Assiut University Faculty of Science Botany Department		جامعة أسيوط كلية العلـوم قسم النـبات
General Botany Exam. for Pre-pharmacy Students, Jan. 2008		
Time allowed: 3 hours		150 Marks

Section A: Plant Physiology (30 Marks)

Answer all of the following Four questions

1. Define Only Seven *(one MARK(each)* of the following terms:
   a. True solutions
   b. Imbibitional force
   c. Sol-gel transformation
   d. Osmosis
   e. Adsorption
   f. Plasmolysis
   g. Hydrophilic colloids
   h. cell turgor

2. Follow the -reactions of ONLY THREE *(five Marks each)* of the following:
   a. Photosynthetic ATP synthesis
   b. Pyruvate to acetyl CoA
   c. No oxygen available for a plant cells
   d. A competitive inhibitor of an enzyme

3. Write down the location of ONLY SIX *(one Mark each)* of the following processes:
   a. Diffusion Pressure Deficit (DPD)
   b. Imbibition
   c. Selective permeability
   d. Light reactions of photosynthesis
   e. Dark reactions of photosynthesis
   f. Cytochrome chain
   g. Glycolysis

4. Illustrate (diagram only) the relationship between osmotic concentration, diffusion pressure deficit, turgor pressure and cell volume in a flaccid cell placed in distilled water. *(Two Marks)*

Best wishes, Refat Abdel-Basset

Section B: Plant Morphology (30 Marks)

Answer the following questions:

a- **Identify:**

Pericarp - embryonic axis - cataphyll - calyptra - weak stem - veins - stilt root.

b- **Write short notes** on ONE only:-

1- Under ground modifications of stem. 2- Types of seed germination.

c- **Illustrate** only the followings:-

*Pneumatophores *Floating root *Foliar buds *Phylloclade stem.

Good Luck: Prof. Dr. K.A. Farghali

Section C: Plant Anatomy (30 Marks)

Firstly: Write brief notes with illustrations if possible on each of the following (15 Marks).

1. Three types of a tissue of secondary origin help in support of woody plants
2. Structure of a protective tissue of secondary origin
3. Three types of simple unspecialized tissue
4. Ergastic nitrogenous waste products
5. Pits of water conducting elements
6. Inulin OR Hydathodes
7. Dendrochronology
8. Callus and callose

Secondly: Answer ONLY THREE questions of the following: (5 Marks each).

1- What are the various criteria on the basis of which meristems can be classified? Give a brief account of various types of meristems based on any criterion? Mention the characteristic features of meristematic cells.

2- Describe different types of vascular bundles with well labeled diagrams. Give the examples of plants and their organs where these are found? Where does the interfascicular cambium occur?

3- Differentiate between heart wood and sap wood? Which of the two is more durable? Why? List the changes that occur during transformation?

4- Write short notes with illustrations on cell wall formation? Mention its chemical components.

5- Explain briefly ONE ONLY:
   a. How stomata are open when the guard cells are turgid?
   b. The process of secondary thickening in dicot roots with a labeled diagram

Good Luck; Prof Dr. M. A. El-Nagdy

Section D: TAXONOMY (30 Marks)

First question: (6 marks each)

a. Define (hypogenous flower, persistent calyx, syngenesious, apocarpous)
b. Draw a labeled diagram showing the generation of male gametes
c. Compare between legume and siliqua, give an example to each.
d. Compare between Solanaceae and Papaveraceae in (sepals & petals).
e. Enumerate one botanical name and its importance belonging to:
   Liliaceae, Brassicaceae, Caesalpiniaceae, Fabaceae, Poaceae & Asteraceae

Second question: (6 marks each)

a.Give 4 different types of racemose inflorescence with illustration.
b.Name 3 different systems of classification. Give examples.
c.Compare between Cyperaceae and Gramineae in (leaf &' fruit).
d. Describe the floral characteristics of Apiaceae with floral diagram.
e. Give 3 botanical names and families of ornamentals and 3 of medicinals.

Good Luck Prof Momen Zareh

First Semester Final Examination

Botany: (Mycology and Phycology)
Pre-Pharmacy Students January 2008

في كراسة الإجابة أنشئ جدولا من عمودين موضحا بأحدهما أرقام الأسئلة وبالآخر الإجابة المطلوبة:

Choose the correct answer (All questions should be answered

Total marks = 30 (one mark for each question)

1- Antibiotics produced by fungi Include:
a- Penicilllns b- Gluconic acids c - Vitamins

2- Some algae and fungi exist In a mutualistlc mode of living forming:
a- Mycorrhizae b- Plasmodia c- Lichens

3· -Antherldia and oogonla are sexual structures produced by:
a- Ascomycota b- Zygomycota c- Oomycota

4- When consumed by man and animals, *Claviceps purpurea* can cause:
a- Lung aspergillosis b- Club root c- Ergotism

5- Carcinogenic metabolites produced by some *Aspergillus* species:
a- Griseofulvin b- Ethanol c- Aflatoxins

6- Cholesterol lowering drugs can be produced during fermentations done by:
a- *Aspergillus terre*us b-*Phytophthora* c- *Plasmopara*

7 - Used commercially for processing good quality of ripened cheese:
a- *Pellicillium roqueforti* b- *Albugo* c- *Agaricus*

8· Fungal cells have distinct cell walls but they do not contain:
a- Nuclei b- Mitochondria c- Chloroplasts

9· Sexual reproduction in *Rltizop"s* results in the formation of:
a-Zygospores b- Sporangia c- Zoospores

10· Griseofulvin Is an antibiotic effective against:
a- Dermatophytes b- *Candida* c- *Aspergillus* infection

11- Plants grow better when they are inoculated with:
a- *Rhizopus* b- *Claviceps* c- Mycorrizal fungi

12· Saprolegniasls is a fungal Infection affecting:
a- Grapevine leaves b- cabbage roots c- Fish and fish eggs

13- Ethanol is produced during fermentation of sugars by:
a-Saccharomyces cerevlslae b- *Pythium* c- *Penicillium*

14- Used in traditional chinese medicine for treatment of various diseases: ..
a- *Cordyceps* b- *Candida albicans* c- *Trichophyton*

I5-Used in some countries as a good source of proteins and vitamins:
a- *Spirulina* b- Diatoms *c-Nostoc*

16- In *Spirogyra*, sexual reproduction is commonly observed as:
a-daughter cells b- Sscalariform conjugation c- Pycnidia

==========(Please see next page)==========

17- Asexual reproduction in *Volvox* occurs by formation of:
a- Buds b- Antheridia c-Daughter colonies
18- Which of the following is regarded as an advanced colony:
a- *Volvox* b- *Chlamydomollas* c- *Oscillntoria*
19- Sexual reproduction in *Fucus* occurs by:
a- Daughter colonies b- Antheridia and oogonia c- Daughter cells
20- Agar agar is produced from:
a- Spirogyra b- Diatoms c- Red algae
21-ln *Euglena*, food is reserved in the form of:
a- Laminarin b- Paramylon bodies c- Oil
22- Used commercially for production of seaweed soap and skin care cosmetics:
a- Cyanophyta b- Brown algae c- *Euglella*
23- Phycoerythrin is the most dominant pigment in: .
a- Rhodophyta b- Phaeophyta c- Euglenophyta
24-Very important in water purification and food supplementation:
a- *Microcystis* b- *Cltlorella* c- *Spirogyra*
25- Provided with two anterior flagella
a- *Oscillatolria* b- *Cltlamydomonas* c- Diatoms
26- Unicellular alga without cell walls:
a- Nostoc b- *Euglena* c- *Lamiflaria*
27- In Phaeophyta food is preserved in the form of:
a- Floridian stach b- Laminarin and mannitol c- Oils
28- Perithecia are fungal structures containing:
a- Conidia b- zoospores c- asci amI ascospores
29- Plasmodiophora brassicae is the causal agent of:
a- Club root of cabbage b- fruit rot c- Lung aspergillosis
30- Several fungi produce acervuli and pvcnidia which contain:
a- Ascospores b- Basidiospores c- Conidiophores and conidia

========== THE END==========

Best wishes, ***Professor Ahmad M. Moharram***

Assiut University Faculty of Science Botany Department	بسم الله الرحمن الرحيم	جامعة أسيوط كلية العلـوم قسم النـبات
General Botany Exam. for Pre-pharmacy Students, Feb. 2008		
Time allowed: 3 hours		

Section A: Plant Physiology (30 Marks)

Write on Three only: (10 marks for each)

1- Light reaction

2- Krebs cycle.

3- Respiratory chain.

4- Mobilization of glycerol.

5- The biosynthesis of fatty acids.

Prof. M. Abdo Shadad

Section B: Plant Anatomy (30 Marks)

Answer only Five questions of the following:- (6 marks for each)

1. What are the characteristic features of meristematic cells? Give an account of various types of meristems based on their position.
2. Give an illustrated account of various types of vascular bundles.
3. What is the origin and function of sclerenchyma'! Describe with illustrations various types of sclereides.
4. Describe briefly the various types of parenchymatous tissue? Also, describe various types of pits found in this tissue.
5. Why seive tube loses its function? Write on its structural adaptation to function.
6. Describe the process of formation of annual rings?
7. Write short notes with illustration on cell wall formation.

Prof. M. M. El-Nagdy

Section C: Fungi and Algae (30 Marks)

Firstly: Write brief notes with illustration if possible on <u>Six only</u> of the following:- (2 marks for each)

Akinetes - Ani sogamy - Aflatoxins - Ergotamine - Mycorrhizae Pycnidium - Chlamydospores - Compound zoospores.

Secondly: Discus briefly Three only of the following: (6 marks for each)

1. Classification of Eumycophyta (true fungi), show the basis of classification with the help of drawing.
2. Various types of sexual sporocarps.
3. The bases on which, the algae are classified into various divisions.
4. Structure and economic importance of Yeast.
5. Varios mode of life (nutration) in Fungi.

Prof. M. A. El-Nagdy

Section D: Taxonomy of Flowering Plants (30 Mlarks)

Answer <u>Five only</u> of the following questions:- (6 marks for each)

1. Define:- hypogenous flower, deciduceus calyx, syngenesious & syncarpous
2. Draw an illustration showing 3 types of racemose inflorescence.
3. Compare between drupe & berry, give an example to each.
4. Compare between Prunoideae and Pyroideae in (carpels & fruit).
5. Give 1 botanical name & family of vegetable, pulse, cereal & medicinal plant
6. Describe the floral characteristics of family Papaveraceae with floral diagram. Enumerate 2 of the important plants.

Prof. Momen Zareh

Assiut University Faculty of Science Botany Department	بسم الله الرحمن الرحيم	جامعة أسيوط كلية العلـوم قسم النـبات

General Botany — Second Term Examination (June 2008)
Time allowed: (3) hours — Pre-pharmacy تخلفات

Answer all the following questions:

Section A: Plant Physiology (30 Marks)

1. Write on FIVE only of the following:

a) Light reaction.
b) Krebs cycle.
c) Nitrate reductase enzyme.
d) Dark reaction.
e) Respiratory chain.
f) The biosynthesis of fatty acids.
g) Symbiotic nitrogen fixation.

Prof. Dr. M. Shadad

Section (B): Plant Morphology & Anatomy (50 marks: 10 each)

2. Using illustration (if possible) discuss FIVE ONLY of the following:

a) Adaptation of structure of xylem tissue to its function.
b) Types of RNA's and their role in protein synthesis.
c) Different types of vascular bundles.
d) Leaf modifications with special reference to insectivorous plants.
e) Characters and shapes of Collenchyma cells.
f) Types and distribution of stomata.
g) Requirements of seed germination.

Prof. Dr. A. M. Moharram

Section (C): Plant Kingdom (50 marks: 10 each)

3. Answer FIVE ONLY of the following:

a) Enumerate the various classes of fungi. Give with the help of drawing two distinctive features of each class. Show the basis of classification.
b) What is the causal organism of the black rust disease? Describe with the help of drawing the various types of spores produced by the fungus on its primary host (wheat).
c) Prepare a diagrammatic representation of alteration of generation **in** archegoniates. Also, discuss briefly with drawing *Adiantum* gametophyte.
d) Discuss briefly lytic life cycle of virulent phage.
e) Discuss briefly the auxospore formation by algae.
f) Write brief notes on the bases on which algae are classified into various divisions.
g) Illustrate diagrammatically and comment on asexual reproduction in *Clamydomonas* OR *Vaucheria***.**

Prof. Dr. M. A. El-Nagdy

The Plant Morphology
Pre-Pharmacy Students (تخلفات)

Answer the following questions: (30 marks)
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A- Complete:

I-The pericarp is ……
2- Endospermic seed has …… which is stored the food.
3- Cotyledon functions are ……., ……., and ……...
4- Root cap is called ……....
5- Coleoptile means …….
6- foliar bud is developed from …….
7- …… and …….. are negative geotropic roots.
8- Adventitious buds are originated from ……
9- Trailing stem is spread on the ground without …….. at nodes.
10- Cladode is a phylloclade but has …….. internodes.
11- The functions of petiole are …….. and ……..
12- Branch has ……..…….. bud and compound leaf has ..... bud.
13- Mechanical donnancy is caused by …….

B- Correct the word between bracts:

1- (Tegmen) ..... is a thick seed coat enclose the embryo.
2- In grain, the endosperm (envelope) …….. the embryo.
3- Seeds are (vegetative) ……. reproductive organs.
4- Immaturity of embryo is due to (physical) …….. dormancy.
5- During germination, starch is converted to glucose by lipase) ……
6- Secondary roots are originated from (endoderm is) ……..
7- Swollen root without definite shape is called (napiform) ……
8- Clinging roots are related to the (floating) …… roots.
9- Winter buds are protected by (sporophyll) ……. leaves.
10- Runners are plants grow (vertically) ……. all the ground.
11- When (branch) ..... falls, it leave a scare.
12- In (pinnate) …… venation lateral veins run toward leaf Margin.
13- Root hairs are (multicellular) ……..

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c- Illustrate only each of the followings:

1- Durian germination. 2- Pneumatophores. 3- Prop root.
4- Radicale buds 5- Cladode 6- Phyllotaxy.

Prof. K.A. Farghali

Faculty of Science Department of Zoology Exam: Zoology for Prepharmacy Code:	كلية العلوم – قسم علم الحيوان	امتحان الفرقة: إعدادى صيدلة المقرر: علم الحيوان رقم المقرر ورمزه: الزمن: ثلاث ساعات 24 يناير 2008

Taxonomy

I-Choose the correct answer: **(20 marks)**

1- *Ascaris* is an ideal example of (molluscans – chordates – nematodes).
2- Protista includes (cellular organisms – parazoans organisms – acellular organisms).
3- Common names of animals are usually used for (scientific – inrernational – local purposes).
4- commensal organisms are usually (harmful – helpful – harmless).
5- ptotozoans nutrition type is (autotrophic – heterotrophic – saprozoic – all)
6- Polyp and medusa are forms of (nematodes – annelids – cnidarians).
7- Annelida, Mollusca, Chordata are (coelomafephyla – major phyla – both).
8- The infective stage of Taenia is (Leptocercus – Lophocercus – Cysticercus).
9- *Entamoeba histolytica*, is a human parasite lives in (mouth – eyes – intestine)
10- Cilia – Podia – flagella are (respiratory – excretory – locomotary organelles).
11- High diversity of Arthropods is due to (exoskeleton – jointed legs – segmentation – all).
12- Insects characterized by (4paires – 2 paires – 3paires of legs).
13- Scorpions attribute to (worms – insects – arachnids).
14- Nematocysts are cnidarian's cells found in (endoderm – mesoderm – ectoderm).
15- The intermediate host snail of *Fasciola* is (*Bulinus* – *Pirenella* – *Lymneae*).
16- Respiration of cestodes takes place by (respiratory system – binary fission – simple diffusion).
17- Hirudun, is a substance secreted by leeches as blood (coagulant – aggulant – anticoagulant).
18- Circulatory system was firstly appearing in (nemalodes – chordates – annelids).
19- Pearls, both natural and cultured, are produced by (snails – leeches – bivalves).
20- One of the following organs is not related to others (flame cell – green gland – radula).

II-Put √ or X for each of the following: **(20 marks)**

1- Coanocytes are specialized cells have sting organelle used for defence ( ).
2- Locomotary organelkles used as a taxonomic character to classify cnidarians ( ).
3- Fertilization of gametocytes of *Plasmodium* usually occurs in human blood ( ).
4- Nematoda considered the first animal phylum has digestive tract ( ).
5- Pseudocoelum is a secondary body cavity found in the mesoderm ( ).
6- Coxal and green glands are organs of respiration in arthropods ( ).
7- *Heterophyes* worms are usually distributed in upper Egypt ( ).
8- Lophocercus cercaria has only cystogenus glands ( ).
9- The final host is the animal where the adult parasite live in it ( ).
10- Each egg if *Schistosoma* worm gives digestive tract ( ).
11- Taenia sp. Is a parasite without digestive tract ( ).
12-Nephredium is an excretory unit of Annelida ( ).
13- All trematodes are hermaphrodite ( ).
14- Leeches considered coelomate animals ( ).
15- The species is a group of similar animals ( ).
16- Radula is a rasping organ in molluscans ( ).
17- The insects attribute to Arthropoda ( ).
18- Ascar is has a direct life cycle.
19- Scyphozoa is a class attributes to cnidarians ( ).
20- Plasmodium causes the malaria fever ( ).

انظر خلفه ⟵

Draw labeled diagrams for the following twins: 20 marks

A nematocyst	A choanocyte
An excretory unit of *Fasciola*	An excretory unit of *Hirudo*
A trematode cerxaria that infects human	A cestod cercaria that infects human
Coelomate animal	Acoelomate animal

Cytology

22 marks

I- Choose the correct answer:

1- Binary fission is a process division in:

a) eukaryotic cell b) prokaryotic cell c) mesokaryotic cell

2- The separation of the duplicated genome into two sets (mitosis) occur in the:

a) cytoplasm b) nucleus c) cytosol

3-The point where microtubules of the spindle apparatus attach with the chromosome is:

a) centriol b) kinetochore c) aster

4- The chromosomes migrate to the equator of the spindle in the:

a) telophase b) metaphase c) prophase

5- Maiosis I known as: a) duplication b) reduction c) division

6-The centromeres still intact in: a) anaphase II b) anaphase I c)metaphase I

7- The participation of the membranous organelles in cellular metabolism is:

a) indirect b) direct c) both

8- In the amphipathic molecules of phospholipids, the head linked to tail by:

a) phosphate group b) sulphate group c) carbonate group

9- Genetic abnormalities of spectrin structure lead to:

a) anaemia b) membrane fluidity c) membrane transport

10-In active transport, the molecules moves from area of:

a)high concentration to one of low concentration b) low concentration to one of high concentration c) no concentration difference

11-The organelle which facilitates absorption and form the striated border in the intestine is:

a) microvilli b) microtubules c) microfilaments

12-In muscle cells, the SER is a specialized form and known as:

a) sarcoplamic reticulum b) neuroplasmic reticulum c)ergastoplasmix reticulum

13- Each centriole duplicates itself at: a) the beginning of cell division

b) the end of cell division c) middle of cell division

14-Exogenous pigments include: a)minerals b) melanin c) lipofuscine

15-Recognition of nerve cells for other nerve cells during synaptic formation is called:

a) microenvironment b) antiginicity c) molecular recognition

16- The pores of the cell membrane are lined with:

a)glycoprotein b) phosphlipid c) protein layer

17- SER involved in the breakdown of glycogen due to the presence of certain enzyme which one of the following: a) acid phosphatase
b) alkaline phosphatase c) glucose-6-phosphatase

18- The phase of Golgi apparatus which receives the transfer vesicles from the RER is called:
a) granular phase b) mature phase c)immature phase

19-The lysosomes are present in almost all cells, but they are particularly abundant in:
a) muscle cells b)liver cells c) phagocytic cells

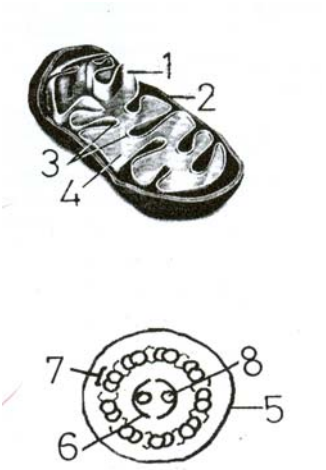
20-Ribosomes are composed of almost 80 different proteins and: a)20 types of ribosomal RNA b) 8 types of ribosomal RNA c) 4 types of ribosomal RNA

21-The distance between the outer and the inner membranes of mitochondria is called:
a) intercristal space b) intermembrane space c) intermembrane space

22- RER is prominent in the cells specialized for:
a) lipid synthesis b) lipoprotein and steroid c) protein synthesis

II- Label the following diagram: 8 marks

1-
2-
3-
4-
5-
6-
7-
8-



Assiut University
Faculty of Science
Chemistry Department

Jan. 2008

Time allowed: 3 hrs.

Examination of Physical and Inorganic Chemistry for Pre-Pharmacy Students

Section (I)

Answer **Three Only** of the following: (50 Marks)

1) a) Discuss the kinetics for the following reactions:

$$2A \xrightarrow{K_2} B \quad \text{and} \quad A \underset{K_1}{\overset{K_1}{\rightleftharpoons}}$$

where K_2 is the rate constant for a second order reaction and K_1 , K^{-I} represent the values for first order kinetics.

b) Derive the following thermodynamic relations:
(i) Volume arid temperature in adiabatic processes.
(ii) Entropy change and temperature for processes carried out either at constant volume or constant pressure.

2) a) Discuss the effect of temperature on reaction rate.
b) Write a brief account on the followings:
(i) Standard cells. (ii) Calomel electrode.
(iii) Reversible and irreversible cells and
(iv) Measurement of single electrode potential.

3) a) Derive an expression for the efficiency of heat engine working between two temperatures T_1 and T_2.
b) The half life periods for a certain reaction at different initial concentration are given below:

Initial concentration Mole/liter	0.20	0.15	0.10	0.05
t½ Time/min.	5	6.66	10	20

Calculate the reaction order and the rate constant.

4) a) One mole of water vapour is condensed at 100°C and the water obtained is cooled at 0°C and then frozen to ice. Calculate the entropy change for the process. Latent heat, of·;fusion and vaporization of ice and water are 80 and 540 cal. per gm, respectively, also the heat capacity for water = 1.01 cal.gm-^{t} K-^{1},

b) For certain gas C_p = 12.0 cal. mo'r^{1} K-^{1}, what will be the change in entropy of 10 moles of the. gas when it is expanded from a volume of 200 Iiters at 3 atm. pressure to a volume of 400 Iiters at 1 atm. pressure. Calculate also ΔE, ΔH and W for the process.

أنظر خلفه باقي الأسئلة

Section (II)

Answer **Three Only** of the following: (75 Marks)

1) a) (In S.I units) what is the frequency and wave number associated with light of wavelength equals to 6000A°? (c = 3 xl0^8 m.s^{-1}).

b) (i) Give an experiment how to obtain the line spectrum of hydrogen atom.

(ii) Calculate the wave number of the third line in Brackett series (R = 109678 cm^{-1}).

2) a) What is the wavelength of a grain of sand that weighs 0.000010 g and is moving at a speed of 0.010 ms-^{1} (h = 6.63 X 10^{-34} Js, 1 J = 1 Kg m^2/s^2).

b) Give reasons for:

(i) Atomic radii of the representative elements decrease across a period from left to right.

(ii) Why the Cl atom does not form a Cl^{2-} ion instead of the Cl^- ion? (Crystal lattice for Na_2Cl = ~ - 2570 kJ/mol, for NaCl = -789 kJ/mol).

(iii) Electron capture (in β-decay) is accompanied by production of X-rays.

3) a) Write on:

(i) Isotopes application in studying photosynthesis and in medicine.

(ii) $BeCl_2$, BCl_3, PCl_{3s} and SF_6 as examples of exceptions to the octet rule.

b) Give the nomenclature of: $[Ag(CN)2]^-$, $[Cr(NH_3)_3Cl_3]$, $[Co(NH_3)_4Cl_2]^+$

4) a) Draw the molecular orbital energy-level diagrams for: O_2+ , O_2 and O_2^{-2}, which of the three are paramagnetic or diamagnetic?

b) Deduce the Lewis structure of CO_3^{2-}

Section (III)

Answer **Four Only** of the following: (25 Marks)

1) Describe how the surface tension of liquid can be determined by the capillary rise method.

2) How many g of oxygen is contained in 10.5L of oxygen measured over water at 25°C and 740 mmHg? Vapour pressure of water at 25°C is 24 mmHg.

3) Derive the relationship between K_c and K_p for a reaction:

$$aA + bB \rightleftharpoons cC + dD$$

4) a) What are the fundamental assumptions of the kinetic theory of gases?

b) Derive.Avogadro's law from the kinetic gas equation.

5) For the reaction: $PCl_{5(g)} \rightleftharpoons PCl_{3(g)} + Cl_{2(g)}$

pure PCl_s is introduced into evacuated chamber and allowed to equilibrium at 250°C and 2 atm. The equilibrium gas contains 40.7% chlorine by volume. Calculate K_c and K_p for the former reaction.

Atomic masses (H= 1, C= 12, Cl= 35.5, O= 16, P= 31)

Good Luck

Department of Mathematics Faculty of Science **دور يناير 2008م** **الزمن: ساعتان**	**قسم الرياضيات** **كلية العلوم** **أمتحان الفرقة: إعدادي صيدلة** **إسم المقرر: رياضيات وإحصاء**

أجب عن الأسئلة الآتية:

السؤال الأول: (10 درجات)

أ) أوجد $\frac{dy}{dx}$ لكل مما يأتي:

(i) $y = \text{cosec}\,(5x) + e^{\cot(2x)}$

(ii) $y = \sqrt{1-4x^2}.\cos^{-1}(2x) + \ln(\sin^3 x)$

ب) إذا كانت $y = e^{\sqrt{x^2+1}}$ فإثبت أن $(x^2+1)\frac{dy}{dx} = y^2x^2$

ج) أوجد $\frac{dy}{dx}$ من العلاقة الآتية: $\sin y = \cos(x - y)$

السؤال الثاني: (10 درجات)

2-أ) أحسب ثلاثة فقط من التكاملات الآتية:

(i) $\int \sin^{-1} x\,dx$, (ii) $\int e^{\sin 2x}.\cos 2x\,dx$

(iii) $\int \frac{x+8}{\sqrt{1-x^2}}$, (iv) $\int \frac{x+2}{(x-2)(x+3)}dx$

ب) أوجد القيم العظمي والصغري المحلية للدالة:

$$f(x) = 4x^3 + 6x^2 - 24x + 30$$

ج) أوجد صيغة اختزالية للتكامل الآتي: $I_n = \int \tan^n x\,dx$

ومن ثم أوجد قيمة $I_4 = \int \tan^4 x\,dx$

السؤال الثالث: (15 درجات)

أ) أوجد قيمة لكل من λ , μ التي تجعل للنظام

$x + 3y + \lambda z = \mu^2$, $x + 3y + 5z = 9$, $x + 2y + 3z = 5$

(i) حل وحيد ثم أوجده (ii) عدد لانهائي من الحلول ثم أوجد إحداها.

ب) استخدم طريقة نيوتن رافسون في إيجاد قيمة تقريبية للمقدار $\sqrt{0.07}$

السؤال الرابع: (15 درجات)

أ) البيانات التالية تمثل علاقة بين المتغيرين x , y

x	-2	-1	0	1	2
y	8	4	2	2	4

(i) أوجد أفضل قطع مكافئ يقرب مجموعة هذه البيانات باستخدام طريقة المربعات الصغري.
ثم أوجد قيمة y عند $x = 10$.

(ii) أوجد معامل التحديد ومنه استنتج قيمة معامل الارتباط. وما هي النسبة المئوية للتغير الذي يفسره الانحدار ؟

ب) إذا قيست كمية الصوديوم في عينتين من علب العصير الموجودة بالأسواق لنوعين من العصير (التفاح والبرتقال) وكانت النتائج كما في الجدول:

التفاح	4.86	5.11	5.23	5.14	5.61	5.32		
البرتقال	4.72	4.81	5.22	5.67	5.52	5.35	4.41	5.50

أختبر الفرض القائل بأن هناك اختلاف بين متوسط كمية الصوديوم في هذين النوعين من العصير عند مستوي معنوية $\alpha = 0.05$.

(استخدم ما يلزم من القيم $Z_{0.975} = 1.96$, $t\,(0.975;\ 12) = 2.18$)

أنتهت الأسئلة مع تمنياتنا بالنجاح والتوفيق ،،،،

Assuiut University | الإمتحـان وجهـان | January, 2008
Faculty of Arts | Time: 2 hours
Dept. of English

First Semester -- Final Exam

Subject: No. ……. English Language
Students: Preparatory Year - Faculty of Pharmacy

I- Write a paragraph of TEN lines on only ONE of the following: [10 marks]
1- Drug addiction 2- Pollution 3- The importance of a pharmacist in society

II- Read the passage and choose the best answer (a, b, c, or d): [9 marks]

The earliest authentic works on European alchemy are those of the English monk Roger Bacon and the German philosopher S1. Albelius Magnus. In their treatises they maintained that gold was the perfect metal and that inferior metals such as lead and mercury were removed-by various degrees of imperfection from gold. They further asserted that these base metals could be transmuted to gold by blending them with a substance even more perfect than gold. This elusive substance was referred to as the "philosopher's stone." Most' of the early alchemists were artisans who were accustomed to keeping trade secrets and often resorted to cryptic terminology to record the progress of their work. The term sun yvas used for gold, moon for silver, and the five known planets [or base metals, This convention of substituting symbolic language attracted a group of mystical philosophers who compared the search for the perfect metal with the struggle of mankind [or the perfection of the soul. The philosophers began to use the artisan's terms in the mystical literature that they produced. Thus, by the fourteenth century, alchemy had developed two distinct groups of practitioners - the laboratory alchemist and the literary alchemist.

1- What is the author's main point?
a- That there were both laboratory and literary alchemists.
b- That the philosopher's stone was essential to alchemy.
c- That Roger Bacon and 81. Albertus Magnus wrote about alchemy.
d- That base metals can be transmuted to gold by blending them with a substance more perfect than gold.

2- Who were the first alchemists?
a- They were chemists. **b-** They were writers.
c- They were artisans. **d-** They were linguists.

3-Roger Bacon and St. Albertus Magnus had the same ……
a- nationality. **b-** premise.
c- profession. **d-** education.

4- It is probable that Roger Bacon's work ……
a- was not genuine. **b-** contained references to the conversion of base metals to gold.
c- disproved that of St. Albetus Magnus. **d-** was written after St. Albertus Magnus.

5- According to the alchemists, what was the difference between base metals and gold?
a- Perfection. **b-** Chemical content.
c- Temperature. **d-** Weight.

6- What was the "philosopher's stone?"
a-,Lead which was mixed with gold. **b-** An element that was very found.
c- Another name for alchemy. **d-** A base metal

III- <u>Underline the incorrect word(s) or phrase in each sentence and *correct it*</u>: [7 marks]

1- Our professor is an important member in the university counsel.
2- If you have studied a bit harder, you could have answer all the exam.
3- There were continual sounds of hammering that never stopped.
4- After the crash, two of the passengers were found conscience.
5- Our flat is composed of two bedrooms and a living room.
6- I really appreciate your nice complement.
7- He compared the results in the report to the standard measures to decide the treatment.

IV- <u>Choose the ONE word or phrase that best completes the sentence:</u> [7.5 marks)

1- The exquisite antique bottle was carved marble.
a- from **b-** by **c-** about **d-** at

2- .....of the tranquilizer, the scientist put a tag on its ear and recorded details about the animal
a- While under the effect the deer **b-** While being under the effect the deer
c- While the deer was under the effect **d-** While the deer under the effect

3- The black moths …….. have genetically become more tolerant of pollution.
a- survive in industrial areas **b-** survived in industrial areas
c- survived in industrial areas **d-** survived in industrial areas

4- That acne …….. by daily consumption of zinc suI fate tablets gives patients much encouragement.
a- has been controlled **b-** controlled
c- will have been controlled" **d-** had controlled

5- Not until 1865 ..... the first antiseptic treatment on a compound fracture.
a- when Joseph Lister tried **b-** when did Joseph Lister try
c-. did Joseph Lister try **d-** that Joseph Lister tried

V- <u>Do as shown between brackets:</u> [12 marks]

1- Pesticides protect us from insects, weeds, disease, and getting hungry, but some pose a risk of cancer, birth defects, and being sterile. **[Correct the parallel]**
2- Although the drought was as not severe as the previous one, its effect was more damaging. **[Correct]**
3- Only the 100 wealthier were allowed to become members of the club. **[Correct]**
4- After (to erupt) in May 1980, Mount Saint Helens continued erupting intermittently throughout the following year. **[Write the correct verb form]**
5- He couldn't sleep unless he (would get- got- has got) a lot of exercises. **[Choose**]
6- (Everybody- Everywhere- Every now and then) he went, people admired him. **[Choose the correct marker]**
7- Glaucoma, (when- which- where) is often called tunnel vision, happens when a buildup of pressure in the eye gradually shrinks the field of vision. **[Choose the word that can introduce the clause]**
8- Identical twins are …… in many ways and are often difficult to tell apart. **[Use "like" or "alike"]**

Vl- <u>Translate into Arabic:</u> [4.5 marks]

Erythrocytes, or red blood cells, are round disks, concave on two sides, and approximately 7.5 thousands of a millimeter in diameter. In humans, and most other mammals, the mature red blood cell contains no nucleus; in some vertebrates, it is oval, and nucleated. Hemoglobin, a protein in the red blood cells, gives blood its red calor and transports oxygen from the lungs to the body cells, where it picks up carbon dioxide for transport back to the lungs to be expired.

End – Good Luck – *Dr. Nader S. Fahim*

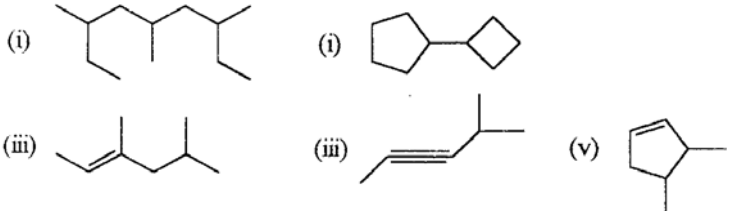
Assiut University
Faculty of Science
Chemistry Department

Time allowed: 2 hrs
Jun. 2008

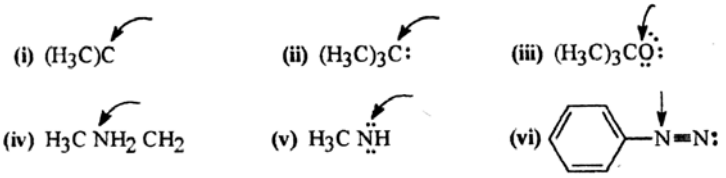
Final Organic Chemistry Examination for Pre-Pharmacy Students.

Answer the following questions:

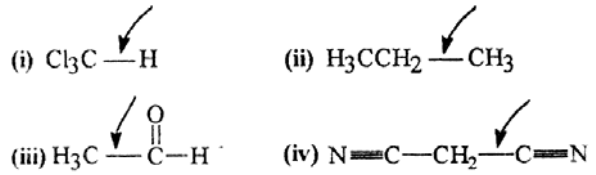
(Q 1) (a) Give systematic IUPAC names for four of the following structures.



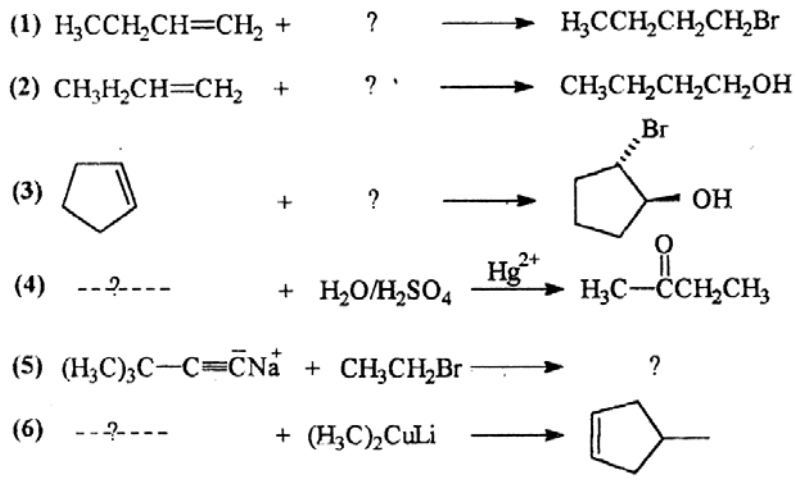
(b) Assign an ionic charge for four only of the indicated atoms in the following structures (All unshared valence electrons on these atoms are shown).

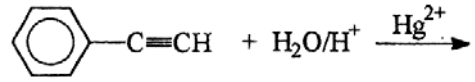


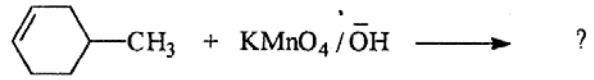
(c) What hybrid orbitals are used to form each of the indicated covalent bonds ?

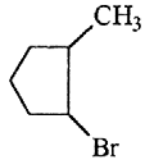


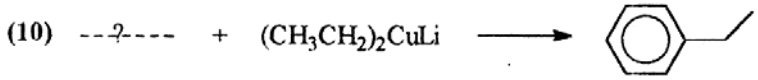
(d) Write structural formula for the missing reagent in eight of the following synthesis.



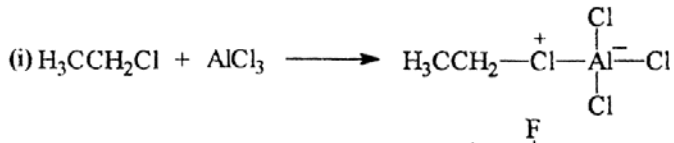
(7) 

(8) 

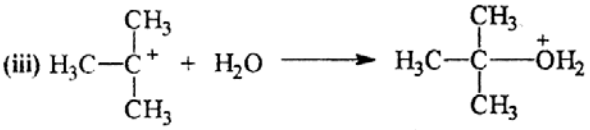
(9) 

(10) 

(Q 2) (a) Designate the Lewis acid and Lewis base in two of the following reactions.

(i) 

(ii) 

(iii) 

(b) Explain two of the following:

(i) Guanidine is strong base whereas phthalimide is sufficiently acidic to form alkali metal salts.

(ii) The nitrogen atom in pyrrolidine is basic whereas is not in pyrrole.

(iii) p-Nitroaniline is less basic than aniline itself.

(c) Predict the more stable alkene of each of the following pairs:

(i) 2-Methyl-2-pentene or 2,3-dimethyl-2-butene.

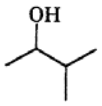
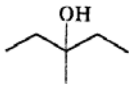
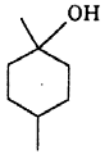
(ii) cis-3-hexene or trans-3-hexene.

(iii) I-hexene or cis 3-hexene.

(iv) trans 2-hexene or 2-methyl-2-pentene.

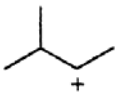
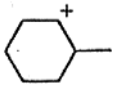
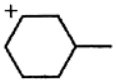
(d) Acid-catalyzed dehydration of neopentyl alcohol $(H_3C)_3CCH_2OH$, yields 2-methyl-2-butene as the major product. Outline acceptable mechanism showing all steps in its formation.

(Q 3) (a) Give the products that be formed when each of the following alcohols is subjected to acid-catalyzed dehydration. If more than one product would be formed, designate the alkene that would be the major product, (Neglect cis-trans isomerism).

(i)  (ii)  (iii)  (iv) 

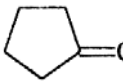
(b) Classify the following solvents as being protic or aprotic
formic acid, HCO-OH; acetone H_3C-CO-CH_3; acetonitrile $CH_3C{\equiv}N$; formamide H-CO-NH_2, sulfur dioxide, SO_2; ammonia, NH_3; trimethylamine, $N(CH_3)_3$; ethylene glycol $HOCH_2CH_2OH$.

(c) Write a formula for the expected rearranged carbocation, if any, from each of the following carbocations:

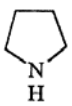
(i)  (ii)  (iii)  (iv) 

(d) Give a reason for two only of the following facts.
(i) Tertiary carbocations are more stable than secondary carbocations.
(ii) alkyl iodides are easily hydrolyzed then alkyl flourides.
(iii) Toluene is more reactive than benzene in electrophilic aromatic substitution reactions.

(Q 4) (a) Outline acceptable mechanism for one of the ionic additions of :
(i) HBr to 2-methyl-I-butene.
(ii) HI to I-methylcyclopentene.

(b) Write the general structure for two only of the alkenes that would produce the following products when treated with ozone and then with zinc and water.
(i) H_3C-CO-CH_3 and $CH_3CH(CH_3)CHO$
(ii) CH_3CH_2CHO only (2 mol are produced from 1 mol of alkene).
(iii)  and HCHO

(c) Which member of each of the following pairs would you expect to be the more water soluble? Why? (answer two-only).

(ii)  or  (iii) CH_3SCH_3 or $CH_3\overset{\overset{O}{\|}}{S}CH_3$

(d) Explain two only of the following findings.
(i) O-Nitrophenol and p-nitrophenol are more acidic than phenol itself.
(ii) 2,6-Dimethyl-N,N-dimethylaniline is inactive towards diazo coupling reactions whereas N,N-dimethylaniline is highly active.
(iii) O-Hydroxybenzoic acid (salicy1ic acid) is more acidic than m-hydroxybenzoic acid.

Good Luck
Prof. Dr. Maher El-Zohry

Assiut University
Faculty of Science
Chemistry Department

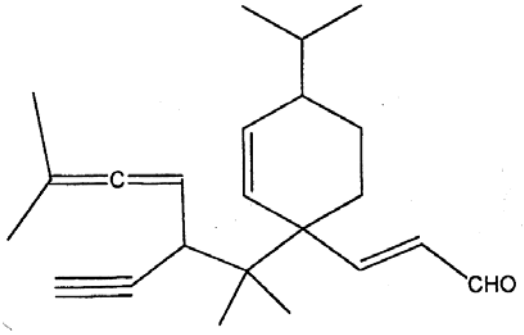
Time allowed: 2 hrs
Mar. 2008

Student Name:
Student No.

Mid-Term Organic Chemistry Examination for Pre-Pharmacy Students (Organic Chemistry)

Answer all the following questions:

Ql. For the following compound **(10 Marks)**

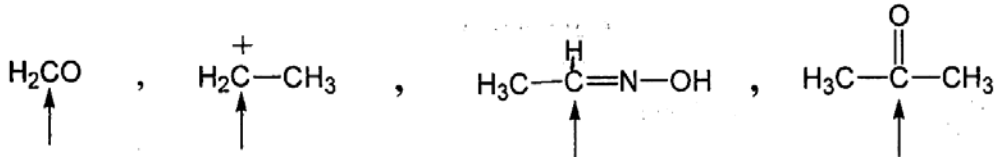


1- What is the compound type ?
2- What is the functional group ?
3- How many sp^3 carbons ?
4- How many sp^2 carbons ?
5- How many sp carbons ?
6- How many sp^2 atoms ?
7- How many sp^3-$1s$ σ bonds ?
8- How many sp^2-$1s$ σ bonds ?
9- How many sp^2-sp^3 σ bonds ?
10- How many sp^3-sp^3 σ bonds ?
11- How many sp^2-sp^2 σ bonds ?
12- How many sp-sp σ bonds ?
13- How many sp-sp^2 σ bonds ?
14- How many 1°ry carbons ?
15- How many 2°ry carbons ?
16- How many 3°ry carbons ?
17- How many 4°ry carbons ?
18- How many 1°ry hydrogens ?
19- How many 2°ry hydrogens ?
20- How many 3°ry hydrogens ?

Q2. Which of the following structures could be classified as electrophiles or nucleophiles ? (2 Marks)

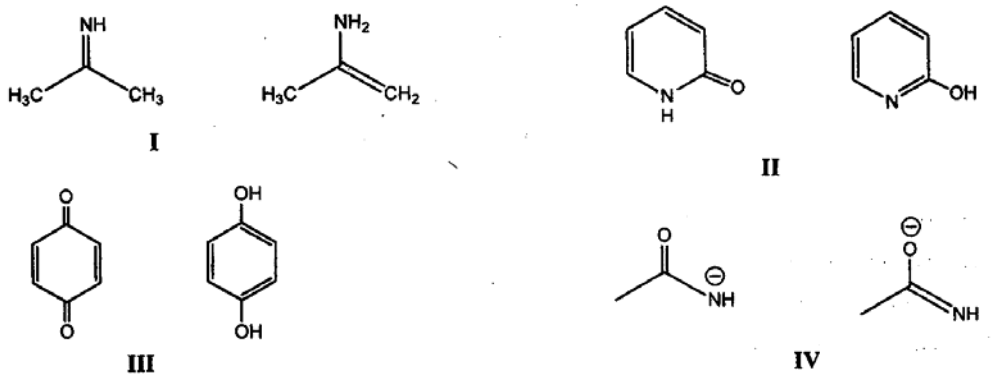
$FeCl_3$ CH_3NH_2 BH_3 H_2O

Q3. What is the bond angle for the indicated atom in the following molecules ? (2 Marks)



Q4. Which of the following pairs of structures represents tautomers?

2 Marks)



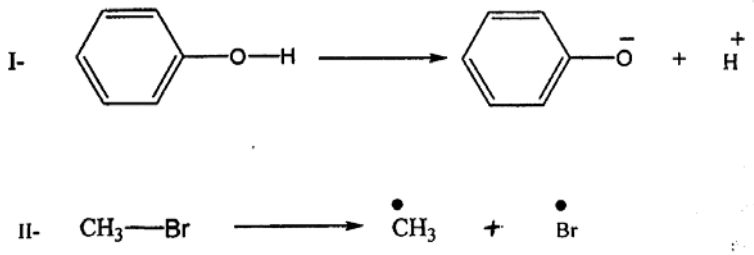
I II III IV

(i) I, II (ii) III, IV (iii) I, III (iv) II, IV

Q5. Which of the following compounds is nonpolar ? (2 Marks)

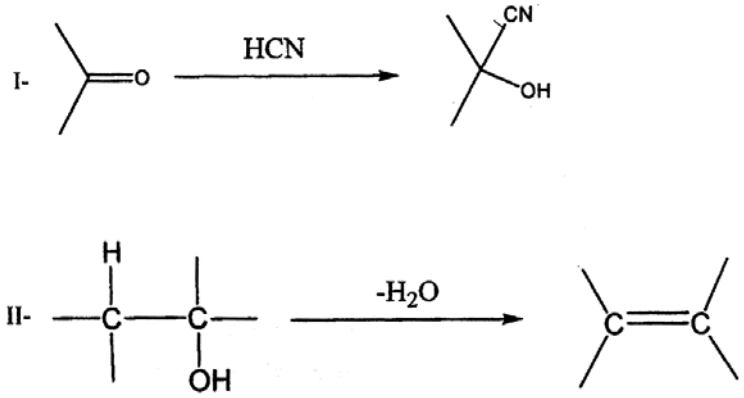
CH_3OH CS_2 NH_3 BF_3 $CHCl_3$

Q6. State whether each of the following disconnection is hemolytic or heterolytic ? (2 Marks)

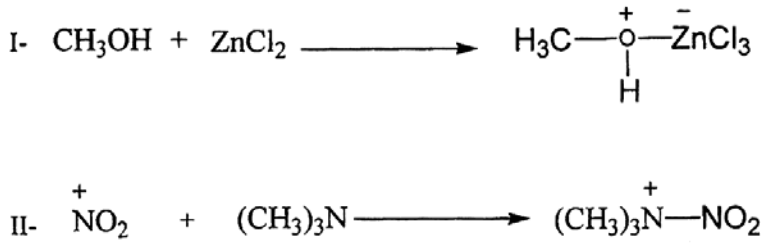


Q7. Arrange the following compounds in the order of increasing bond energy of the indicated bonds (least first) (2 Marks)

Q8. Give the type of organic reaction of the following and indicate the change of hybridization of atoms from the starting materials to the products ? (2 Marks)



Q9. Designate Lewis acid and Lewis base in the following reactions ? (2 Marks)



Good Luck

Prof. Dr. Maher El-Zohry

Assiut University
Faculty of Science
Chemistry Department

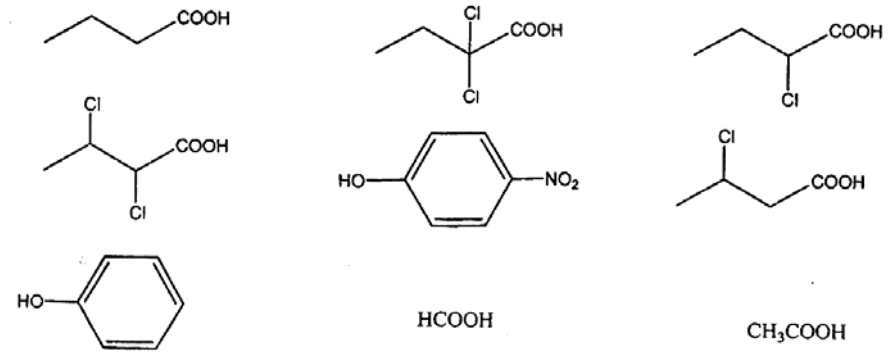
Time allowed: 2 hrs.
May 2008

Final Organic Chemistry Examination for Pre- Pharmacy student

Answer all the following questions:

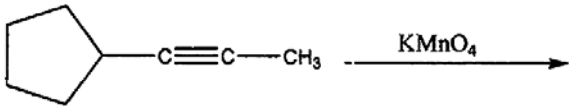
Ql- Answer only four of the following items. (20 Marks)

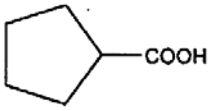
(a)- Arrange the following compounds according to their acidity **(5 Marks)**

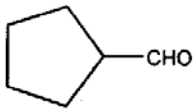


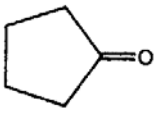
(b)- Explain why cyclohexyl amine is more basic than aniline whereas phenol is more acidic than methanol ? **(5 Marks)**

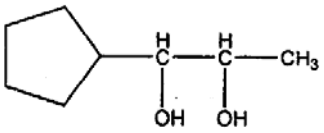
(c)- What is the product from the following reaction ? **(5 Marks)**



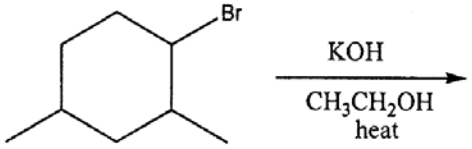
i- CH_3COOH + 

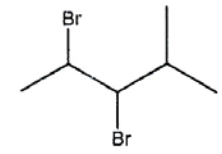
ii- CH_3CHO + 

iii- CH_3COOH + 

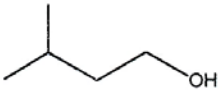
iv- 

(d)- Predict the major organic product formed in each of the following reactions **(5 Marks)**

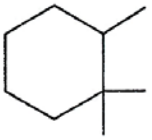
i- 

ii- 

$\xrightarrow[\text{liq. } NH_3]{NaNH_2}$

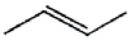
iii- 

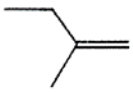
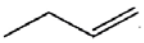
$\xrightarrow[\text{warm}]{H_2SO_4}$

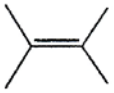
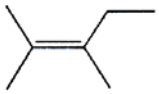
iv- 
$\xrightarrow[h\nu]{Br_2}$

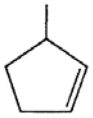
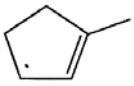
v- 
$\xrightarrow[HgSO_4/H_2SO_4]{H_2O}$

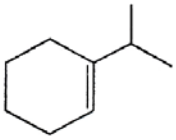
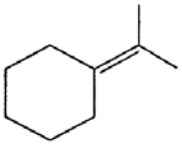
(e)- In the following five pairs of alkenes which is more stable and why?
(5 Marks)

i-  , 

ii-  , 

iii-  , 

iv-  , 

v-  , 

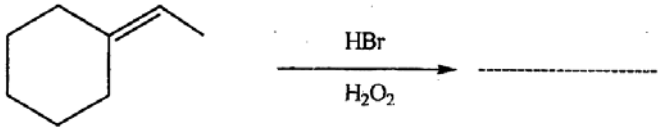
Q2- Answer only four of the following items (20 Marks)

(a)- Give the reason for guanidine is highly basic whereas phthalimide is sufficiently acidic to form alkali salts? **(5 Marks)**

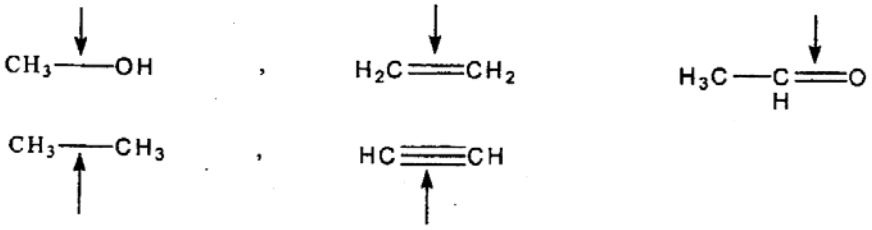
(b)- Explain why methyl iodide is easily hydrolyzed than methyl fluoride in aqueous alkaline solutions? **(5 Marks)**

(c)- Show by equations the synthesis of trans-1,2-cyclohexandiol and cis-1,2-cyclohexandiol. **(5 Marks)**

(d)- Complete the following equation and write its reaction mechanism. **(5 Marks)**



(e)- Arrange the following compounds in order to increasing bond distance of the indicated bonds (least first). **(5 Marks)**



Q3- Answer only <u>four</u> of the following items. (20 Marks)

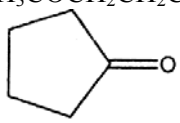
(a)- Explain why N,N-dimethylaniline is less basic than N,N-dimethyl-2,6-dimethylaniline? **(5 Marks)**

(b)- Give the reason for 1, I-dimethylethyl carbocation is more stable than I-methylethyl carbocation. **(5 Marks)**

(c)- Write the general structure of the alkenes that would produce the following products when treated with ozone and then with zinc and water. **(5 Marks)**

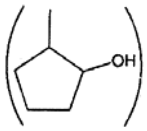
i- $CH_3COCH_2CH_3$ and CH_2O

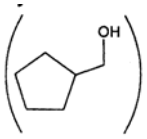
ii- $CH_3COCH_2CH_2CH_2CH_2CHO$

iii-  and CH_3CHO

iv- CH_3COCH_3 only (2 moles are produced from one mole of alkene).

v- $(CH_3)_2CHCHO$ and CH_3CH_2CHO

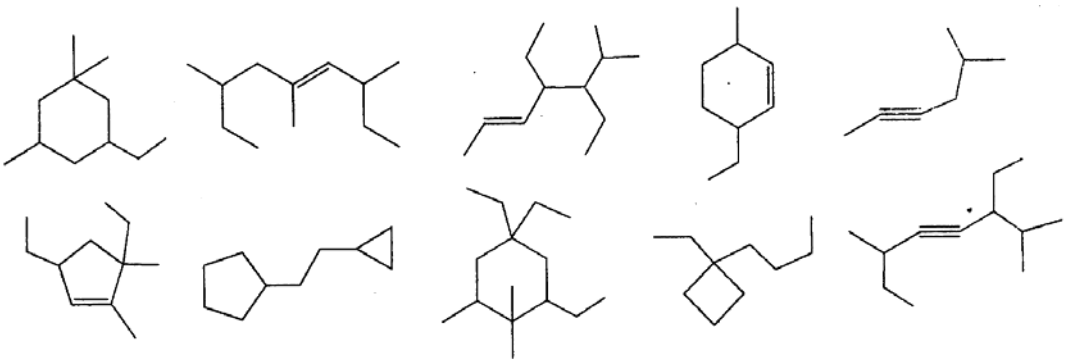
(d)- Acid catalyzed dehydration of either 2-methylcyclopentanol 

or cyclopentylmethanol 

give 1-methylcyclopentne as major products.

Write the possible mechanisms that explain these results **(5 Marks)**

(e)- Give the IUPAC nomenclature of the following compounds **(5 Marks)**



Q4- Answer only four of the following items. (20 Marks)

(a)- Outline the mechanism for the ionic addition of HBr to 1,3-dimethylcyclopentene. **(5 Marks)**

(b)- Give the reason for chlorobenzene is failed to hydrolysis to the corresponding phenol in aqueous alkaline medium. **(5 Marks)**

(c)- Predict the major organic product of the reaction of 2-methyl-2-butene with each of the following reagents. **(5 Marks)**

i- $C_6H_5CO_3H$ ii- $KMnO_4/^-OH$ iii- $BH_3/H_2O_2/^-OH$

iv- H_2O/H_2SO_4 v- Cl_2/CH_3OH

(d)- What are the best conditions for the following conversion ? **(5 Marks)**

(e)- Which is the following compounds can exist as a pair of geometric isomer? Draw their structures and label them as cis and/or trans. **(5 Marks)**

i- $ClCH_2$-CH=CH-CH_2Cl ii- CH_3-CH=CH-COOH

iii- CH_2=C(CH_3)CH_2-CH_3 iv- HOOC-CH=CH-COOH

v- CH_3-CH_2-CH_2-CH_3

Good Luck

Prof. Dr. Maher El-Zohry

Answer Only Five Questions: **أجب عن خمسة أسئلة فقط مما يأتي:**

ملحوظة هامة: الأسئلة علي ثلاث صفحات ، ويجب إجابة كل سؤال في صفحة منفصلة كم يجب إجابة السؤال كاملا وليس جزء من سؤال مع جزء من سؤال آخر مع مراعاة ترقيم إجابة الأسئلة حسب ترقيمها في ورقة الأسئلة.

Questions No. (1) and (2): Determine which of the following statement is correct [√] and which is not [X].

ضع إجابتك عن السؤال الأول والثاني في جدول رأسي يحتوي علي رقم الفقرة وقرارك:

Question No. (1): **(30 Marks)**

1- X-ray produced from the nucleus of atom.
2- The power of a thin lens is direct proportional to λ of light used.
3- The distance between two successive waves is called frequency.
4- Range of far U.V. radiation extends between 0.3×10^{-5} cm to 0.2×10^{-5} cm.
5- Continuous emission spectrum produced as a result of inward jumping of orbital electrons.
6- Astigmatic eye accompanied by myopia can improved by sphero-toric lens.
7- Ametropic eye whose near and far points are normal..
8- A thermaneous materials transmit far I.R.
9- Energy of electromagnetic radiations is direct proportional to its wave-length (λ).
10- Condition to disperse white light without it deviate is:
$$A_1 (n_1 - 1) = A_2 (n_2 - 1).$$
11- Cone nerves fibers on retina register colours.
12- Amplitude of Accommodation equals to power of Accommodation.
13- $A = 5 \times 10^{-5}$ cm has the dual character of visible light and I.R.
14- If the length of a small object is longer than A. of light source used, it can scatter the incident light on it.
15- Focal length for red colour is shorter than that for violet colour

Question No. (2): **(30 Marks)**

1- Emmetropic eye whose near and far points are normal.
2- Diathermaneous materials transmit far I.R.
3- V.V. spectrometer has greater dispersive power than normal one (visible spectrometer).
4- Condition for achromatism is $[n_v - n_r]_1 A_1 = [n_v - n_r] A_2$.
5- If the magnification is negative (-ve) image is inverted U.V.
6- λ for orange colour is longer than Indigo colour.
7- U.V. radiations can ionize gaseous materials.
8- A diverging-cylindrical lens needed to improve myopic eye accompanied by astigmatism.
9- Image of vertical slit source formed by toric lens is vertical sharp line and pale rectangular at different distances.
10- Range of near I.R. extends between $\lambda = 5 \times 10^{-5}$ cm. to $\lambda = 15 \times 10^{-5}$ cm.
11- The refractive index is direct proportional to λ.
12- Continuous emission spectrum produced by heating an element to red-hot temperature.
13- 60% of the total solar energy is due U.V.-radiations.
14- Hypermetropia is due to increase in eye-ball dimension.
15- Scattering of electromagnetic radiations increases by increasing frequency.

Question No. (3): **(30 Marks)**

(a) Explain how to produce X-rays, and explain the difference between characteristic X-rays and continuous X-rays. **(15 Marks)**

(b) The potential difference across X-ray tube is 100000 volts and the current through it is 5 mA. Calculate the maximum speed of cathode rays produced, and the rate of production of heat at the target if only 0.1 of the energy is converted into X-ray radiation **(15 Marks)**

Question No. (4): **(30 Marks)**

أكتب إجابتك بنفس الترتيب في جدول رأسي يحتوي علي رقم العبارة والحرف الأبجدي المناسب.

1- Kirchhoff's voltage says:

(a) $\Sigma I = 0$	(b) $\Sigma E = \Sigma I R$	(c) $\Sigma E = \Sigma I^2 R$	(d) $\Sigma E = \Sigma IV$

2- The force on a current-carring wire in uniform magnetic field is given by:

(a) F = B L A	(b) F = F L I	(c) F = L B ν	(d) F = B L V

3- An a.c. current equation is given by 15 sin 3 t, therefore, the current after 30 ses. Is

(a) 9.61 A	(b) 15 A	(c) 13.36 A	(d) 12.61 A

4- The amplitude of T-wave, in E.C.G., is increased in:

(a) Hypoxia	(b) Hyperthyroidism	(c) Hypertrophy	(d) Toxic dses

5- A voltage 50V is applied across a 5 ohm in 20 sec., $\therefore$ the average energy dissipated in R is:

(a) 100 J	(b) 10000 J	(c) 1000 J	(d) 5000 J

6- The NMR is used to study the change in the concentration of:

(a) proteins	(b) ATP	(c) EPR	(d) pH

7- The calculated Nernst potential is the potential across:

(a) The neutral lipids	(b) the membrane	(c) the protein	(d) the H_2O ions

8- The EMG may be obtained from:

(a) muscles	(b) neurons	(c) brain	(d) membrane

9- In a purely capacitive circuit, the power factor cos ϕ is equal to:

(a) zero	(b) $1 / \sqrt{2}$	(c) one	(d) 0.5

10- Pure germanium doped with arsenic will transfer germanium to semi-conductor type:

(a) n-type	(b) p-type	(c) np-type	(d) q-type

11- The conservation of energy requires that all radiations from human bodies be at the expense of:

(a) internal energy	(b) outside environment	(c) outside temperature	(d) external energy

12- The semi-conductor n-p-n transistor, the emitter-base junction is connected:

(a) Forward bias	(b) Reverse bias	(c) Internal bias	(d) Outside bias

13- The first law of thermodynamic is expressed in the form:

(a) $\Delta E = \Delta Q + \Delta W$	(b) $\Delta Q = \Delta E + \Delta W$	(c) $\Delta W = \Delta E + \Delta Q$	(d) $\Delta Q = \Delta E + \Delta F$

14- The heat capacity C_v of a system at constant volume is related to the specific heat c_v by:

(a) $C_v = c_v m$	(b) $C_v = c_v n$	(c) $C_v = c_v nm$	(d) $C_v = c_v E$

15- The velocity of sound waves in Muscles are:

(a) 1540 ms^{-1}	(b) 1410 ms^{-1}	(c) 1750 ms^{-1}	(d) 440 ms^{-1}

Question No. (5): Put [√] for the correct statements and [X] for the others: **(30 Marks)**
أكتب إجابتك بنفس الترتيب في جدول رأسي يحتوي على رقم العبارة والعلامة المناسبة:

1- The ECG apparatus is mainly a sensitive voltmeter.
2- Heating muscles by short wave using capacitor technique is due to oscillating magnetic field.
3- The EMG of a patient having myasthenia gravies shows that in repetitive stimulation the motor nerve to muscle transmission succeeded
4- Sensory neurons transmit signals from CNS to the muscles.
5- In synaptic conduction, the transmission is electrical assisted.
6- Heating by Ultrasonic waves, is due polarization of water dipoles of the body's molecules.
7- Heating muscles by short wave diathermy, using Ultrasonic method is by eddy currents.
8- A p-type semiconductor is produced by Germanium doped with Gallium.
9- The transistor is a current-controlled device.
10- The function of S.A. node is to generate and initiate the cardiac rhythm.
11- The RC of a resistor-capacitor circuit is referred to as the time constant of the circuit and has unit of ohm.
12- The sodium pump is referred to the moving of the sodium ions out of the membrane cells.
13- The junction between a nerve fiber is often called myoneural junction.
14- Excessive heating of humans tissue causes reddening and sometimes edema.
15- The energy necessary to vaporize one gram of water at 37° C is 2.4 KJ/g

Question No. (6): Solve The Following Problems. Put your decision answer in a vertical Table **(30 Marks)**

1- A gas in a cylinder is at a pressure of 8000 Pa and a piston has an area of 0.1 m^2 blocking the gas. Heat is slowly added to the gas, the piston is pushed up a distance (d) of 4.0 cm. Therefore the work done on the surroundings by expanding the gas (assume that pressure remains constant): **(10 Marks)**

(a) 52 J	(b) 42 J	(c) 32 J	(d) 35 J

2- A 150 μ F capacitor is made with two parallel plates 5 cm^2 in area each, separated by 0.5 mm thick sheet of biological material. Therefore, the dielectric constant of the biological material is: **(10 Marks)**

(a) 18.9	(b) 16.9	(c) 15.9	(d) 17.8

3- An a.c. voltage E_1 has r.m.s value of 10 Volts at a frequency of 1000 Hz is applied across a capacitance of 0.05 μF and a non-inductive resistor. If the output voltage across the capacitor E_2 is to have an r.m.s value of 7.5 Volts. Therefore the value of the resistor is: **(10 Marks)**

(a) 1.8 K Ω	(b) 2.8 K Ω	(c) 2.5 K Ω	(d) 2.4 K Ω

أسماء السادة الأساتذة الممتحنين: **أ.د./ عبد الله ابراهيم عبد المجيد**
أ.د./ عادل عباس محمد

GOOD LUCK

Faculty of medicine Date: 15-6-2008
Histology Department Time:3 hours(Histology&Anatomy)

FINAL HISTOLOGY EXAM.
FOR
THE PREP. YEAR PHARMACY STUDENTS.

Answer the following questions illustrating your answers with diagrams whenever possible:

1- Write an account on the structure of lymphatic nodule.
(5 marks)

2- Discuss the structure of Juxta glomerular apparatus.
(10 marks)

3- Describe the structure of mature Graffian follicle.
(10 marks)

4- Give an account on the structure of adrenal cortex.
(10 marks)

5- Write short note on the structure and function of Sertoli cell.
(10 marks)

6- Give an account on different types of liver lobules.
(10 marks)

7- Draw a labeled diagram of the great alveolar cell(E.M).
(5 marks)

Good luck

Assiut University
Faculty of Medicine *Time: 3 hours*
Anatomy Department *Date: 15 / 6 / 2008*

Anatomy Examination
For Prep. Year Faculty of Pharmacy

Answer the following questions:

1. Describe with a diagram the anatomy of the female genital system. *(20 Marks)*
2. Describe with a diagram the structure of the digestive tube. *(20 Marks)*
3. Describe with a diagram the structure of the heart and the great vessels connected with it. *(20 Marks)*

Good Luck

بسم الله الرحمن الرحيم

Assiut University
Faculty of Pharmacy
Pharmaceutics Department
Prepharmacy Year
Introduction to Pharmacy
(Maximum Points: 80)

Time allowed: 2 Hours **Thursday June 19, 2008**

All Questions Should be Answered

ملحوظات : ورقة الأسئلة تتكون من صفحتين – يجب إجابة كل سؤال فى صفحة أو صفحات منفصلة- كما يجب احابة السؤال كاملا وليس جزء من سؤال مع جزء من سؤال آخر- مع مراعاة ترقيم إجابة الأسئلة حسب ترقيمها فى ورقة الأسئلة

اقرأ الأسئلة جيدا قبل الإجابة عليه

1.Give definition for the following: (15 points)
A-Pharmacy B- Enemas C-Glycerites
D-Code of ethics E- Textbooks

2. Write about the following: (12 points)
A- Label information of the OTC products
B- Semisolid dosage forms
C-Auxiliary labels
D-Hospital medication orders

3-Give Reason(s) for the following: (9 points)
A-Sometimes oral dosage forms is not suitable for administration
B-A pharmacist should always strive to perfect and enlarge his Professional Knowledge
C-It is particularly important to speak to the doctor before buying Over-the-counter drugs for children and elders.

4-Mention each of the following: (12 points)
A-Role of the pharmacists in community pharmacy
B-Requirements for the rational use of drugs
C-Role of the pharmacists in child health

5.Give the difference(s) between each of the following: (12 points)
A-Local and systemic effects
B-Tablets and cepsules
C-Brand and generic names of drug products
D-Gargles and mouth washes

ملحوظة: بقية الأسئلة فى الصفحة التالية

تاريخ الصيدلة

6. أحب عن الأسئلة التالية: **(20 درجة)**

أ-أذكر أهم فوائد دراسة تاريخ الصيدلة

ب-تكلم عن ما تضمنته بردية (قرطاس) برلين

ت-تناول بالشرح مراحل تطور الدواء وصناعته فى مصر الحديثة

ث- وضح الدور الذى لعبته مدرسة جامعة الإسكندرية كأحد المدارس الطبية فى مصر القديمة

مع أطيب التمنيات بالتوفيق

يعقد امتحان الشفوى بقسم الصيدلانيات بعد الامتحان التحريرى مباشرة

كلية التربية **الزمن:-ساعتان**
قسم علم النفس **الفرقة: إعدادى صيدلة**
***** **المادة: علم نفس**

امتحان الفصل الدراسى الثانى للعام الجامعى 2008/2007 م

****

أجب عن الأسئلة التالية:

السوال الأول:

" إن حياة الانسان لاتمضى على وتيرة واحدة ، وإنما هى فى العادة مليئة بالخبرات والتجارب المتنوعة" ناقش ذلك موضحا.

1- تعريف الإنفعال وشروط حدوثه. (9 درجات)
2- كيف تتكون العواطف وما هى أنواعها. (8 درجات)

السؤال الثانى:-

"يولد الإنسان وهو مزود بالاستعدادات التى تجعل فيه كائنا اجتماعيا قادرا على التكيف مع البيئة الاجتماعية" ناقش ذلك موضحا.

1- العوامل المؤثرة على عملية التذكر. (9 درجات)
2- أنواع التفكير علىأساس مستوى التفكير. (8 درجات)

السؤال الثالث:-

ناقش مايلى.

1- الأثار النفسية المترتبة على الإدمان. (8 درجات)
2- النمو اللغوى والعقلى فى مرحلة الطفولة. (8 درجات)

**********انتهت الأسئلة **********مع أطيب التمنيات بالنجاح**

د/ صمويل تامر بشري

****

Faculty of Science 2008 / 2009
Botany Department Final Examination of General Botany Time allawed:3 hours
11-1-2009 For Pre-pharmacy Students 150 marks
****

ملحوظة هامة جدا: الأسئلة فى أربع صفحات

Section A : Plant Morphology (30 marks)

Answer THREE only of the following:

1- Complete..... 10 marks.

I-Vegetative bud gives .....
2-Foliar bud is developed from .....
3-Scaly leaf means .....
4-Lamina is modified into pitcher in .....
5-Germination occurs on parental plant is called: .....
6-Roots arise from shoot branches are called .....
7-In seeds the embryonic axis lies ..... cotyledons.
8-Physical dormancy occurs due to .....
9- Fasculated roots are tuberous arisine .....

2- Define: ..... 10 marks.

Thorn - sporophyll- cladode - coleoptile - corm - cling root - caruncle.

3- Differentiate between :.....10 marks.

a- Summer buds and winter buds.
b- Branch and compound leaf.
c- Pneumatophore and prop root.

4- Write the functions of : .....10 marks.

Petiole - cotyledons - veins - adventitious roots.

****

Section B : Plant Anatomy (30 marks)

Answer THREE only of the following:

1- Complete: ..... 10 marks.

I-Increase in plant length is caused by .....meristems.
2-Mechanical tissue devoid of lignin is .....
3-Companion cells are associated with ..... .
4-Vascular bundles of stem are .....
5- Hydathodes function is .....
6-Casparian strips are found in .....
7-Anthocyanin location is in the .....
8-Wood is common name of .....
9-Callose is a complex carbohydrates. It forms plugs of.....

بقية الأسئلة فى الصفحات التالية

****

2- Identify and write the function of:..... 10 marks
Hydathodes - Tyloses - Phellogen -Ieucoplast - Anthocyanin - Ribosome.

3- Differentiate between : .....10 marks
a- Radial and collateral vascular bundles.
b- Cell wall and cell membrane.

4- Only Illustrate : .....1 0 marks
a- Mechanical tissue.
b-Mineral crystals.

Prof. K.A.Farghali

****

Section c :Mycology and Phycology (30 marks)

Write brief notes with illustrations on FIVE only of the following: . (6 marks for each)

1- Asexual reproduction in green unicellular alga.

2- a- Formation of sexual spores in lower sac fungi.
b- Germination of sporangium in an Oomycete.

3 - a- Importance of flagella in classification of lower fungi (aquatic fungi).
b- Types of plectenchyma tissue.

4 - a- Fruiting bodies of *Eurotium* and *Peziza.*
b- Importance of fragmentation and diplanitsm in some fungi.

5 - a- Economic importance and ascoma of a fungus have stromatic ascocarp.
b- Algal thick walled spore formation. Why is the group form these spores considered to be most primitive of all algae?

6 - a- Gradual transition of sporangium to conidium.
b- Economic importance of : i- Carrageening,
. OR, Algin,
ii- Kafer's yeast.
c- Importance of reserve food materials in classification of algae.

Prof. M. A. El-Nagdy

بقية الأسئلة فى الصفحات التالية

Section D: Plant Physiology (30 Marks)

Answer the Following Questions:

I-Complete **Five only** of the following statements with correct answer *(one mark each):*

a-In anaerobic respiration one molecule of hexsos produce ----------ATP

b- Allosteric regulation means----------

c- The stomata of C4-Plants are opened at----------

d- The number of CO_2 enter Calvin cycle to produce 1 molecule of sucrose are---------

e- The compound accept CO_2 in CAM plants is ----------

f- The water potential of a flaccid plant cell equal----------

II-Follow only **Four** of reactions catalyzed by the enzymes *(l0 marks):*

a-Rubisco b-Aldolase

c-Glutamate-Oxaloacetate transaminase d-Hexkinase

d- Triose ketol isomerase

III- Write the scientific expression of **Only Five** statements *(one mark each):*

a- Evolution of CO_2 during light.

b- Conversion of ADP to ATP.

c- Conversion of hexsoses into pentoses.

d- Movement of water out of cells.

e- Formation of EtOH in yeasts

f- Splitting of H_2O during light.

g-Enzymes which remove H_2O from substrates.

V a) Mention the components of the Followings *(10 marks):*

I-Photosystem II 2- Cytochrome chain

b)Two cells A & B in contact each other. The cell A has Ψp (4 bar) and Ψs (-12 bars). Cell B has Ψ_p (2 bars) and Ψs of (-5 bars).

Determine the following:

1- The net movement of water.

2- The entrance force of water into cell.

Prof. Dr. EL-Enany

اقلب الصفحة

Section E: Toxonomy of Flowering Plants

"Put all your answers in a table"

Answer the following question: -

1- A) Choose the correct answer: - (15 Marks)

1- The disadvantage of using common names for species is that:
a) the names may change b) one name does not apply universally
c) one species may have several common names d) all of the preceding

2- Taxonomists classify plants on the basis of
a) morphological similarities b) evolutionary history
c) reproductive patterns d) all of the preceding

3- Which of the following statements about plants in the Fabaceae is true?
a) all members have a legume fruit b) all members have a superior ovary
c) all members have one locule d) all of the preceding

4- Which of the following is considered as a primitive floral feature?
a) fused floral structures b) fewer floral structures c) inferior ovary d) superior ovary

5- A maize grain is
a) a true fruit b) a false fruit c) an undeveloped ovary d) a seed

6- Which part of a plant contains the male nuclei?
a) pollen b) style c) seed d) stamen

7- Which fruit is developed from hypanthodium inflorescence?
a) syconus b) sorosis c) berry d) drupe

8- Assume that ovary has 2 carpels with a central placentation, and then it contains
a) many locules b) two locules c) three locules d) one locule

9- Which of the following statements about plants in Lamiaceae is true?
a) bilabiate corolla. b) quadrangular stem d) gynobasic style d) all of the preceding

10- The fusion of polar nuclei with one male gamete gives rise to
a) diploid cell b) zygote c) male gametophyte d) triploid cell

1- B) Fill in the Blanks: - (15 Marks)

11- .....is seemingly in the middle of a stem, where the main stem axis continue to grow vegetatively after having produced an inflorescence.

12- An aggregate fruit develops from .....

13- There are two .....of flowering plants that are commonly called Liliopsida and Magnoliopsida.

14- The mature fertilized ovule is known as .....

15- When the ovule is inverted and straight, with the micropyle and chalaza at the same axis, then it is named .....

16- .....is the tissue where the integuments and nucellus are joined.

17- Capitulum is surrounded by one or more whorls of bracts forming what is called .....

18- Linnaeus' system of plant classification was based mainly on .....

19- The flower is the most characteristic structure of .....

20- .....that contains both male and female reproductive organs.

21- Ten stamens are arranged in two whorls; the outer whorl is opposite to the petals, then it is called .....

GOOD LUCK

Assiut University Faculty of Science Department of Zoology Midterm exam: Prepharmacy: Zoology	كلية العلوم - قسم علم الحيوان	امتحان أعمال الفصل لطلاب إعدادى صيدلة المقرر: علم الحيوان رقم المقرر ورمزه: الزمن: ساعة نوفمبر 2008

اسم الطالب/ـة (بالعربية): ..... رقمه/ـها.....

I- Taxonomy: Choose the correct answer: (10 marks)

I-The phylum is a taxonomic rank includes (classes - families - genera - all).
2-Trypanosoma is a blood parasite, causes (sleeping sickness - chagas disease - both).
3-Bouri fishes are (intermediate host - final host - transport host) of *H heterophys.*
4-Platyhelminthes, Nematoda and Annelida are (major phyla - related phyla - both).
5-One of the following is not a poriferan cell (archeocyte - pinacocyte - nematocyte).
6-Parasitic flukes usually live in (liver - blood - intestine -lung - all).
7-Conjugation is a type of reproduction occurred in (ciliates - *Paramecium* - both).
8-Stony corals live mostly in (medusa form - hydra form - both).
9-Schistosoma's life cycle not include (sporocyst- cercaria - redia).
I0-Linnaeus established (the binomial nomenclature - the species - both).

11 - Cytology: Choose the correct answer: 5 marks

1- .... diffuses rapidly through synthetic lipid bilayer. a) Amino acid b) Glycerol c) Glucose
2-Smooth endoplasmic reticulum .....Ribophorin I and II. a) contains b) lacks c) segregates
3-Secretory granules usually bud from .....face of Golgi apparatus. a) Trans b) Cis c) a and b
4- ...releases its lysosomal enzymes extracellularly. a) Hepatocyte b) Fibroblaste c) Osteoclaste
5-The stop codon of mRNA is found at .....a) 3 end b) 5 end c) rRNA

تمنياتنا بالتوفيق

Faculty of Science Department of Zoology Exam: Zoology for Prepharmacy student Code:	كلية العلوم - قسم علم الحيوان	امتحان الفرقة: إعدادى صيدلة المقرر: علم الحيوان رقم المقرر ورمزه: الزمن: ثلاث ساعات 27 يناير 2009

Taxonomy

I-Choose the suitable number from (A) in (B): (20 marks)

(A)	(B)	
1- Eumetazoa	Is a genus considered the representative types of Cnidaria.	
2- Sporozoa	Without body space and incomplete digestive system	
3- *Plasmodium*	Commonly known as tapeworms and are endoparasites.	
4- Trypanosoma	Is a trematode parasite of man and lives in the branches of portal vein.	
5- Sponges	Is a pseudocoelomate phylm.	
6- Hydra	Is a sub-phylum with notochord in the posterior region of the body.	
7- Platyhelminthes	Is the most advanced Class in the inverterbrates	
8- Cestodes	Is a Class belongs to Mollusca and with a spiral shell.	
9- Schistosoma	Is a Class belongs to Mollusca and prduces the pearles.	
1 0- Nematoda	Are the units of respiration in some arthropods	
11- Annelida	Are the units of excretion in some arthropods	
12- Orgelase	Are characterized by three pairs of legs.	
13- Arachnida	Is the Class without antennae and with four pairs of walking legs	
14-Insects	Is a substance secreted by Hirudinea	
15 - Green glands	Is a phylum with segmented body and true coelom	
16- Lung books	Are sessile animals and mostly marine.	
17- Bivalvia	Is a protozoan parasite and transmitted by tsetse fly.	
18- Gastropoda	Is a human parasitr carried out by Anopheles mosquitoes.	
19- Cephalopoda	Is a Class belongs to phylum Apicomplexa.	
20- Urochordata	Is a section of animal kingdom with true tissues.	

II-Choose the correct answer: (20 marks)

1- *Paramecium* is a protozoan organism with (one nucleus - 2 nuclei - 4 nuclei).
2- Protista includes (prokaryotes - eukaryotes - akaryote organisms).
3- Locomotary organelles used as a taxonomic character to classify (worms-protozoans-sponges).
4- Fertilization of gametocytes of *Plasmodium* usually occurs in (human blood-insect gut-both).
5- The first animal phylum has digestive tract is (Nematoda-Platyhelminthes-Annelida).
6- Parasitic organisms are usually (helpful- harmfull- harmless).
7- Arthropoda, Echinodermata and Chordata are (coelomate phyla - major phyla - both).
8- Lophocercus cercaria has (cystogenus glands -penetration glands-both).
9- *Heterophyes heterophyes*, is a human parasite lives in (mouth - intestine - eyes).
10- The body of trematodes is covered with (cuticle- tegument-cilia).
11-Jointed legs characterize the (arthropods - annelids-molluscans).
12- Nematocysts are cnidarian's cells found in (endoderm - mesoderm - ectoderm).
13- Crustacea differ from uniramia by having (one pair -two pairs - 4pairs of antennae).
14- The infective stage of *Ascaris* is (mammilated egg- embryonated egg-larvae).
15- The intermediate host of *Taenia* is (snails- pigs- both).
16- The notochord characterizes phylum (Cnidaria - Chordata - Nematoda).
17- Circulatory system was firstly appeared in (nematodes - annelids - chordates).
18- Platyhelminthes, Nematoda and Annelida are (major phyla - related phyla - both).
19- The radula is a rasping organ present in (Arthropoda - Mollusca - Chordata).
20- *Argas* attributes to (worms- arachnids - insects).

انظر خلفه←

III- Draw labeled diagrams for the following twins: 20 marks

A parazoan epithelial cell	A cnidarian defense cell
An excretory organ of Annelida	An excretory organ of Arthropoda
The infective stage of Entamoeba histolytica	The infective stage of Ascaris
An incomplete digestive tract	A complete digestive tract

Cytology

IV-Choose the correct answer (1 mark each)

1- The most abundant lipids in the lipid bilayer is
a) glycerolipids b)phospholipids c) both
2-Glucose diffuses through synthetic lipid bilayer
a) rapidly b)hardly c) slowly
3-Number of lipid molecules in the plasma membrane is
a) equal to protein ones b) bigger than protein ones c)smaller than protein ones
4-Cell can control its plasma membrane fluidity by controlling the Concentration of
a) cholesterol b) glycerol c) phospholipid
5-ATP-driven pump is a strategy of
a) passive transport b) active transport c) selective transport
6- The cytoplasmic side of the plasma membrane is usually
a) positively charged b) negatively charged c) double charged
7 -In some animal types, egg and sperm recognition is mediated by
a) glycogen b) glycerol c) glycocalyx
8-Balance in the amount of water and solutes inside and outside cells is kept by what is called a) membrane potential b) massive transport c) Na-K ATPase
9-Almost all phosphorylation processes in the cell occurs in
a) Golgi bodies b) RER c) mitochondria
10-Kaems-Sayre syndrome results from
a) altered lysosomes b) altered mitochondria c) altered Golgi apparatus
11-SER lacks a) ribosomes b) ribophorin **I** and **II** c) a and b
12-Sarcoplasmic reticulum is a special name of SER found in
a) liver cells b) nerve cells c) muscle cells
13-Posttranslational modifications of proteins occurs in
a) Golgi bodies b) RER c) a and b
l4-Sulfotransferase enzyme is almost exclusively found in
a) Golgi bodies b) mitochondria c) lysosomes
15- proteins destined for lysosomal segregation is always labeled with
a) glucose-6-phosphate b) mannose-6-phosphate c) fructose-6-phosphate
16-Lysosomes are synthesized in
a) RER b) Golgi bodies c) a and b
17-Primary lysosomes are distinguished from secondary ones by
a) obvious membrane b) large size c) a and b
18-Peroxisomes are rich in
a) DNAse b) catalase c) lipase
19-Free ribosomes are responsible for protein synthesis for
a) cell consumption b) exporting c) degradation
20-Removing of introns from mRNA is called
a) splicing b) transcription c) translation

انظر خلفه ←

V-Write the missing labels of the following diagrams. (1 mark each)

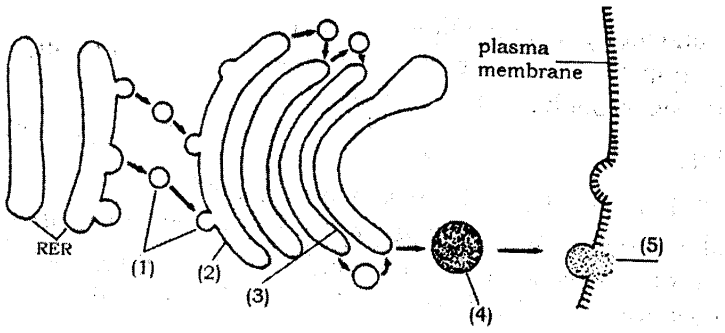


Diagram I

(1) ..... .
(2) ..... .
(3) ..... .
(4) ..... .
(5) .....

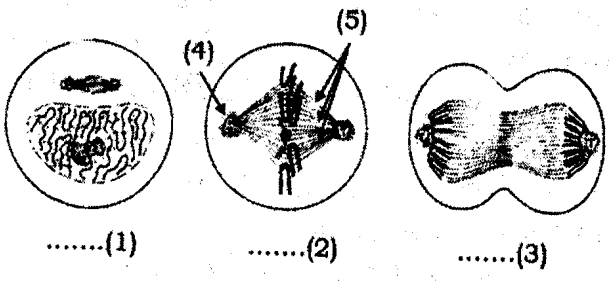


Diagram 11

(1) .....
(2) ..... .
(3) ..... .
(4) ..... .
(5) .....

انتهت الأسئلة مع تمنياتنا بالتوفيق

أ.د. ناصر الشيمي **أ.د. أحمد حامد** **د. أبوبكر الطيب**

Assiut University Feb. 2009
Faculty of Science
Department of Chemistry Time: 3 hrs.
Examination of Physical and Inorganic Chemistry for Pre-pharmacy Students
Answer the following questions:

Section (I) : Answer Three Only of the following: (60 Marks)

1) a) Discuss the kinetics for the following reaction A $\xrightarrow{K_1}$ **B** , where K_1 is a first order rate constant.
b) Derive the following thermodynamic relations:
(i) Volume and temperature in adiabatic processes.
(ii) Entropy change for processes acompanied by temperature change.

2)a) Discuss the effect of temperature on reaction rate.
b) Assuming CO_2 to be an ideal gas, calculate the work done by 22 gm of CO_2 in expanding isothermally and reversibly from 10 atm. to 5 atm. pressure at 27°C. What are the values of q, A E, A H and AS for the process. [C=12, O = 6).

3) a) Derive an expression for the efficiency of heat engine working between T_1 and T_2 temperatures.
b) The rate constant for the hydrolysis of ethyl acetate by NaOH is 6.36 $(mole/liter)^{-1}$ min^{-1}. Starting with concentration of base and ester of 0.02 mole/liter. What proportion of ester will be hydrolyzed in 15 min.?

4) a) Write a brief account on each of the following:
(i) Measurement of emf of a cell. (ii) Standard cells. (iii) Calomel electrode.
b) Two liters of N_2 at O°C and S atm pressure are expanded isothermally against constant pressure of one atm. until the pressure of the gas also one atm. What are the values of w, q, A E, A H and A S for the process. [C_v for the gas = 5.0 Cal. Mol^{-1} K^{-1}
[C = 12, O = 16, H = 1 , N = 14]

Section (11):Answer Four Only of the following: (60 Marks)

1)a) Derive the de Broglie equation = $\lambda = h/mv$ for the electron.
b) Use the concept of electron-pair repulsions to predict the geometrical shape of:
CO_2, PCl_s , SF_6 (VSEPR theory).

2)a) Deduce the formal charges for the atoms in: NH_3, NH_4 , $POCl_3$
b) Give the oxidation number of: P in H_3PO_4 , Sn in K_2SnO_3, Mn in MnO_4 and Cr in CrO_4^{2-}.

3) a) Show the molecular orbital aufbau order of O_2 molecule. Is the molecule paramagnetic or diamagnetic.
b) Identify the atoms of the following electronic configuration in their outer shell or shells (give group and period) $2s^2 2p^5$,$3s^2 3p^1$, $3s^2 3p^6 4s^1$, $3s^2 3p^6 3d^3 4s^2$.

4) a) Sketch the potential energy curve for the energy change that accompanys the covalent bond formation in H_2 molecule and then comment on the curve.
b) Diagram the resonance forms of: SO_2, CO_3^{2-} and SO_3 .

5)According to Bohr's theory derive an expression for calculating the:
a)Bohr radius of hydrogen atom.
b)Energy of permitted orbits for the electron in hydrogen atom.

أنظر خلفه باقى الأسئلة

Section (Ill): Answer the following questions: (30 Marks)

1) a) At a pressure of 1 atm. arrange the density of the following gases: H_2 at 200^oK, He at 100^0K and O_2 at 400^0K?
(Atomic weights: He = 4.00, H = 1.008, O = 16.00, N = 14.01)

b) State the Le Chatelier's principle. For the reaction,

$$2SO_{2(g)} + O_{2(g)} \longleftrightarrow 2SO_{3(g)} + \text{heat},$$

which of the following changes will shift the equilibrium to produce more or less SO_3? why? :

(i) increasing the temperature. (ii) decreasing the volume.

2) Answer Three Only of the following:

a) State how kinetic gas equation may be utilized to calculate the root mean square velocity of a gaseous molecule.

b) For a given reaction $H_2(g) + 1_2(g) \longleftrightarrow 2\ HI(g)$
At 458°C one mole of H_2 was mixed with two moles of 1_2 in a container with a volume of 400 ml. Calculate the concentration of each gas at equilibrium if Kc = 49.7.

c) Estimate the relation between Kc and K_p at constant temperature.

d) What is meant by the following statement? :
(i) Critical temperature of carbon dioxide is 304.2°K.
(ii) Vapour pressure of water at 10°C is 9.2 Torr.

Good Luck

جامعة أسيوط كلية العلوم قسم الرياضيات	اختبار نهاية الفصل الدراسى الأول دور يناير	الفرقة: اعدادى صيدلة المقرر: رياضيات الزمن: ساعتان

Questions	Marks
أجب عن الأسئلة التالية: **السؤال الأول:** اجب عن فقرتين فقط مما يأتى (i) اوجد مشتقة الدوال التالية $y = \frac{x^2 + \cos^2 x}{x - \cos ec^2 x}$ ، $y = \sin^{-1} x + \sin(\sin x)\sec^{-1} x$ (ii) اوجد $\frac{dy}{dx}$ من كل من العلاقات التالية $\tan^{-1}\left(\frac{x+y}{x-y}\right) = 5y^2$ ، $x^{Iny} + y^{Inx} = xy$ (iii) اذا كانت $y = \cos(m\sin^{-1} x)$ فبين أن $(1-x^2)\frac{d^2y}{dx^2} - x\frac{dy}{dx} + m^2 y = 0$	**(10)**
السؤال الثانى: اجب عن فقرتين فقط مما يأتى (i) اوجد النهايات القصوى المحلية للدالة $f(x) = x^4 - 4x^3 + 7$ (ii) اوجد $\int \frac{\cos x dx}{(1+\sin x)(2-\sin x)}$ ، $\int \tan x dx$ (iii) اوجد $\int \sin(\ln x)dx$ ، $\int \ln(x^2+2)dx$	**(10)**
ملاحظة: t(0.95,17) = 1.79 ، t(0.995,11) = 3.11 ، t(0.99,11) = 2.72 ، $z_{0.45} = 1.65$ **السؤال الثالث:** اجب عن فقرتين فقط مما يأتى (أ) تدعى احدى شركات الادوية ان متوسط مفعول احد الادوية المصنعة اقل من عشر دقائق من اعطائها فاذا اخذت عينة من 12 مريضا اعطوا هذا الدواء وسجل الزمن اللازم لمفعول هذا الدواء كما يلى: 8.6 – 8.1 – 12.5 – 9 – 11 – 12 – 10.7 – 9.5 – 5.3 – 8.2 – 9.2 - 9.1 اختبر صحة الادعاء عند مستوى معنوية 1% =α اوجد 99% فترة ثقة لمتوسط مفعول الدواء (ب) فى احدى التجارب لمعرفة تأثير نوعين من البنسلين على معدل النمو اخذت عينتان من البكتريا واعطيت لنوعين من الفئران فكانت النتائج التالية A: 41 48 51 56 30 45 51 62 36 51 B: 25 12 16 27 18 20 15 18 12 اختبر ان كان معدل النوع الثانى من البنسلين اقل من معدل النوع الأول عند مستوى 5% (ج) يعتقد احد المنتجين لنوع من أنواع الفيتامينات ان فعالية هذه الاقراص بعد تعرضها للحرارة والرطوبة هو اكثر من 70% واراد احد الموزعين الذى يبيع الفيتامينات ان يتأكد من هذا الاعتقاد وعلم من الاختبارات السابقة ان فعالية من الفيتامينات يخضع لتوزيع طبيعى بانحراف معيارى 5.2 . اخذ الموزع عينة من 20 قرصا من هذه الفيتامينات ووجد ان متوسط قوة الفاعلية لهذه الفيتامينات هى 72.5% اختبر صحة هذا الاعتقاد عند مستوى 5%	**(15)**
السؤال الرابع (أ) أوجد قيمة (قيم) كل من μ ، λ التى تجعل نظام المعادلات الاتية $x + 3y + \lvert\lambda\rvert z = \mu^2$ ، $x + 3y + 9z = 4$ ، $x + 2y + 2z = 1$ أولا: لها حل وحيد ثم أوجده ثانيا: لها عدد لانهائى من الحلول ثالثا: ليس لها حل (ب) أوجد حلا (ان وجد) لنظام المعادلات الخطية $2x + y - z = 5$ ، $x - y + z = 1$ ، $x + y + 2z = 6$ انتهت الأسئلة	**(15)**

Assiut University
Faculty of Arts
Dept. of English

January, 2009
Time: 2 hours

First Semester -- Final Exam

Subject : No..... English Language
Students: Preparatory - Faculty of Pharmacy Dept. of English

1- Write a paragraph on ONE only of the following: [10 marks]

a) There are seven benefits in travel. b) This is how I imagine the world in 2050.

II-Find the ONE incorrect word or phrase in each sentence and correct it: [15 marks]

1- If the cerebellum of a pigeon was destroyed, the bird would not be able to fly.
2- A vine climbs from one tree to another continuing to grow and support itself even when the original supporting tree is not longer alive.
3- The practical and legal implications of euthanasia, the practice of causing the death of a person suffering from an incurable disease, are so controversial as it is illegal in most countries.
4- When one experiences a change in diet by, for example, moving to a new location, you may also experience temporary problems with the digestive tract.
5- Assiut University, with three other Arabic universities, are holding a conference meant to compare current business practices in Egypt with those of other countries.
6- In 1975, according to statistics, the average life expectancy for people born during that year is 72.4 years.
7- The most common form of treatment it is mass inoculation and chlorination of water sources.
8- No other quality is more important for a scientist to acquire as to observe carefully.
9- When they have been frightened, as, for example, by an electrical storm, dairy cows may refuse giving milk.
10- A barometer is a device with a sealed metal chamber designed to reading the changes in the pressure of air.

111- Choose the best answer (a, b, c, or d) to complete the sentence: [10 marks]

1- To relieve pain caused by severe burns, prevent infection, and treat for shock, ...
a) taking immediate steps. b) to take immediate steps.
c) taken steps immediately. d) take immediate steps.

2- Several of these washers and dryers are out of order and .....
a) need to be repairing. b) repairing is required of them.
c) require that they be repaired. d) need to be repaired.

3-..... that Lee Harvey Oswald may not have acted alone in the assassination of John Kennedy.
a)Thinking 'b) To think c) It is thought d) The thought

4- Unlike other people, many smokers .....their day with having a cigarette and a cup of coffee.
a) used to starting b) are used to start c) are used to starting d) used to start

5- That acne ..... by daily consumption of zinc sulfate tablets gives patients much encouragement.
a) has been controlled . b) controlled
c) will have been controlled d) had controlled

IV - Translate into Arabic: Smoking also causes a fivefold increase in the risk of dying from chronic bronchitis and emphysema, and a twofold increase in deaths from diseases of the

heart and coronary arteries. Smoking also increases the risk of stroke by 50 percent-40 percent among men and 60 percent among women. Other research has proven that mothers who smoke more frequently give birth to premature or underweight babies, probably because of a decrease in blood flow to the placenta. **[5 marks]**

V- <u>Read the passage and choose the best answer from a, b, c or d</u>: [10 marks]

A geyser is the result of underground water under the combined conditions of high temperatures and increased pressure beneath the surface of the earth. Since temperature rises approximately I Fahrenheit for every sixty feet under the earth's surface, and pressure increases with depth, water that seeps down in cracks and fissures until it reaches very hot rocks in the earth's interior becomes heated to a temperature in excess of 290 F. Because of the greater pressure, it shoots out of the surface in the form of steam and hot water. The result is a geyser. In order to function, then, a geyser must have a source of heat, a reservoir where water can be stored until the temperature rises to an unstable point, an opening through which the hot water and steam can escape, and underground channels for resupplying water after an eruption. Favorable conditions for geysers exist in regions of geologically recent volcanic activity, especially in areas of more than average precipitation. For the most part, geysers are located in three regions of the world: New Zealand, Iceland, and the Yellowstone National Park area of the United States. The most famous geyser in the world is Old Faithful in Yellowstone Park. Old Faithful erupts almost every hour, rising to a height of 125 to 170 feet and expelling more than ten thousand gallons during each eruption.

1- A geyser may erupt only when .....

a- hot rocks rise to the surface of the earth. b- there is water flowing underground

c- the hot water and steam escape. d- the earth stays unrigged or broken.

2- As depth increases .....•

a- pressure increases but temperature does not.

b- temperature increases but pressure does not.

c- both pressure and temperature increase.

d- neither pressure nor temperature increases.

3- Old Faithful is a geyser that is located in .....•

a- New Zealand. b- Iceland's Yellowish National Park.

c- America. d- England.

4- How often does Old Faithful erupt?

a- Every 10 minutes. b- Every 60 minutes.

c- Every 125 minute. d- Every 125 to 170 feet.

5- In order for a geyser to function, it requires .....•

a- A source of heat, a place for water to collect, an opening, and underground channels.

b- An active volcano nearby and a water reservoir.

c- Channels in the earth and heavy rainfall.

d- Volcanic activity, underground channels, and steam.

6-What does this passage mainly discuss?

a- The Old Faithful geyser in Yellowstone National Park.

b- The nature of geysers.

c- The ratio of temperature to pressure in underground water.

d- Regions of geologically recent volcanic activity.

End- Good Luck

Dr. Nader S. Fahim

Chemistry Department/ Faculty of Science Time Two hours

Assiut University May 2009 80 marks

Final Exam in Organic Chemistry for pre-pharmacy students

==========

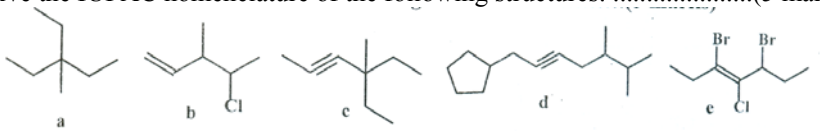
Answer the following questions: الامتحان يقع في ثلاث صفحات

1a. Draw structural formulas for the following: ..... (5 marks)

i- 2-Methyl-3-heptene ii - Trichloromethane iii - 2-Bromo-3-methyl-2-butene

iv-1,1-Dichloro-5-ethyl-3-heptyne v - 2,3,4-Trimethyl-pentane

1b. Give the IUPAC nomenclature of the following structures: .....(5 marks)

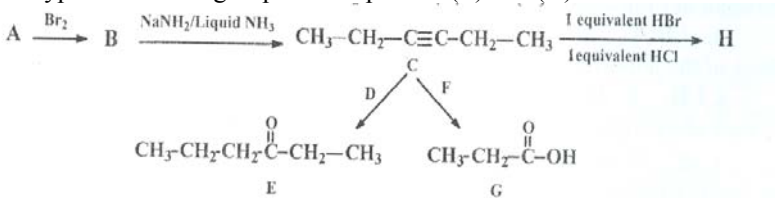


1c. In the following diagram alkene with chemical formula C_6H_{12} (A), when brominated with $Br_2/CHCl_3$, gave, dibromo alkane (B), which on treatment with $NaNH_2/NH_3$ gave 3-hexyne (C), the produced hexyne can be converted into the compounds $CH_3(CH_2)COCH_2CH_3$ (E) and CH_3CH_2COOH by using reagent (D) and (F).... ..... (10 marks)

i- Draw the structural formula of products A, B, H, and write the IUPAC name for each product.

ii- What are the reagents (D) and (F), which can be used to perform this conversion?

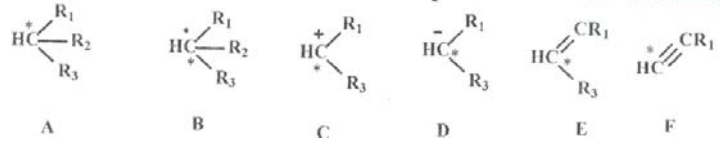
iii- What the type of function groups in compounds (E) and (G).



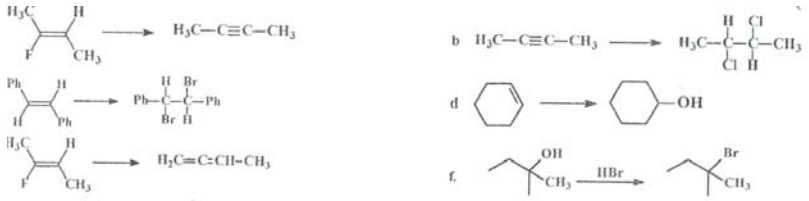
2 **-In the following:.....** (20 marks)

a -What type of hybridization for the stared carbon on the following structures (A-F).

b- Which of these structures can be classified as electrophile and which classified as nucleophile:



c -Classify each of the following reactions as an elimination, addition or substitution (five only):



3a - Write the sign (√) on the front of correct statement and (X) sign on the front of wrong one**.**

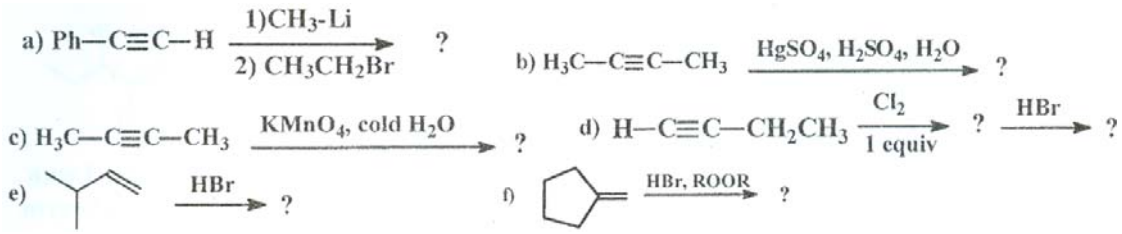
(Answer only Ten)..... (10 marks)

1)Polar compounds are formed between atoms of different electronegativities

2)Nitrogen is more electronegative than Oxygen.

3) $CF_2=CCl_2$ can exist as cis and trans isomers.
4) The sp^2 hybrid orbitals give rise to bond angles of 109.5°.
5) An sp^3 orbital is spherical in shape.
6) The addition of Br_2 to an alkene double bond is an example of electrophilic substitution.
7) An epoxide is formed by reaction of an alkene and a carboxylic acid.
8) Amines can act as bases because of the nitrogen atom which has a lone pair of electrons.
9) BF_3 considered as nucleophile. 10) C_6H_{12} soluble in ethanol.
11) CCl_4 considered as a polar solvent. 12) Aniline is more basic than methyl amine.
13) $-CONH_2$ is the function group of amine.

3b - Draw the products (only five) of the following transformation..... (10 marks)



4. Chose the correct answer (fifteen only):..... (15 marks)

i)On the following molecules which haven't a dipole moment are:
a) CH_3CI b) CH_3OCH_3 c) CH_2Cl_2 d) CCl_4

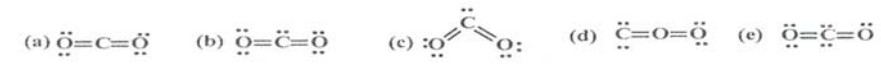
ii)The IUPAC name for $CH_3CH_2C(CH_3)_2CH_2CH(CH_3)_2$?
a) 3,3,5-trimethylhexane b) 2,2,5-trimethylhexane c) 2,4,4-trimethylhexane

iii) The bond has the largest dipole moment in the following:
a. Cl-Cl b. Cl-Br c. H-F d. H-I

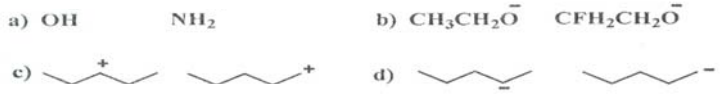
iv) Which of the following is a non-polar covalent compound?
a. CH_4 b. HCN c. CH_3CN d. HCI e. NaCI

v) The state of hybridization of the carbon atoms in ethylene, C_2H_4 is:
a. sp^2 b. sp c. sp^3 d. sp^3d^2 e. none of these

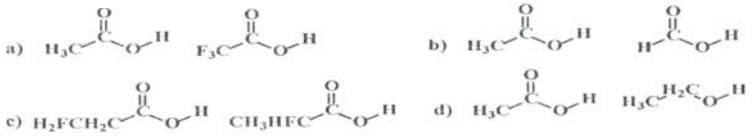
vi) The Lewis structure for CO_2 is:



vii). The most stable species in each pair



viii). The stronger acid in the following pairs



ix). Which alkyne is a "terminal alkyne"? (5-pentyne- 2-pentyne - 3-pentyne- 1-pentyne -4-pentyne).

x). Alkynes contain two π-bonds. Which statement best describes how these π-bonds are formed?

(Each π-bond is formed by side-by-side *C(sp)-C(sp)* overlap - Each π-bond is formed by end-on *C(P)-C(P)* overlap - Each TT-bond is formed by end-on *C(sp)-C(sp)* overlap - Each π-bond is formed by side-by-side *C(s)-C(s)* overlap - Each π-bond is formed by side- by-side *C(P)-C(P)* overlap).

xi) What conditions will convert I-heptyne into 4-decyne?

A. $NaNH_2$, CH_3-CH_2.CH_2-CI- b. $NaNH_2$, CH_3-CH_2CI - c. $NaNH_2$, CH_3-CH_2-CH_2-CH_2-CH_2-CI - d. N aNH_2 , CH_3-CI - e. N aNH_2 , CH_3-CH_2-CH_2-CH_2-CI

xii) What is Markovnikov's rule?

a) Addition of a hydrogen radical to an alkene or alkyne will occur at the least-substituted carbon.
b) Addition of a proton to an alkene or alkyne will occur at the most-substituted carbon.
c) Addition of a hydrogen radical to an alkene or alkyne will occur at the most-substituted carbon.
d) Addition of a proton to an alkene or alkyne will occur at the least-substituted carbon.
e) In the addition of HX, the X will be added to the least-substituted carbon

xiii) In the presence of excess hydrogen bromide, what is the major product of the addition of HBr to 2-pentyne? (2,2-dibromopentane, I-bromopentene , 2-bromopentene - 1,2-dibromopentane *or* l,l-dibromopentane)

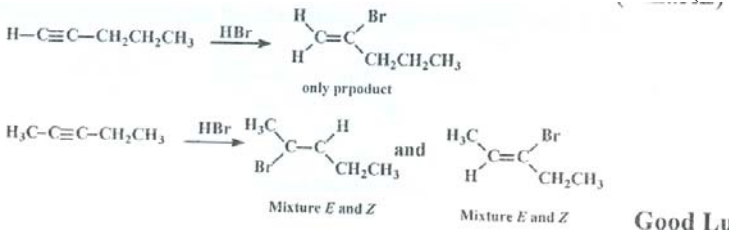
xiv) What product is formed in the peroxide-catalyzed addition of HBr to I-butyne? (1,2-dibromobutane - l,l-dibromobutane -2-bromo-l-butene - I-bromo-l-butene - 2,2-dibromobutane).

xv) What alkyne is the best starting material for the synthesis of the 2-butanone, H_3C-CO-CH_2-CH_3, via acid-catalyzed hydration? (2-pentyne, 2-butyne ,l-butyne , ethyne *or* propyne)

xvi) What final product is formed in the hydroboration-oxidation of propyne? (CH_3CH_2CHO , CH_3-CH=CH(OH) , $CH_3CH_2CH_2OH$, $CH_3C(OH)=CH_2$ *or* CH_3COCH_3).

xvii)The hydration of acetylene requires strong acid catalysis. Which catalyst gives the best results? (H_2SO_4 , $HgSO_4$, $MgSO_4$, H_2SO_4 and $MgSO_4$, H_2SO4 and $HgSO_4$

4b) Explain the observation that when one equivalent of HBr was added to I-pentyne a single product is formed, while when one equivalent of HBr was added to 2-pentyne a mixture of products was formed .....(5 marks)



Good Luck

لجنة الممتحنين: أ.د. عادل محمد كمال الدين أ.د. زينب عبد الحميد حزين

Answer Only Five Questions: **أجب عن خمسة أسئلة فقط مما يأتى:**

ملحوظة هامة: الأسئلة على أربع صفحات، ويجب اجابة كل سؤال في صفحة منفصلة كما يجب اجابة السؤال كاملا وليس جزء من سؤال مع جزء من سؤال آخر مع مراعاة ترقيم اجابة الأسئلة حسب ترقيمها في ورقة الأسئلة:

Questions No. (1),(2) and (3): Determine which of the following statement is correct [√] and which is not [X].

ضع اجابتك عن السؤال الأول والثانى والثالث فى جدول رأسى يحتوى على رقم الفقرة وقرارك:

Question No. (1): (30Marks)

1- Light propagates in straight lines.
2- Refractive index $n = \frac{c}{v}$ where v is the velocity of light.
3- Light is a form of energy.
4- If the magnification is -ve the image is inverted.
5- Power of a refractive surface is direct proportional to its refractive index.
6- Power of a refractive surface is indirect proportional to λ.
7- In any medium reciprocal of vergence is the apparent distance.
8- Energy of U.V. radiation is direct proportional to its frequency.
9- An objective lens in a compound microscope should be less in power than its eyepiece.
10- Magnification = $\frac{\text{final vergence}}{\text{initial vergence}}$
11- Velocity of I.R. radiation is direct proportional to its wavelength λ.
12- Power of refractive surface is inverse proportional to velocity of light.
13- Energy of visible light is direct proportional to its velocity.
14- Energy of radio radiation is direct proportional to its wavelength.
15- In air (1/ vergence) = apparent distance.

Question No. (2): (30 Marks)

1- Continuous emission spectra is formed by heating a solid to white-hot temperature.
2- Image formed by a sphero-cylindrical lens for a vertical slit source of light is two lines perpendicular to each other.
3- A converging lens is used to improve Presbyobia.
4- Cones-nerve fibers on retina register colours.
5- A diverging sphero-cylindrical lens is used to improve Astigmatism accompanied by Myopia.
6- The two prisms in Achromatic combination can be made from the same material.
7- Amplitude of accommodation not equal to power of accommodation.
8- A converging lens is used to improve myopia.

9- Image of a slit source of light formed by a Toric lens appears as straight line parallel to the axis of lens.
10- Focal length for red colour is greater than that for violet one.
11- Image formed by lenses are inverted when magnification is less than unity.
12- Hypermetropia is due to increase in the power of cornea.
13- Presbyobia is due to decrease of refractive index n of the outer layers of lens in human eye.
14- When human-eye can recognize the details of an object whose visual angle is 2 said to have visual acuity 100%.
15- In case of disperse white beam of light without it deviated, the angles of the prisms are equal.

Question No. (3): (30 Marks)

1- If length of a small object is longer than λ of light falling on the object, it can scatter the light.
2- In I.R. spectrometer, the prism is made from sylvine.
3- A thermaneous materials stop far I.R. radiations.
4- A condition to deviate a white light without it dispersed is $[Dv - D_r]_1 = [Dv - D_r]_2$.
5- Condition to disperse white light without having it deviated is $A_1 (n_1 - 1) = A_2 (n_2 - 1)$.
6- Infrared radiations are produced by comparatively low frequency vibration of the atoms in molecules.
7- Dust and water vapour scatter the short wavelength radiations.
8- Photo - electric effect is the emission of electrons from certain surfaces when exposed to U.V. or similar short wave radiations.
9- Continuous X-rays results from deceleration fasting electrons.
10- Energy of X-rays emitted depend on voltage between the cathode and the anode in X-ray tube.
11- λ for X-ray increased by increasing voltage difference between cathode and anode.
12- X-ray may result from knocking an electron outside its atom.
13- Condition to deviate a white light without having it dispersed is $A_1 (n_1 - 1) = A_2 (n_2 - 1)$.
14- Efficiency of X-ray increased by lowering current of passing through the filament of cathode of X-ray tube.
15- Energy of X-ray increased by increasing the charge "e" of electron.

Question No. (4) (30 Marks)

أكتب اجابتك بنفس الترتيب فى جدول رأسى يحتوى على رقم العبارة والحرف الأبجدى المناسب

1- The current density **J** is given by:

(a) nem	(b) nev	(c) enj	(d) nvr

2- The force on a current carrying wire in a perpendicular magnetic field is given by:

(a) F = BLJ	(b) F= BLI	(c) F= LBv	(d) F = BLV

3- An a.c. current is given by 15 sin 3 t, therefore, the current after 15 sec. is

(a) 12.6 A	(b) 10.6 A	(c) 14.36 A	(d) 15.6 A

4- The amplitude of T-wave, in E.C.G., is increased in:

(a) Hypoxia	(b) Muscular exercise	(c) Hypertrophy	(d) Toxic doses

5- A 50V is applied across a 10 ohm in 20 sec., ∴ the average energy dissipated in R is:

(a) 100 J	(b) 5000 J	(c) 1000 J	(d) 10000 J

6- The NMR is used to study the change in the concentration of:

(a) ATP	(b) proteins	(c) EPR	(d) pH

7- The calculated Nernst potential is the potential across:

(a) the membrane	(b) the neutral lipids	(c) The protein	(d) H_2O ions

8- The EMG may be obtained form:

(a) muscles	(b) neurons	(c) brain	(d) membrane

9- In a purely capacitive circuit, the power factor cos ϕ is equal to:

(a) Zero	(b) $1/\sqrt{2}$	(c) one	(d) 0.5

10- Pure germanium doped with arsenic will transfer germanium to a semi-conductor type:

(a) n-type	(b) p-type	(c) np-type	(d) q-type

11- The conservation of energy requires that all radiations from human bodies be at the expense of

(a) outside skin	(b) internal energy	(c) outside body	(d) external energy

12- In the semi-conductor n-p-n transistor, the emitter-base junction is connected either (a) or (b) or (c) or (d):

(a) Reverse bias	(b) Forward bias	(c) internal bias	(d) outside bias

13- The First Law of Thermodynamic is expressed in the form:

(a) $\Delta E = \Delta Q + \Delta W$	(b) $\Delta Q = \Delta E + \Delta W$	(c) $\Delta W = \Delta E + \Delta Q$	(d) $\Delta Q = \Delta E + \Delta F$

14- The heat capacity C_v of a system at constant volume is related to the specific heat c_v by:

(a) $C_v = c_v m$	(b) $C_v = c_v n$	(c) $C_v = c_v nm$	(d) $C_v = c_v E$

15- The velocity of sound waves in Muscles are:

(a) 1540 ms^{-1}	(b) 1410 ms^{-1}	(c) 1750 ms^{-1}	(d) 440 ms^{-1}

Question No. (5): Put [√] for the correct statements and (X) for the others:
(30 Marks)
أكتب اجابتك بنفس الترتيب في جدول رأسي يحتوى على رقم العبارة والعلامة المناسبة:

1- The ECG apparatus is mainly a sensitive ohmmeter.
2- Heating muscles by short wave using capacitor technique is due to oscillating currents.
3- The EMG ofa patient having myasthenia gravies shows that in repetitive stimulation the sensory nerve to muscle transmission succeeded.
4- Sensory neurons transmit signals f'rom CNS to the muscles.
5- ln synaptic conduction, the transmission is electrical assisted.
6- The RC of a resistor-capacitor circuit 'is referred to as the time constant of the circuit and has unit of ohm.
7- The sodium pump is referred to the moving of the sodium ions out of the membrane cells.
8- The junction between a nerve fiber is often called myoneural junction.
9- Excessive heating of humans tissue causes reddening and sometimes edema.
10- The energy necessary to vaporize one gram of water at 37° C is 2.4 KJ / g.
I I- Heating by Ultrasonic waves, is due depolarization of water of the body's molecules.
12- Heating muscles by short wave diathermy, using Ultrasonic method is by eddy currents.
13- A n-type semiconductor is produced by Germanium doped with Gallium.
14- The transistor is a voltage-controlled device.
15- The function of S.A. node is to generate and initiate the cardiac rhythm .

Question No. (6): Solve The Following Problems. Put your decision answer in a vertical table (30 Marks)

1- The speed of blood in the aorta is 71 cm s^{-1} and this vessel has a radius 1.0 cm. therefore the rate of volume flow of blood through this aorta is: (10 marks)

(a) 231 $cm^3 s^{-1}$	(b) 233 $cm^3 s^{-1}$	(c) 223 $cm^3 s^{-1}$	(d) 214 $cm^3 s^{-1}$

2- To treat a fractured bone, two electrodes were fixed in the bone. If the distance between the electrodes is 5 cm and the area of each electrode' is 0.05 cm^2, resistivity of the bone is 5 x 10^5 ohm.cm and the e.m.f. of the battery used is 4 V, therefore the current flowing in the bone is: (10 marks)

(a) 50 nA	(b) 40 nA	(c) 80 nA	(d) 70 nA

3- A gas in a cylinder is at a pressure of 800 P_a and a piston has an area of 0.10 m^2 blocking the gas. Heat is slowly added to the gas, the piston is pushed up a distance d of 4.0 cm. Therefore, the work done on the surrounding by expanding gas is (Assume that gas pressure remains constant) : (10 marks)

(a) 3.8J	(b) 2.8 J	(c) 3.2 J	(d) 2.4 J

أسماء السادة الأساتذة الممتحنين: أ.د./ عبد الله ابراهيم عبد المجيد أ.د. عادل عباس محمد

Assiut University
Faculty of Medicine
Histology Department

Date :20/6/2009
Time:3 hours(Histology & Anatomy)

FINAL HISTOLOGY EXAM.
FOR
THE PREP. YEAR PHARMACY STUDENTS.

Answer the following questions illustrating your answers with diagrams:

1- Describe the histological structure of the cells of the epidermis (10 marks)

2-Write an account on the histological structure of the thyroid follicle. (10 marks)

3- Give an account on the general structure of the blood vessels. (10 marks)

4- Describe the histological structure of lining epithelium of the villi of small intestine. (10 marks)

5-Discuss the histological structure of Bowman's capsule. (10 marks)

6- Write short note on the structure of the corpus luteum. (10 marks)

7- Draw a labeled diagram (E. M) of the hepatocyte. (10 marks)

Good luck

كلية التربية
قسم علم النفس
****

الفرقة : إعدادى صيدلة
المادة : علم النفس العام
الزمن : ساعتان

امتحان الفصل الدراسى الثانى 2008 - 2009 م

****

أجب عن الأسئلة الآتية:

*السؤال الأول:

(يرى علماء النفس أن الشخصية هى نتاج لعملية التنشئة الاجتماعية). ناقش ذلك موضحا مايلى :

1- معنى الشخصية وصعوبات تحديد هذا المعنى. (8 درجات)
2- نظرية أيزنك فى الشخصية. (8 درجات)
3- أساليب التنشئة الوالدية وأثرها على الشخصية. (9 درجات)

*السؤال الثانى :

(الحياة سلسلة من مواقف الإحباط والصراعات النفسية ، وبناء عليها تتكون الشخصية السوية والشخصية المضطربة). ناقش ذلك موضحا مايلى:

1- مفهوم الإحباط وعلاقته بالنكوص. (9 درجات)
2- خمس من الحيل الدفاعية اللاشعورية. (8 درجات)
3- مضمون التنشئة الاجتماعية وأهم سماته. (8 درجات)

********** انتهت الأسئلة ********** مع تمنياتى بالتوفيق **********

د/ صمويل تامر بشرى

Assiut University Faculty of Science Botany Department		جامعة أسيوط كلية العلوم قسم النبات
General Botany Exam. for Pre-pharmacy Students, January 2010		
Time Allowed: 3 Hours الامتحان فى ست صفحات		150 points

Plant Physiology (30 Points)

Answer only six* of *the following questions* (5 *points each)

I- Transfer into your answer sheet the correctanswer only:

1. The electrons in photosynthesis COII,e from:
   a. carbon dioxide b. carbohydrate c. water d. oxygen
2. The oxygen released from photosynthesis comes from:
   a. water b. ribulose 1, 5 bisphosphate c. glucose d. the Calvin Cycle
3. Proteins and starch prevent complete cytosol dehydration in a plasmolyzed cell because:
   a. they are colloidal particles imbibe water stronger than osmosis.
   b. in plasmolyzed cells there wjll be no water left.
   c. the outer membrane of the cell is damaged.
4. The primary function of the light-dependent reactions of photosynthesis is to:
   a. produce carbon dioxide b. use ATP to make glucose
   c. convert light energy to glucose. d. produce energy-rich ATP and NADPH
5. Which of the wavelengths of light is LEAST effective in photosynthesis?
   a. blue b. red c. green

11- Match each of the following with the appropriate pigment in your answer sheet:

a. carotenes and xanthophylls b. chlorophylls C. all of the above pigments:

1		are hydrophobic
2		occur in the thylakoid membranes
3		Contain chelated magnesium
4		With phytol tail
5		Chemically belong to terpenes

III. Select and rewrite your correct choice in your answer sheet:

1. Enzymes are a special type of:
   a. carbohydrates b. lipids c. proteins d. inorganic compounds
2. The prosthetic group is:
   a. inorganic ions b. organic molecules c. both a and b d. none of the above

3. Which of the following is true of sucrose?
   a. Water insoluble b. Osmosis arises c. Has Imbibitional force
4. In how many classes enzymes are divided by the Enzyme Commission (E. C.)?
   a. 4 b. 5 c. 2 d. 6
5. Flaccid tomato slices placed in a hypotonic solution would increase in mass because:
   a. solution components would cause the cells to divide rapidly
   b. water enters the cells c. they increase their production of sugar

IV- Transfer the correct answer to your answer sheet:

1. What will happen if enzyme is added to reaction?
   a. rate of reaction decreases b. rate of reaction increases c. starts up d. inhibited
2. A piece of potato is placed in pure water. The potato cells are not 100% water. Relative to pure water potato cell sap is:
   a. Isotonic b. hypotonic c. hypertonic
3. Rearrange the following steps from first to last in an enzyme catalyzed reaction:
   Adsorption - enzyme-substrate complex - collision - catalysis - enzyme+ products
4. Oxygen is consumed in plant cells by the following enzymes except:
   a, oxidases b. peroxidases c. dehydrogenases d. catalases
5. Toxic ammonium is rapidly converted into amino acids as:
   a. glutamate b. aspartate c. both of them d. none of them

Write on <u>two only</u> of the following (<u>5 Points each</u>):

i. the three stages of the carbon reduction cycle
ii. nitrate reduction and nitrogen fixation into ammonium
iii. types and applications of tissue cultures

Best wishes, Refat Abdel-Basset

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MORPHOLOGY AND ANATOMY OF PLANTS

<u>فى كراسة الإجابة انشىء جدولا من عمودين بأحدهما رقم السؤال وبالآخر الإجابة الصحيحة المختارة (60 درجة)</u>

<u>1- To catch and digest insects, leai'e!i, ofNepentltes are modified into:</u>
   a- Pitcher-like structures b- Valve traps c- Bladders
<u>2- Vegetative reproduction in some plants takes place by certain structures as:</u>
   a- Bulbs b- Ribosomes c- Root hairs
3- <u>As a climbing plant, stems of grapevine are modified into:</u>
   a - Scaly leaves b- Tendrils c- secretory gland
4- <u>In many desert plants, reduction o[transpiration can be achieved by:</u>
   a- Climbing b- Capturing insects c- Spiny stems
5- <u>A micropyle is a minute pore found in:</u>
   a- Seed coat b- Plasma membrane c- Cotyledons
6- <u>In epigeal germination cotyledons are raised above soil level due</u> to <u>elongation of:</u>
   a- Epicotyls b- Hypocotyls c- Leaves
7- <u>Rice grains can easily germinate under</u>:
   a- Boiling temperature b- High acidity c- Low 02 concentration
8- <u>Lignificatian af xylem vessels and sclerenchyma tissues is due to deposition of:</u>
   a- Phenolic compounds b- Cellulose c- Cutin

9- *Pectic substances are the main components of:*
a- Suberin b- Middle lamella c- Nuclear membranes
10 - *Pits between tracheid elements are called:*
a- Simple pit pairs b- Half bordered pit pairs c- Bordered pit pairs
11- *Plasmodesmata are cytoplasmic connections between:*
a- Living parenchyma cells b- Chromatids c- Intergrana
12- *Hydrophobic layers on the surface of plant stems and leaves are called:*
a- Phospholipids b - Cuticle c- Proteins
13- *Roughness oUlte endoplasmic reticulum is due to the presence of:*
a- Cellulose b- Rhaphides c- Ribosomes
14- *Green photosynthetic organelles in plant cells:*
a- Chloroplasts b- Vacuoles c - Anthocyanins
15- *Energy transformations inside plant cells occur in:*
a- Nucleolus b- Mitochondria c- Spindle fibers
16- *Starch grains are usually stored in:*
a- Lipids b~ Aleurone grains c- Amyloplasts
17 - *In the plant cell, secretion and collection of proteins can be done by:*
a- Golgi apparatus b- Cristae c- Thylakoides
18- *Intracellular digesting enzymes are usually found in:*
a- Ribosomes b- Lysosomes c- Chondriosomes
19- *Small subunits (SSU) of ribosomes have special binding sites for:*
a- tRNA b- Peptide bonds c - mRNA
20- *One oUhe following is the initiation codon at mRNA:*
a- AUG b- CCG c- UAA
21- *Nucleoli are small organelles composed of:*
a- Fats b- Proteins and RNA c- Pigments
22- *One oUhe following disappears during cell division:*
a- Cell wall b- Mitochondria c- Nucleolus
23- Metaphase is recognized by the arrangement of chromosomes at:
a- Cell equator b- Nuclear membrane c- Cell sap
24- *Excess release of lysosomal contents inside a plant cell can lead to:*
a- Cell elongation b- Cell death c- Cell division
25- *During transcription of DNA, Thymine is replaced by:*
a- Adenine b- Cytosine c- Uracil
26- *In the double heli.x of DNA , complementary bases are linked by:*
a- Hydrogen bonds b- Phosphate bonds c- Peptide bonds
27- *During DNA replication Okazaki fragments are formed on:*
a- Leading strands. b- Lagging strands c- Both leading and lagging strands
28- *Breaks in sugar- phosphate backbone of DNA are sealed by:*
a- Peptidase . b- Lipase c- Ligase
29- *Denaturing of the DNA double helix is made by:*
a· DNA helicase b· DNA template c- Single strand binding proteins
30- *At the lagging strands, starting points for DNA replication are made by:*
a- DNA polymerase· b- RNA primase c- ATP
31- *In mitotic division, chromatin threads graduallv shorten and thicken during:*
a- Cytokinesis b- Telophase c- Prophase
32- *Longitudinal splitting* of *centromeres and separation* of *sister chromatids indicate:*
a. Anaphase b- Metaphase c- Cell death
33- *Nuclear membranes disappear and reappear in:*
a. Stone cells b- Actively diyiding cambium cells c- Sieve tubes
34- In *many oily seeds, proteins are transformed to:*
a. Glucosides b- Raphides c- Aleurone grains

35- *Insoluble calcium oxalate is stored in some plant cells as:*
a. Druses b- Globoid stmctures c- Torus
36- *Epidermal cells of Ficus leaves often contain calcium carbonate crystals in the form ot·*
a. Sclereids b- Cystolith c- Fibers
37- *Needle shaped elongated supporting cells are called:*
a. Chlorenchyma b- stone cells c- Fibers
38- *In old dicot stems, the primar xylem is:*
a. Endarch b- Exarch c-Mesarch
39- *Irregular phloem is characterized bv the presence of:*
a, Tracheids b- Parenchyma cells c- branched hairs
40- *Vascular bundles of roots are:*
a. Amphivasal b- BicoIlateral c- Radial
41- *Closed collateral vascular bundles with regular phloem are often found in:*
a. Monocot stems b- Old dicot roots c- Dicot leaves
42- *Several dicot stems have periqclic cells outside phloem in the form 0f:*
a. Collenchyma b- Fibers c- Sieve cells
43- *A major enzyme in DNA replication process:*
a. Pyrimidines b- Peptidase c- Polymerase
44- *In manv old plants, xylem vessels are blocked with:*
a. Tyloses b- Starch grains c- Mitochondria
45- *Lenticles are small areas in periderm composed of:*
a. Companion cells b- Loosely arranged cells c- Protoxylem
46- *Heart wood is formed from sap wood as a result of;*
a. Decrease in fibers b- Increase in collenchyma c- Loss of protoplast
47- *11,e main component of Papaver late." is:*
a. Morphine b- Rubber c- Oils and fats
48- *Openings at leaf margins of some plants that secrete liquid water are called:*
a. Stomata b- Hydathodes c- Lysigenous glands
49- *Hardness and impermeability of seed coat to water and oxygen lead to:*
a. Root enlargement b- Better germination c- Seed dormancy
50- *Root apex is protected bv:*
a. Root cap b- Peridel'm c- Fibers
51- *Water absorbing structures developing from plant stems or leaves are called:*
a. Taproots b- Adventitious roots c- Spiny stipules
52- *Aquatic insectivorous plant with bladder like leaves:*
a. Drosera b- *Dionaea* c- *Urticularia*
53- *For water storage, stems orsome desert plants are modified into:*
a. Succulent organs b- Spiny stipules c- Tuberous roots
54- *The shape of a plant cell is maintained by:*
a. Plasma membrane b- Cell wall c- Nuclear membrane
55- *In bordered pit pair, a pit membrane has a special lens- shaped thick structure called:*
a. Pit cavity b- Border c- Torus
56- *Fine cvtoplasmic strands connecting adjacent cells:*
a. Plasmodesmata b- Simple pits c- Xylem fibers
57 - *Chlorophyll pigments mav be protected from destruction bv sun light by:*
a. Root hairs b- Carotenes c- Cutinized epidermis
58- *Lignified thick walled irregular cells often found in fruits and seeds:*
a. Phyllogen b- Collenchyma c- Sclereids
59- *Usual/v found in stems and leaves of aquatic plants:*
a, Aerenchyma b- Cutinized epidermis c- respiratory roots
60- *Simple or complex perforation plates found between successive cells of:*
a. Xylem vessels b- Xylem tracheids c- Periderm

Good Luck; A. M. Moharram

Section: Taxonomy of Flowering Plants

Answer the following question: _ "Arrange your answer in a table"

A- Replace the following definitions with the appropriate botanical terms: (15 marks)

1. A sterile stamen sometimes resembles a petal.
2. Flowers can be divided by only a single plane into two mirror-image. halves.
3. It is a dry fruit that develops from multiple carpels; at maturity it splits up into a number of indehiscent units.
4. Spike with fleshy axis and small flowers surrounded by showy bract.
5. It looks like a single flower; the peduncle terminates into a single female flower and surrounded by male flowers.
6. It is a simple dry fruit, develops from a single carpel with one locule and a superior ovary, and opens along two longitudinal sutures from the apex to the base.
7. It can be defined as a mature fertilized ovule.
8. A group of related individuals that can interbreed and produce fertile offspring.
9. An ovule is orientated transversely on the funicle, the micropyle is being close to the funicle.
10. It occurs in angiosperms, only, in which two sperm nuclei from each pollen tube fertilize two cells in an ovary.

B- Choose the correct answer: _

1. .....is the taxonomic rank just below the class.
   a- Order b- Genus c- Family d- Species
2. Which of the following is **True** about Poaceae ? .
   a- indehiscent fruit b- inferior ovary c- class Magnoliopsida d- actinomorphic flower
3. Which of the following is **False** about Caesalpiniaceae ?
   a- superior ovary b- compound pistil c- zygomorphic flower d- unilocular
4. The aggregate fruits develop from a single:
   a- inflorescence b- flower c- carpel d-locule
5. Which trait is common between Sorosis and Syconus?
   a- simple fruits b- develop from inflorescence c- dry fruits d- schizocarpic fruits
6. An ovary has three carpels with a parietal placentation; how many locules does this ovary contain?
   a- two b- one c- many d- three
7. Which is **False** about the binomial nomenclature rules?
   a- each taxonomic group of plants has only one correct name.
   b- the scientific name of each species is formed by the combination of two English words.
   c- no two plants are permitted to have the same name.
   d- author's name should be cited with each scientific name.
8. The ovule is attached to the pericarp by the pedicel.
   a- true b- false
9. Spike-like, apetalous, unisexual, and pendulous is known as:
   a- corymb b- catkin c- cyme d- umbel
10. Which is **Not True** about the pollen grain?
    a- pollen is haploid b- the outer layer of wall is called exine
    c- pollen grain itself is the male gamete d- pollen is produced within anthers

With my best wishes

FUNGI AND ALGAE

Firstly FUNGI (18 Marks)

Answer all the following questions, illustrate your answer with labelled diagrams:

(I) Answer TWO questions only of the following:- (12 Marks)

1. a) What is the casual organism of Ergot disease? Describe with drawing how infection and spreading of fungus takes place.
   b) Describe with drawing planogametic copulation as a mode of plasmogamy in fungi.
2. a) Classify true sac fungi (Euascomycetes), showing the basis of classification with the help of drawing and giving examples.
   b) Describe by drawing only various types of zoospores in Mastigomycotina.
3. a) Describe with the help of drawing sexual reproduction in any holocarpic fungus.
   b)Name the diseases caused by *Albugo* and *Saprolegnia.* Mention their hosts.
   c)What are Mycotoxins.

(II) Write in a table ONE difference at least with the help of drawing if possible between THREE only of the following: (3 Marks)

1- Oomycetes & Zygomycetes.
2- Chlamydospores & Arthrospores.
3- Heterothallism & Homothallism.
4- Myxomycota & Eumycota.
5- Facultative parasites & Facultative saprophytes.

(III) Describe by drawing only (in a table) each of the following structures, economic importance if possible, their functions and name of organism in which each is present: (3 Marks)

(i) Secondary zoospores.
(ii) Sclerotium.
(Hi) Soredium.

Secondly ALGAE (12 Marks)

Answer all the following questions, Illustrate your answer with labelled diagrams:

(I) Answer TWO questions only of the following:- (6 Marks)

1. Define coenobium? give two examples and differentiate between them.
2. why members of blue green algae are known now as cyanobacteria?
3. write in a table a brief account on the importance of reserve food materials and pigments in classification of algae.

(II) Describe by drawing only (in a table) THREE of the following structures, their functions and name of organism in which each is present: (3 Marks)

Akinetc - palmella stage - Gonidium - Carpogonium - Heterocyst.

(III)Write in a table:- (3 Marks)

- Name and uses of two industrial products obtained from any red alga, mention the name of this alga.
- Name antibiotic obtained from algae and its source.
- Name an alga which helps in nitrogen fixation.

"Good Luck"

Prof. M. A. EI-Nagdy

Assiut University Faculty of Science Botany Department		جامعة أسيوط كلية العلوم قسم النبات

General Botany Exam. for
Pre-pharmacy Students **(تخلفات)**

Time Allowed: 3 Hours الامتحان فى أربع صفحات 21 Feb. 2010

Section (A): Plant Anatomy

Firstly: Choose the correct answer: Put your answer in a table (10 Marks)

1- Dermatogen gives - - - - - - - - a- cortex b- epidermis c- pith.
2- The function of Hydathodes is - - - - - - - - - -
a- Guttation b- Respiration c- protection
3- Epidermal outgrowth are - - - - - a- sclerides b- trichomes c- stomata.
4- Endodermis is a part of - - - - - - a- epidermis b- cortex c- pith.
5- Pits are occur in - - - - - - a- cell membrane b- cell wall c- lysosome
6- Vacuole in plant cell contain- - - - - - - a-water b-solution c-air
7- Most abundant RNA in the cell is - - - - a- r-RNA b- t-RNA c-m-RNA
8- Middle lamella is made up of - - - - - - - - -
a-suberin b-cellulose c-Ca-pectate
9- Dictysome means - - - - - - a-plastids b-mitochondria c-golgi bodies
10- The elastic supporting tissue which present in rapidly growing parts is
a-collenchyma b-stone cells c-fibers
11- The type of pits which present in tracheids is - - - - - - - -
a-simple b-half borded c- borded

Secondly: Write Short notes with drawing if possible on 5 only : 5 Marks for each

1.Various types of parenchyma tissue.
2.Different types of vascular bundles.
3.Types of meristems based on their position.
4.Different forms of mineral crystals in plant cell.
5.Lignification patterns in xylem vessels.
6.Microscopic Structure of chloroplasts and Mitochondria.
7.Structural adaptation of sieve tubes to their function.

Prof. M. A. EI-Nagdy

Section (B): Plant Morphology

Firstly: Choose the correct answer: Put your answer in a table (10 Marks)

1- Root cap is originated from - - - - - - - -

a- apical meristem. b- calyptrogen. c- elongation zone.

2- Hair of root are - - - - - - - - -
a- unicellular. b;. multicellular. c- glandular.
3- Vegetative bud gives - - - - - - -
a- branch. b- flower. c-Ieaf.
4- Scaly leaf means - - - - - - - - -
a- prophyll. b- cataphyll. c- mesophyll.
5- Main function of leaf petiole is - - - - - - - - -
a- protection. b- conduction. c- convection.
6- Scutellum is - - - - - - - - - -
a- cotyledon b- endosperm. c- embryo.
7- Leafy stem is a modification of - - - - - - - - - -
a- stem. b- leaf. c- foliage bud.
8- Function of caruncle is - - - - - - - - -
a- absorb water b- nutritive organ. c- none.
9- Seed is an - - - - - - - - - -
a- embryo. b- ripened ovule. c- ovary.
10- Stem develops from - - - - - - - - - --
a- plumule. b- radical. c- cotyledons.

Secondly: Write Short notes with drawing if possible on 5 only: 5 Marks for each
1.Under ground modifications of stem.
2.Requirements for seed germination
3.Various types· of weak stems.
4.Different types of buds.
5.Morphological zones of the root.
6.Various types of insect catching leaves.
7.Seed Dormancy Or Types of venation in leaves.

Prof. M. A. EI-Nagdy

Section (C): Fungi And Algae

Firstly: Write Short notes with drawing if possible on 3 only : (7 Marks for each)

1)Various types of sexual ascocarps.
2) Gametangial copulation in Ascomycetes.
3) Asexual reproduction of *Claviceps,* with special reference to its medical importance.
4) Various modes of nutrition in fungi.
5) a- Fragmentation as asexual reproduction in fungi.
b- Various types of Zoospores in Mastigomycotina.

Faculty of Science Department of Zoology Exam: Zoology for Prepharmacy students	كلية العلوم – قسم علم الحيوان	امتحان الفرقة: اعدادى صيدلة المقرر: علـم الحيـــوان رقم المقرر ورمزه: الزمن: ثلاث ساعات 3 فبراير 2010

Taxonomy

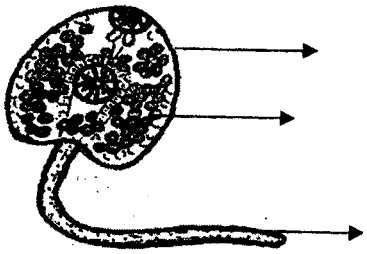
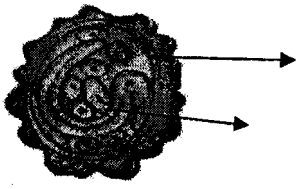
I-Choose the suitable number from (A) in (B) (20 marks)

(A)	(B)	
1- The species	-are sessile animals.	( )
2- Linnaeus	-are flat cells covering the sponge body.	( )
3- Organization	-is a class belongs to Platyhelminthes.	( )
4- The flame cell	-is a larval stage appears in the life cycle of some trematodes	( )
5- Cnidaria	-is an annelid class with closed circulatory system.	( )
6- Nematoda	-is the first layer of exosekeleton in arthropods.	( )
7 - Protzoan phyla	-is a molluscan class including snails and slugs.	( )
8- Plasmodium	-includes spiders, scorpions, ticks, mites.	( )
9- Trypanosoma	-is a sub-phylum with a posterior notochord.	( )
10- Poriferans	-is a sub-phylum with two pairs of antennae.	( )
11- Pinacocytes	-Is a parasitic genus present in the blood of vertebrates.	( )
12- Trematoda	-Is a genus belongs to class Sporozoa.	( )
13- Miracidium	-includes all unicellular animals.	( )
14- Oli ochaeta	-is a triploblastic phylum.	( )
15- Epicuticle	-is a diploblastic phylum.	( )
16- Gastropoda	-is the basic unit of execretion in Platyhelminthes.	( )
17- Chelicerata	-is one of the basic characteristic of animal classification.	( )
18- Urochordata	-classified animals into 7 taxonomic ranks.	( )
19- Crustacea	-includes similar and interbreeding individuals.	( )
20- Cephalopoda	-is the most advanced class of inverterbrates.	( )

II-Choose the correct answer: (20 marks)

1- All flat worms are hermaphrodite except *(Fasciola - Ascaris - Schistosoma).*
2- Rounded worms and separate sexes (Cnidaria - Mollusca - Nematoda)
3- Anticoagulant substances secreted by leeches (Orgelase - hirudin -both).
4-With four pairs of walking legs and without antennae (insects - cestodes- arachnids).
5- Sporozoites are the infective stage of *(Paramecium - Trypanosoma - Plasmodium)* 6- Nematocysts are cnidarian's cells found with (endoderm - mesoderm - ectoderm). 7- Protozoans live as (free living - parasites - commensal - all).
8- histolytica is a (family name - generic name - species name)
9- Reproductive system of Platyhelminthes is (simple - absent - complex)
10-High diversity of arthropods is due to (metamorphosis - jointed legs – egmentation-all).
I1-Heart dorsal and with 1 or 2 auricles and 1 ventricle of (nematods - mollusks - annelids).
12-Heterophyes is a flat worm distributed at lake (Naser - Manzala - both).
13-The process of removing the old exoskeleton in arthropods called (excretion-molting-both).
14-Filaria worms live usually in the (intestine -lymphatic system - lung).
15-Pork tapeworm lives as an adult in the (muscles of pig - intestine of man - blood).
16-Digestive tract with layers of muscles in (Nematoda - Annelida -enidaria)
17-Excretory system typically a pair of nephridia per body segment in *(Hirudo - Nereis* - both).
18-Chordates characterized by presence of (ventral nerve cord - gill slits - both).
19-Clams, mussels, oysters, squids, and octopuses are (arthropods- molluscans - echinoderms).
20-0ne of the following is not related to others (lungbook - radula - trachea). انظر خلفه ⟶

III- Draw labeled diagrams and/or label the diagrams for the following: 20 marks

The name:.....	Infective termatod larva
	
Adhesive system in worms	The tracheal system in Arthropoda
The name:.....	The invective stage of *Entamoeba histolytica*
	
The digestive tract of Heterophyes	The digestive tract of *Hirudo*

Cytology

1- Give the scientific expression of the following: (10 marks)

1- Cells that secrete lysosomal enzymes extracellular (.....)
2- Specific protein distinguishing rough from smooth endoplasmic reticulum (.....)
3- The start codon of mRNA for ribosomal translation (.....)
4- Elimination of unimportant sequences from mRNA before translation (.....)
5- Plasma membrane proteins specific for ion transportation (.....)
6- Cell cycle stage in which DNA replication occurs (.....)
7 - The only negatively charged phospholipids in plasma membrane (..... .....)
8- The syndrome based on lacking of dynein in cilia and flagella (..... .....)
9- Body organs where the meiosis occurs (.....)
10-Parts of the nucleolus containing maturing ribosomes (.....)

II·· Choose the correct answer: (10 marks)

1- The only cellular organelle that can perform self-replication
a) Golgi bodies b) Lysosomes c) Mitochondria
2-Pancreatic acinar cells are expected to be rich in a) Lysosomes
b) Mitochondria c) RER
3- Secretory granules of Golgi apparatus usually bud from
a) Trans face b) Cis face c) a and b
4- In the plasma membrane, number of Lipid molecules is
a) Equal to protein ones b) Bigger than protein ones c) Smaller than protein ones
5- Sphingomyelin is found almost exclusively in
a) Plasma membrane outer leaflet b) Plasma membrane inner leaflet
c) Attached to the integral proteins
6- Lipid molecule controlling the plasma membrane fluidity in mammalian cells
a) Cholesterol b) Glycerol c) Phospholipids
7- Sarcoplasmic reticulum found in a) Liver cells b) Nerve cells c) Muscle cells
8- Catalase is rich in a) Mitochondria b) Peroxisomes c) SER
9- Centriole consists of a) 9 sets of microtubules singlet
b) 9 sets of microtubules doublets c) 9 sets of microtubules triplets
10- cytokeratins filaments are found exclusively in
a) Muscle cells b) Epithelial cells c) Mesenchymal cells

III-Give short notes about only 2 of the following (10 marks)

1- Lysosomal enzymes selection by Golgi body
2- Karyotype
3- Mitochondrial diseases

اكمل إجابتك في الصفحة التالية ☞➔

انتهت الأسئلة مع تمنياتنا بالتوفيق

د.أبو بكر الطيب أ.د. أحمد حامد أ.د.ناصر الشيمى

Assiut University
Faculty of Science
Chemistry Department

Jan.2010

Time: 3 hrs.

Examination of Physical and Inorganic Chemistry for Pre-Pharmacy Students

Section (I) : (60 Marks)

Answer Three Only of the following:

1) a) Discuss the kinetics of the following:
(i) Second order reactions. (ii) Opposing first-order reactions.
b) At 25°C the half-life period for the decomposition of N_20_S is 5.7 hrs and is independent on its initial concentration, calculate: (i) The specific rate constant.
(ii) The activation energy of the reaction when its rate constant doubled upon the reaction temperature was increased to 35°C.

2) a) Derive the following thermodynamic relations.
(i) Efficiency of heat engine and its two working temperatures.
(ii) Temperature and volume in a given adiabatic and reversible processes.
(iii) Entropy change for processes which are accompanied by temperature and volume changes.
b) For a certain gas C_p = 12.0 cal mOrl K-t, what will be the change in entropy of 10 moles of the gas when it is expanded from a volume of 200 liters at 3 atm.pressure to a volume of 400 liters at 1 atm. pressure. Also calculate AE, A Hand w for the process.

3) a) Write a brief account on each of the following:
(i) Standard cells. (ii) Reversible and irreversible cells.
(iii) Measurement of single electrode potential.
b)Calculate the potential of the following electrodes:

Zn/Zn^{+2} (0.01 M)	and	$Hg, Hg_2Cl_2/Cr$ (0.1 M)
E°_{zn} = 0.7618 volt		E°cal. = 0.268 volt

4) a) 16 grams of O_2 at 30°C and under pressure of 10 atm. are permitted to expand adiabatically and reversibly until the final pressure is one atm. Find the final temperature and q, w, ΔE, Δ H and ΔS for the process [C_p = 7.0 cal mol^{-1} $K^{-l,}$ O=16]
b) The specific rate constant for the hydrolysis of ethyl acetate by NaOH is 6.36 $[mole/liter]^{-1}$ min^{-1}. Starting with concentration of base and ester of 0.02 mol/liter, calculate the following: (i) the half-life period of the hydrolysis.
(ii) Proportion of ester which hydrolysed in 10 min.

Section (II) : (60 Marks)

1) Give reasons for Three of the following:
a)The preferred configuration of lithium is $1s^2$ $2s^1$ rather than $1s^2$ $2p^1$.
b)The bond angle in NH_3 is 106.6° whereas that of H_2O is 104.5° (ideal tetrahedral angle is 109.5°).
c)Decrease in atomic radius on moving from left to right across a period.
d)Be_2 does not exist.

2) a) Draw the molecular orbital energy diagram for O_2, Is the molecule paramagnetic or diamagnetic?
b)According to the VSEPR approach calculations deduce the molecular shape of propene ($MeCH=CH_2$).

3) a) Describe the hybridization in triagonal-bipyramidal systems taking the hypothetical molecule PH_5 as an example.
b)"Sharing of pions by nucleons in a nucleus is analogous to sharing of electrons by bonded atoms in molecules". Discuss this statement and compare between deuteron and H_2^+ as an example

أنظر خلفه باقى الأسئلة

c) Complete the following equations:

$_{7}N^{14} + {}_{0}n^{1} \longrightarrow$ ..... $+ {}_{1}H^{1}$

$_{27}CO^{59} +$ ..... $\longrightarrow {}_{27}CO^{60}$

$_{92}U^{235} + {}_{0}n^{1} \longrightarrow {}_{56}Ba^{142} + 36Kr^{91} +$ .....

Section (III): (30 Marks)

Answer Four Only of the following:

1) Calculate the density and root mean square of velocity of ammonia and carbon dioxide gases at STP.
2) From kinetic gas equation, explain mathematically why balloon expands as it rises into the atmosphere.
3) What are the equilibrium concentrations (1_2) and (I) for the reaction

$$I_{2(g)} \rightleftharpoons 2I_{(g)}$$

if the initial concentrations are 2.0×10^{-6}M 1_2,0 M I, and Kc = 4.0×10^{-8} ?

4) A flask with the volume of 5 L contains 7.2 g of oxygen at 133°C. Calculate the weight of nitrogen required adding to a flask to increase the original pressure to become 4 atm.
5) Discuss how van der Waals equation accounts for the behavior of a real gas at high and low pressures.

انتهت الأسئلة مع امنياتنا لكم بالتوفيق ،،،،،

Assiut University تخلفات Feb.2010
Faculty of Science
Chemistry Department Time: 3 hrs.

Examination of Physical and Inorganic Chemistry for Pre-Pharmacy Students

Answer the following questions:

Section (I) : (76 Marks)

Answer **Three Only** of the following:

1) a) Discuss the kinetics of the following:
(i) First order reactions. (ii) Consecutive reactions.
b)For a given reaction, the half life periods ($t_{½}$) at different initial concentrations (C) were as follows:

C [mole/liter]	5	10	15	20
$t_{½}$ hours	40	20	13.3	10

calculate the reaction order.

2) a) Show how the temperature can affect the reaction rate. Calculate then the activation energy for the reaction when its rate was doubled by increasing the temperature from 30°C to 45°C.
b) Calculate the emf and the reaction of the following cell:
Zn/Zn +2 (O.OIM *II* 0.1 M cr *I* Hg_2CIz, Hg
EO_{zn} = 0.7618 volt EOCalomel = 0.268 volt

3) a) Derive the following relations:
(i) Pressure and volume in adiabatic processes.
(ii) Work performed in isothermal and reversible processes.
(iii) Entropy change for processes accompanied by temperature change.
b) 3 moles of an ideal gas at 27°C expands isothermally and reversibly from 20 liters to 60 liters. Calculate W , Q, ΔE, ΔH and ΔS for the process.

4) a) Write a brief account on the following:
(i) Measurement of emf of a cell. (ii) Calomel electrode. (iii) Hydrogen electrode.
b)State the third law of thermodynamics and show how it can be applied to calculate the absolute entropy of a chemical compound in order to calculate ΔS for the following reaction: $aA + \mathbf{bB} \rightleftharpoons cC + dD$

Section (11) : (76 Marks)

Answer **Three Only** of the following:

1) a) Sketch the potential energy curve for the energy change that accompanies the covalent bond formation in H_2 molecule and then comment on the curve.
b) Use the concept of electron repulsions (VSEPR) to predict the geometrical shape of CO_2 and PCl_5.

2) a) Identify the atoms of the following electronic configuration in their outer shell or shells (give group and period): $3s^2 3p^6 3d^1 4s^2$, $3s^2\ 3p64s2$, $2s^2{}_{2p}3$, $3s^2{}_{3p}2$.
b) Draw the molecular orbital aufbau order for O_2 molecule. Is the molecule paramagnetic or diamagnetic?

3) a) Derive the de Broglie equation which relate the wavelength, mass and velocity of an electron.
b)Complete the following equations:
(i) $_{53}I^{122} \longrightarrow {}_{52}Te^{122} +$ ..... (ii) $P^{+}_{A} \longrightarrow \cdots\cdots\cdots \pi^{+}$
(iii) $_4Be^9 + {}_1H^2 \longrightarrow {}_5B^{I0} +$ ..... (iv) $\pi^{+} +$ ..... $\longrightarrow P^{+}_{B}$

a) Give the oxidation number of: S in $Na_2S_4O_6$, P in H_3PO_4 and Xe in XeO_6^{-4} .
b) Give the nomenclature of: $[Ag(CN)_2]^{-}$, $[CoCI_6]^{3-}$, $[Cr(NH_3)_3CI_3]$

أنظر خلفه باقى الأسئلة

Section (III): (38 Marks)

Answer **Four Only** of the following:

1) When 0.690 g of an unknown gas is held in an empty 285-mL container, the pressure is 756.8 mmHg at 19°C. What is the molecular mass of the gas?

2)Define the following:

(i) Critical temperature.

(ii) Normal boiling point.

3)Estimate Boyle's and Graham's laws from the kinetic theory of gases.

4)If 4.0 X 10^3 L of methane gas at 21°C is heated and allowed to expand at a constant pressure, what will the volume become in m^3 when the temperature reaches 815°C?

5) Consider the reaction:

$$H_2(g) + Cl_{2(g)} \rightleftharpoons 2HCl_{(g)} + 44 \text{ kcal}$$

Indicate how each of following changes can affect the pervious equilibrium.

(i) removal of HCI

(ii) lowering temperature

(iii) increasing pressure.

انتهت الأسئلة مع أمنياتنا لكم بالتوفيق

Prof. Dr. Rabi Gabr, Prof. Dr. Araf Ahmed , Dr. Gamal Abd EI-Wahab

Assiut University
Faculty of Science
Chemistry Department

Date: June 2010
Time allowed: 2 hours

Final exam of Organic Chemistry for prepharmacy students

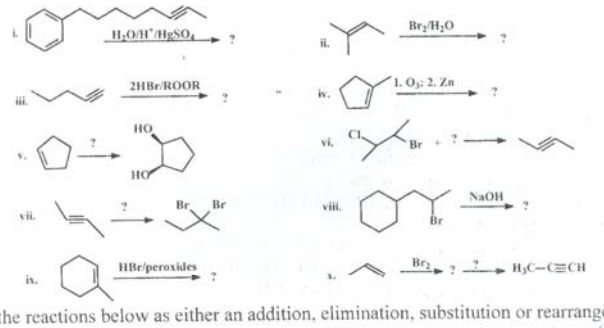
Answer the following questions: .....(80 marks)

l.A. Put (√) in the front of correct statements and (X) in the front of wrong **one: .. (15 marks)**

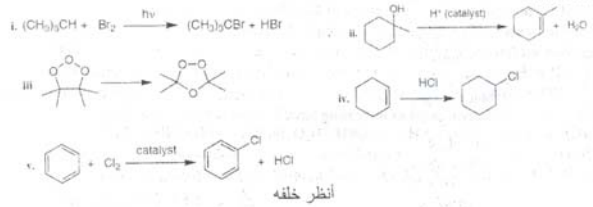
i. σ bond in methane was created by overlapping of SP3-SP3 orbitals.
ii. The carboanion was stabilized by increasing number of alkyl subsistent groups.
iii. The carbocation carbon is SP2 hypridized carbon.
iv. Ammonium ion was considered as electrophile.
v. Water molecule was considered as Lewisacid.
vi. Carbon tetrachloride was considered as polar mole'cule and it has dipole moment
vii. Inductive effect is a polarization of molecule through transfer of electrons through conjugated double bonds.
viii. Carbon-carbon single bond is shorter than carbon-carbon double bond shorter than carbon-carbon triple bond.
ix. Ethanol was consider as aprotic solvent while acetone considered as protic solvent
x. bromination of alkenes in the presence of peroxide proceeded antimarkinikov rule.
xi. Propene can be exist as *cis-trans* form
xii. As the number of carbon atoms in the members of the alkene series increases, the ratio of carbon atoms to hydrogen atoms decreases.
xiii. The addition of hydrogen to alkyne was occurred as syn addition while the addition of bromine occurred as anti addition.
xiv. The arrangement of nuclei in all resonance structures must be the same.
xv. Hyperconjugation involves a bonding interaction between an adjacent C-H σ-orbital with the alkene π*-orbital

1. B, Fluorine is more electronegative than chlorine. However, methyl chloride is *more* polar than methyl fluoride Explain. *[Answer in one sentence]* .....(5 marks)

2. Complete the following equations: .....(20 marks)

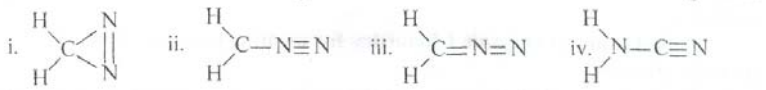


3.A. Classify the reactions below as either an addition, elimination, substitution or rearrangement : .....(5 marks)



أنظر خلفه

3.B. The $CHzN_z$ formula can be presented in all the following structures, draw Lewis structure and calculate the formal charge for each one and then show which of the following is not a proper Lewis structure for a molecule with this empirical formula? .....(10 marks)



C. Draw the following compounds: ..... (5 marks)

i. 5-Ethyl-2-methyl-hept-3-yne

ii. 3-Ethyl-5,6-dimethyl-hept-3-ene iii. 5-Bromo-2-methyl-heptane

iv. 5-Ethyl-6-methyl-hept-l-yne v. I-Ethyl-3,5-dimethyl-cyclohexane

4. Choose the correct answer: .....(20 marks)

a) Which atomic orbitals overlap for form the double bond of ethylene (CH_2=CH_2)?

i. *sp2* + *sp2* and *p*+ *p* **ii**. s + s and *p*+ *p* iii. *sp2*+ *sp2* and s+ s iv. *sp*+ *sp* and *p*+ *p*

b) Which will be the most polar bond?

i. C-C **ii**. C-Br **iii**. C-Si iv. C-Cl

c) Which of the following is the major product obtained by the reaction of l-butyne with two molar equivalents of hydrogen bromide?

i. I, l-dibromobutane **ii.** 1,2-dibromobutane **iii**.2,2-dibromobutane **iv.** 2-bromo-I-butene

d). Which normal alkene has the highest boiling point at **1** atmosphere?

i. C_2H_4 ii. C_3H_6 iii. C_4H_8; iv. C_5H_{10}.

e) Which compound is an ester?

i. CH_3COOH ii. CH_3CHO iii. CH_3COOCH_3 iv. CH_3COCH_3

f) $C_2H_4 + Br_2 \rightarrow ?$ What reaction occurs when the above chemicals react?

i. elimination ii. substitution; iii. Addition iv. esterification

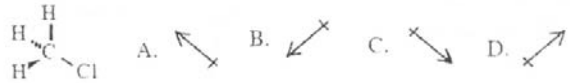
g) Which of the following is not a Lewis acid? i.H^+ ii. $AICl_3$ iii. $(H_3C)_3N$ iv. H_3C^+

iv. (i)-(iv) are all Lewis acids

h)Which of the following reactions has a mechanism that involves the formation of a cyclic intermediate from acyclic starting materials? i. dehydration of an alcohol

ii. addition of HBr to an alkene iii. chlorination of an alkane iv. addition of bromine to an alkene

1) What is the direction of the dipole moment in the molecule shown?



j) According to Markovnikov's rule, addition of water to l-butene should give a

i. primary alcohol **ii**. secondary alcohol iii. tertiary alcohol iv. none ofthe above

k)A compound which soluble in water is:

i. n-hexane ii. I-hexene iii. 2-hexyne iv. ethyl alcohol.

1)which of the following acid has greatest acidity;

i. $CH_3CH_2CH_2CHBrCH_2COOH$ ii. $CH_3CH_2CH_2CH_2BrCOOH$ iii. $CH_3CH_2CH_2CBrzCOOH$

iv. $CH_3CH_2CH_2BrCH_2CH_2COOH$

m) Which formula represents a saturated hydrocarbon? (i) C_2H_2; (ii) C_2H_4; (iii) C_3H_6; (iv) C_3H_6.

n) Which compound is a member of the alkane series? (i) C_2H_6; (ii) C_3H_6; (iii) C_4H_6; (iv) C_6H_6.

0) Which compound is an isomer of CH_3COOH? (i) $HCOOCH_3$; (ii) CH_3CH_20H; (iii) CH_3CH_2COOH; (iv) CH_3COOCH_3.

p)Which represents the functional group of an organic acid? (i)-COOH; (ii)-OR; (iii)-CHO; (iv) -NH_2.

q)As the number of carbon atoms in the members of the alkene series increases, the ratio of carbon atoms to hydrogen atoms (i) decreases; (ii) increases; (iii) remains the same.

r)Which is the correct molecular formula of 2-Methyl-2-pentene: i. C_6H_{I2} **iii**. C_6H_{I4} iv.C_6H_{1o}

s)Which of the following reagents must be used with HBr to convert I-hexene to I-bromohexane?

(a) HSO_3^- (b) $NaBH_4$ (c) ROOR (d) *Pd/C* (e) no other reagent is necessary

t) Which of the following is the correct order of increasing basicity: i. (less basic< more basic)?

i. NH_4 <NH_3<H_2O<CH_3NH_2 ii. NH_3<NH_4 <CH_3NH_2<H_20 iii. NH_3< H_2O<NH_4^+< $MeNH_2$ iv.NH_4^+<H_2O<NH_3<$MeNH_2$

Good luck انتهت الأسئله

Prof Dr. Adel Kamal & Dr. Mohamed Saad

Primary Year	(3 Pages)	English Exam
Faculty of Pharmacy		Time: 2 hours
Assiut University		Jan. 2010-----

I. Write a paragraph on ONE of the following: (13 marks)

A. Smoking as a dangerous habit B. The Internet

II. Read the following passage and then answer the questions below:

(15 marks)

Human Allergies

Four of the most human allergies are directly caused by substances in the air we breathe. Asthma is a lung condition that causes coughing, wheezing, and great difficulty in breathing; asthma may be made worse by the victim's inhaling cigarette smoke or by air pollution. Sinusitis is an inflammation of the sinus cavities in the skull around the nose and eyes. The inflammation is caused by inhaling dust, mold, or pollen and the condition may last only a short while, or it may be chronic. Allergic eczema is an itching rash on the neck, legs, or amlS; some people assume that these areas of the body have contacted a food or drug to become affected by allergic eczema, but very often the condition is caused by inhaling mold or pollen.

The most common of all aUergi~s is, of course, is hay fever. The running eyes and nose, itchy throat, sneezing, and coughing that we call hay fever are caused by inhaling pollen from trees, grasses, or weeds. The allergy is not really an allergy to hay, and sufferers from hay fever may not really have a fever. There is no season of the year that is "safe" for someone suffering from hay fever; early in the spring, most trees are producing pollen; in the early summer, pollen from grasses fills the air; in the fall, the air is full of pollen from weeds.

Nor is any pall/of the country safe for the allergy victim. Years ago, doctors prescribed moving to desert areas that were free of the pollen that caused tllese allergies. Now that prescription is ineffective. Irrigation has brought more plants to the deserts and, ironically, the allergy sufferers all planted lawns and trees and brought their houseplants with them.

Choose the correct answer: .

1. The purpose of this passage is to: (2marks)

a. discuss the causes of hay fever.
b. discuss the process of pollination.
c. compare hay fever to three other allergies.
d. Discuss briefly four of the most common human allergies.

2. According to the passage, which of the following allergies is not directly attributable to the inhaling of pollen? (2 marks)

a. sinusitis b. asthma c. hay fever d. eczema

3. We can conclude from the passage that (2 marks)

a. some allergies can be fatal
b. all allergies have basically the same symptoms.
c. some people are more sensitive to irritants in the air than other people.
d. hay fever is more dangerous than any of the other three allergies.

4.The passage suggests that (1.5 marks)

a. some allergy victims help create situations that promote their symptoms.
b. allergies can now be cured with antibiotics.
c. the desert is now more dangerous for allergy victims than is the city.
d. Most allergies are the result of contact with certain foods and drugs.

5. As is used in the passage, the word "inflammation" means (1.5 marks)

a. activity b. destruction c. swelling d. shrinking

6.As is used in the passage, the word "cavities" means (1.5 marks)

a. decays b. hollow areas c. swellings d. vents

7.As is used in the passage, the word "chronic" means (1.5 marks)

a. abrupt b. short c. continuing d. mysterious

8.As is used in the passage, the word "pollen" means (1.5 marks)

a. limbs b. flowers c. sap d. seed like dust

9.As is used in the passage, the word "irrigation" means (1.5 marks)

a. provided with water b. provided with pollen c. denied water d. transplanted

III. Translate the following into Arabic: (9 marks)

When you refer to your brain, you should probably say, "Brains". Most modern scientists studying the brain have concluded that there are three major parts of our brain, that each is separate from the others, and that each has its own functions and distinctive processes.

IV. Grammar: (9 marks)

A. Complete the following passive voice sentences in the tense given:

1. The chalk (keep) in that cupboard, but they (lose) the key;
(present and present perfect)
2. Our street (dig up) for water-pipes to (lay down).
(present perfect and infinitive)
3. It (sweep) now. (present progressive)

B. Write the following sentences without "to" or "for":
I. The teacher showed some maps to his class.
2. I must buy a present for my brother.
3. Sameer lenta dictionary to his friend George.

V. Explain the following Expressions: (4 marks)
1. A still tongue keeps a wise head 1.5 marks
2. Break a leg 1 mark
3. Swim against the tide 1.5 marks

Good Luck

Dr. Mamdouh Ali

Primary Year	(2 Pages)	English Exam
Faculty of Pharmacy		Time: 2 hours
Assiut University		Jan. 2010-----

I. Write a paragraph on ONE of the following: (14 marks)

1.The important role of pharmacists in society
2.The importance of the internet

II. Read the following passage and then answer the questions below: 12 marks

The earliest authentic works on European alchemy are those of the English monk Roger Bacon and the German philosopher St. Albertus Mangus. In their treatises they maintained that gold was the perfect metal and that inferior metals such as lead and mercury were removed by various degrees of imperfection from gold. They further asserted that these base metals could be transmuted to gold by blending them with a substance even more perfect than gold. This elusive substance was referred to as the "philosopher's stone".

Most of the early alchemists were artisans who were accustomed to keeping trade secrets and often resorted to cryptic terminology to record the progress of their work. The term sun was used for gold, moon for silver, and the five known planets for base metals. This convention of substituting symbolic language attracted a group of mystical philosophers who compared the search for the perfect metal with the struggle of mankind for the perfection of the soul. The philosophers began to use the artisan's terms in the mystical literature that they produced. Thus, by the fourteenth century, alchemy had developed two distinct groups of practitioners - the laboratory alchemist
and the literary alchemist.' '

1. What is the author's main point?
a.that there were both laboratory and literary alchemists.
b.that the philosopher's stone was essential to alchemy.
c.that Roger Bacon and St. Albertus Mangus wrote about alchemy.
d.that base metals can be transmuted to gold by blending them with a substance more perfect than gold.

2. Who were the first alchemists?
a. They were chemists. b. They were writers.
c. They were artisans. d. They were linguists .

3. Roger Bacon and St. Albertus Mangus had the same .....
a. nationality b. premise c. profession d. education

4. It is probable that Roger Bacon's work .....
a.was not genuine
b.disproved that of St. Albertus Mangus
c.was written after St. Albertus Mangus
d.contained references to the conversion of base metals to gold.

5. According to the alchemists, what was the difference between base metals and gold?
a. Perfection. b. Chemical content c. Temperature d. Weight

6. What was the "philosopher's stone"?
a. Lead which was mixed with gold. b. An element that was very found.
c. Another name for Alchemy. D. A base metal.

III. Grammar: 14 marks
Choose the correct answer:
A. Strauss finished ..... two of his publishe~ compositions before his tenth birthday.
a) written b) write c) to write d) writing

B. Please .....Xerox copies of copyrighted material without the permission of the publisher.
a) no make b) don't make c) not make d)not to make

C. The great apes, a generally peaceful species, ... in groups.
a) would rather living b) would rather live
c} would rather they live d) would rather lived

D. The Palo Verde tree ..... in spring.
a) has beautiful yellow blossoms b) beautifulyellow blossoms
c) having beautiful yellow blossoms d) to will beautiful yellow blossoms

E. To check for acidity, one had better .....litmus paper.
a) using b) to use c) useful d) u~e

F. If humans wer~ deprived of sleep, they ..... hallucinations, anxiety, coma, and eventually, death.
a)would experience b)experience c)would have experienced d)had experienced

G. Football teams don't play in the Superbowl ..... Either the National at the American Conference.
a)but they win b)unless they will win c)unless they win d)but to have won

IV. Translation: 10 marks
Translate the following into Arabic:
A holiday is the day set apart for religious observance or for the commemoration of some extraordinary event or distinguished person, or for some other public occasion. Holidays are generally accompanied by public and private ceremonies including feasting, parades and carnivals.

Good Luck
Dr. Mamdouh Ali

أولا التفاضل: أجب عن أربعة فقرات فقط مما يلى (خمس درجات عن كل فقرة)

1- إذا كانت $y = cs(m\cos^{-1} x)$ اثبت أن $(1-x^2)y'' - xy' + m^2 y = 0$

2- احسب المشتقة الأولى للدوال التالية

(i) $y = (10^{\sin 2x})$ (ii) $y = (x^2 \tan x + x\cot x)$

3- أحسب القيمة العظمى للدالة $f(t) = t^2 e^{-t}$

4- (i) أوجد $\frac{dy}{dx}$ للدالة $x^3 + y^3 = 4xy$ (ii) احسب $\int xLnxdx$

5- (i) احسب $\int \frac{(1+Lnx)^{10}}{x}dx$ (ii) أوجد $\frac{dy}{dx}$ للدالة $x\sin y + cis3y = \sin 2y$

ثانيا الإحصاء: أجب فقط عن فقرتين مما يأتى (8 درجات عن كل فقرة).

(أ)- متغير عشوائى X وسطه الحسابى 80 وانحرافه المعيارى 25 اخذت عينة عشوائية حجمها n=36 من توزيع هذا المتغير . ما هو احتمال ÷ن يزيد الوسط الحسابى لهذه العينة عن 88 (القيمة الجدولية 0.4726).

(ب)- البيانات الأتية 0.8 , 0.7 , 0.2 , 0.3 , 0.6 , 0.4 تمثل عينة عشوائية من مجتمع طبيعى وسطه الحسابى μ أوجد 95% حدود الثقة لهذا الوسط (القيمة الجدولية 1.76).

(ج)- فى دراسة للمقارنة بين أوزان الأطفال حديثى الولادة فى قريتين مختلفتين. أختيرت عينة عشوائية مكونة من 8 أطفال من كل قرية. إذا كانت بيانات العينة الأولى هى: $\bar{x}_1 = 2.4$ ، $s_1^2 = 5.3$ وبيانات العينة الثانية هى: $\bar{x}_2 = 3.1$ ، $s_2^2 = 2.7$ المطلوب هو اختبار ان كان هناك فرق جوهرى بين متوسطات أوزان الأطفال بالقريتين لمستوى المعنوية α= 0.01 علما بأن t(0.90, 14)=1.34

ثالثا الجبر: أجب عن السؤال التالى

أ) حلل الكسر الآتى الى مجموع كسوره الجزئية $\frac{6x^2 + x - 1}{x^3 - x}$ (5 درجات)

ب) استخدم معكوس المصفوفة فى حل نظام المعادلات الخطية التالى:

$x + 4y + z = 7$ ، $x + 2y + 2z = 7$ ، $x + y + 2z = 6$

انتهت الأسئلة مع التمنيات بالتوفيق أ.د./ محمود ابراهيم ، أ.د./ أحمد علام ، أ.د./ حسن الهوارى

Assiut university
Faculty of Medicine
Department of anatomy

Date,: 26/6/2010
Time: 1.5 Hours

Anatomy Examination for Preparatory year Pharmaceutical students

Answer the following guestions:- (60 Marks)

1- Illustrate with diagram anatomy of female genital system. (20 Marks)

2- Illustrate with diagram types and subtypes of joints with an example to each type. (20 Marks)

3- Give an account on anatomy of cranial nerves. (20 Marks)

Good luck

ملحوظة:- امتحان الشفوي على النحو التالي:-

يوم 2010/6/27 في تمام الساعة الثامنة صباحا لأرقام الجلوس من: 1 - 600

يوم 2010/6/27 في تمام الساعة الثانية عشرة ظهرا لأرقام جلوس من 601 للأخر

Assiut university
Faculty of Medicine
Department of anatomy

Date,: 28/6/2010
Time: 1.5 Hours

Anatomy Examination for Preparatory year Pharmaceutical students

Answer the following guestions:- (60 Marks)

1- Illustrate with diagram anatomy of male urinary system.

(20 Marks)

2- Illustrate with diagram anatomy of the heart and blood vessels attached to it. (20 Marks)

3- Illustrate with diagram anatomy of the digestive tube.

(20 Marks)

Good luck

ملحوظة:- امتحان الشفوي عقب الأمتحان التحرير مباشرة

Assiut University. *Date:26-6-2010*
Faculty of medicine. *Time:* 3 *hours(Histology&Anatomy)*
Department of Histology .

……

FINAL HISTOLOGICAL EXAM.
FOR
THE PREP. YEAR PHARMACY STUDENTS

.....

Answer the following questions:

1- Enumerate only:- **(3 marks each)**

a- Layers of the epidermis.
b- Cells of the lining epithelium of the intestinal villi and crypts.
c-Chromophilic cells of the pars distalis.
d- Types of blood capillaries.
e- Types of ovarian follicles.

***2- Mention the components of* :-** **(3 marks each)**

a- Blood air barrier.
b- Juxtaglomerular apparatus.
c- White pulp of the spleen.

3-In a tableform compare between: - **(4 marks each)**

a-Classic liver lobule & portal lobule.
b- Proximal and distal convoluted tubules.

4-Draw a labelled diagram (ElM structure) of: - **(4 marks each)**

a- Pigmented epithelium of the retina.
b- Melanocytes.

5-Mention the site and structure of: - **(4 marks each)**

a- Interstitial cells of Leydig.
b-Parietal cells.
c- Corpus luteum.

6-Mention the general structure of the wall of the blood vessel. **(8 marks)**

.....

Good luck

جامعة أسيوط　　فيزيـــــاء　　العام الدراسى 2010/2009
كلية العلوم　　الفرقة: اعدادى صيدلة
قسم الفيزياء　　الزمن: ثلاث ساعات

أجب عن خمسة أسئلة فقط مما يأتى:　　Answer Only Five Questions:

ملحوظة هامة: الأسئلة على أربع صفحات، ويجب إجابة كل سؤال فى صفحة منفصلة كما يجب اجابة السؤال كاملا وليس جزء من سؤال مع جزء من سؤال آخر مع مراعاة ترقيم اجابة الأسئلة حسب ترقيمها فى ورقة الأسئلة

[Total mark 150 points]

Question No. (1), (2) and (3). Determine which of the following statements is correct [√] and which is not [X}.

ضع اجابتك عن السؤال الأول والثانى والثالث فى جدول رأسى يحتوى على رقم الفقرة وقرارك:

Question No. (1): **(30 points)**

1- Refractive index for red colour is smaller than that for violet.
2- Condition for Achromatic condition is:

$$(n_v - n_r).\ At = (n_v - n_r)_2\ A_2$$

3- Condition for disperse a white light without it deviate is:

$$A_1\ (n_1-1) = A_2\ (n_2-1)$$

4- Near U.V. radiations extend between 3700 Å to 3000 Å.
5- Band emission spectra produced as a result of vibration of molecules.
6- Line emission spectra are produced as a result of inward jumping of orbital electrons in the excited atoms.
7- U.V. radiations can produce ionization in gases.
8- Near U.V. radiations is responsible for production of vitamin D within human body.
9- If the length of a small object is shorter than λ of radiation falling on the object, it can hardly scatter the radiation.
10- Focal length for violet colour is greater than that for red one.
11-Wave length for red colour is shorter than that for violet.
12- In Achromatic combination the angle of first prism equal to that of the second one.
13- X-ray produced by deceleration of ele:ctrons are known as K_β x-rays.
14- Gamma rays originate from transition of electrons between inner orbits.
15- Myopia is due to a slight decrease in the diameter of the eye ball.

Question No. (2): **(30 points)**

1- If the magnification is negative the image is inverted.
2- Power of refractive surface is direct proportional to its refractive index.
3- In any medium reciprocal of vergence is the apparent distance.

من فضلك انظر خلفه ←——

4- At the point source of light, the vergence is infinite.
5- Energy of I.R. radiations is direct proportional to its frequency.
6- Power of refractive surface is indirect proportional to λ.
7- Light is a form of energy.
8- Presbyopia can be improved by use a converging lens.
9- In I.R. spectrometer the prism is made from rock salt.
10- $V_{air} / V_{med} =$ n for medium.
11-Velocity of U.V. radiations is direct proportional to its wave length.
12- Cones-nerve fibres on retina register white and black colours.
13- A converging lens is used to improve myopia.
14- Amplitude of accommodation not equal to power of accommodation.
15- Image of a slit source of light formed by a Toric lens appears as a straight line parallel to the axis of the lens.

Question No. (3): **(30 points)**

1- In compound microscope power of objective lens is higher than that of eye-piece.
2- Magnification in a simple microscope range between 0.25 F and 1 +0.25 F (where F is power of lens).
3- In compound microscope, the object is placed at a distance slightly greater than the focal length of the objective.
4- Artificial source of LR. radiations are electric radiations.
5- A thermanous materials stop far I.R. thermal radiations.
6- In U.V. spectrometer, the prism is made from Quartz.
7- One reason for presbyropia is weakness of ciliary muscles.
8- Image formed by a cylindrical lens for a slit source of light parallel to the axis of the lens is a very sharp bright line parallel to the axis of the lens.
9- Hypermetropia is due to decrease in the power of the cornea.
10- Presbyopia is due to increase of refractive index of outer layers of lens in human eye.

11- λ for x-ray increased by increasing potential difference between cathode and anode in x-ray-:tube.
12- Efficiency of x-rays increased by lowering electric current passing through cathode in x-ray tube.
13- Energy of x-rays increased by increasing charge on electrons.
14- Continuous x-rays produced by transition of eleetrons between inner orbits.
15- Energy of characteristic x-rays range between very small value and maximum one.

Question No. (4) **(30 points)**

اكتب اجابتك بنفس الترتيب فى جدول رأسى يحتوى على رقم العبارة والحرف الأبجدى المناسب

1- Kirchhoffs voltage says:

(a) $\sum I = 0$	(b) $\sum E = \sum IV$	(c) $\sum E = \sum I^2 R$	(d) $\sum E = \sum IR$

2- The force on a current-carrying wire in a uniform magnetic field is given by:

(a) F = B L A	(b) F = B L V	(c) F = L B v	(d) F = B L I

3- An a.c. current equation is given by 5 sin 3 t, therefore, the current after 30 sec. is:

(a) 15.61 A	(b) 14.61 A	(c) 10.36 A	(d) 25 A

4- The amplitude of T- wave, in E.C.G., is decreased in:

(a) Hypoxia	(b) Hyperthyroidism	(c) Hypertrophy	(d) Toxic doses

5- A voltage 10V is applied across a 5 ohm in 20 sec., ∴ the average energy dissipated in R is :

(a) 100 J	(b) 5000 J	(c) 1000 J	(d) 400 J

6- The NMR is used to study the change in the concentration of:

(a) proteins	(b) ATP	(c) EPR	(d) p H

7- The potential across a cell membrane is expressed in the form:

(a) - 90 mV	(b) 0.050 volt	(c) – 0.095 volt	(d) 97 mV

8- The EMG signal may be obtained from:

(a) muscles	(b) neurons	(c) brain	(d) membrane

9- In a purely capacitive circuit, the power factor cos ϕ is equal to:

(a) zero	(b) $1/\sqrt{2}$	(c) one	(d) 0.5

10- Pure germanium doped with arsenic will transfer germanium to a semi-conductor type:

(a) n-type	(b) p- type	(c) np- type	(d) q-type

11- The conservation of energy requires that all radiations from human bodies be at the expense of :

(a) outside temperature	(b) outside environment	(c) internal energy	(d) external energy

12- The semi-conductor n-p-n transistor ,the emitter-base junction is connected :

(a) internal bias	(b) Reverse bias	(c) forward bias	(d) outside bias

13- The First Law of Thermodynamic is expressed in the form:

(a) $\Delta W = \Delta E + \Delta Q$	(b) $\Delta Q = \Delta E + \Delta W$	(c) $\Delta E = \Delta Q + \Delta W$	(d) $\Delta Q = \Delta E + \Delta F$

14- The heat capacity C_v of a system at constant volume is related to the specific heat c_v by:

(a) $C_v = c_v$ nm	(b) $C_v = c_v$ n	(c) $C_v = c_v$ m	(d) $C_v = c_v$ E

15- The velocity of sound waves in Muscles are:

(a) 1750 ms^{-1}	(b) 1410 ms^{-1}	(c) 1540 ms^{-1}	(d) 1340 m s^{-1}

Question No. (5): **Put *[J]* for the correct statements and [Xl for the others:** **(30 points)**

أكتب اجابتك بنفس الترتيب فى جدول رأسى يحتوى على رقم العبارة والعلامة المناسبة:

1- The EcG apparatus is mainly a sensitive voltmeter.
2- Heating muscles by short wave using capacitor technique is due to oscillating magnetic field.
3- The EMG of a patient having myasthenia gravies shows that in repetitive stimulation the motor nerve to muscle transmission succeeded.
4- The dosimeter is a tool to measure the real activity of radioisotopes.

5- In synaptic conduction, the transmission is electrical assisted.

من فضلك انظر خلفه ←

6- Heating by Ultrasonic waves, is due depolarization of water of the body's molecules.
7- The RBE of fast moving β- particles and γ-rays is about equal and taken as 2.
8- A p-type semiconductor is produced by Germanium doped with Gallium.
9- The transistor is a current-controlled device.
10- The Becquerel (Bq) is defined as 1 disintegration per second.
11- Components of a gamma camera, the scintillation detectors and the pacient are in a shielded lead housing.
12- The decay constant λ of a radioactive material is related to the half-life time by:

$$T_{½} = (\ln 2) / \lambda$$

13- The Curie, is that of a gram of radium.
14- Excessive heating of humans tissue causes reddening and sometimes edema.
15- The energy necessary to vaporize one gram of water at 37° C is 2.4 KJ / g.

Question No. (6): [Solve The Following Problems,]put the final answer in a vertical Table **(30 points)**

1- A 150 μF capacitor is made with two parallel plates 5 cm^2 in area each, separated by 0.5 mm thick sheet of biological material. Calculate the dielectric constant of the biological material.

(a) 18.9	**(b)16.9**	**(c)15.9**	**(d) 17.9**

2- A gas in a cylinder is at a pressure of 6000 Pascal and a piston has an area of 0.20 m^2 blocking the gas. Heat is slowly added to the gas, the piston is pushed up a distance (d)of 5 cm. Calculate the work done on the surroundings by expanding the gas. Assume that pressure remains constant.

(a) 4.5 J	**(b)7.6 J**	**(c) 6.0 J**	**(d) 5.8 J**

3- If you have 1 gm of pure potassium 40 (^{40}K) that emits about 10^5 beta particles per second, what is the decay constant λ,? (Avogadro's number = 6.02 x 10^{23}).
(10 points)

(a) 6.7×10^{-18} sec^{-1}	**(b)5.7×10^{-16} sec^{-1}**	**(c) 8.7×10^{15} sec^{-1}**	**(d) 6.9×10^{18} sec^{-1}**

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أسماء السادة الأساتذة الممتحنين: أ.د./ ..عبد الله ابراهيم عبد المجيد.
أ.د./ عادل عباس محمد.
أ.د./ .....

Good Luck

بسم الله الرحمن الرحيم

Assiut University	Preparatory year Final Exam
Faculty of Pharmacy	Introduction to Pharmacy
Department of Pharmaceutics	& History of pharmacy

Time Allowed (2 hrs) 14/06/2010

Instructor: Prof. Tahani Elfabam. (40 marks)

I -Tick (√) for the right and (X) for the wrong statement of the following: (15 marks)

l- Pharmacy is a truly unique combination of profession and business. ( )

2-It is not the concern of the pharmacist, x'.' (llonitor the patient after dispensing the medicaments ( )

3- Pharmacists communicate with coworkus and customers daily by telephone or in person.( )

4- The Food and Drug Administration (FDA) is the agency responsible for creating guidelines for the approval and use of drugs. ( )

5- A pharmacist does need a strong foundation in basic science; chemistry, physics, and biology ( )

6- When you finish your study ,you will earn a B.Pharm. degree ( )

7- According to the code of ethics, A pharmacist respects the autonomy and dignity of each patient. ( )

8-The term medication order is usually used when referring to drug orders for persons who are in - patients ( )

9- Percentage w/v indicates the number'of grams of ingredient in 100 milliliters of product.( )

10- Controlled drugs, are drugs sold without prescription. ( )

11- The industrial pharmacist in R&D analyzes and quantitatively asses the quality of the products. ( )

12- The hospital pharmacist dispenses medications to in-patients only ( )

13- Medication errors are due to human mistakes ( )

14- The drugs that should be monitored have narrow therapeutic index ( )

15-The components of a TPN formulation are added to a sterile infusion bag and administered to the patient via a catheter. ( )

II- Choose the most suitable completion of the sentences: (10 marks)

1. A narcotic prescription order is;
   A) That written for a narcotic drug.
   B) Permitted to be dispensed only once.
   C) Both (A) and (B)

2- In the prescription order, the (signature) means directions to,
   A) The patient.
   B) The pharmacist.
   C) Both (A) and (B).

3- 5% NaCI solution prepared by;
   A)Dissolving 5gm NaCI in l000ml solvent
   B)Dissolving 50gm N aCI in 100mg solvent
   C)Dissolving 5gm NaCI in l00ml solvent

4- In the prescription the subscription is directed to,
   A)The pharmacist
   B)The patient
   C)The physician.

5- The pharmacist reviews the prescription for;
   A)Doses, dosage intervals and contraindications
   B)The name of the physici.all
   C)The history of the patient

6- The first known chemical processes were carried out by the artisans, in
   A)Europe
   B)Tigris and Euphrates
   d) Egypt & China

7- Doctor of Pharmacy (Pharm. D.) is,
   A) The master's degree
   B)A professional degree.
   C)A doctor's degree, usually a Ph.D

8- Pharmacists must have a high level of social contact because;
A)They work with patients
B)They work with physicians constantly
C)Both A& B

9- The body (inscription) of the prescription,
A)Stating the ingredients and the quantity of each.
B)Stating directions to the patient
C)Stating directions to the Pharmacist

10- Narrow therapeutic index (window) of the drug indicates that;
A)The drug is potent
B)The drug is safe
C)The drug is weak

III- Calculate: (8 marks)

1-The amount of Strong Cetrimide Solution (BP 1988) required to prepare 500 ml of Cetrimide Solution (1 % *w/v* solution). Given that;
Strong Cetrimide Solution BP (1988) contains 40% *w/v* cetrimide. (5 marks)

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2- The missed amounts (3 marks)

Tar ointment

Ingredients	%W/W	For 200 gm
Coal tar solution	12%	----------
Hydrous Wool Fat	12%	----------
Yellow soft paraffin to	100%	----------

IV- Define the meaning of (7 marks)

1- Pharmacopeia

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2- Over- The –Counter drugs

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Instructor: Prof. Ahmed Moustafa El-Sayed (40 marks)

1. Give reason(s) for the following: (8 marks)

A- The accuracy of dose of divided powders is more important than in bulk powders

B- Overuse of nasal drops is common

C- Pasters are very stiff and do not spread readily over the skin's surface

D- Implants must be sterile

2.Indicate whether each of the following statements is true (√) or false (X) and justify your answer: (8 marks)

( ) A- Linctuses are characterized by a viscous nature

( ) B-Buccal route of administration is highly effective and can be used for both systemic and local actions and give quick onset of action

( ) C- Drugs absorbed from vagina are subjected to "first pass" effect

( ) D- Volume of 2-3 ml can be injected by intradermal injection route.

3- Differentiate between: (4 marks)

Elixirs and Syrups

تاريخ الصيدلة:(20 درجة)

1- أذكر مثالين لكل من: (6 درجات)

أ- المواد التى استعملها قدماء المصريين لتدوين الكتابة عليها

ب-مصادر تاريخ الصيدلة

ت-علماء مدرسة الإسكندرية القديمة

2- ضع علامة (√) للعبارات الصحيحة وعلامة (Xٜٜٜ) للعبارات الخاطئة ثم صحح الخاطىء منها (10 درجة)

( ) أ- استخدم قدماء المصريين الرصاص كعقار معدنى فى صورة دهان مع الزيت لعلاج التهاب العيون

( ) ب- استعمل الملح منذ أقدم العصور كمادة مطهرة أو للبخور

( ) ت- استعمل قدماء المصريين شمع العسل فى التحنيط كمادة لاصقة

( ) ث- الخشخاش عقار نباتى استخدمه قدماء المصريين لما له من تأثير مضاد للميكروبات

( ) ج- استخدم قدماء المصريين الصمغ كعقار نباتى لإدرار البول

( ) ح- وصف ابن سينا كثير من الادهان مثل دهن الورد والبابونج وتحدث عن الأطيان وأنواعها وفوائدها واستعمالاتها

3-أكمل الجمل الأتية: (4 درجة)

1-"سر الأسرار" كتاب الفه أبو بكر الرازى وقد شرح فيه الآتى:

ب- تضمن كتاب ابن البيطار "المغنى فى الأدوية المفردة" على الآتى:

سوف يعقد امتحان الشفوى فى الأوقات التالية <u>والتى يجب الالتزام بها</u>:

1- من رقم 1 حتى رقم 470 يوم الامتحان وبعده مباشرة

2- من رقم 471 الى آخر الكشف صباح يوم الثلاثاء 15-6-2010 فى تمام الساعة التاسعة

كلية التربية
قسم علم النفس
****

الفرقة : إعدادى صيدلة
المادة : علم النفس العام
الزمن : ساعتان

امتحان الفصل الدراسى الثانى 2009 – 2010م

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أجب عن السؤالين التاليين :

*** السؤال الأول :**

(يرى علماء النفس أن مرحلة الطفولة المبكرة من المراحل الهامة فى بناء شخصية الإنسان). ناقش ذلك موضحا مايلى :

1- تعريف الشخصية ، كيفية بناء الشخصية من وجهة نظر المدرسة السلوكية. (9 درجات)

2- مكونات الجهاز النفسى عند فرويد (8 درجات)

3- اضطراب الوسواس القهرى وأعراضه. (8 درجات)

***السؤال الثانى:**

(يختلف الناس فى الشعور بالإحباط والقدرة على تحمله). ناقش ذلك موضحا مايلى:

1- العوامل المؤثرة على استجابة الفرد للإحباط. (9 درجات)

2- أنواع الصراع النفسى ، موضحا ذلك بأمثلة. (8 درجات)

3- تعريف الآليات اللاشعورية ، ذاكرا ثلاثة منها بالأمثلة.(8 درجات)

*******انتهت الأسئلة ********* مع تمنياتى بالتوفيق******

د/صمويل تامر بشرى

Assiut University Faculty of Science Botany Department		جامعة أسيوط كلية العلوم قسم النبات
Mid-Term Exam of General Botany For Pre-pharmacy Students, Nov. 2010		
الإسم:	رقم الجلوس:	

Section 1: Plant Physiology and Biochemistry (**5 pts**)

Underline the correct answer (1/2 points for each):

1. (Light reactions – Dark reactions) take place exclusively on thylakoid membranes.
2. The ultimate source of electrons in photosynthesis is (water-light).
3. Protons from photosynthetic water oxidation accumulate in chloroplast (lumen – stroma).
4. Each cholorphyll molecule contains (one – two) magnesium atoms.
5. Photosynthetic synthesis of ATP is coupled to (electron transport- carbon fixation).
6. Cyclic photophosphorylation occurs in the presence of (surplus – limited) NADPH.
7. The assimilatory power is consumed during the (fixation – reduction) stage of Calvin cycle.
8. Thylakoids and cristae are (similar – dissimilar) in structure and function although differ in shape.
9. (Carotenes – Xanthophylls) contain oxygen.
10. RubisCO is the enzyme that catalyzes carbon dioxide fixation and (can –can't) catalyze oxygen as well.
11. Oxygen evoloves in (photosynthesis – respiration).

N.B. it is enough to answer only 10 points to get the full mark!!!!!!!

Best wishes; Refaat Abdel- Basset

Please T.O.

الاسم (بالعربية): ..... **الرقم:** .....

1- Taxonomy

Choose the correct answer: (l0marks)

1- The Scientist Ray defined the (binomial nomenclature- taxonomic ranks- species- family).

2- Homo sapiens is a (specific- common- scientific- generic) name.

3- Conjugation is a type of reproduction occurred in (poriferans- ciliates- cnidarians- parazoans).

4- One of the following is not related to the others (cilia- flame cell- flagella- podia).

5- Sporozoites are the infective stage of *(Paramecium- Trypanosoma- Plasmodium- Fasciola).*

6- (Choanocytes- Pinacocytes- Nematocytes- Archaeocytes) are flat cells covering the sponge body.

7- The Order is a taxonomic rank includes (families- phyla- class- genera).

8- All platyhelminthes are hermaphrodite except *(Taenia- Fasciola- Schistosoma- Heterophyes).*

9- Polyp and medusa are forms of (poriferans- cnidarians- protozoans- nematodes).

10- The intermediate host snail of *Fasciola* is *(Lymnaea- Biomophalaria- Pirenella- Lymneae).*

II- Cytology

Choose the correct answer: (5marks)

1- In active transport, the molecules move from area of (high concentration to one of low concentration- low concentration to one of high concentration- no concentration difference).

2- In muscle cells, the SER is a specialized form and known as (microvilli- microtubules- microfilaments).

3- The only cellular organelle that can perform self-replication (Golgi bodies- lysosomes- mitochondria).

4- Secretory granules of Golgi apparatus usually bud from (trans face- cis face- both).

5- Pancreatic acinar cells are expected to be rich in (mitochondria- RER- lysosomes) .

مع خالص التمنيات بالتوفيق ،،،،،،،،،،

(A)

Assiut University Nov. 2010
Faculty of Science ----------:اسم الطالب
Chemistry Department ----------:رقم الطالب

Mid-Term Examination for Pre-Pharmacy Students
(Inorganic Chemistry)

Choose the correct answer and Put the letter of correct answer in the give table:

1) The Lyman series of hydrogen spectrum appears in .....
(a) Ultraviolet region. (b) Visible region. (c) Infrared region.

2) The energy charge accompany the addition of one electron to a neutral atom is called .....
(a) electron affinity. (b) electronegativity. (c) lattic energy.

3) Applying $n_1 = 3$, $n_2 = 6$ in Rydberg equation gives the wavelength of the third line of .....
(a) Brakett (b) Balmer (c) Paschen

4) A substance which is weakly repelled by a magnetic field is .....
(a) paramagnetic (b) diamagnetic (c) ferromagnetic

5) The ionization energies across a period in the periodic table ..... from left to right.
(a) increase (b) decrease (c)remain without charge.

6) The number of valence electrons in carbonate ion is .....
(a) 22 e (b) 24 e (c) 26 e .

7) The formal charge on S in SF_4 is .....
(a) -2 (b) 0 (c) -1

8) A molecule with a central atom surrounding by 5-bonding pairs and on lone pair has ..... geometry.
(a) octahedral (b) square pramide (c) trigonal bipyroamidal

NO.	Correct answer (A) or (b) or (c)
1	
2	
3	
4	
5	
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8	

Taxonomy

I- Choose the correct answer: (20marks)

1- The Scientist Ray defined the (common name- species- scientific names- family).
2- All flat worms are hermaphrodite except *(Fasciola- Ascaris- Schitosoma- Heterophys).*
3- Reproduction by conjugation occurs in *(Plasmodium - Paramecium - Trypanosoma- Entamoeba).*
4- One of the following is not related to the others (choanocytes- pinacocytes- nematocytes- archaeocytes)
5- Cercariae are the infective stage of *(Trypanosoma- Schistosoma- Entamoeba- Fasciola).*
6- The Family is a taxonomic rank includes (Species- Phyla- Class- Genera).
7- Protozoans live as (free living- parasites- commensal- mutualism- all).
8- Corals are formed by (Molluscs- Cnidarians - Protozoans- Echinoderms).
9- Polyp and medusa are forms of (poriferans- cnidarians- protozoans- nematodes).
10- The intermediate host snail of *Schistosoma* is *(Lymnaea- Biomophlaria- Pirenella- Lymneae).*
11- Nematodes are also called (Cylindrical worm- Leafworm- Round worms- Flat worm).
12- Which one is a flat worm? (Seat worm- Filaria worm- Arrow worm- Blood fluke).
13- Which one.is acoelomate? (Nematoda- Annelida- Arthropoda- Platyhelminthes).
14- Scorpion belongs to (Arthropoda- Annelida- Mollusca - Echinodermata).
15- Pearls, both natural and cultured, are produced by (snails- leeches- bivalves- shrimps).
16- (Heparin- Hirudin- Oxalic- Salisic acid) is secreted by leeches as blood anticoagulant.
17 - *Fasciola* lives as an adult in the (muscles of cow- intestine of man- blood of man- liver of man).
18- Octopuses, squids, mussels and clams are (Annelids- Arthropods- molluscans- echinoderms).
19- Invertebrates have four pairs of walking legs (insects- cestodes- arachnids- nematodes).
20- The process of removing the old exoskeleton in arthropods called (excretion- molting- fixing- shift).

II- Choose the suitable number from (A) to (B): (20 marks)

(A)	(B)
I-Pinacocytes	-is a class belongs to phylum Annelida ( )
2-Linnaeus	-are sessile animals ( )
3-0rganization	-is a class belongs to platyhelminthes ( )
4-Ascon	-is a one of the intermediate hosts of *H. heterophys* ( )
5-Flame cell	-is a rasping organ present in mollusks ( )
6- Nematoda	-is one of the main characters of arthropods ( )
7-Protzoan phyla	-is a molluscan class including snails and slugs ( )
8-Planaria	-are arthropod animals have three pairs of walking legs ( )
9-Entamoeba	-is a long flexible, rod like supporting structure in chordates( )
10-Poriferans	-is a sub-phylum with two pairs of antennae ( )
11-Hirudinea	-causes amoebic dysentery in the parasitic state ( )
12-Cestoda	-is a free living platyhelminthes ( )
13- Pirenella conica	-includes all acellular animals ( )
14-Exoskeleton	-are organs of excretion in some arthropods ( )
15- Green glands	-is the basic unit of excretion in Platyhelminthes ( )
16-Gastropoda	-is a type of sponges ( )
17- Radula	-is one of the basic characteristic of animal classification ( )
18-Notochord	-classified animals into 7 taxonomic ranks ( )
19- Insects	-are epithelial cells that cover the sponge body ( )
20- Crustacea	-is a triploblastic Phylum ( )

III- Draw labeled diagrams for the following: (20 marks)

Excretion unit of Platyhelminthes	Infective trematod cercaria
The tracheal system in Arthropoda	Adhesive system in worms
The digestive tract of *Heterophyes*	The digestive tract of *Hirudo*

Cytology

IV-Choose the correct answer **(20 markes)**

1- Membranous organelles participate in cellular metabolism

a) directly b) indirectly c) rarely

2- Major lipids constituting lipid bilayer in the plasma membrane are phospholipids and

a) glycerol b) cholesterol c) glycogen

3- Ions transport plasma membrane mainly through

a) carrier proteins b) channel proteins c) hydrophobicity force

4- The only cellular organelle that can perform self-replication is

a) Golgi bodies b) lysosomes c) mitochondria

5- Pancreatic acinar cells are expected to be rich in

a) lysosomes b) mitochondria c) RER

6- Posttranslational modifications of proteins occurs in

a) RER b) Golgi bodies c)a and b

7 - Primary lysosomes are distinguished from secondary ones by

a) large size b) obvious membrane c) a and b

8- Removing of introns from mRNA is called

a) translation b) splicing c) tran,scription

9- Ribophorin I and II are missed in

a) RER b) SER c) both

10- Kaerns-Sayre syndrome results from

a) altered Golgi apparatus b) altered lysosomes c) altered mitochondria

V- By labeled drawings only, demonstrate <u>only 2</u> of the following **(10 marks)**

1- Different lysosomal pathways

2- Mitosis

3- Centriole ultra structure

=== With Our Best Wishes ===

Drs. Ahmad H. Obuid-Allah, Abo bakr M. Eltaybe, Khaleid F. Abd El-Wakeil

Chemistry Department	الاسم:
Faculty of Science	رقم الجلوس:
Assiut University	
Mid-Term Examination on Advanced Physical Chemistry For Pre-Pharmacy Students	

Answer the following Questions:

1) The efficiency of engine that is working between 27°C and a 327°C is:

2) Enthalpy change of a system can be represented by:

3) A gas is allowed to expand at 127°C from a volume of 1.0 L to 10.1 L against an external pressure of 0.50 atm. If the gas absorbs 250 Cal. of heat from the surroundings, calculate the values of entropy change during this process and internal energy change.

((انظر خلف الصفحة))

4) Estimate the relation between pressure and temperature in adiabatic process.

Taxonomy

I- Choose the correct answer: (20marks)

1- The Scientist Linnaeus defined the (common name- species- scientific names- family).
2- In 1969, Whittaker classified the world into (3- 4- 5- 7) kingdoms.
3- Reproduction by conjugation occurs in *(Plasmodium - Paramecium - Trypanosoma- Entamoeba).*
4-One of the following is not related to the others (choanocytes- pinacocytes- nematocytes-archaeocytes).
5- Cercariae are the infective stage of *(Trypanosoma- Schistosoma- Entamoeba- Fasciola).*
6- The Family is a taxonomic rank includes (Species- Phyla- Class- Genera).
7- Malaria fever is caused by *(P. vivax* -Monocystis - Cockroach - Mosquito).
8- Corals are formed by (Molluscs- Cnidarians - Protozoans- Echinoderms).
9- Polyp and medusa are forms of (poriferans- cnidarians- protozoans- nematodes).
10- The intermediate host snail of *Fasciola* is *(Lymnaea- Biomophalaria- Pirenella- Lymneae).*
11- Nematodes are also called (Cylindrical worm- Leafworm- Round worms- Flat worm).
12- Which one is the flat worm? (Seat worm- Filaria worm- Arrow worm- Blood fluke).
13- Which one is acoelomate? (Nematoda- Annelida- Arthropoda- Platyhelminthes).
14- Prawn belongs to (Arthropoda- Annelida- Mollusca - Echinodermata).
15- Pearls, both natural and cultured, are produced by (snails- leeches- bivalves- shrimps).
16- (Heparin- Hirudin- Oxalic- Salisic acid) is secreted by leeches as blood anticoagulant.
17-Pork tapeworm lives as an adult in the (muscles of pig- intestine of man- blood of man- lung of man).
18-Octopuses, squids, mussels and clams are (Annelids- Arthropods- molluscans- echinoderms).
19- Invertebrates have four pairs of walking legs (insects- cestodes- arachnids- nematodes).
20- histolytica is a (family- generic- species- specific) name.

11- Choose the suitable number from (A) to (B): (20marks)

(A)	(B)	( )
1-Pinaccytes	-is a class belongs to phylum Annelida	( )
2- Ray	-are essile amimals	( )
3- Chagas disease	-is a class belong to platyhelminthes	( )
4- Ascon	-is a one of the intermediate hosts of H. heterophys	( )
5- Polymorphism	-is an organ present in mollusks	( )
6- Nematoda	-is one of the main characters of arthropods	( )
7-Protzoan phyla	-is a molluscan class including snail and slugs	( )
8-*Planaria*	-are arthropod animals have three pairs of walking legs	( )
9-*Entamoeba*	-is a long flexible, rod like supporting structure in chordates	( )
10-Poriferans	-is a sub-phylum with two pairs of antennae	( )
11-Hirudinea	-causes amoebic dysentery in the parasitic state	( )
12-Cestode	-is a free living platyhelminthes	( )
13-*Pirenella conica*	-includes all acellular animals	( )
14-Exoskeleton	-are organs of excretion in some arthropods	( )
15-Radula	-means more than one bdy form	( )
16-Gastropoda	-is a type of sponges	( )
17-Insects	-is caused by *T.cruzi*	( )
18-Ntochrod	-defined the species	( )
19-Crustacea	-are epithelial cells that cover the spongs body	( )
20-Green glands	-is a triploblastic phylum	( )

اقلب الصفحة

III- Enlist the main taxonomical characters (three only) of phyla porifera, Arthropoda, Mollusca (9 marks)

Phylum Porifera:

1-

2-

3-

Phylum Arthropoda:

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Phylum Mollusca:

1-

2-

3-

IV- Compare among Cnidarians, Platyhelminthes and Annelids in the following characters (11merks)

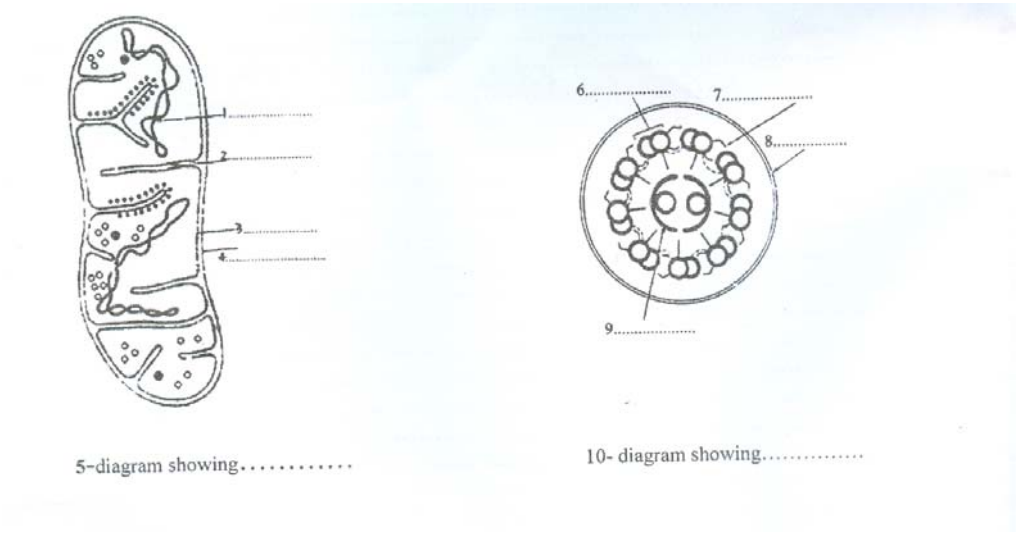
Characters	Cnidarians	Platyhelminthes	Annelids
Body shape			
Excretory organ		(with drawing)	
Digestive system		(with drawing)	

Cytology

I-Choose the best answer (10 marks)

1- In some animal types, egg and sperm recognition is mediated by
a) glycogen b) glycerol c) glycocalyx
2- Deoxyribonuclease is almost exclusively found in
a) lysosomes b) nucleus c) Peroxisomes
3- Free ribosomes are responsible for protein synthesis for
a) cell consumption b) exporting c) degradation
4- Signal recognition particle (SRP) consists of 6 polypeptides and
a) 18S RNA b) 7S RNA c) 28S RNA
5- Nucleosomes consist of
a) 48 DNA base pair b) 166 DNA base pair c) 30 DNA base pair
6- Nuclear organizer DNA containing DNA sequence encoding
a) mRNAs b) tRNAs c) rRNAs
7 - Desrnin is an intermediate filament found in
a) chondrocytes b) epithelial cells c) muscle cells
8- Which one of the following is false concerning benign turnors?
a) slow growth b) invasiveness c) fast growth
9- G1 phase of the cell cycle is most probably controlled by
a) Cdk2/cyclin A b) Cdk2/cyclin E c) Cdk2/cyclin B
10- Which one of the following is false concerning Prophase II
a) forming of tetrads b) forming of spindle c) dissolving of nuclear envelope

II- Complete the missing labels of the following cellular structures (10 marks)



5-diagram showing.....

10- diagram showing.....

اقلب الصفحة

11- Write short notes about only two of the following (10 marks)

1- DNA condensation to form chromosomes
2- Structure of the nucleolus
3- Intermediate filaments of the cell

==with our best wishes==

Prof. Ahmed H. beid ALLAH, Dr. Abo Baker E. Eltayeb, Dr. Khaleid F. Abd El-Wakiel

Botany Department
Faculty of Science
Assiut University
1st Semester - Final Exam
2010/2011 – January 2011

Pharmacy Program
Course: General Botany
Pre-pharmacy Students
Time: 3 Hours
Marks : 150

No. of Pages:16 No. of questions:20(6+7+7)

Part A (Taxonomy, macro- and micro-morphology)

Answer questions 1 & 2 then select & answer 3 only of the other questions

Question no. 1 هذا السؤال اجبارى **(15 marks)**

Put (√) beside the correct answer and put (X) beside the wrong answer:- (0.5 mark each)

1: Bordered pits present when a parenchyma cell is adjacent to conducting element ..... ( )
2.Frets are the thylakoids that cross intergrana region of ch/oroplast ..... ( )
3.The different kinds of nucleotides differ only in their nitrogen bases ..... ( )
4.Guttation is the secretion of the water by plants as liquid water ..... ( )
5.Primary meristem that gives xylem and phloem is known as procambial strand ..... ( )
6.Collenchyma is the elastic supporting tissue, in rapidly growing parts of dicot stems .... ( )
7.The turgidity of the guard cells increases to open stomata in low acidity ..... ( )
8.Irregular phloem is consists of sieve tubes and companion cells ..... ( )
9.When the seed is exendospermic, the food is stored in the cotyledons ..... ( )
10.In general, the epidermal cells of seed coat are composed of sclereides ..... ( )
11.Anemophily is the pollination by wind ..... ( )
12.If the sepals fall off early or prematurely, it is called as free sepals ..... ( )
13.When the flower is hypogenous, the ovary is called· inferior ..... ( )
14.The ground tissue of the style is composed of fibres..... ( )
15.The ventrai carpellary trace of the gynoecium wall diverges into the stigma ..... ( )
16.In Brassicaceae seeds, inner layer of testa is known as hourglass layer ..... ( )
17.Catkin is a spike like inflorescence bear unisexual flowers on pendulous axis ..... ( )
18.Colored bract called spathe is associated with cyathium ..... ( )
19.Sorosis develops from spike or spadix inflorescence ..... ( )
20.Carcerulus type of fruits is usually found in the family Apiaceae ..... ( )
21.Pneumatophores roots are the adventitious roots that help in respiration ..... ( )
22.The casparian strips take (u) shape in monocot roots ..... ( )
23.Ligules are two small scale-like appendages that standing at the leaf base ..... ( )
24.Theopharastus is a botanist proposed an artificial system for plant systematic ..... ( )
25.In Cyperaceae, flower is surrounded by 2 bracts called lemma and palea ..... ( )
26.The plants of pulses are belonging to family Fabaceae ..... ( )
27.In monocot le&'ies, the vascular bundles are open collateral bundles ..... ( )
28.In roots, protoxylem is directed inarch ..... ( )
29.Contractil root of Pancratium help in pull bulbs deeper in soil ..... ( )
30.The dark colour of seeds is almost due to the presence of hourglass cells ..... ( )

Question no. 2 هذا السؤال اجبارى **(15 marks)**

Choose the correct answer (put your answer <u>in the table</u>):- (0.5 mark each)

(1) If new particles of cell wall are added among materials of earlier formed wall, it is called
a. intussusception b. apposition c. deposition d. particlation

(2) Nicotine, morphine, strychnine and atropine are:-
a. alkaloids b. tannins c. anthocyanins d. glycosides

(3) Originate from permanent tissues returned meristematic:-
a. 2ry meristems b. cork cambium c. intetiasicular cambium d. all the preceding

(4) Annular and Spiral shape Iignifications are characteristic of:-
a. 2ry xylem b. metaxylem c. pretoxylem d. 1ry phloem

(5) A condition when filaments & anthers are fused is known as:-
a: syngenesious b. synandrous c.syncarpels d. adelphous

(6) Which of the following contains the others:-
a. ovary b. stigma c. carpel d. gynoecium

(7) Number of vascular bundles that intersperse mesophyll tissue of flower perianth:-
a. one b. Two c. three d. numerous

(8) The endothecial cells of anther wall typically develop into:-
a. fibrous wall b. epidermal cells c. tapetum layer d. testa

(9) The hypodermis of the gynoecium is composed of:-
a. parenchyma b. sclereides c. collenchyma d. fibres

(10) When dichasial cyme ends into monochasial cyme, it is called as:-
a. biparous b. cincinus c. verticillaster d. uniparous

(11) Which of the following contains the others:-
a. tegmen b. micropyle c. hilum d.testa

(12) In corn, there is only one cotyledon known as:-
a. operculum b. chalaza c. scutellum d. caruncle

(13) The diploid internal food storage tissue that originates from nucellus is called:-
a. endosperm b. perisperm c. nucisperm d. diplosperm

(14) The micropyle of seed helps in the entry of:-
a. pollen tube b. male gametes c. water d.none

(15) In unitegmic seeds the entire seed coat is called:-
a. tegmen b. operculum c. chalaza d. Testa

(16) The epidermal and sub-epidermal layer of testa in Brassicaceae is mainly:-
a. parenchyma b. sclereides c. fibers d. collenchyma

(17) In *Gossypium* testa, innermost layer composed of radially elongated cells called:-
a. endodermis b. fringe layer c. hourglass layer d. pigmented layer

(18) The seedless fruits are called:-
a. endocarpic b. schizocarpic c. parthenocarpic d. noncarpic

(19) In some epiphytes such as orchids, the aerial roots help in:-
a. aeration b. protection c. photosynthesis d. climbing

(20) The root region that responsible for pushing the root tip deeper in the soil is:-
a. root cap b. elongation zone c. secondary root d. root hairs

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(21) The cells that present between xylem and phloem in dicot stems are called:-

a. endodermis b. cambium c. hypodermis d. pericycle

(22) Some stems form summer wood alternate with spring wood, the two are called:-

a. different woods b. annual rings c. tyloses d. Periderm

(23) If the leaf veins form an easily recognizable network, this is called:-

a. pinnate b. palmate c. reticulate d. all the preceding

(24) In insectivorous plants, the part that modified into organs for trapping insects is:-

a. stem b. root c. leaf d. all the preceding

(25) The leaf differentiation takes place from:-

a. leaf tip b. leaf margin c. leaf base d. all the preceding

(26) In dicot leaves, the phloem is oriented into the:-

a. lower epidermis b.upper epidermis c. ventral epidermis d. periderm

(27) hi c4 plants. bundle sheath of dicot leaves is composed of:-

a. parenchyma b.collenchyma c. sclerides d. fibres

(28) The correct scientific name of Mango (المانجو) plant:-

a. *Mangifera sp.* b. *Mangifera indica* c. *Mangifera indica* L. d. all the preceding

(29) Which plant is a vegetable and belonging to family Brassicaceae:-

a. *Allium satium* b. *Oryza sativa* c. *Lactuca sativa* d. *Raphanus sativus*

(30) family that characterized by milky sap, numerous stamens and deciduous calyx is:-

a. Lamiaceae b. Caesalpiniaceae c. Papaveraceae d. Brassicaceae

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Question no. 3 **هذا السؤال اختيارى** **(20 marks)**

a. Draw and write short notes on plasma membrane. **(6 marks)**

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b. Write short notes on the internal structure of vascular cylinder of roots (5 marks)

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c. Write briefly on four of the leaf modifications (5 marks)

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d. Compare the following families:- (4 marks)

- Liliaceae and lridaceae in (stamens & ovaries).
- Solanaceae and Papaveraceae in (sepals & petals).

	Liliaceae	lridaceae
Stamens		
Ovaries		

	Solanaceae	Papaveraceae
sepals		
petals		

Question no. 4 **هذا السؤال اختيارى** **(20 marks)**

a. Compare between fibres and sclereides (4 marks)

Fibres	sclereides

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b. Draw and write short notes on the micro-morphology of pulses seed coat (6 marks)

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c. Define:- diplostemony – cyathium – funiculus – raphe – Coleorhiza (5 marks)

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d. Give 1 botanical name and its family of oil seed, vegetable, pulse, cereal &

medicinal plant. (5 marks)

	botanical name	family
oil seed		
Vegetable		
Pulse		
Cereal		
medicinal plant		

Question no. 5 **هذا السؤال اختيارى** **(20 marks)**

a. Draw and write short notes on primary root system. (5 marks)

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b. Write short notes on tannins and alkaloids in plant cells (5 marks)

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c. Describe the floral characteristics of Papaveraceae with floral diagram. Enumarate 2 plants belonging to this family. (6 marks)

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d. Compare between monocot and dicot leaves (4 marks)

	Monocot leaves	dicot leaves

Question no. 6 **هذا السؤال اختيارى** **(20 marks)**

a.Write briefly on the primary meristematic tissues (5 marks)

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b. Draw an illustration showing eight only of the lamina shapes (4 marks)

c. Draw and write short notes on the internal structure of flower ovary (6 marks)

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d. Compare between the following:- (5 marks)

- Mimosaceae and Fabaceae in (corolla & stamens)
- Legume and siliqua, give an example to each:

	Mimosaceae	Fabaceae
Corolla		
Stamens		

	Legume	siliqua
Example		

Best wishes ..... Prof. Momen Zareh

Part B (Plant Physiology)

Answer only six of the following questions(5 points each)

Question no. 1 **(5 marks)**

Mark the correct answer only:

1.Water in photosynthesis is the source of:

a. electrons b. oxygen c. both

2. Oxygen evolved during photosynthesis comes from:

a. H20 b. CO_2 C. $C_6H_{12}0_6$

3.Active sites in proteins are formed at its:

a. primary.structure b. secondary structure c. tertiary structure

4.The principle function of the light-dependent reactions of photosynthesis is to:

a. use ATP to make glucose. b. convert light energy to glucose.

c. produce energy-rich ATP and NADPH.

5.The proton motive force drives the photosynthetic formation of ATP

a. in chloroplasts b. in mitochondria c. in both

Question no. II **(5 marks)**

Write down the correct answer in the appropriate box in the table below:

a. NADH b. active center c. chlorophyll molecules d. protons

1		Is a coenzyme
2		Occur in the thylakoid membranes
3		Contain conjugated bonds
4		Is the site at which the substrate is adsorbed to the eczyme polypeptide chain
5		Accumulate in the lumen

Question no. III **(5 marks)**

Select your correct choice and put a tick (√) below:

1. Glycolysis takes place in:

a. mitochondria b. cytosol c. stroma

2. The prosthetic group includes:

a. cofactors b. coenzymes c. both

3. The enzyme catalyzed reactions are characterized by:

a. lowered energy of activation b. unspecificty c. none of a &b

4. In how many classes enzymes are divided by the Enzyme Commission (E

a. 4 b. 5 c. 2 d.6

5. Which is not correct about CO_2:

a. it is fixed in photosynthesis and evolved in respiration

b. it is used in sugar synthesis and results from sugar degradation

c. None of the above

Question no. IV **(5 marks)**

Label your correct answer:

1. Oxygen is used up for respiration in:

   a. glycolysis b. Krebs cycle c. respiratory chain

2. The substrate of RubisCO is:

   a. ribulose 1,5 bisphosphate b. oxaloacetic acid c. CO_2

3. Which of the following statements describes the rate of the enzymecatalyzed reactions, mark the correct one:

   a. It depends on the rate of collisions between substrate and enzyme molecules.
   b. It does not depend on the rate of collisions that is in turn dependent on substrate concentration.
   c. It does not depend on the rate of collisions that is in turn dependent on temperature lower than the maximum.

4. Oxygen is consumed in plant cells by the following enzymes:

   a. oxidoreductases b. ligases c. hydrolases

5. The carbon reduction cycle (Calvin cycle) can be divided into:

   a. two stages b. three stages c. four stages

<u>Using figures or reactions when applicable answer to questions V, VI, VII</u>

Question no. V **(5 marks)**

Structural compatibility for the chloroplast function

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Question no. VI **(5 marks)**

Classification of enzymes

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Question no. VII **(5 marks)**

No oxygen is available, how a glucose molecule will be respired?

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Best wishes, Refat Abdel-Basset

Part C (Fungi and Algae)

Question no. 1 **(6 marks)**

Choose the correct answer (put your answer in the table): (0.5 mark each)

(1) Stroma is .....
a. Compact somatic hyphae with fruit bodies b. Loosely inter-woven hyphae
c. Small hyphal branch d. A group of spores

(2) The osmatic phase in a myxomycetous fungus is called.....
a. Plasmodium b. Mycelium c. Hyphae d. Nothing

(3) The ascoma produced in Penicillium is known as .....
a. Cleistothecium b. *Perithecium* c. Apothecium d. Stroma

(4) Holocarpic fungus is .....
a. *Saccharomyces.* b. *Albugo* c. *Aspergillus* d. *Saprolegnia*

(5) Columellate sporangia are characteristic feature of .....
a. *Rhizopus* b. *Aspergillus* c. *Peziza* d. *Albugo*

(6) Asci are produced alternating with.....
a. Paraphyses b. Elaters c. Mycelium d. Nothing

(7) Thickwalled'resting spores formed asexually in fungi are known as .....
a. Chlamydospores b. Zygospores c. Oidiospores d. Oospores

(8) Which of the following is diploid?
a. Zygospores b. Zoos pores c. Aplanospores d. Chlamydospores

(9) The laterally biflagellate zoos pores are usually .....
a. kidney shaped b. pear shaped c. Lemon shaped d. Irregular shaped

(10) Which of the following has two types of zoospores in its life cycle?
a. *Saprolegnia* b. *Albugo* c. *Rhizopus* d. Nothing

(11) The sexual reproduction in primitive sac fungi is usually through .....
a. Planogametic copulation b. Gametangial contact
c, Oogamy d. Gametangial copulation

(12) Algin or Alginate is produced from .....
a. *Fucus* b. *Laminaria* c. Diatoms d. *Chondrus*

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Question no. 2 **(8 marks)**

Give the scientific expression for each in the table:- (0.5 mark each)

(1) Fungus thallus differentiated into distinct sterile and fertile portion.
(2) A group of fungi represented by multinucleate mass of protoplasm and lacks a definite cell wall.
(3) Aplanogamic fungus causes salmon disease to fish.
(4) Tubular or hair like structure arising from the apex of ascogonium and makes contact with antheridium.
(5) Fungi live either as saprophytes on dead organic matter or as parasites on living cells according to environmental conditions.
(6) A group of fungi in which the sexual or perfect stage is unknown.
(7) Group of conidiophores are collected and united together to form asexual sporocarp
(8) Fungus which attacks crucifers and causes white blisters.
(9) Mutually beneficial association between a fungus and roots of forest trees.
(10)Coenocytic and multinucleate alga in which multiflagellated zoospores are present.
(11)Group of algae with prokaryotic organization.
(12)Algal thallus bears both kinds of gametes.

(13) The microsporanium used in preparation of ethyl alcohol from lactose.

(14) Carcinogenic metabolites produced by some Asperillus species.
(15) The fungus used commercially for processing good quality of ripened cheese.
(16) It is an characteristic features in Saprolegnia which include the development of secondary zoosporan~ia inside the old primary one.

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Question no.3 **(3 marks)**

A. Draw only neat and labeled diagram of <u>TWO ONLY</u> of the following:- (2 mark)

I. Process of ascospores formation in lower ascomycetes,
II. Sexual spores of basidiomycetes and zygomycetes
III. Ascomata produced by plectomycetes and Discomycetes

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B. Draw only neat and labeled diagram of <u>TWO ONLY</u> of the following:- (1 mark)

Intercalary chlamydospores - Tinsel flagellum - Palmella stage

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Question no. 4 **(3 marks)**

a. List two features only which indicate that the blue green algae are primitive?

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b. List the basis of which true fungi (Eumycota) are classified

.....
.....
.....
.....

c. What do you know about ONE ONLY of the following:-

i. Antherida ii. Evolutionary criteria in Volvox

.....
.....
.....
.....
.....

Question no. 5 (4 marks)

a. Write a brief account on sources and uses of TWO ONLY of the following

-Diatomaceous earth - Carrageenin

- Ergotamine - Agar

	sources	uses

b. Name the fungus which causes:-

-Candidasis – Aspergillosis – club root of Cabbage – Ergotism

Candidasis	
Aspergillosis	
club root of Cabbage	
Ergotism	

c. Define two only of the following:-

a. Somatogamy b. Peptidoglycon (murein)

c. Soredia d. Heterothallism

.....

.....

.....

.....

.....

Question no. 6 (3 marks)

Write short notes with drawing if possible of <u>ONE ONLY</u> of the following:

a. Algol reserve food materials and their significance in algal classification
b. The importance of the flagellation in classification of zoosporic fungi

.....

.....

.....

.....

.....

Question no. 7 (2 marks)

Give an illustrated account of ONE ONLY of the following:

a. Sexual reproduction in green unicellular alga studed by you.
b. Honey dew stage

.....

.....

.....

.....

.....

Best wishes, Prof. Dr. M. Alaa El-Nagdy

Assiut University Faculty of Science Botany Department		جامعة أسيوط كلية العلوم قسم النبات
General Botany Exam For Pre-pharmacy Students, Feb. 2011 (تخلفات)		
Time allowed: 3 hours الامتحان فى ست صفحات		175 points

Plant Physiology (35 points)

Answer only seven questions of the following (5 points each):

I. Transfer into your answer sheet the correct answer only:

1. The electrons in photosynthesis come from:
   a. carbon dioxide b. carbohydrate c. water
2. The oxygen released from photosynthesis comes from:
   a. water b. ribulose 1, 5 bisphosphate c. glucose
3. Proteins and starch prevent complete cytosol dehydration in a plasmolyzed cell because:
   a.they are colloidal particles imbibe water stronger than osmosis.
   b.in plasmolyzed cells there will be no water left.
   c.the outer membrane of the cell is damaged.
4. The primary function of the light-dependent reactions of photosynthesis is to:
   a. produce energy-rich ATP and NADPH
   b. use ATP to make glucose c. convert light energy to glucose
5. Which of the wavelengths of light is LEAST effective in photosynthesis?
   a. blue b. red c. green

II. Select and rewrite your correct choice in your answer sheet:

1. Enzymes are a special type of:
   a. carbohydrates b. Iipids c. proteins
2. The prosthetic group is:
   a. inorganic ions b. organic molecules c. both a and b
3. Which of the following is true of sucrose?
   a. Water insoluble b. Osmosis arises c. Has Imbibitional force

4. Into how many classes enzymes are divided by the Enzyme Commission (E.C.)?

a. 4 b. 5 d.6

5. Flaccid tomato slices placed in a hypotonic solutiOn would increase in mass because:

a. solution components would cause the cells to divide rapidly

b. water enters the cells c. they increase their production of sugar

III. Match each of the following with the appropriate pigment in your answer sheet:

a. carotenes and xanthophylls b. chlorophylls

c. all of the above pigments

1		Are hydrophobic
2		Occur in the thylakoid membranes
3		Contain chelated magnesium
4		With phytol tail
5		Chemically belong to terpenes

IV- Transfer the correct answer to your answer sheet:

1. What happens if an enzyme is added to a reaction?

a. starts up b. rate of reaction increases c. rate of reaction decreases

2. A piece of potato is placed in pure water. The potato cells are not 100% water. Relative to pure water potato cell sap is:

b. Isotonic b. hypotonic c. hypertonic

3. Rearrange the following steps from first to last in an enzyme catalyzed reaction:

adsorption - enzyme-substrate complex - collision - catalysis - enzyme+ products

4- Oxygen is consumed in plant cells by the following enzymes except:

a. oxidases b. peroxidases c. dehydrogenases

5- Toxic ammonium is rapidly converted into amino acids as:

a. glutamate b. aspartate c. both of them

Follow the chemical reactions of (5 Points each):

V. the three stages of the carbon reduction cycle
VI. nitrate reduction and nitrogen fixation into ammonium
VII. light reactions
VIII. anaerobic respiration

Best wishes, Refat Abdel-Basset

==========

Fungi and Algae (35 Marks)

Firstly: Give an illustrated account of THREE ONLY of the following: (5 Marks each)

1- Asexual reproduction of *Clavecips* with special reference to its medical importance.
2- Various types of sexual reproduction and the range of thallus in algae with suitable examples.
3- Gametangial copulation in lower Ascomycetes.
4- Asexual reproduction in green unicellular alga

Secondly: Discuss and describe by drawing TWO ONLY of the following: (5 Marks each)

1- Various types of sexual ascocarps (ascomata) in Euascomycetes with suitable examples.
2- Planogametic copulation as a mode of plasmogamy in fungi
3- The importance of f1agella in classification of zoosporic fungi.
4- Role of reserve food materials and pigments in classification of algae.

Thirdly: (10 Marks)

1. Write on each of the following:
   - Name and uses of three products obtained from algae (3 Marks)
   - Formation of Akinetes in algae and chlamydospores in fungi (2 Marks)
   - Symbiosis in fungi with suitable two examples (one Mark)
   - The basis of which fungi are classified (one Mark)

2. List in a table how can be differentiated with the help of drawing between each of the following (two differences at least, 3 Marks):
   - Ascomycetes and Deuteromycetes
   - *Volvox* and *Pandorina* Coenobia
   - Cyanophyta (cyanobacteria) and chrysophyta

Best wishes, Prof. Dr. M.A. EI-Nagdy

Taxonomy of Flowering Plants (35 Marks)

Answer the following question:

"Arrange your answers in a table"

1- A) Fill in the missing spaces with the appropriate term or word: - (17.5 Marks)

1- An aggregate fruit develops from .....
2- There are two classes of flowering plants that are called.....and.....
3- The mature fertilized ovule is known as .....
4- When the ovule is inverted and straight, with the micropyle and chalaza at the same axis, then it is called .....
5- Capitulum is surrounded by one or more whorls of bracts forming what is called.....
6- Linnaeus' system of plant classification was based mainly on .....
7 - The flower is the most characteristic structure of .....
8- ..... that contains both male and female reproductive organs.
9- ..... seemingly in the middle of a stem, where the main stem axis continue to grow vegetatively after producing an inflorescence.
10- .....is the tissue where the integuments and nucellus are joined.

1- B) Choose the correct answer: - (17.5 Marks)

11. The fusion of polar nuclei with one male gamete gives rise to
a) diploid cell b) zygote c) male gametophyte d) triploid cell

12. Taxonomists classify plants on the basis of
a) morphological similarities b) evolutionary history
c) reproductive patterns d) all of the preceding

13.Which of the following is considered as a primitive floral feature?
a) fused floral structures b) fewer floral structures c) inferior ovary d) superior ovary

14. A maize grain is
a) a true fruit b) a false fruit c) an undeveloped ovary d) a seed

15. Which part of a plant contains the male nuclei?
a) pollen b) style c) fruit d) stainen

16.Which of the following is false about plants in Fabaceae?
a) all members have a legume fruit b) all members have a superior ovary
c) all members have one locule d) all members have two styles

17. Which of the following is developed from hypanthodium inflorescence?
a) syconus b) sorosis c) berry d) drupe

18. The disadvantage of using common names for species is that:
a) the names may change b) one name does not apply universally
c) one species may have several common names d) all of the preceding

19. Assume that ovary has 2 carpels with an axile placentation, then it contains
a) many locules b) one locule c) three locules d) two locules

20. Which of the following is false about plants in Lamiaceae?
a) bilabiate corolla b) quadrangular stem d) gynobasic style d) ten stamens

GOOD LUCK

MORPHOLOGY AND ANATOMY OF PLANTS

1- Write the correct answer (15 x2 = 30 marks)

1- Leaves of Nepenthes are modified into .....
2- Vegetative reproduction in onion plants occurs by special organs called .....
3- Climbing organs in grapevine are called .....
4- Spiny stems and leaves function in .....
5- Seed coat is provided with a minute pore called .....
6- cotyledons are raised above soil level due to elongation of .....
7- Grains of rice plants can easily germinate under low .....
8- Secondary walls of sclerenchyma cells are mainly composed of .....
9- Middle lamellae between cells are formed of .....
10 - Pores between tracheid elements are called .....
11- Cytoplasmic connections between living cells of plants are called .....
12- Roughness of the endoplasmic reticulum is due to the presence of .....
13- Photosynthetic organelles in plant cells are called .....
14- Energy transformations inside plant cells occur in .....
15- In the plant cell, secretion and collection of proteins can be done by .....

11- Choose the correct answer (40 x 1 = 40 marks)

16- In plant cells starch grains are usually stored in:
a- Lipids b- Aleurone grains c- Amyloplasts

17- Intracellular digesting enzymes are usually found in:
a- Ribosomes b- Chondriosomes c- Lysosomes

18-Waxes on the surface of plant stems and leaves are:
a- Cellulosic b - Hydrophilic c- Hydrophobic

19- Small subunits (SSu) ofribosomes have special binding sites for:
a- tRNA b- Peptide bonds c - mRNA

20- One of the following is the initiation codon at mRNA:
a- UAA b- CCG c- AUG

21- Nucleoli are small organelles composed of:
a- Proteins and RNA b- Pigments c- Fats

22- Nuclear membrane disappears during:
a- Cell division b- Respiration c- Photosynthesis

23- Metaphase is recognized by the arrangement of chromosomes at:
a- Cell equator b- Nuclear membrane c- Cell sap

24- Excess release oflysosomal contents inside a plant cell can lead to:
a- Cell death b- Cell elongation c- Cell division

25- During transcription of DNA, Thvmine is replaced by:
a- Uracil b- Cytosine c- Guanine

26- In the double helix of DNA, complementary bases are linked by:
a- Hydrogen bonds b- Phosphate bonds c- Peptide bonds

27- During DNA replication Okazaki fragments are formed in:
a- Lagging strands b- Leading strands c- mRNA

28- Breaks in sugar- phosphate backbone of DNA are sealed by:
a- Ligase b- Lipase c- Peptidase

29- Denaturing ofthe DNA double helix is made hy:

Best wishes Professor Ahmad M Moharram

a- DNA helicase b- DNA template c- Single strand binding proteins

30- *Building up a new strand of DNA is made by:*
a- DNA polymerase b-Helicase c- Peroxidase

31- *At the end of mitotic division, formation of new nuclei is followed by:*
a- Prophase b- metaphase c- Cytokinesis

32- *Longitudinal splitting ofcentromeres and separation of sister chromatids indicate:*
a. Cell death b- Metaphase c- Anaphase

33- *Branched pits in heavily lignified cells are seen in:*
a. sieve cells b- Cambinm cells c- Stone cells

34- *In many oily seeds, proteins are stored as:*
a. Glucosides b- Rapbides c- Aleurone grains

35- *Calcium oxalate is stored in some plant cells in the form of:*
a. Torus b- Globoid structures c- Druses

36- *Epidermal cells of Fie us leaves often contain calcium carbonate in the form 0(;*
a. Sclereids b- Fibers c- Cystolith

37- *Lignified fusiform elongated cells in old stems and roots are called:*
a. Chlorencbyma b- stone cells c- Fibers

38- *In old dicot stems, the primary xvlem is:*
a. Mesarch b- Exarcb c- Endarch

39- *Irregular phloem is characterized by the presence of:*
a. Tracheids b- branched bairs c- Parenchyma cells

40- *Radial vascular bundles are seen in:*
a. Dicot leaves b- Monocot stems c- Dicot roots

41- *Closed collateral vascular bundles with regular phloem are often found in:*
a. Monocot stems b- Old dicot roots c- Dicot leaves

42- *Several dicot ~'fems have pericyclic cells outside phloem in the form of:*
a. Fibers b- Collencbyma c- Sieve cells

43- *A major enzyme in DNA replication process:*
a. Polymerase b- Peptidase c- Lipase

44- *In many old plants, xvlem vessels are blocked with:*
a. Tyloses b- Starch grains c- Mitochondria

45- *Lenticles are small areas in periderm composed of:*
a. Loosely arranged cells b- Companion cells c- Protoxylem

46- *Heart wood is formed from sap wobd as a result of:.*
a. Loss of protoplast b- Decrease in fibers c- Increase in collenchyma

47- *The main component of Papaver latex is:*
a. Morphine b- Rubber c- Oils and fats

48- *Openings at leaf margins of so me plants that secrete liquid water are called:*
a. Hydathodes b- Stomata c- Lysigenous glands

49- *Hardness and impermeability of seed coat to water and oxygen lead to ..*
a. Seed dormancy b- Root enlargement c- Better germination

50- *Root apex is protected by:* _____ .
a. Root cap b- Periderm c- Fibers

51- *Water absorbing structures developing from plant stems or leaves are called:*
a. Adventitious roots b- Taproots c- Spiny stipules

52- *Aquatic insectivorous plant with bladder like leaves:*
a. Urtreularia b- *Dionaea* c- *Drosera*

53- *For water storage, stems of some desert plants are nwdified into:*
a. Succulent organs b- Spiny stipules c- Tuberous roots

54- *The shape ofa plant cell is maintained bl£:*
a. Cell wall b- Plasma membrane c- Nuclear membrane

55- *In bordered pit pair. a pit membrane has a special lens- shaped thick structure called ..*
a. Torus b- Border c- Pit cavity

جامعة أسيوط الاختبار النهائى: مبادىء الرياضيات والإحصاء دور يناير 2011م

كلية العلوم قسم الرياضيات الفرقة: اعدادى صيدلة الزمن: ساعتان

Questions	Marks

(12.5)

أجب عن أربعة فقط من الأسئلة الآتية:

1) فى تفاعل كيميائى معين كانت درجة الحرارة المطلقة T لغز تعطى بالعلاقة T=CPV حيث P ضغط الغاز ، V حجمه، C ثابت ما يعتمد على كتلة الغاز. فإذا كان من الممكن التعبير عن P,V كدالتين فى الزمن t على الصورة

$$p = \log_e \sqrt{t}\ , \quad V = e^{5t2} + \sqrt{\sin t}$$

فأوجد معدل التغير فىT بالنسبة للزمن t

ب- أوجد التكاملات الآتية: $(ii)\int \frac{\sin x}{1+\cos x}\,dx$ $(i)\int \tan x dx$

(12.5)

2) أ- أوجد التفاضل النونى للدالة $f(x) = \frac{1}{(3x-2)}$

ب- أوجد $\left(\frac{dy}{dx}\right)$ من العلاقة $\sin^{-1}\frac{y}{x} + \tan^{-1}\frac{x}{y^2} + 5x = 0$

ج- أوجد التكاملات الآتية:

$$(i)\int \frac{4x-1}{\sqrt{6x^2-3x+4}}\,dx \qquad (ii)\int \sec^2 x \sqrt[3]{\tan^2 x}\,dx \qquad (iii)\int \frac{\sin\left(lon\sqrt{x}\right)}{x}\,dx$$

(12.5)

يمكن للطالب الاستعانة بالقيم الجدولية التالية:

T(0.99, 11)=2.72 , t(0.995,11)=3.12, P(0<Z<2.74)=0.4969

3) أ- أوجد القيم العظمى والصغرى المحلية ونقط الإنقلاب للمنحنى

$$Y = 3x^4 - 4x^3 - 12x^2 + 24x - 1$$

ب- اذا كان مستوى السكر فى الدم لإحدى الكائنات الحية عندما تعطى جرعة من الادرينالين يتبع التوزيع الطبيعى بالوسط 110 مليجرام لكل مليمتر والانحراف المعيارى 20 مليجرام. اخذت عينة من 30 عنصر من هذه الكائنات وأعطيت جرعة من الادرينالين. ما هواحتمال ان متوسط مستوى السكر لهذه العينة يزيد عن 120 مليجرام.

(12.5)

4) أ- حلل الكسر الآتى الى كسوره الجزيئية $\frac{x-7}{x^3-2x^2+x-2}$

ب- فى احدى التجارب لمعرفة تأثير نوعين من البنسلين على معدل النمو اخذت عينتان من البكتريا وأعطيت لنوعيم من الفئران فكانت النتائج التالية

A	21	28	25	27	30	22	
B	25	24	32	29	18	27	30

اختبر ما اذا كان هناك اختلاف فى معدلى النمو نتيجة تعاطى البنسلين عند مستوى معنوية 1%.

(12.5)

5) أ- عرف ما يلى

الفرضية الإحصائية – المجتمع الإحصائى – الإحصاء – العينة العشوائية

انظر خلف الورقة

ب- فى دراسة بحثية لطبيب اعتقد أن الوزن للرضيع عند اضافة مادة جديدة للغذاء يزيد عن 412 جرام وللتأكد من هذا الاعتقاد اعطى الطبيب الغذاء الجديد لمجموعة مكونة من 12 رضيعا وقاس الوزن المكتسب خلال شهر فوجده كما يلى:

الوزن المكتسب للرضيع	446	224	321	220	416	205	318	252	242	342	401	502

اختبر صحة هذا الاعتقاد عند مستوى معنوية 1% ثم اوجد فترة الثقة لمتوسط الوزن عند الاطفال عند نفس المستوى.

انتهت الأسئلة مع تمنياتنا بالتوفيق ،،،، لجنة الممتحنين : أ.د./ خلف الضبع أحمد ، د/ هانم محمد مصطفى

جامعة أسيوط	الاختبار النهائى: مبادىء الرياضيات والإحصاء	دور يناير 2011م
كلية العلوم قسم الرياضيات	الفرقة: اعدادى صيدلة	الزمن: ساعتان

Questions	Marks

(12.5)

أجب عن أربعة فقط من الأسئلة الآتية:

يمكن للطالب الاستعانة بالقيم الجدولية الآتية

$t(0.95 , 14)= 1.76$ K $t(0.99, 11) = 2.72$ K $t(0.975, 14) = 2.15$

1- أ) أوجد $\left(\frac{dy}{dx}\right)$ من العلاقة $\left(\tan y^2\right)^x = (\sec x)^y$

ب) أوجد التكاملات الآتية $(i)\int \frac{x+2}{\sqrt{x^2+4x+10}}dx$ $(ii)\int x\sin^{-1}x\,dx$

(12.5)

2- أ) أوجد القيم العظمى والصغرى المحلية للدالة $f(x) = x^3 + 2x^2 - 4x - 3$

ب) اذا كانت A, B مصفوفتان بالصورة $A = \begin{bmatrix} 1 & 2 & 3 \\ 1 & 4 & 0 \end{bmatrix}$ ، $B = \begin{bmatrix} 1 & 0 & 2 \\ 2 & 2 & 3 \\ 3 & 5 & 1 \end{bmatrix}$

فأوجد AB ثم أوجد معكوس المصفوفة B .

(12.5)

3- أ) أوجد $\left(\frac{dy}{dx}\right)$ للعلاقات الآتية

$(i)y = \left(\sqrt{1-x^2} + \sin^{-1}x\right)^3$ $(ii)y = e^{\tan\sqrt{x}}.\log_e \cos x$

ب) اوجد التكاملات الآتية

$(i)\int \frac{x^2+1}{(x+2)(x^2-1)}dx$ $(ii)\int \frac{\tan x}{(1+\ln\cos x)}dx$

(12.5)

4- تعتقد احدى الشركات المنتجة لنوع من اللقاحات ضد الزكام أن فعالية هذا اللقاح تصل الى أكثر من 70% ولتأكد من ذلك أعطى اللقاح لعدد 15 شخص وتمت مراقبتهم بالنسبة لإصابتهم بالزكام لمدة معينة فوجد أن متوسط المقاومة لهذه العينة هو 75% والانحراف المعيارى لها 5ز5 اختبر صحة هذا الاعتقاد حول فعالية اللقاح عند مستوى معنوية 5% ثم أوجد فترة الثقة لمتوسط قوة الفعالية عند نفس المستوى.

(12.5)

5-أجرى باحث تجربة على نوعين من الدواء احداهما قديم A والآخر حديث B لعلاج الأرق على مجموعتين من الأشخاص وكان عدد ساعات النوم لمفردات المجموعتين كالتالى

A	7	9	6	9.5	8	6	
B	10	8	7	9	7	8	10

والمطلوب معرفة ما اذا كان الدواء الحديث يعطى زيادة معنوية فى متوسط عدد ساعات النوم عن الدواء القديم. اختبر ذلك عند مستوى معنوية 1%.

انتهت الأسئلة مع تمنياتنا بالتوفيق ،،،،

لجنة الممتحنين : أ.د./ خلف الضبع أحمد ، د/ هانم محمد مصطفى

Primary Year 2pages English & Terminology Exam
Faculty of Pharmacy Time: 2 hours
Assiut University Jan. 2011

I. Write a paragraph on ONE of the following: (10 marks)

1. Wasting Time 2. The Use of Computers in life
3. The importance of English as a Universal Language

II. Read the following passage and then answer the questions below: (10 marks)

Vitamin research may be the fastest growing area of research in medicine. Despite the fact that the public apparently trusts vitamins to do exactly what their manufacturers say they will do and rushes to buy vitamins, there are a great many misunderstandings and myths about what vitamins are and how consumers should use them. And research is consistently proving 1hese myths wrong.

First of all, many vitamins simply will not do what is often claimed. Vitamin C has never been proven to aid in the prevention of colds. B vitamins do not get rid of "the rundown feeling"; any effect a person feels when taking a 8-1:2 capsule, for example, is purely a psychological effect. B-12 deficiencies are rare, and even in cases where B-12 treatment is necessary, the vitamin must be injected because it is ineffective when taken orally. Vitamin E is often said to prevent heart disease, improve virility, and slow the aging process, but there has been no experimental proof of any of these claims. The fact that male rats become sterile when deprived of vitamin E does not mean that the same thing happens to humans who are deprived of E. In fact, it is nearly impossible to study vitamin E deprivation in human beings because vitamin E is present in almost all sourcesofhuman fuod.

The same is true of almost every other vitamin. They are abundantly present in a balanced diet. The most common vitamins are A, B-1, B-2, C, and D; and if a person eats a balanced diet that provides these vitamins, all the other vitamins will be present in enough quantity. Though many people claim that vitamins are rare and that you should eat special· fuods or take vitamin pills daily to make sure you are getting the correct quantity, this is simply not true. In fact, you can overdo vitamin supplements. Some vitamins are toxic if you take in too much of them. Vitamin C overdose can cause diarrhea and kidney stones. Large amounts of A can cause pressure to build up in the brain or cause dryness in the skin, headaches, general pains. Vitamin D overdoses can cause mental and physical retardation, nausea, and high blood pressure. In fact, vitamin overdose is often more severe than vitamin deficiency and is becoming more common. Another myth about vitamins is that "natural ones are superior to those produced in the lab. People will often pay high prices for vitamins made up of natural ingredients--such as C from rose hips--when synthetic, lab-produced vitamins are available at much cheaper prices. In fact, a vitamin always has exactly the same molecular structures whether its source is a plant, animal or test tube; any change in its structure would make it a different substance altogether. There is not any difference between a synthetic and a "natural" vitamin, so the body cannot possibly make a distinction between the two.

Circle the correct answer:

1. A good title for this passage might be
a The Dangers of vitamin overdose b. Vitamins
c. Myths about vitamin supplements d. Natural and synthetic vitamins

2. The main idea of this passage is that
a. vitamins aren't "miracle" drugs and can be harmful. b. vitamin supplements are dangerous.
c. natural vitamins are no better than synthetic ones. d. vitamin overdose can cause serious problems.

3. The passage states that
a most vitamins are not effective when taken orally. b. vitamin E can be toxic.
c.synthetic vitamins are better than natural ones.
d.all the vitamins we need are present in a balanced diet

4. Slowing the :aging process" has been associated with

a. vitamin C b. vitamin E c. vitamin B-12 d.vitamin D

5. Which of the following conc1usions does the passage support?

a.Vitamin supplements need to be controlled by law

b.If you take vitamin supplements, you should take natural ones.

c."Junk" food is do not provide enough vitamins.

d.People should try to eat balanced diets instead of taking vitamin supplements.

6. The author probably

a is a vegetarian. b. doesn't take vitamin supplements. c. uses only natural vitamins.

d. avoids taking vitamins A and D.

7. As used in this passage, the word virility means

a. emotions b. life c. good health d. potency

8. As used in this passage, the word sterile means

a. stronger b. impotent c. female d. clean

9. As used in this passage, the word toxic means

a. poisonous b. deadly c. harmful d. useless

10. As used in this passage, the word synthetic means

a. artificial b. natural c. expensive d. useless

III. Translate the following into Arabic: (10 marks)

When you were a youngster and couldn't sleep, your mother probably told you to drink a glass of warm milk; if she did, the folk remedy she prescribed had a scientific basis. The amino acids contained in milk have a sedat1ve effect; various amino acids found in high protein foods promote heavy, relaxing sleep. So, if your mother really-wanted to make sure you got plenty of sleep, the warm glass of milk should have been preceded or accompanied by a high protein dinner of meat and cheese.

IV. Grammar: (10 marks)

A. Correct the verbs in brackets

1.He (not buy) the book if he does not want it.

2.He (come) if you had asked him.

3.If I (have to) go to London, I will learn English.

B. Choose a, b, c or d to complete the following:

1. Strauss finished .....two of his published compositions before his tenth birthday.

a. written b. write c. to write d. writing

2. Before the Angles and the Saxons ..... To England, the Iberians had lived there.

a. coming b. come c. came d. have come

V. Explain <u>BRIEFLY</u> the following terms: (10 marks)

1. Angina 2. Toxicity 3. Elimination 4. Central nervous system

---

Good Luck

Dr Mamdouh Ali

Primary Year 2pages English & Terminology Exam
Faculty of Pharmacy Time: 2 hours
Assiut University Jan. 2011(تخلفات)

I. Write a paragraph on ONE of the following: (13 marks)

1. Sports 2. University Life

11. Read the following passage and then answer the questions below: (15 marks)

Blood pressure is created by the heart as it pumps the blood through the circularity system. The pressure is not constant but varies with the action of the heart. The higher pressure, called the systolic, occurs when the heart contracts; and the lower pressure, called the diastolic, is the pressure remaining in the veins, when the heart relaxes. Both pressures are measured, which is why blood pressures are given in two figures; a pressure of 120/80 is normal for adults up to the mid-forties. A systolic pressure over 165 or a diastolic pressure over 95 is considered "high blood pressure. Because the blood pressure can vary as a result of excitement, stress, or sleep, most doctors will measure blood pressure several times before deciding that a patient is suffering from high blood pressure. Unless the pressure remains at high levels, there is no cause for alarm. Everyone's blood pressure "goes up" sometimes.

Choose the correct answer:

1. The main purpose of this paragraph is to
a. define blood pressure b. indicate that everyone's blood pressure varies
c. define high blood pressure d. indicate the dangers of high blood pressure

2. Diastolic pressure measures
a. the heart rate b. pressure as the heart contracts
c. the pressure left in the veins when the heart relaxes d. constant vein pressure

3. We can conclude from the paragraph that
a. "normal" blood pressure drops as we grow older b. blood pressure is affected by heart rate
c. "normal" blood pressure rises as we grow older d. high diastolic pressure indicates arterial disease

4. The paragraph suggests that
a.a high diastolic reading is more dangerous than a high systolic reading
b.stress and excitement are the causes of high blood pressure
c.it is not particularly important to check blood pressure until the mid-forties
d.the most accurate reading of blood pressure would probably be an average of several readings

5. As used in this paragraph. The word stress means
a. strength b. tension c. emphasis d. physical condition m.

Translation: (9 marks)

Translate the following into Arabic:

Years ago, polio was a common disease among young children and often left its victims with paralysis. In 1954, the first vaccine was developed, and, in the years since, widespread use of the vaccine has almost eliminated the disease.

IV. Grammar: (10 marks)

Choose the correct answer:

1 .One of the least effective ways of storing information is learning ..... it.
a. how repeat b. repeated c. to repeat d. repeat
2. The theory of Continental Drift assures that there ..... long-term climatic changes in many areas during the past.
a. must have been b. must be c. must have d. must

3. Harvard ..... a school for men, but now it is coeducational, serving as many women as men.
a. was used b. used to be c. was used to d. was used to be
4. Please ..... Xerox copies of copyrighted material without the permission of the publisher.
a. no make b. don't make c. not make d. not to make
5. After her famous husband's death, Eleanor Roosevelt continued .... for peace.
a. work b. the working c. to working d. working
V. Explain the following expressions: (3 marks)
1. bag of bones 2. ahead of time 3. a piece of cake

Good Luck
Dr Mamdouh AIi

Assiut University
Faculty of Science Jan.:2011
Chemistry Department Time: 3 hours

Final Examination of Physical and Inorganic Chemistry for Pre-Pharmacy Students

Section (I)

Answer <u>only four</u> of the following: (60 Marks)

(1) A) Use the concept of electron-pair repulsion (VSEPR) to predict the geometrical shape of SF 6 and determine the hybrid orbital employed by the central atom in this compound.
B) Draw the Lewis structure of CO_3^{2-} and calculate the formal charge on each atom.

(2) A) The bond distance in HF is 91. 7pm, and the dipole moment of it is 1.91D. Calculate the partial ionic., character of the HF bond.
(The unit charge, e, is 1.60 X 10-^{19} coul. and I D is 3.34 X 10^{-30} coul.m.)
B) Write the nomenclature of $[Co(en)_2Cl_2)Cl$ and suggest the possible isomers of it.

(3) Draw the molecular-orbital energy level diagrams for O_2^+ and O_2^- and determine the bond order of each.

(4) Write the complete nuclear reactions for the decay of the following radionuclides:
A) The α decay of $^{210}po_{84}$ B) The β decay of $^{82}Br_{35}$
C) The positron decay of $^{38}K_{19}$ D) The electron-capture decay of $^{197}Hg_{so}$

(5) A) Give the reason(s) for the following:
(i) High boiling point of water.
(ii) Astable molecule He_2 does not exist.
(iii)Electron-capture is accompanied by X-rays.
B) It was found that 90% of a sample of ^{18}F was decay in time equals 336 min. Calculate the half life of ^{18}F.
(Atomic numbers: He = 2, C = 6, O = 8, F = 9, and S = 16)

Section (II)

Answer <u>only four</u> of.the following: **(60 Marks)**

(1) A) A certain first order reaction is 20% completed at 15 min. Calculate the time required to 80% completed of this reaction at the same temperature.
B) Derive an expression for the efficiency of Carnot's engine working between two different temperatures.
(2) A) Calculate the entropy change and free energy change when 7 g of nitrogen at 27^0 C at an internal pressure of 30 atm is allowed to expand isothermally to pressure of 2 atm.
B) Compare between reversible cell and irreversible cell (Demonstrate with examples).
(3) A) Deduce a rate law for the second order reaction when two reactants have the same initial concentrations.
B) Write the thermodynamic expressions which describe the following statements:
(i) Third law of thermodynamic.
(ii) Relation between pressure and volume for an adiabatic process.
(iii) Entropy change of a reversible process.

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(4) A) From thermodynamic considerations, prove that heat capacity at constant pressure for an ideal gas is more than its corresponding at constant volume by value of universal gas constant.

B) Discuss the use of half- time method for determination of the reaction order.

(5) A) Write short accounts on the following:

(i) Oxidation-Reduction electrode. (ii) Standard cell.

B) A certain gas is allowed to expand at constant temperature from a volume of 3.0 L to 30.0 L against an external pressure of 2.0 atm. If the gas absorbs 300 J of heat from its surroundings, what are the values of q, Δ E, wand Δ H?

Section (III)

Answer <u>only four</u> of the following: (30 Marks)

(1) Nitric acid is produced by dissolving $N0_2$ gas in water according to:

$$3NO_{2(g)} + H_2O_{(1)} \longrightarrow 2HNO_{3(1)} + NO_{(g)}$$

Calculate the volume of NO_2 (cm^3) required to produce 10 grams of HNO_3 at 25°C and l atm

(2) Give a reason for the following:

(i) The hardness of diamond and the brittleness of graphite.

(ii) At the same temperature water has lower vapor pressure compared to diethyl ether.

(3) Consider the reaction: $H_{2(g)} + I_{2(g)} \longleftrightarrow 2HI_{(g)}$

Suppose we start with 0.20 mol of H_2 gas and 0.10 mol of 1_2 gas in a one liter flask. When equilibrium is reached 48% of the H2 gas will have been consumed. Calculate Kc value.

(4) Using the kinetic theory of gases deduce Graham's law of effusion.

(5) Choose the correct Answer in each of the following:

A) The average kinetic energy of gas molecules is directly proportional to:

(i) temperature; (ii) gas pressure; (iii) gas volume; (iv) container volume

B) Pascal (Pa) is a pressure unit and it equals:

(i) 1 N/m^2; (ii) 10 N/m^2; (iii) 10 N/m^3; (iv) 100 N/m^2.

(C)Consider the equilibrium: $C_{(s)} + 2\ H_{2(g)} \longleftrightarrow CH_{4(g)}$ $\Delta H = -75$ kJ. The concentration of CH_4 may be increased by:

(i) increasing "C" concentration; (ii) increasing H_2 concentration

(iii) decreasing H_2 concentration; (iv) increasing the temperature

D)For the equilibrium: $2SO_{2(g)} + O_{2(g)} \longleftrightarrow 2SO_{3(g)}$; K_p is given by:

(i) $K_p = K_c(RT)^{-2}$; (ii) $K_p = K_c(RT)^{-1}$; (iii) $K_p = Kc$; (iv) $K_p = K_c(RT)$

E) Which of the following gases effuse faster:

(i) NO; (ii) NO_2; (iii) N_2O; (iv) N_2O_4

(Atomic weights; H = 1, O= 16, and N = 14)

Good Luck

Examiners: Prof. Dr. Ahmed H. Osman, Prof. Dr. Bahaa M. Abu-Zied, and Dr. Gamal A. Ahmed

Assiut University Feb.:2011
Faculty of Science
Chemistry Department Time: 3 hours

Examination of Physical and Inorganic Chemistry for Pre-Pharmacy Students(تخلفات)

Answer the following questions:

Section (I): Answer Five Only of the following:.....(76 marks)

a) i) Discuss the kinetics for the following reaction:

A $\xrightarrow{K_1}$ B, where K_1 is a first order rate constant.

ii) Show bow to calculate the activation of a chemical reaction.

b)Derive the following relations:

i) Heat capacity at constant volume and that at constant pressure.

ii) Volume and temperature for adiabatic and reversible processes.

iii) Entropy change for isothermal and reversible expansion of ideal gases.

c) Assuming CO_2 to be an ideal gas, calculate the work done by 4.4 gm from this gas in expanding isothermally and reversibly from 10 atm to 5 atm at 27°C. Calculate also q, Δ E, Δ H and Δ S for the process [C = 12, O = 16].

d) Write a brief account on each of the following:

i) Measurement of single electrode potential.

ii) Reversible and irreversible cells.

iii) Calomel electrode.

e) i) Discuss one method for determination of reaction order.

ii) Show how to calculate the entropy change for processes accompanied by reversible temperature change.

Section (II): Answer Three Only of the following questions: .....(76 Marks)

1)Give reasons for Three Only of the following:

a) The bond angle in NH_3 is 106.6° whereas that of H_2O is 104.5° (ideal tetrahedral angle is 109.5°).

b) Decrease in atomic radius on moving from left to right in a period in the periodic table.

c) Be_2 does not exist.

d) Electron capture (in β-decay) is accompanied by production of X-rays.

2) a) Draw the molecular orbital diagram for O_2, Is the molecule paramagnetic or diamagnetic?

b) According to the VSEPR approach deduce the molecular shap of TWO of the following: propene ($MeCH=CH_2$), CO_2 , PCl_5, CH_4 and $[PF_6]^-$.

3) Complete Three Only of he following equations:

$_{7}N^{14} + {}_{0}n^{1} \longrightarrow$ .. .. $+ {}_{1}H^{1}$

$_{27}Co^{59} +$ ..... $\longrightarrow {}_{27}Co^{60}$

$_{92}U^{235} + {}_{0}n^{1} \longrightarrow {}_{56}Ba^{142} + {}_{36}Kr^{91} +$ .....

$_{53}I^{122} \longrightarrow {}_{52}Te^{122} +$ .....

$_{4}Be^{9} + {}_{1}H^{2} \longrightarrow {}_{5}B^{10} +$ .....

$\pi^{+} +$ ..... $\longrightarrow P_B^{+}$

4) Answer Two Only of the following:

a)Give the oxidation number of S in Na2S406, P in H_3P0_4 and Xe in Xe064- .

b)Write the nomenclature of: [Ag(CN)2r, [$CoCI_6$f-, [Cr(NH3)3Ch]

c)Describe the hybridization in tetrahedral systems taking methane as an example.

d) According to Slater's rule calculate the effective nuclear charge Z* for Li($1s^2\ 1s^1$) and nitrogen ($1s^2\ 2s^2\ 2p^3$.

انظر خلفه باقى الأسئلة

Section (III) : Answer Four Only of the following questions: ..... (38 Marks)

a) Derive, combined gas law.

b) State Le Cbatelier's principle. Indicate how each of the following changes affect the equilibrium in the system $HBr(g) + O\ 2(g) \longleftrightarrow 2\ H_2O(g) + 2\ Br_2(g) + Heat$.
   (i) Deerease of reaction volume.
   (ii) Adding more water.
   (iii) Increase of reaction temperature.

c)What is the volume occupied by 7.1 g of chlorine gas at 47°C and 2 atm.

d) Describe how the surface tension of ethanol can be determined by capillary rise method.

e) Define the following: (i) Critical temperature . (ii) Normal boiling point
   (iii) Surface tension.

Molar masses (Cl = 35.3).

Good Luck

Examiners: Prof.· Dr. Aref A.M. Aly ,
Prof. Dr. Rabi M. Gabr,
Dr. Gamal Abd EI-Wahab

Assiut University Faculty of Science Department of Physics Prepharmacy students		Term: 2nd; 2010-2011 Date: June 8, 2011, Time: 3hours
Physic – Final Examination (150 marks), (Test in 2 pages)		
Lecturers: Dr. Mohamed Housam, Dr. Mohamed Rashad		

Part I Electricity & heat:

Question 1: *Circle the correct answer for the following questions:* (35 *Marks)*

1- When equilibrium is reached, the potential difference across the cell wall is given by the so-called .....

(a) Nemst potential (b) cell potential (c) difference potential (d) equilibrium potential

2- In a hot day you may find the water in a pool still cold, where the water has a low .....

(a) heat capacity (b) Latent heat (c) specific heat (d) non of these

3- Chemical shift produce in NMR due to the presence of Hydrogen atom in different

(a) Environment (b) molecules (c) both a and b (d) non of these

4- can be used to sustain life by stopping cardiac fibrillation in heart attack victims

(a) Large capacitors (b) Large coils (c) RC circuits (d) non of these

5- The Oscilloscope may be used to measure the ..... inside the cell

(a) cell current (b) cell voltage (c) cell resistance (d) non of these

6- The QRS portion of the EKG pattern is wider than normal indicating that the patient may have .... heart

(a) a weak (b) a strong (c) an enlarged

7 - In MRI (Magnetic resonance image) we use ..... to get the transition

(a) Microwave (b) DV wave (c) IR wave (d) Radiowave

Question 2: Answer **only 4** of the following questions: (40 Marks)

1- At what frequency'does the inductive reactance ofa 57.()-IJ.H inductor equal the capacitive reactance of a 57.0-μF capacitor?

2- A segment of steel railroad track has a length of 30 m when the temperature 0.0°C. What is its length when the temperature is 40.0°C? (for steel $\alpha = 11 \times 10^{-6}(°C)^{-1}$)

3-Find the ratio of the concentration of K^+ ions inside a cell to the concentration outside the cell if the Nernst potential is measured to be 90.0 mV.

4- At what frequency will a 12-μF capacitor have a reactance $X_C = 300$ ohm?

5-Sketch a diagram showing :

a- Full wave rectifier circuit b- PNP transistor connected as a common emittet in a fixed base bias circuit

.....

Date of the exam: 8 June 2011 Dr. Mohamed Rashad

Part 2: Geometrical optics (75 marks)

Please answer the following question

Question 1 (25 marks)

A) Put (√) or (x) in the following sentences (15 marks)

1-	Matter is necessary for the propagation of the light.	( )
2-	The optical power is measured by the initial vergence which an incidence parallel beam acquires by refraction through the surface.	( )
3-	The yellow spot is the spot on the retina directly opposite the pupil has maximum sensitivity.	( )
4-	In the telescope, the distance between the lenses is about the sum of the focal lengths of two lenses.	( )
5-	For proper focusing in the camera, which is necessary for the formation of sharp images, the lens-to-film distance depends only on the object distance.	( )

B) The lens of a certain 35-mm camera (35 mm is the width of the filmstrip) has a focal length of 55 mm and a speed (an f-number) of f/1.8, the correct exposure time for this speed under certain conditions is known to be 1/500 sec.
1)Determine the diameter of the lens of this camera.
2) Calculate the correct exposure time if the f-number is changed to f/4 at the same lighting conditions. (10 marks)

Please answer only two questions of the following:

Question 2 (25 marks)

A) Sketch the geometry of the compound Microscope and describe how the image is formed in this type of Microscopy. (15 marks)

B) If the near point of a long sighted person at 100 cm., find the power of the lens suitable for reading (i.e. 25 cm. from the eye). (10 marks)

Question 3 (25 marks)

A)You have a spherical surface with two sides (convex and concave), using this surface to proof that, the optical power of the refracting surface is independent of the direction of the incidence light. (15 marks)
B)A thin double convex lens has refractive index 1.5, and each surface has a radius of curvature of 20 cm.
Calculate its power when placed (a) in air, (b) in water of n = 1,3 (10 marks)

Question 4 (25 marks)

A) Define the following (15 marks)
(Wavelength - Magnification - Curvature of spherical waves - Cornea of eye- Retina of eye)

B) Describe only two of the sight defects. (10 marks)

Assiut university
Faculty of Pharmacy
Dept. of Pharmaceutics

Preparatory Students Final Exam
Introduction and History of Pharmacy

Time allowed 2 hrs 14/06/2011

Total marks = 80

Part 1. Instructor: Prof. Tahani Elfaham

I.Tick (√) for right and (x) for false statements and correct the false one:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

1 – Pharmacy is derived from the French word pharmakon, meaning medicine or drug; ( )
.....

2- It is not the concern of the pharmacist, to monitor the patient after dispensing the drugs ( )
.....

3-Pharmacists who work in pharmades not allowed .to provide information about drugs sold without a prescription ( )
.....

4 - At the early times physicians often both prepared and prescribed medicines ( )
.....

5- In the medieval times there was a correlation between drugs ,faith and religion ( )
.....

6-- The hospital pharmacist dispenses medications to (in-patients) only ( )
.....

7- A pharmacist does need a strong foundation in basic science; chemistry, physics. ( )
.....

8- With the growth of pharmaceutical industry, pharmacists compounded fewer drugs. ( )

9- The patient medication record is a record citing all the characteristics of a patient; his name, age, weight, state, medications ( )
.....

10- The term faculty is restricted to an educational program requiring 1 or more years of collegiate study for admission. " ( )
.....

11- When you finish your study ,you will earn a Pharm.D degree ( )
.....

12- The term medication order is usually used when referring to drug orders for persons who are patients in hospitals ( )

13-"the responsible provision of drug therapy for the purpose of achieving specific outcomes that improve a patient's quality of life", is known as pharmaceutical care. ( )

.....

14-launching of new products, is the responsibility of the R & D department ( )

.....

15- In the case of narcotic drugs the pharmacist is required by law to fill the original prescription order and copies are not furnished. ( )

.....

16- Percentage w/v indicates the number of grams of ingredient in 100 milliliters of product. ( )

.....

17- 1 in 500 by parts *w/v* equals 0.2% **( )**

.....

18- A pharmacopoeia is a pharmaceutical standard intended to secure uniformity in the kind, quality, composition, and strength of remedies. ( )

.....

19- The community pharmacist has over-the-counter products advisory role ( )

.....

20- OTC drugs, are drugs sold without prescription. ( )

.....

II. Choose the most suitable statement:
Using the table below; (15 marks)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

I-The community pharmacist presents services to general practitioners as;
A) Examine the patients instead of him.
B) Gives him information about drugs.
C) Gives him free samples of drugs.

2-A Narcotic Prescription Order is;
A) That written for a narcotic drug.
B) Permitted to be dispensed only once.
C) Both (A) and (B)

3- Therapeutic drug monitoring is done for drugs:
A) With narrow therapeutic index.
B) With wide therapeutic index.
C) With high plasma concentration.

4- In pharmaceutical companies, Quality Control Department is engaged in;
A)Production of dosage forms
B)Promotion of products
C)Quantitative analyses of drugs

5- Medication errors occurred from:
A)Humans mistakes.
B)Drugs
C)Both (A) and (B).

6- In the prescription order, the (subscription) means directions to,
A)The patient. .
B)The pharmacist.
C)Both (A) and (B).

7- The record citing all the characteristics of the patient on admission to the hospital is;
A)Patient compliance.
B)Patient counseling.
C)A patient medication record.

8- Total Parenteral nutrition is used when,
A)A patient cannot eat too much
B)Patient's gastrointestinal tract is not functional
C)Patient needs oral nutritional support

9- One microgram (µg) is;
A) 1000 ng B) 1000 mg C) 1000 pg

10- The pharmacist review the prescription for;
A)Doses, dosage intervals and contraindications
B)The name of the physician
C)The history of the patient

11- 7% NaCl solution prepared by;
A)Dissolving 7gm NaCl in 1000ml solvent
B)Dissolving 70gm NaCl in 100mg solvent
C)Dissolving 7gm NaCl in 100ml solvent

12- The first known chemical processes were carried out by the artisans, in
A) Europe
B) Egypt
C) Egypt & China

13- In the prescription the signature is directed to,
A)The pharmacist
B)The patient
C)The physician.

14-People in the career of pharmacy frequently:
A)Dispense drugs prescribed by doctors and health care workers.
B)Never update and use job-related knowledge
C)work always individually

15- Professional services rendered by pharmacists includes;
A)Placing the address of the patient and the date of the prescription
B)Make alterations of ingredients
C)Change the doses by himself

III. Solve the following: (5 marks)

1-How much of a diluent must be added to l00g of a 10% ointment to make it a 5 % ointment? (3marks)

.....
.....
.....
.....
.....
.....

2- The concentration of chlorine in drinking water is 2 ppm. Express this concentration as a percentage. (2marks)

.....
.....
.....
.....

Part 2 Instructor Prof. Ahmed Mustafa

Mention **TWO** examples for each: (8 marks)

A-The disadvantages of oral rout~ of drug administration

i-

.....

ii-

.....

B- The advantages of buccal route of drug administration

i-

.....

ii-

.....

C-Uses of intra-arterial injections

i-

.....

ii-

.....

D-Uses of enemas

i-

.....

ii-

.....

2.Write the cause(s) for each: (6 marks)

A- Lotions which have an alcoholic base should be avoided in asthmatic and young children

.....

.....

B-Adding inhalations to boiling water before use should be avoided

.....

.....

C-Sucrose is being replaced by sorbitol as sweetening agent in many Syrups.....

.....

3.What is the difference(s) between each:

A- Tinctures and gIycerins

.....
.....
.....
.....

B- Pastes and ointments

.....
.....
.....
.....

C-Bulk powder and divided powder

.....
.....
.....
.....

ثانيا: تاريخ الصيدلة (20 درجة)

السؤال الأول: أذكر **مثالين** لكل من:

1- فوائد دراسة تاريخ الصيدلة

أ- .....

ب- .....

2- مصادر تاريخ الصيدلة

أ- .....

ب- .....

3- المواد التى كان قدماء المصريين يدونون عليها كتاباتهم للتعبير عن افكارهم

أ- .....

ب- .....

4- الدساتير العربية

أ- .....

ب- .....

5- الأسباب التى دعت قدماء المصريين الى تحنيط الموتى

أ- .....

ب- .....

6- المواد المستعملة فى التحنيط

أ- .....

ب- .....

7- العقاقير المعدنية التى استخدمت فى عصور ماقبل التاريخ

أ- .....
ب- .....
8- أعظم الكتب العربية التى أثرت فى الصيدلة فى أوروبا
أ- .....
ب- .....

السؤال الثانى: أكتب عن الآتى: (8 درجات)

1- بردية ايبرس الطبية (2 درجة)

.....
.....
.....
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.....

2- طرق التحنيط (4 درجات)

أ- .....
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ب- .....
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ت- .....
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ث- .....
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3- استخدامات الخروب كعقار نباتى عند قدماء المصريين (2 درجة)

.....
.....
.....
.....

السؤال الثالث: أكتب عن الآتى: (4 درجات)

1- أعمال ابن سينا فى الطب النسوى (2 درجة)

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.....
.....
.....

2- مضمون كتاب سر الأسرار الذى ألفه أبو بكر الرازى (2 درجة)

.....
.....

مع التمنيات بالتوفيق

Assiut university
Faculty of Pharmacy

Preparatory Students Make up Exam
Introduction and History of Pharmacy

Dept. of Pharmaceutics

Time allowed 2 hrs 2/07/2011

Total marks = 80

Part 1. Instructor: Prof. Tahani Elfaham

I.Tick (√) for right and (x) for false statements and correct the false one:
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4- The hospital pharmacist dispenses medications to (in-patients) only ( )

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5- A pharmacist needs a stro.ng foundation in basic science; chemistry, physics and biology. ( )

.....

6- With the growth of pharmaceutical industry, pharmacists compounded fewer drugs. ( )

.....

7- Each country have its own national pharmacopoeia ( )

.....

8- Post graduate studies in pharmacy are the Master (Msc.) and (Ph.D) degrees ( )

.....

9- Pharmacy is a truly unique combination of profession and business. ( )

.....

10- The term faculty is restricted to an educational program requiring 1 or more years of collegiate study for admission. ( )

.....

11- When you finish your study ,you will earn a Pharm.D degree ( )

.....

12- Medication errors are due to human mistakes or system flaws. ( )

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18-MEC means minimum effective concentration. ( )

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2-.A Narcotic Prescription Order is;
A)That written for a narcotic drug.
B)Permitted to be dispensed only once.
Both (A) and (B)

3- Therapeutic drug monitoring is done for drugs:
A) With narrow therapeutic index

B) With wide therapeutic index.
C) With high plasma concentration.

4-lit pharmaceutical companies, Quality Control Department is engaged in;
A) Production of dosage forms
B) Promotion of products
C) Quantitative analyses of drugs

5- Medication errors occurred from:
A) Humans mistakes.
B) Drugs
C) Both (A) and (B).

6- In the prescription order, the (subscription) means directions to,
A) The patient.
B) The pharmacist.
C) Both (A) and (B).

7- The record citing all the characteristics of the patient on admission to the hospital is;
A) Patient compliance.
B) Patient counseling.
C) A patient medication record.

8- Total Parenteral nutrition is used when,
A) A patient cannot eat too much
B) Patient's gastrointestinal tract is not functional
C) Patient needs oral nutritional support

9- One micro gram (μg) is;
A) 1000 ng B) 1000 mg C) 1000 pg

10· The pharmacist review the prescription for;
A)Doses, dosage intervals and contraindications
B)The name of the physician
C)The history of the patient

11- 7% NaCl solution prepared by;
A)Dissolving 7gm NaCI in 1000mlsolvent
B)Dissolving 70gm NaCI in 100mg solvent
C)Dissolving 7gm NaCI in IOOml solvent

12- The first known chemical processes were carried out by the artisans, in
A) Europe
B) Egypt
C) Egypt & China

13- In the prescription the signature is directed
A) The pharmacist

B) The patient
C) The physician

14-People in the career of pharmacy frequently:
A) Dispense drugs prescribed by doctors and health care workers
B) Never update and use job-related knowledge
C) work always individually

15- Professional services rendered by pharmacists includes
A) Placing the address of the patient and the date of the prescription
B) Make alterations of ingredients
C) Change the doses by himself

III. Complete the following: (2.5 x 2 marks)

1- A pharmacoepia is

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2-The concentration of chlorine in drinking water is 2 ppm. Express this concentration as a percentage. (2marks)

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مع التمنيات بالتوفيق

PART 2 Instructor: Professor Ahmed Moustafa

Routes of administration and dosage forms (20 marks)

1. Differentiate between each of the followings: (10 marks)
A- Buccal and sublingual route of administration

B- Intravenous and intramuscular route of administration

C- Spirits and aromatic waters

D- Pessaries and suppositories

2.1ndicate whether each of the following statement is true (√) or false (X) and justify your answer: (10 marks)

( )A-Irrigations are liquids for a variety of external uses which include antiseptics, parasiticidal and soothing. They may be solutions, suspensions or emulsions.

( ) B-paints are semisolid preparations for topical use. They are easier to apply and are less greasy than ointment.

( ) C-Glycerins are aqueous suspensions of drugs containing 1% of glycerin as suspending agent to increase the viscosity of the vehicle.

( ) D -Dusting powders are finely divided powders for external use as lubricants between skin surfaces and for disinfectants and antiseptics in minor wounds

( ) E-Oxymels are preparations in which the vehicles is a mixture of acetic acid and honey

ثانيا: تاريخ الصيدلة (20 درجة)

السؤال الأول: أكتب عن الآتى: (10 درجات)

1- نشأت مهنة الصيدلة (2 درجة)

ب- مدرسة الاسكندرية الطبية فى مصر القديمة (3 درجة)

ت- بردية كاهون الطبية (3 درجة)

ث- دور المومياء فى العلاج فى العصور القديمة (العصر اليونانى & الرومانى) وفى أوربا (2 درجة)

السؤال الثانى: اذكر استعمال قدماء المصريين المواد الآتية: (4 درجة)

1- الجير الحى

2- الراتنجات

3- زيت الخروع

4- الأنتيمون

السؤال الثالث: تكلم عن الآتى: (6 درجات)
1- الصيدلة فى عصر الدولة العباسية

ب- مضمون كتاب الأدوية المفردة لأبن البيطار

مع أطيب التمنيات

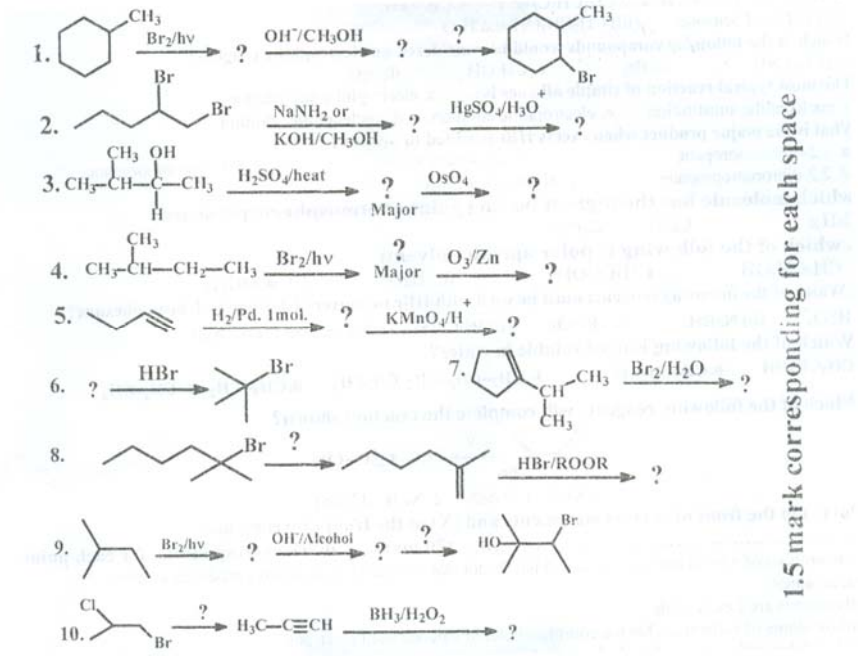
الامتحان يقع فى صفحتان

Assiut University Date: June 2011
Faculty of Science Time allowed: 2 hours
Chemistry Department

Final exam of Organic Chemistry for prepharmacy students

Answer the following questions: .....(80 marks)

I. Provide the structures and reagents to complete the following reaction schemes...(30 marks)



II. Choose the correct answer:..... (30 marks, 1.5 mark corresponding for each point)

i.Which of the following statements concerning a carbocation is not true?

(a) The hybridization is sp2. (b) The geometry is trigonal planar.

© They are stabilized by hyperconjugation. (d) They cannot he observed. Isolated or trapped.

(e) All statements (a)-(d) are true.

ii. Which of the following compounds is the least soluble in water?

a. CH_3OH b. CH_3COCH_3 c. $CH_3CON(CH_3)_2$ d. $CH_3CH_2CH_2CH_2CH_3$

iii. Which of the following molecules has the largest dipole moment?

a. H-C≡C-H b. Br-C≡C-Br c. H-C≡C-Br

iv. Which of the **following molecules will not have a dipole moment?**

a. CH_3Cl b. CH_3OH c. CH_2Cl_2 d. CCI_4

v. The ozonolysis of an unsymmetrical, unbranched alkene forms: a. A single aldehyde

b. An aldehyde and a ketone b. Two different ketones c. Two different aldehydes d. A single ketone

vi. Credit for the first synthesis of an organic compound from an inorganic precursor is usually given to: a. Berzelius b. Lewis c. Wohler d. Arrhenills

vi. Which of the following molecules functionalized with ketonic group?

a. CH_3COCH_3 b. CH_3CN c. $CH_3CH_2CO_2CH_3$ d. CH_3CHO

vii. Which of the **following compounds contains an *sp*2 carbon atom?**

a. bromoalkane b. ketone c. alkyne d. alkane

viii. Which of the following is the definition of a Lewis base?

a. A proton donor b. An electron pair don c. A hydroxide ion donor d. An electron pair acceptor

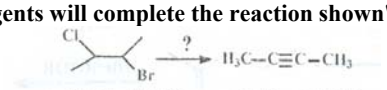
ix. According to Marl<ovnil<ov's rule, addition of water to I-butene should give a

i. primary alcohol ii. secondary alcohol iii. tertiary alcohol iv. none of the above

x.which of the following acid has greatest acidity?

a. CF_3COOH b. CFH_2COOH c. CH_3COOH d. CF_2COOH

xi. In which of the following compounds is hydrogen bonding absent?
a. 2° amine b. alcohol. c. aldehyde d. carboxylic acid
xii. Which of the following pairs will be immiscible?
(i) $CH_3CH_2CH_2CH_2CH_3$ and $CH_3CH_2CH_2CH_2CH_2CH_2CH_3$
(ii)H_2O and benzene (iii) CH_3CH_3OH and H_2O
xiii. Which of the following compounds would be considered an electrophilic reagent?
a. $(CH_3)_2NH$ b. Br_2 c. CH_3OH d. H_2O
xiv. The most typical reaction of simple alkenes is ... a. electrophilic substitution
b. nucleophilic substitution c. electrophilic addition d. nucleophilic addition
xv. What is the major product when excess HBr is added to propyn?
a. 1,2-dibromopropane b. 1-bromopropene c.1,1-dibromopropane
d. 2,2-dibroromopropane e. no answer shown
xvi. which molecule has the highest boiling point at atmospheric pressure
C_5H_{10} C_5H_{12} C_4H_{10}
xvii. which of the following is polar aprotic solvent:
i. CH_3CH2OH ii. CH_3COOH iii. H_2O iv. CH_3COCH_3
xviii. Which of the following reagents must be used with HBr to convert l·hexcne to 1-bromohexane?
(a) HSO_3^- (b) $NaBH_4$ (c) ROOR (d) Pd/C (e) no other reagent is necessary.
xix. Which of the following is most soluble in water?
a. CH_3CH_2OH b.$CH_3CH_2CH_2Cl$ c. CH_3-CH_2-CH_2-CH_2CH_3 d.CH_3-CH_2-O-CH_2-CH_3
xx. Which of the following reagents will complete the reaction shown'?



a. KOH b.H_2SO_4 c. Ni_2B d.$NaNH_2$

III. Put (√) in the front of correct statements and (X) in the front of wrong one:
..... (20 marks, 1 mark corresponding for each point)
i. The heterolysis of a bond between atoms which do not bear formal charges always produces a cation and an anion
ii. Carbocations are Lewis acids
iii. Carbon atoms of carbanions have a complete octet of valence shell electrons
iv. Nucleophiles seek centers of high electron density (e.g., a negative charge).
v. Polarity of bond created due to the difference in electronegativity of atoms forming bond.
vi. When electron withdrawing group attached to carboxylic group the acidity will be increased.
vii. Addition of hydrogen to alkynes in the presenceofpd(lindlar) proceeded through syn addition(cis).
viii. Addition of Bromine to alkenes proceeded through ant; addition (trans).
ix. In elimination reaction, formation of the most substituted alkenes is favored in using small base.
x. Zaitsev's rule: formation of the most substituted alkene is favored with a bulky base.
xi. σ bond in methane was created by overlapping of SP3-SP3 orbitals.
xii. Terminal alkynes hydration in the presence of $BH_3/H_2O/H_2O$ gave an aldehyde.
xiii. CHIC'] was considered a non polar solvent and have zero dipole moment.
xiv. CH_3COOH was considered an isomer to HCOOCH
xv. A tertiary carbocation (carbonium ion) is more stable than either a secondary or primary carbocalion
xvi. Carbon-carbon triple bond is longer than carbon-carbon double bond longer than single one.
xvii. Hydration of terminal alkynes in the presence ofB)J-h produced ketones.
xviii. Addition of HBr in the presence of ROOR proceeded through free radical addition.
xix. As the molecular mass of the compounds of the alkane series increases their boiling points decreases
xx. Increased substitution stabilizes an alkene due to hyperconjugation.

Good Luck
Prof. Dr Adel M Kamal

Assiut University Date 26/6/2011
Faculty of Medicine Time: 1½ hours

Department of Anatomy

Preparatory Pharmaceutical students

Final Examination in Anatomy- May

Answer all the following questions:

1) Mention parts of the vertebral column and illustrate with diagram the general features of the typical vertebra. (15 degrees)

2) Illustrate the anatomical features of the right atrium. (15 degrees)

3) Mention parts of the male urethra and the length and the features of each part. (15 degrees)

4) Give an account of the anatomy and functions of the autonomic nervous system. (15 degrees)

GOOD LUCK

Assiut University
Faculty of Medicine
Histology department

Date 26/6/2011
Time: 1½ hours

Final Histological examination
For Prep. Year Pharmacy Students

A- Choose the correct answer: (One mark each)

1- The Sertoli cells:
a. Secrete testosterone hormone.
b. Form the blood testicular barrier.
c. Undergo a complex process called spermiogenesis.
d. Present in the interstitial tissue of the testis.

2- Pigmented epithelium of the retina:
a. Separated from the photoreceptors by Brush's membrane.
b. Is a single layer offlate cells.
c. It absorbs light and prevents its reflection.
d. Its apical surface is covered by cilia.

3- The glomerular blood capillaries are:
a. Continuous capillaries.
b. Fenestrated capillaries.
c. A network of arteriovenous anastomosis.
d. Sinusoidal capillaries.

4- Throid follicular cells:
a- Secrete thyro-calcitonin.
b- Secrete thyroid hormones (T_3&T_4).
c- a & b.
d- Are pseudostratified columner.

5- Cells of fundic gland are the following except:
a. Parietal cells.
b. Chief cells.
c. Paneth cells.
d. Entero-endocrine cells.

6-Islets of langerhans are present in:
a. Liver.
b. Pancreas. c. Skin.
d. All of the above.

7-Blood air barrier separates:
a. Air in the alveoli from blood in the capillaries.
b. A layer of surfactant from alveolar squamous epithelium.
c. Basal laminae of alveolar squamous epithelium from alveolar capillary endothelium.
d. None of the above.

8- The cornea has the following except:
a. Stratified squamous non keratinized epithelium.
b. Many free nerve endings.
c. Numerous blood vessels and 1)TI1phatics.
d. Parallel collagen bundles in substantia prpria.

9- Which of the following is not an "epidermal appendage"?
a. Sebaceous gland.
b.Hair follicle.
c.Duct of sweat gland.
d.Arrector pili muscle.

10- Interstitial cells of Leydig:
a. Present in angular spaces between seminiferous tubules.
b. Are supportive and nutritive in function.
c. Share in the formation of blood testicular barrier.
d. Contain abundant RER in their cytoplasm.

11- The liver cells are:
a. Stellate in shape.
b. Polyhedral with vesicular nuclei.
c. Arranged in glomeruli.
d. b&c.

12- Clara cells:
a. Secrete a surfactant like substance.
b. Act as a progenitor for other types of cells.
c. Are columnar cells with apical microvilli.
d. All of the above.

13- The medulla of lymph node is formed of:
a. Cortical lymphatic sinuses.
b. Lymphatic cords and lymph sinuses.
c. Lymphatic nodules.
d. Thymus dependent zone.

14- In the wall of large arteries, there is:
a. Abundant amount of elastic fibers.
b. Abundant amount of collagen fibers.
c. Few amount of elastic fibers
d. b&c

15- Before onset of p~berty all ovarian follicles are in:
a. Primary stage.
b. Primordial stage.
c. Mature stage.
d. Secondary stage.

16- Adrenal cortex includes the following zones except:
a. Zona reticularis.
b. Zona pelluceda.
c. Zona glomerulosa.
d. Zona fasiculata.

17- Podocytes:
a. Share in the formation of juxtaglomerular apparatus.
b. Secrete rennin
c. Have primary and secondary processes (pedicles).
d. Are called macula densa.

18- Marginal zone is a transitional zone between:

a. White and red pulp of the spleen.
b. Lymphatic nodule and priarterial sheath.
c. Cortex and medulla of the lymph node.
d. None of the above.

19- In the epidermal layers of skin, mitosis is common in:

a. Stratum Spinosum.
b. Stratum Granulosum.
c. Stratum Lucidum.
d. Stratum genninativum.

20- Type I alveolar cells:

a. Share in blood air barrier.
b. Secrete the surfactant.
c. Constitute 3% of the alveolar surface.
d. Are cuboidal in shape.

B- Answer by true (T) or false (F): (Two marks each)

1- The filtration barrier present between the blood circulating in the capillaries and the filtrate in the capsular spaces of renal corpuscle. ( )

2 - Continuous capillaries are characterized by uninterrupted endothelium and discontinuous basal lamina. ( )

3- The 2nd lymphatic nodule is formed of a central pale area called the germinal center and a peripheral dark zone. ( )

4- Langerhans cells are branched cells containing no tonofilaments, no desmosomes, and no melanin granules. ( )

5- Adrenal medulla composed of parafollicular cells separated by wide blood capillaries. ( )

C- Fill in the spaces: (Two marks each)

1 - The proximal end of the nephron is expanded to form .....

2 - In sinusoidal capillaries, the endothelial wall and the basal lamina are .....

3 - Red pulp of the spleen composed of ..... and .....

4 - Parafollicular cells (C. cells) secrete hormone .....

5 - Crypts of Lieberkuhn are present in .....

D- Give an account on each of the following (without diagram):

(Five marks each)

1- Corpus luteum.

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2- Great alveolar cell.

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3- White pulp of the spleen.

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4- Melanocyte

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(Good Luck)

Assiut University (تخلفات) Date 4/7/2011

Faculty of Medicine Time: 1½ hours

Department of Anatomy

Preparatory Pharmaceutical students

Final Examination in Anatomy- May

Answer all the following questions: (60 Marks)

1- Illustrate with diagram type of joint with an example to each type. (20 Marks)

2- Illustrate with diagram part of alimentary tract. (20 Marks)

3- Give an account on anatomy of cranial nerves. (20 Marks)

Good Luck

Assiut University (تخلفات) Date 4/7/2011
Faculty of Medicine Time: 1½ hours
Histology department

Final Histological examination
For Preparatory Year Pharmacy Students

A- Choose the correct answer: (One mark each)

1- The epithelial layer of skin is:
a. epidermis.
b. dermis.
c. hypodermis.
d. lamina propria.

2- Capillaries are lined by a single layer of:
a- Simple cuboidal cells
b- Squamous endothelial cells
c- Simple columner cells
d- Pseudostratified columner cells

3- The white pulp of the spleen contains:
a. Periarterial lymphatic sheath.
b. Lymphoid follicle.
c. Central artery
d. All of the above.

4- The Seminifrous tubules are lined by:
a. Spermatogenic cells.
b. Follicular cells.
c. Sertoli cells.
d. a&c.

5- The basement membrane lies between:
a. stratum granulosum and stratum corneum.
b. epidermis and dermis.
c. papillary and reticular layers of dermis.
d. Stratum basal and stratum spinosum

6- Follicular cells of thyroid gland:
a- Secrete thyro-calcitonin.
b- Secrete thyroid hormone (T 3&T 4).
c- a & b.
d- Are pseudostratified columner.

7- The lry lymphatic nodule is formed of:
a. a central pale area and a peripheral dark zone.
b. Packed smalllymphocytes
c. Parafollicular cells.
d. Acidophilic cells.

8- The photoreceptos:

a. Are light sensitive cells.
b. Formed of rods and cones.
c. Constitute the 2nd layer of the retina.
d. All of the above.

9- The glomerular blood capillaries are:

a. Continuous capillaries.
b. Fenestrated capillaries.
c. Sinusoidal capillaries.
d. Non of the above.

10- Corpus luteum is present in:

a. Kidney.
b. Ovary.
c. Skin. d. Pancreas.

11- The cornea has the following <u>except</u>:

a. Stratified squamous non keratinized epithelium.
b. Many free nerve endings.
c. Numerous blood vessels and lymphatics.
d. Parallel collagen bundles in substantia propria

12- The endocrine parts of pancreas are:

a. Islets of Langerhans.
b. Pancreatic acini.
c. Secretory ducts.
d. Serous acini.

13- Clara cells:

a. Secrete a surfactant like substance.
b. Act as a progenitor for other types of cells.
c. Are columnar cells with apical microvilli.
d. All of the above.

14- The medulla of lymph node is formed of:

a. Cortical lymphatic sinuses.
b. Lymphatic cords and lymph sinuses.
c. Lymphatic nodules.
d. Thymus dependent zone.

15- In the wall of large arteries, there is:

a. Abundant amount of elastic fibers.
b. Abundant amount of collagen fibers.
c. Few amount of elastic fibers
d. b&c

16- Before onset of puberty all overian follicles are in:

a. Primary stage.
b. Primordial stage.
c. Mature stage.
d. Secondary stage.

17- Marginal zone is a transitional zone between:

a. White and red pulp of the spleen.
b. Lymphatic nodule and periarterial sheath.
c. Cortex and medulla of the lymph node.
d. None of the above.

18- In the epidermal layers of skin, mitosis is common in:

a. Stratum Spinosum.
b. Stratum Granulosum.
c. Stratum Lucidum.
d. Stratum germinativum.

19- Sertoli cells:

a. Secrete testosterone hormone.
b. Form the blood testicular barrier.
c. Undergo a complex process called spermiogenesis.
d. Present in the interstitial tissue of the testis.

20- Type I alveolar cells:

a. Share in blood air barrier.
b. Secrete the surfactant.
c. Constitute 3% of the alveolar surface.
d. Are cuboidal in shape.

B- Answer by true (T) or false (F): (3 marks each)

1- The fundic glands of the stomach constitute 90% of the thickness of the mucosa. ( )

2 - Fenestrated Blood Capillaries are present mainly in nervous tissue ( )

3- The 2nd lymphatic nodule is formed of a central pale area called the germinal center and a peripheral dark zone. ( )

4- Interstitial cells of Leydig Share in the formation of blood testicular barrier ( )

5- Adrenal medulla composed of parafollicular cells separated by wide blood capillaries. ( )

C- Fill in the spaces: (3 marks each)

1- The structural unit of the kidney is .....

2 - Interstitial cells of Leydig are responsible for secretion of .....

3 - Cells of adrenal medulla are ..... and .....

4 - The alveoli are lined with ....

5 - Crypts of Lieberkuhn are present in .....

D- Give an account on each of the following (without diagram):

(5 marks each)

I-Blood air barrier. 5 marks each)

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2- Red Pulp of the spleen.

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3- Melanocyte

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E- Enumerate only: (2 ½ marks each)

1- Types of epidermal cells.

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2- Types of ovarian follicles.

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3- Cells of fundic gland.

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4- Type of blood capillaries.

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كلية التربية
قسم علم النفس
*****

الزمن:ساعتان
الدرجة الكلية: 50 درجة

امتحان الفصل الدراسى الثانى إعدادى صيدلة

مادة: علم النفس

أجب عن الأسئلة الآتية:-

أ- ضع علامة (√) أو علامة (×) مع التعليل. **(30 درجة) درجتان لكل عبارة**

1- ينسب الفضل الى العالم فونت فى استقلال علم النفس كعلم قائم بذاته. ( )

2- يعد الإحباط أحد أسباب العدوان عند المراهقين. ( )

3-طبقا لروجرز فإن مفهوم الذات هو المحك الأساسى لسلوك الفرد. ( )

4- تعتبر الوراثة أحد العوامل المؤثرة فى تكوين الشخصية. ( )

5- قامت نظرية بياجيه على ملاحظات مباشرة للسلوك. ( )

6- النمو عملية ثابتة وغير متغيرة لجميع الأطفال. ( )

7- النمو عملية مستمرة غير متدرجة. ( )

8- استخدام الطفل لكلمة "بابا" للإشارة إلى أى رجل يراه يعد مثالا على تقدم النمو من الخاص الىالعام.( )

9- مرحلة الذكاء المجرد سابقة مرحلة العمليات المحسوسة عند بياجيه. ( )

10- راكب القطار الذى يتهرب من دفع ثمن التذكرة مقنعا نفسه أن ذلك بسبب
وقوفه أثناء رحلة السفر يعد مثالا على النكوص. ( )

11- طبقا لنظرية التحليل النفسى فإن الأنا هى مخزن الطاقة النفسية ومنبع الشهوة واللذة الحسية. ( )

12- يبدأ النمو بمرحلة المهد وينتهى بمرحلة المراهقة. ( )

13- بدأ علم النفس بالبحث فى الشعور وانتهى بالبحث فى اللاشعور. ( )

14- تأتى مرحلة المهد بعد مرحلة الطفولة المبكرة. ( )

15- عملية التنشئة الاجتماعية هى عملية بيولوجية فى المقام الأول. ( )

من فضلك انظر الصفحة الثانية

(ب) – اختر الإجابة الصحيحة من بين الأقواس (20 درجة) درجتان لكل عبارة

1- من العوامل التى تؤثر على التنشئة الاجتماعية وترجع الى الفرد.

(الإمكانيات البيولوجية – الدور الاجتماعى – المؤسسة الاجتماعية)

2- من العوامل التى تؤثر على التنشئة الاجتماعية وترجع الى المجتمع.

(المؤسسة الاجتماعية – القيم والمعايير – كلاهما معا)

3- اسلوب **(القسوة – التذبذب – الحماية)** يقصد به عدم إجماع الوالدين على نظام أمثل للتعامل مع الطفل.

4- **(الكبت – النكوص – التسامى)** هى حيلة دفاعية تمنع الأفكار المؤلمة من الدخول الى الشعور.

5- الشاعر الايطالى دانتى الذى برز فى الشعر الرومانسى بعد فشله فى قصة حبه الشهيرة يعد مثالا على **(النكوص – الكبت – التسامى)**

6- الحب المفرط من أخت كبرى أقل جمالا الى أخت صغرى أكثر جمالا على الرغم من غيرة الأولى من الثانية يعد مثالا على **(النكوص – التكوين العكسى – أحلام اليقظة)**

7- أكدت نظرية **(ألبورت – فرويد – بياجيه)** على السمات فى دراستها للشخصية.

8- طبقا لنظريه **(ألبورت – فرويد – أيزتك)** فإن الدوافع الجنسية هى المحددة لشخصية الفرد.

9- **(الأسرة – النضج – كلاهما)** من العوامل المؤثرة فى الشخصية.

10- تمتد مرحلة الطفولة المبكرة من **(2-4 ، 2-6 ، 2-3)** سنوات.

==========انتهت الأسئلة==========

د/ محمود محمد امام

Faculty of Science Department of Zoology Exam: Zoology for Clinical pharmacy students	كلية العلوم – قسم علم الحيوان	امتحان الفرقة: إعدادى صيدلة المقرر: علم الحيوان رقم المقرر ورمزه: PZO 108 الزمن: ثلاث ساعات 14 يناير 2012

Taxonomy

I- Choose the suitable number from (A) in (B): (25 marks/1 for each)

(A)	(B)	( )
1- Worms	-the largest animal phylum	( )
2- Lips	-annelids with fixed number of segments	( )
3- Protista	-attributes to scyphozoans.	( )
4- Metamorphosis	-excretory organs of Arthropoda.	( )
5- Parthenogenesis	-a substance secreted by leeches.	( )
6- Orgelase	-a type of reproduction where eggs hatch without fertilization	( )
7- Green glands	-a process where egg hatches a larvae not resemble their parents	( )
8- Aurelia	-includes unicellular organisms with true nucleus.	( )
9-Hirudinea	-are the adhesive organs of Ascaris	( )
10- Aethropoda	-include phyla platyhelminthes, Nematoda and Annelida	( )
11- Gill-slits	-is the locomotary organs of starfish.	( )
12- Trematoda	-one of the important appendages of Arthropoda.	( )
13- Redia	-molluscans with two plates shell.	( )
14- Germ layers	-is a sub-phylum without antennae.	( )
15-Cuticle	-Includes snails and slugs.	( )
16- Gastropoda	-is the first layer of exoskeleton in arthropods.	( )
17- Chelicerata	-is one of the basic characteristics of chordate.	( )
18- Bivalvia	-is a larval stage appears in the life cycle of some trematodes.	( )
19- Antennae	-Include liver, blood, intestinal flukes	( )
20- Tubefeet	-one of the big four characteristics of chordate.	( )
21- Pearles	-Characterized by presence of notochord	( )
22- Mantle	-is a taxonomic rank includes species	( )
23- ♀Anophelis	-the most serious insects	( )
24- The genus	-a molluscan coat and secrets the shell	( )
25- Chordata	-produced from clams	( )

II -Choose the correct answer: (25 marks/l for each)

1-Unicellular and mostly microscopic organisms (Porifera - Cnidaria - Protozoa).
2-A science concerns with arrangement of organisms into groups (zoology -cytology-taxonomy).
3-Mussels, oysters, squids, and octopuses are (arthropods - echinoderms- molluscans).
4-Zoomastigophora is a class includes *(Entamoeba-Plasmodium- n:vpanosoma).*
5-Nematocysts are cnidarian cells found in (endoderm - mesoderm - ectoderm).
6-High diversity of Arthropods is due to (exosl)fleton - jointed legs - segmentation - all).
7-Mites attribute to (Annelid a - Cnidaria - Arthropoda).
8-*Biomphalaria* snails attribute to phylum (Platyhelminthes - Nematoda - MoJ1usca).
9-Insect transport of *Trypanosma rhodesiens* is *(Glossina palpalis - Drosophyla - Glussina morsitans).*
10- The infective stage of *Taenia* is (Leptocercus cercaria -Lophocercus- Cysticercus).
11-Hirudin, is a substance secreted by leeches as blood (coaggulant - aggulant - anticoaggulant).
12- The adult parasite usually lives in (intermediate host - transport host- final host).
13-Coelom characterizes Phylum (Annelida, Mollusca, Echinodermata-al). انظر خلفه ⟶

14-Mosquitos attribute to (insects - uniramia - arthropods - all).

15-*Amoeba*,*Trypanosoma*, and *Paramecium* Attribute to (animals -monerans - protistans).

16-Chordates characterized by (ventral nerve cord- gilspots - notochord -all).

17-Exchange of gametes between paired organisms called (asexual - sexual-both) reproduction.

18- The process of removing the old exoskeleton in arthropods is called (excretion-molting-both).

19-Digestive tract with layers of muscles found in (Nematoda-Cnidaria- Annelida)

20-Belharzia's life cycle not include (miracidium - sporocyst - cercaria - redia - all).

21- Cercaria with pointed head and penetration glands (Leptocercus - Lophocercus - Furcocercus).

22- The radula is a rasping organ present in (Arthropoda - Mollusca - Chordata).

23-The intermediate host snail of *Heterophyes* is *(Bulinus - Pirenella - Lymneae*).

24-Infective cercaria oftrematodes (Leptocercus - Lophocercus - Furcocercus).

25- Tape worms usually live as adult in the (muscles - intestine - blood)

III-Draw <u>two</u> diagnostic characters of <u>five</u> major animal phyla: (10 marks/2 for each)

Phylum	Two diagnostic characters	

Cytology

I- : Choose the correct answer: **10 marks/ for each**

1- Channel proteins in the plasma membrane are mainly specific for (uncharged small molecules- uncharged large molecules - ions) transportation.
2- One of the following molecules can penetrate the synthetic lipid bilayer easily (Ethanol - Ca^{+2} – O_2).
3- DNA replication takes place during (GI phase - M phase - S phase).
4- The only cellular organelle rather than nucleus that contains DNA is (Golgi - RER - Mitochondria).
5- Highly dividing cancer cells are expected to have (condensed nucleus- rounded nucleus - open face nucleus).
6- Autophagosome is resulting from attacking of lry lysosome to a (phagosome - foreign body - both).
7- p53 is a (tumor suppressor protein - oncogene - both)
8- Increase of p21 induces (G2/M - S phase - both) cell cycle arrest.
9- Chemotherapeutic drugs induce apoptosis via activating (Bax - Bcl2 - p21).
10- Steroid hormones-secreting cells are expected to be rich in (SER - Mitochondria - RER).

II-: Put (√) or (X) infront of the following sentences: **10 marks/ for each**

1- The 1 ry transcripts of ribosomal RNA are located in ribosomes ( )
2- Melanin is an exogenous pigment and secreted by melanocytes ( )
3- Incoming transport vesicles enter the immature face of Golgi apparatus to be concentrated and stored ( )
4- Antigens are located on the cell coat ( )
5- Chemotherapeutic drugs inducing G2/M cell cycle arrest are expected to activate p21 protein ( )
6- In neurons, decoding of mRNA takes place by Nissl bodies ( )
7- The time required for a cell to give two daughter cells is called doubling time ( )
8- Bax upregulation leads to induction of programmed cell death ( )
9- Nucleolus consists mainly of proteins, tRNA, DNA and certain enzymes ( )
10- p53 induces apoptosis via transcriptional upregulation of p21 ( )

III- Write briefly on the followings: **10 marks/5 for each**

1- Functions of plasma membrane	2- Type of chromatin in relation to DNA activity

انتهت الأسئلة مع تمنياتنا بالتوفيق

د. اسماعيل محمد **أ.د. ناصر الشيمى**

Department of Mathematics		**قسم الرياضيات**

كلية العلوم		Faculty of Science
امتحان نهاية الفصل الدراسى الأول 2011/2012م		
الفرقة: اعدادى صيدلة	درجة الامتحان:50 درجة	التاريخ: 17/1/2012م
اسم المقرر: اساسيات الرياضيات والاحصاء	كود: MTH-129	الزمن: ساعتان

أجب عن الأسئلة الآتية:- **(الأسئلة فى ورقتين)**

السؤال الأول: **(13 درجة)**

(1) أوجد المشتقة الأولى $\frac{dy}{dx}$ **لثلاثة فقط** من المعادلات الآتية:- (درجتان لكل فقرة)

$(i) y = \sec(x^5)e^{\tan x}$, $(ii) y = \ln(\sqrt{1-x^2}) + \cot(\frac{3x+1}{x^2-5x})$,

$(iii) y = (\sin x)^{\tan^{1-} x}$, $(iv) e^{x+y} = \sin(xy)$.

(ب) اذا كان $y = cos(m\ sin^{-1}\ x)$ فاثبت أن

$(1-x^2)\frac{d^2y}{dx^2} - x\frac{dy}{dx} + m^2 y = 0$ حيث m مقدار ثابت. (7 درجات)

السؤال الثانى:- (12 درجة)

اوجد **أربعة فقط** من التكاملات الآتية:- (3درجات لكل فقرة)

$(i)\int e^{x+e^x}dx$, $(ii)\int \frac{\tan(\sqrt{x})}{\sqrt{x}}dx$, $(iii)\int \frac{xe^{\sqrt{1-x^2}} + \sin^{-1} x}{\sqrt{1-x^2}}dx$,

$(iv)\int \sqrt{1-\frac{1}{x}}\frac{1}{x^2}dx$, $(v)\int \cos^3 x dx$, $(vi)\int \frac{1}{x\sqrt{1+\ln(x)}}dx$.

السؤال الثالث:- (13 درجة)

(أ) **(7 درجات)**

سجلت سيارة رادار على طريق دائرى بين محافظتين سرعات ثلاثون سيارة بالميل كل ساعة فى فترة معينة فكان الجدول التالى بين فترات السرعة (x-) وعدد السيارات (f):

x-	51-	55-	59-	63-	67-	71-	75-
f	1	6	5	8	3	4	3

أوجد: (i) الوسط الحسابى للسرعة (ii) المنوال بأى طريقة

باقى الأسئلة أنظر خلفه ←

(ب) أجب عن **اثنين فقط** مما يأتى: **(3 درجات لكل فقرة)**

(1) اذا كان C,D حدثان متنافيان فى فضاء عينة S فإن: ...= $P(C \cup D)$. واذا كان A,Bحدثان آخران من حوادث S وكان: $P(A)=0.4, P(B)=0.3, P(A \cap B)=0.2$ فهل A,B متافيان؟ ولماذا؟ ثم احسب الاحتمالات الآتية: $(i)\ P(A^c)$ $(ii)\ P(A/B)$ $(iii)\ P(B^c/A)$

(2) عرف رياضيا: التوقع الرياضى E(X) – التباين V(X) لأى متغير عشوائى X. واذا اعطيت دالة الكتلة الاحتمالية: $p(x) = \frac{1}{34}(x^2+1)$ $x=1,2,3,4$, و $P(x)=0$ لغير ذلك من قيم x. أوجد:

$E(X), V(X)$

(3) المتغير العشوائى X يتبع توزيعا بمتوسط $\mu=10$ وتباين $\sigma^2=16$. احسب الاحتمالات:

$(i)\ P(8 < X < 18)$ $(ii)\ P(X > 14)$

استخدم: $P(0 < Z < 2)= 0.4772$, $P(0< Z < 1) = 0.3431$, $P(0 < Z <0.5)=0.1915$

السؤال الرابع:- **(12 درجة)**

(4 درجات لكل فقرة)

(أ) استخدم طريقة كرامر لحل نظام المعادلات الآتي:

$x+2y+3z = 14$, $x+4y+2z =15$, $x+5y+4z=23$

(ب) اجب عن **اثنين فقط** مما يأتى:

(1) اثبت أن: $\frac{x^2+x\_1}{(x+1)^2(x^2+1)} = \frac{1}{2(x+1)^2} + \frac{1}{2(x^2+1)}$

(2) استخدم خواص المحددات لإثبات أن:

$$\begin{vmatrix} 1 & a & a^3 \\ 1 & b & b^3 \\ 1 & c & c^3 \end{vmatrix} = (a-b)(b-c)(c-a)(a+b+c)$$

(3) حلل الكسر: $\frac{x^2-1}{(x^2+1)(x-2)}$ الى كسوره الجزئية.

انتهت الأسئلة مع أطيب التمنيات بالتوفيق والنجاح

الممتحنين: أ.د./ عبد الباسط عبد الله د./ منصور السيد أحمد

Final Examination of Physical and Inorganic Chemistry for Pre-Pharmacy Students

Section (I)

Answer <u>only three</u> of the following: (60 Marks)

A)Discuss the kinetics of the following reactions:

$A \xrightarrow{K_2} B$ and $A \underset{K_{-1}}{\overset{K_1}{\rightleftharpoons}} B$

Where K2 is the rate constant for a second order reaction and Kl, K_l represent the values for first order inetics.

B)Derive the following thermodynamic relations:

i)Volume and temperature for adiabatic processes.

ii)Entropy change and temperature for processes carried out either at constant volume or constant pressure.

A)Discuss the effect of temperature on reaction rate.

B)Write a brief account on the following:

i) Standard cells. ii)Reversible and irreversible cells.

iii)Calomel electrode. iv)Measurement of single electrode potential.

A)Derive an expression for the efficiency of heat engine working between two temperatures T_1 and T_2.

B)The specific rate constant for the hydrolysis of ethyl acetate by NaOH is 6.36 $(mole/liter)^{-1}$ min^{-1}. Starting with concentrations of base and ester of 0.02 mole/liter. Calculate the following:

i)The half-life period of the hydrolysis. ii)fraction of ester which hydrolyzed in 10 min.

A)16 grams of O_2 at 30°C and under pressure of 10 atm. are permitted to expand adiabatically and reversibly until the final pressure is one atm. Find the final temperature, q , w , ΔE , ΔH and ΔS for the process. [Cp=7.0 $cal.mol^{-1}k^{-1}$ and O=16]

B)Discuss the following:

i)Two methods for reaction order determination.

ii)The relation between C_p and C_v.

iii)The relation between enthalpy change and internal energy change of an ideal gas.

Section (II)

Answer <u>only Four</u> of the following: **(60 Marks)**

A)Calculate the energy liberated when an electron drops from the fifth to the lowest energy level in hydrogen atom.

B)Complete the following:

i)The mathematical expression of Heisenberg uncertainty principle is.....

ii)The bond order of He_2^+ is .....

iii) The redius of $^{238}U_{92}$ nucleus is ..... Cm.

iv)The oxidation number of P in $Na_3P_3O_9$ is .....

A)Draw the lewis structure of the chlorate ion ClO_3^- (Cl atom is the central atom) and calculate the formal charge on each atom of it

B)Choose the correct answer of the following:

i)The Lyrnan series of hydrogen spectrum appears in .....

a-Ultraviolet region b- Visible region c-Infrared region.

ii)Applying $n_1=3$, $n_2=6$ in Rydberg equation gives the wavenumber of third line of .....series.

a-Brakett b-Balmer c-Paschen

iii)The geometrical shape of NH_3 is.....

a-Triangular planar b- Tetrahedral c- Trigonal pyramidal.

iv)A type of radioactive decay processes that increases the neutron/proton ratio of a nuclide is.....

a-Beta emission b-Positron emission c-Alpha emission

انظر خلفه

(A)Use the VSEPR theory to predict the geometrical shape of PF_5. What type of hybrid orbitals is employed by the central atom.

(B)The bond distance in the BrF molecule is 176 pm and the dipole moment of BrF is 1.29D. Calculate the partial ionic character of the BrF bond. The unit charge, e, is $1.6xl0^{-19}$C and ID is $3.34x\ 10^{-30}$C.m.

(A)Draw molecular-orbital energy-level diagrams for O_2^+, O_2 and O_2^- State the bond order for each, which of the three are paramagnetic.

(B) Write equations for the following examples of radioactive decay:

i)Alpha emission by $^{210}PO_{82}$. ii)Electron capture by $^{197}Hg_{80}$.

(A) Write the nomenclature of the following complexes:

i)$[CoCl(H_2O)_5]^{2+}$. ii)$[Ni(CN)_6]^{2-}$.

B)The nuclide $^{76}Br_{35}$ has a half-life of 16.5 hours. How much of a 0.010 g sample remains at the end of 1.0 day?

atomic numbers: H=l, He=2, B=4, Be=5, C=6, N=7, O=8, F=9, P=15, CI=17, S=32.

Section (III)

Answer the following: **(30 Marks)**

If the atmospheric pressure equals 0.997 atm at a certain height where air consists of N_2, O_2 and CO_2 only, and the weight percent of N_2 and O_2 found to be 76.16026 and 22.0155 respectively, Calculate the partial pressures of the three gases, knowing the atomic weights N=14.0067, O=15.994, C=12.0l11.

Express **Four Only** of the following mathematically and graphically:

1- Why do atoms assemble into crystals.
2-Calculate APF for FCC.
3-Dalton's law for mixtures of gases.
4-Rault's law for mixtures of liquids.
5-Deviation of gases from ideal behavior.

Good Luck

Examiners: Prof. Dr. Rabei Gabr, Prof. Dr. Ahmed H. Osman, Dr. Zaher khafagy

Assiut University Faculty of Science Botany Department		جامعة أسيوط كلية العلوم قسم النبات
General Botany Exam. for Pre-pharmacy Students, February 2012		
Time allowed: 3 hrs	الامتحان فى **6** صفحات	**(تخلفات)** 175 Marks

Plant Physiology (35 Marks)

Answer All the Following Questions

I. Underline the correct answer (1/2 Mark each, Two points free):

1. Stroma in (chloroplasts - mitochondria) is similar to matrix in (chloroplasts - mitochondria); they both accommodate biochemical reactions.
2. Thylakoid membranes resemble cristae; they both contain (electron transport components - photosynthetic enzymes - chlorophylls).
3. Cytochromes are electron carriers in (mitochondria only - chloroplasts only - mitochondria and chloroplasts).
4. Ferridoxin is the electron acceptor from (PSI - PSII - H20).
5. Ferridoxins are proteins conjugated with (iron - cupper - magnesium).
6. Plastoquinone pool (PO) accepts electrons from (PSI - PSII - H20).
7. Ferridoxins donate electrons to (NADP+ - NADPH+H+ - ATP).
8. Respiration starts by glycolysis in the (mitochondria - cytosol - chloroplasts).
9. Release of respiratory C02 takes place in the (mitochondria - cytosol - chloroplasts).
10. Oxidation of pyruvate into acetyl CoA is a transition reaction linking glycolysis to (Krebs cycle - Calvin cycle - oxidative phosphorylation).
11. Carotenoids exist in the (thylakoid membranes - stroma -lumen).
12. Carotenoids are absolutely stable because of their (isoprenoid structure - their yellow or red color - both).
13. Each molecule of (carotenoids - chlorophyll - cytochrome) contains one single magnesium atom.
14. (Glycolysis - Light - Dark) reactions of photosynthesis are independent on the presence of light.
15. (Two - Three - Four) electrons release per each oxygen molecule evolved in photosynthesis.
16. Enzymes (accelerate - start up - inhibit) cellular reactions.
17. Each polypeptide chain contains (one - two - multiple) active center(s).
18. Enzymes resemble catalysts as they both (lower the energy of activation - act under physiological conditions of temperature, pH, etc. - neither).

19. ATP synthesis can be driven by (light energy only - food oxidation - light energy or food oxidation).
20. The substrate of Rubisco is (ribulose 1,5 bisphosphate - oxaloacetic acid - glyceraldehyde 3 phosphate)
21. Organisms lacking (chlorophyll a - chlorophyll b - carotenoids) cannot perform ph otosynthetic activity.
22. The active center is best illustrated in (primary - secondary - tertiary) structure of the protein.

II. Write down the scientific term best expressing the following information (1/2 Mark each, one point free):

1	A metabolic process cleaves one glucose molecule into two pyruvates.	
2	A type of respiration its energy output is only 2 ATP molecules per each glucose molecule.	
3	The inhibition of enzyme activity by compounds similar to the substrates	
4	The specific position at which a substrate molecule fits into the enzyme molecule.	
5	The organelle at which photosynthesis occurs	

III. Mark the correct answer only (1/2 Mark each, one point free):

1. Water in photosynthesis is the source of:
   a. electrons b. oxygen. c. both

2. Active sites in proteins are formed at its:
   a. primary structure b. secondary structure c. tertiary structure

4. The principle function of the light-dependent reactions of photosynthesis is to:
   a. use ATP to make glucose. b. convert light energy to glucose.
   c. produce energy-rich ATP and NADPH.

5. The enzyme catalyzed reactions are characterized by:
   a. lowered energy of activation b. unspecificty c. none of a &b

6. Oxygen is consumed in plant cells by the following enzymes:
   a.oxidoreductases b.ligases c. hydrolases

7. The carbon reduction cycle (Calvin cycle) can be subdivided into:
   a. two stages b. three stages c. four stages

IV. Write down the correct answer in the appropriate box in the table below (1/2 Mark each, one point free):

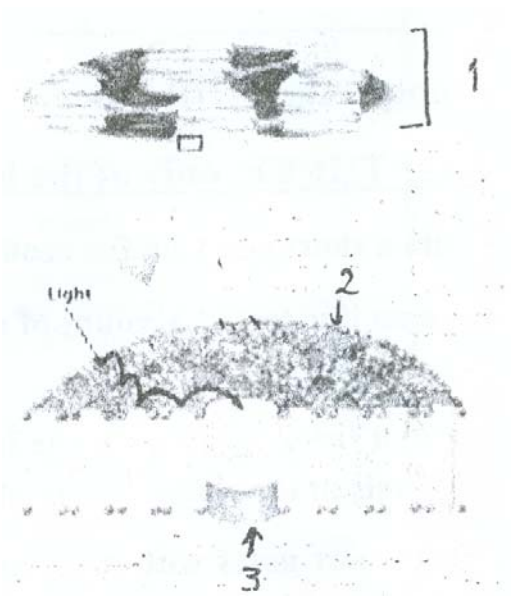
a. NADH b. active center c. chlorophyll molecules
d. protons e. carotenoids

1		Is a coenzyme
2		Occur in the thylakoid membranes
3		Contain conjugated bonds
4		Is the site at which the substrate is adsorbed to the enzyme polypeptide chain
5		Accumulate in the lumen

V. Describe diagrammatically <u>Three ONLY</u> (5 Marks each):

1. Calvin cycle
2. Glycolysis
3. Light reactions
4. Mode of enzyme action (key and lock theory)

VI. Write down the name and function of the part indicated by the arrow on the figure (3 Marks):

	Name	Function	
1			
2			
3			

Best wishes,
Rafat Abdel-Basset

Firstly: Fungi (Drawing is very important) (20 Marks)

Answer FOUR only of the following: (5 Marks for each)

1- (a) Discuss the mechanism of nutrition in fungi and algae
   (b) Draw only a labeled diagram of: (i) Basidiospores (ii) Ascus
2- Give an illustrated account of asexual reproduction in *Claviceps*, with special reference to its medical importance.
3- Give an illustrated account of various sexual ascocarps (ascomata) in Euascomycetes.
4- Discuss any three methods of asexual reproduction in fungi.
5- Discuss the importance of flagella in classification of Mastigomycotina.
6- Describe with the help of drawing sexual reproduction in yeasts, with special reference to its economic importance.

Secondly: Algae (Drawing is very important) (15 Marks)

Answer THREE only of the following: (5 Marks for each)

1- Write a short essay on the economic importance of algae.
2- Give an illustrated account of asexual reproduction in green unicellular alga studied by you.
3- Write a brief account on the importance of pigments and reserve food materials in the classification of algae.
4- Write short notes with drawing on range of vegetative thallus structure and various kinds of sexual reproduction in algae with suitable examples.

"Good Luck"

Prof. M. A. El-Nagdy

Taxonomy, macro- & micro-morpology

Answer question (1) then select to answer (3) only of the other questions

Question No. 1 **هذا السؤال اجبارى** **(39 marks)**

Choose the correct answer (put your answer in the table):- **(1.0 mark each)**

(1) Composed of two layers of proteins sandwiching a double layer of lipid molecules:-
a. plasma membrane b. endoplasmic reticulum c. nuclear membrane d. all the prece

(2) Protoplasmic threads that connect the protoplasm of the adjacent cells through pits are:
a. plasmolysis b. plasmodia c. plasmids d. plasmodesmata

(3) Thylakolds that cross intergrana region form structures called:-
a. thylakolets b. interstructure c. connection d. frets

(4) Considered as the code carrier and acts in the building up of protein molecules: ..
a. t-RNA b. s-RNA c. m-HNA d. r-RNA

(5) In *Ficus leaf*, a protrusion of Ca-carbonate is deposited forming a cluster-like called:-
a. raphldes b. aleurone grain c. cystolith d. druses

(6) Nicotine, morphine, strychnine and atropine are:-
a. alkaloids b. tannins c. anthocyanin d. glycoside

(7) The primary meristem that present only in roots is called:-
a. calyptrogen b. protoderm c. ground meristem d. procambial strands

(8) The type of stomata that present in Graminae and Cyperaceae is:-
a. Dumb-bell b. sunken with hairs c. sunken d. all the preceding

(9) The types of parenchyma that play a function in photosynthesis are called:-
a. aerenchyma b. chlorenchyma c. collenchyma d. sclerenchyma

(10) The elastic supporting tissue, in rapidly growing parts of dicot stems is:-
a. Parenchyma b. sclerenchyma c. collenchyma d. all the preceding

(11)Develop from parenchyma cells and have very thick Iignified 2ry wall:-
a. vessels b. fibres c. sclereides d. sieve tubes

(12) The phloem that consists of sieve tubes and companion cells is called:~
a. 2ry phloem b. regular c. irregular d. all the preceding

(13) The collateral vascular bundle with a sheath and without carnbium is called:-
a. closed b. bicollateral c. open . d. radial

(14) When the flower is hypogenous, the ovary is called:-
a. superior b. inferior c. semi-inferior d. semi-superior

(15) If the sepals become colored like petals, it is called as:
a. sepaloid petals b. petaloid calyx c. tepals d. perianth

(16) A condition when filaments & anthers are fused is known as:-
a. syngenesious b. synandrous c. syncarpels d. adelphous

(17) The number of vascular bundles that intersperse mesophylltissue of flower perianth:
a. one b. Two c. three d. numerous

(18) In anther wall, the number of vascular strands may be:-
a. one b. three c. four d. all the preceding

(19) The endothecial cells of anther wall typically develop into:-
a. fibrous wall b. epidermal cells c. tapetum layer d. testa

(20) The hypodermis of the gynoecium is composed of:-
a. parenchyma b. sclereides c. collen.chyma d. fibres

(21) The flower in a spike differs from raceme in being:-
a. pedicellate b. sessile c. hermaphrodite d. sterile

(22) In corn seed, the protective cap over the plumule is called:-
a. euplumule b. testa c. coleorhiza d. coleoptile

(23)Entomophilly is the pollination by:
a. birds b. wind c. insects d. water

(24) In bitegmic seeds the testa is derived from:-
a. seed coat b. inner integument c. both integuments d. outer integument

(25) In general, the epidermal cells of seed coat are:·
a. sclereides b. parenchyma c. collenchyma d. soft cells

(26) The hourglass layer is mainly:-
a. fibers b. sclereides c parenchyma d. collenchyma

(27) In Gossypium testa the inner inteClument can be differentiated into ..... zones:-
a. Two b. three c. four d. seven

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(28) *Ananas* is an example of:-
a.sorosis b. syconus c. lomentum d. achene
(29) Carcerulus type of fruit is usually found in the family:-
a. Compositae b. Leguminosae c. Gramineae d. Apiaceae
(30) Adventious respiratory roots are seen in:-
a. Avicennia b.Onion c. Potato d. carrot
(31) The outer layer of roots is called:-
a. endoderm's b. Epidermis c. Hypodermis d. Piliferous
(32) The xylem alternate with phloem in:-
a. monocot stems b. Dicot roots c. Dicot leaves d. Dicot stems
(33) The ground tissue is not differentiated into cortex and pith in:-
a. monocot stems b. Dicot stems c. Monocot roots d. Dicot roots
(34) The xylem that composed of large vessels and less fibres of annual rings is called:-
a. summer wood b. Spring wood c. Autum wood d. Non of the preceding
(35) Succulent leaves present in:-
a. xerophytes b. mesophytes c. halophytes d. helophytes
(36) Leaves modified in *Drosera* and *Dionaea* to adapted the function of:-
a. trapping b. supporting c. food storage d. respiration
(37) In c4 plants, vascular bundles of dicot leaves are enclosed by bundle sheath composed of:
a. parenchyma b. Collenchyma c. Sclerides d. Fibres
(38) The plant family that characterized by papilionaceous flowers is called:-
a. Fabaceae b. Caesalpiniaceae c. Mimosaceae d. Brassicaceae
(39) Plant family that characterized by milky sap, numerous stamens and deciduous calyx is:-
a. Lamiaceae b. Caesalpiniaceae c. Papaveraceae d. Brassicaceae

---

Answer <u>three only</u> of the following questions

Question no. 2 هذا السؤال اختيارى **(22 marks)**

a.Draw and write short notes on the types of pits (6 marks)
b.Give short notes on the seed embryo (5 marks)
c.Write briefly on the internal structure of stigma and style (5 marks)
d.Compare between the following families :- (6 marks)
- Cyperaceae and Poaceae (GramLleae) in (stem & fruit).
- Solanaceae and Papaveraceae in (sepals & petals).

Question no. 3 هذا السؤال اختيارى **(22 marks)**

a.Compare between fibres and sclereides (5 marks)
b.Draw & write short notes on seed coat micro-morphology of Brassicaceae (6 marks)
c.Define:- diplostemony - cyathium - funiculus - Coleorhiza (5 marks)
d.Enumerate 1 botanical name and its importance belonging to each of families: (6 marks)
Papaveraceae, Brassicaceae, Caesalpiniaceae, rabaceae, Poaceae & Asteraceae.

Question no. 4 هذا السؤال اختيارى **(22 marks)**

a. Draw and write short notes on morphological regions of the root (6 marks)
b. Write short notes on the types of meristematic tissues (5 marks)
c. Describe the floral characteristics of Papaveraceae with floral diagram.
Enumerate 2 plants belonging to this family. (6 marks)
d. Compare between monocot and dicot stems (5 marks)

Question no. 5 هذا السؤال اختيارى **(22 marks)**

a.Write briefly on the mechanism of stomatal opening (6 marks)
b.Draw an illustration showing eight only of the lamina shapes (4 marks)
c.Draw and write short notes on the internal structure of flower ovary (6 marks)
d.Compare between the followings:- (5 marks) (6 marks)
- Mimosaceae and Fabaceae in (corolla & stamens).
- legume and siliqua, give an example to each

Best Wishes .... Prof. Dr. Momen Zareh

Department of Mathematics		قسم الرياضيات
Faculty of Science		كلية العلوم
امتحان نهاية الفصل الدراسي الأول ٢٠١١/٢٠١٢م (تخلفات)		
الفرقة: اعدادى صيدلة (تخلفات)	درجة الامتحان: ٥٠ درجة	التاريخ: ٢٠١٢/٢/١٩م
اسم المقرر: أساسيات الرياضيات والاحصاء	كود: MTH - ١٢٩	الزمن: ساعتين

أجب عن الأسئلة الآتية:-

السؤال الأول:- (١٣ درجة)

(أ) أوجد المشتقة الأولى $\frac{dy}{dx}$ للمعادلات الأتية :- (٣ درجات لكل فقرة)

$$(i)\ y=\sqrt{1-x^2}+\cos(x^3+2x),\quad (ii)\ y=(\sin^{-1}x+1)^3,\quad (iii)\ y=\sin(xy).$$

(ب) أوجد المشتقة الثانية للمعادلة $y=\cos(m\sin^{-1}x)$ حيث m مقدار ثابت. (٤ درجات)

السؤال الثانى:- (١٢ درجة)

أوجد التكاملات الأتية :- (٣ درجات لكل فقرة)

$$(i)\ \int e^{x^2}x\,dx,\quad (ii)\ \int\frac{\sin x}{1+\cos x}dx,\quad (iii)\ \int\frac{\sec^2 x}{\sqrt{1+\tan x}}dx,\quad (iv)\ \int(1+x^2)^3 x\,dx.$$

السؤال الثالث:- (١٣ درجة)

(أ) حل نظام المعادلات الأتي:

$$x+y+z=6,\quad x+y-z=4,\quad x-y+z=2$$ (٧ درجات)

(ب) حلل الكسر الأتى $\frac{1}{(x^2+2)(x+1)}$ إلى كسوره الجزئية. (٦ درجات)

السؤال الرابع:- **أجب عن فقرتين فقط مما يأتى:** (١٢ درجة)

يمكن للطالب الاستعانة بالقيم الأتية: $t(0.99,10)=2.76,\ t(0.99,11)=2.72,\ t(0.995,11)=3.11,\ P(0<Z<1.7)=0.4554$

(أ) ينتج مصنع للمواد الغذائية نوعاً من الغذاء يحتوى على مادة تساعد على النمو عند الأطفال ويجب أن تكون كمية هذة المادة محددة بشكل دقيق. فإذا كان وزن هذة المادة يتوزع توزيعاً طبيعياً بمتوسط ٣,٢ مليجرام وانحراف معيارى ١,٢ مليجرام ولدراسة مدى دقة المصنع فى اضافة هذة المادة إلى المنتج قام مدير المصنع بتحليل عينة من ٢٥ من المنتج الغذائى. احسب احتمال ألا يقل متوسط وزن هذة المادة عن ٣,٦ مليجرام. (٦ درجات)

(ب) أجريت دراسة لمقارنة عينات من أوراق الخس الملقحة بفيروس موزايك الخس بعينات من الأوراق السليمة (المراقبة) فيما يختص بمحتواها من مادة المتيونين وكانت البيانات كالتالى:

١١	٣٣	٣٦	١٨	٣٠	٢٧	المراقبة
٢١	٣٠	١٨	٢٦	٣٥	٥٠	الملقحة

هل تدل هذة البيانات على أن مستوى المتيونين انخفض من التلقيح أختبر ذلك عند مستوى ١% . (٦ درجات)

(ج) أجريت دراسة لأحد الأطباء لمعرفة ما إذا كان اضافة مادة جديدة لغذاء الرضع تحسن الوزن عن ٥٤٠ جرام فقام الباحث بإعطاء الغذاء الجديد لعينة من ١٢ رضيع وتابع الوزن المكتسب خلال شهر فكان كالتالى:

٣٤٠	٣٩٩	٢٩٥	٤٧٠	٢٤٢	٢٣٠	٤٩٦	٥١٦	٢٠٥	٣٢٦	٢٢٥	٤٤٨	الوزن المكتسب للرضيع

اختبر ما إذا كانت المادة الجديدة تفيد فى تحسين الوزن عند مستوى معنوية ١% جم. أوجد فترة الثقة لمتوسط المجتمع عند نفس المستوى. (٦ درجات)

انتهت الأسئلة مع أطيب التمنيات بالتوفيق والنجاح

الممتحنين: **ا . د/ عبدالباسط عبدالله** **د/ منصورالسيد أحمد**

Faculty of Science Department of Zoology Exam: Zoology for Clinical pharmacy students	كلية العلوم – قسم علم الحيوان	امتحان الفرقة: إعدادى صيدلة المقرر: علم الحيوان رقم المقرر ورمزه: PZO 108 الزمن: ثلاث ساعات 14 يناير 2012

Taxonomy

I I -Choose the correct answer: (30 marks/2 for each)

1- Phylum is a taxonomic ranke includes (classes - orders- families - all).
2- Anticoagulant substances secreted by leeches (Orgelase - hirudin -both).
3- One of the following organs is not related to others (flame cell- green gland - gills).
4- Rounded worms and separate sexes (Cnidaria - Mollusca - Nematoda)
5- Nematocysts are cnidarian's cells found in (endoderm - mesoderm - ectoderm).
6- Protozoans live as (free living - parasites - commensal - all).
7- *histolytica* is a (family name - generic name - species name)
8- Reproductive system of Platyhelminthes is (simple - absent - complex)
9- High diversity of arthropods is due to (metamorphosis - jointed legs - segmentation - all).
10-*Heterophyes* is a flat worm distributed at lake (Naser - Manzala - both).
11-Filaria worms live usually in the (intestine -lymphatic system - lung).
12-Sporozoites are the infective stage of *(Paramecium- Plasmodium - Trypanosoma)*
13-All flat worms are hermaphrodite except *(Fasciola - Schistosoma - Ascaris)*
14-Pearls, both natural and cultured, are produced by (snails - bivalves -leeches).
15- With four pairs of walking legs and without antennae (insects - arachnids - cestodes).

II-Put √ or X for each of the following: (30 marks/2 for each)

1- *Taenia* sp. is a cestod parasite, without digestive tract ( ).
2- Adult *Schistosoma* sp. lives in the blood vessels ( ).
3- Nematocyst is a specialized cell found in cnedarians ( ).
4- Cestod's bodies consists of scolex, neck and proglottids ( ).
5- The final host is the animal where the adult parasite live in it ( ).
6- The insect vector of *Trypanosoma* is tsetse fly ( ).
7- Nephredium is an excretory unit of Annelida ( ).
8- All trematodes are hermaphrodite except Belharzi ( ).
9- Leeches are considered as coelomate animals ( ).
10- The species is a group of similar animals ( ).
11- The insects attribute to Arthropoda ( ).
12- *Ascaris* has a direct life cycle ( ).
13- *Plasmodium* causes the malaria fever ( ).
14- Nematoda is considered as the first animal phylum with digestive tract ( ).
15- Each egg of *Schistosoma* worm gives one adult worm ( ).

III-Draw labeled diagrams for the following: (10 marks/5 for each)

A flame cell	A nematocyst

انظر خلفه ←

Cytology

I- : Choose the correct answer: 10 marks

1- Channel proteins in the plasma membrane are mainly specific for (uncharged small molecules - uncharged large molecules - ions) transportation.
2- One of the following molecules can't penetrate the synthetic lipid bilayer easily (Ethanol- CO_2 - O_2).
3- DNA replication takes place during (G1 phase - M phase - S phase).
4- The only cellular organelle rather than nucleus that contains DNA is (Golgi - RER - Mitochondria).
5- Cancer cells are expected to have (condensed nucleus - rounded nucleus - open face nucleus).
6- 2ry lysosome is resulting from attacking of 1ry lysosome to a (phagosome - foreign body - both).
7- Bax is a (apoptotic protein - antiapoptotic - Oncogene)
8- Increase of p2I induces (G2/M - S phase - both) cell cycle arrest.
9- Drugs induce apoptosis via activating (Bax - Bcl2 - p21).
10- Steroid hormones-secreting cells are expected to be rich in (SER - Golgi - RER).

II-: Put (√) or (X) infront of the following sentences: 10 marks

I-The Iry transcripts of ribosomal RNA are located in ribosomes
2-Melanin is an endogenous pigment and secreted by melanocytes
3-Incoming transport vesicles enter the mature face of Golgi apparatus to be concentrated
4-Antigens are located on the plasma membrane
5-G 1 phase of the cell cycle is the main growth phase
6-Decoding ofmRNA takes place by ribosomes
7- The time required for a cell to give two daughter cells is called doubling time
8-Mitochondrial damage takes place during programmed cell death
9-Nucleolus consists mainly of proteins, rRNA, DNA and certain enzymes
10-Separation of the two daughter cells from each other occurs in M phase

III- Write briefly on the followings: 15 marks

1- Functions of cell coat.
2- Functions of mitochondria. '
3- Types of chromatin in relation to DNA activity.

انتهت الأسئلة مع تمنياتنا بالتوفيق

د. اسماعيل أحمد **أ.د. ناصر الشيمى**

Assiut University
Faculty of Science تخلفات Jan.:2011
Chemistry Department Time: 3 hours

Final Examination of Physical and Inorganic Chemistry for Pre-Pharmacy Students

Section (I)

Answer only four of the following: (76 Marks)

l-(A)If an element consists of 60.10% of atoms with a mass of 68.926 u and 39.90% of atoms with a mass of 70.925 μ, what is the atomic weight of the element?

(B)Draw the lewis structure ofSF6. what type of hybrid orbital is employed by the central atom.

2-(A)Use the concept of electron-pair repu1sions to predict the geometric shape of (i)$NH_3$and (ii)BF3.

(B) Calculate the energy required to remove an electron from the lowest energy level of the hydrogen to produce the H^+ ion.

3-(A)Diagram the resonance forms of (i)CO_3^{-2} ion and (ii)SO_2.

(B)Choose the correct answer of the following:

(i)The geometrical shape of H_2O is .....

a-Linear b-Tetrahedral c-Angular.

(ii)The oxidation state of U in Mg_3 UO_6 is .....

a-9 b-6 c-5.

(iii)An emission that results in decrease the atomic number by one with no change in mass number is ....

a-Electron capture b-Beta emission c-Gamma radiation.

(iv)The bond order in B_2 molecule is .

a-0 b-1 c-1/2.

4-(A)Draw molecular -orbital energy level diagrams for N2 and N2+. State the bond order of each.

(B)The nuclide $^{198}Au_{79}$ has a half-life 64.8 hours. How much of 0.010 g sample remains at the end of 1.00 day?

5-(A)For the complex $[Co(NH_3)_4Cl_2]^+$ write: a)The oxidation state of the metal.

b)The coordination number of the metal. c)The geometrical shape of the complex.

d)The IUP AC name of the complex. e)The possible isomerism showing by the complex.

Atomic numbers: H=l, B=4, Be=5, C=6, N=7, O=8, F=9, Mg=12, P=15, Cl=17, S=32.

Section 11

Answer four only of the following: (76 Marks)

l-(A)Deduce a rate law for the first order reaction.

(B)Assuming helium gas to be an ideal gas, calculate the work done by 6 g of helium in expanding isothermally and reversibly from 20 atm. to 10 atm. at 27°C. What the values of q, ΔE, ΔH and ΔS for this process. (He = 4).

2-(A)Write a brief accounts on each of the following:

i) Reversible and irreversible cells. ii) Calomel electrode.

(B)Derive an expression for the efficiency of heat engine working between temperatures T_1 and T_2.

3-(A)Estimate the mathematical expression for the relationship between volume and temperature in temperature in an adiabatic process.

(B)A certain second order reaction is 20% completed at 20 min. calculate the time required to 60% completed of this reaction at the same temperature.

4- (A) Evaluate the relationship between Cp and Cv for the ideal gas.

(B) Write the thermodynamic expressions which describe the following statements:

i) Entropy' change of a reversible process. ii) Third law of thermodynamic.

iii) Relationship between pressure and volume for an adiabatic process.

5-(A) Discuss the use of half-time method for the determination of the reaction order.

(B) One mole of water vapor is condensed at 100°C and the water obtained is cooled to 0°C and then frozen to ice. Calculate the entropy change for these processes.(Latent heat of fusion and evaporation of ice and water are 80 and 540 cals/gm respectively and the heat capacity of water is 1.01 cal/gm. K.

أنظر خلفه

Section (III)

Answer only five of the following: (38Marks)

(1) Consider the reaction:

$C_{(S)} + 2\ H_{2(g)} \leftrightarrow CH_{4(g)}$ $\Delta H = -75$ kJ

Which way will the equilibrium shift by?

(a) An increase in temperature. (b) An increase in the pressure of hydrogen.

(c) Addition of more hydrogen. (d) A decrease in the pressure of methane.

(2) In the following reaction;

$N_{2\ (g)} + 3\ H_{2(g)} \longrightarrow 2NH_{3(g)}$

Calculate the volume of nitrogen under STP conditions required to produce 200 cm^3 of ammonia at STP also.

(3) Show by plot only Andrew's curves for CO_2 liquefaction.

(4) For the equilibrium: $2SO_{2(g)} + O_{2(g)} \leftrightarrow 2SO_{3(g)}$

Calculate K_p at 900 K if K_c for the same equilibrium is 56 at 900 K.

(5) Define the following:

Allotropy - Triple point of a substance - Vapor pressure of a liquid.

(6) Choose the correct Answer in each of the following:

A) Critical temperature of CO_2 is:

(i) 13°C; (ii) 31°C; (iii) 133°C; (iv) 43°C.

B)For a mixture of nitrogen and oxygen which of the following relations is incorrect?

(i) $P_{total} = P_{N_2} + P_{O_2}$; (ii) $P_{N_2} = X_{N_2} \bullet P_{total}$;

(iii) $P_{O_2} = X_{N_2} \bullet P_{total}$; (iv) $P_{O_2} = X_{O_2}$. Ptotal.

C) Which of the following gases effuse faster?

(i) NH_3; (ii) H_2; (iii) CO; (iv) CO_2.

(Atomic weights; H = 1, O = 16, N = 14, and C = 12)

D) Which of the following values of the universal gas constant is incorrect?

(i) 8.314 kPa dm^3 mol^{l} K^{-1}; (ii) 8.314 Nm^{-l} mol^{-1} K^{-1};

(iii) 0.082 L atm mol^{-1} K^{-l}; (iv) 8.314 J mol^{-1} K^{-1}.

Good Luck

Examiners: Prof. Dr. Ahmed H. Osman, Prof. Dr. Bahaa M. Abu-Zied and Dr. Gamal A. Ahmed

Assiut University Faculty of Science

Final Exam for (Pre-Pharmacy 2012)

Date of exam (03.06.2012) Time: 3 Hours Total mark (150 marks)

Bio-Physics (Dr. Mohamed Rashed)

Answer the following question

Question 1: (30 marks)

(A): Put (√) or (x) in the following sentences:

1-	The center of gravity does not shift as the person moves and bends.	( )
2-	In equilibrium, the torque about the fulcrum do not equal zero.	( )
3-	Sound is a mechanical wave produced by vibrating bodies.	( )
4-	According to the Doppler effect, The frequency of sound detected by an absorver depants on the relative motion between the source and the observer.	( )
5-	The speed of sound wave v depends on the material that propagates the sound.	( )
6-	The stability against a toppling force is increasing by spreading the legs.	( )
7-	Heat can be defined as energy being transferred from a hotter body to a colder body.	( )
8-	In a solid material, the atoms are bound together; the random motion is more restricted than in liquids.	( )
9-	If one end of a solid rod is placed in the proximity of a heat source such as a fire, after some time the other end of the rod will become hot. In this case, heat has been transferred from the fire through the rod by convection.	( )
10-	Materials such as metals, which contain free electrons, are poor conductors of heat.	( )

(B): Choose the correct answer: *Bio-Physics*

1-	----------, the fulcrum is located between the applied force and the load.		
(a): In a Class 1 lever		(b): In a Class 2 lever	(c): In a Class 3 lever
2-	If the adhesive force is ---------- the cohesive force, the liquid wets the container wall, and the liquid surface near the wall is curved upward.		
(a): greater than		(b): equal	(c): smaller than
3-	The human ear can hear in the frequencies range ---------- Hz.		
(a): 200-4000		(b): 20-20000	(c): 20-2000
4-	The ---------- of an erect person with arms at the side is at approximately 56% of the person's height measured from the soles of the feet.		
(a): weight		(b): center of gravity	(c): length
5-	The ----------. Convert sounds to nerve impulses.		
(a): middle ear		(b): sensory cells	(c): outer ear
6-	If the adhesive forcer is ---------- the cohesive force, the liquid surface near the wall is curved downward.		
(a): greater than		(b): equal	(c): smaller than
7-	The pressure required to withdraw water from the soil is called the ----------.		
(a): surfactants		(b): surface Tension	(c): soil moisture tension
8-	The maximum pressure driving the blood at the peak of the pulse is called the -----		
(a): diastolic pressure		(b): surface Tension	(c): systolic pressure
9-	---------- transmit information between neurons.		
(a): The interneurons		(b): The motor neurons	(c): The sensory neurons
10-	The molecules spread from the region of high concentration to regions of lower concentration. This process is called ----------.		
(a): diffusion		(b): conduction	(c): radiation

Answer only three of the following *Bio-Physics*

Question 2: (15 marks)

(A): Heat is transferred from one region to another by three types. Sate the definition of every type together with its relation. (9 marks)

Answer:

Type name:	**Type name:**	**Type name:**
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(B): Proof the Bernoulli's equation which gives the relationship between velocity, pressure, and elevation in a line of the flow. (6 marks)

Answer:

Question 3: (15 marks) *Bio-Physics*

(A) A person stand with spreading his legs with 70 cm, his height from his shoulders to his feet is 140 cm, his weight is 80 Kg and his foot width is 10 cm. Calculate the magnitude of the external applied force needed to topple this person. **(6 marks)**

Answer:

Explain how the action potential is producing and propagating in the axon. **(9 marks)**

Answer:

Question 4: (15 marks) *Bio-Physics*

(A) A person stand at rigid attention with height from his shoulders to his foot is 140 cm, his weight is 8

external applied force needed to topple this person. **(6 marks)**

Answer:

(B): The neurons, which are the basic units of the nervous system, can be divided into three classes, p

Answer:

Class name:	**Class name:**	**Class name:**
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Question 5: (15 marks) *Bio-Physics*

(A): The human ear is usually divided into three main sections: the outer, middle and inner ear. Defin

Answer:

Outer ear	**Middle ear**	**Inner ear**	
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(B): Proof that, when a liquid is contained in a vessel, it will wets the container wall than rise in a narr

Answer:

Optics (Dr. Mohamed Almokhtar) *Optics*

Part I. Choose the correct answer for the following questions (30 marks)

1-	The optical power of a converging surface is			
(A): negative		(B): positive	(C): zero	(D): infinity
2-	The power of a lens is measured in			
(A): meter		(B): Newton	(C): diopterw	(D): joule
3-	The curvature of the incident wave of an object located at the center of curvature of a concave mirror is:			
(A): Equal to the curvature of the mirror		(B): Larger than the curvature of the mirror	(C): smaller than the curvature of the mirror	(D): zero
4-	When the L/L' >1, where L is the initial vergence and L' is the final vergence, then:			
(A): the image is elongated		(B): the image is dimensioned	(C): the image is incidence	(D): non of the above
5-	The index of refraction of a substance is defined as:			
(A): The speed of light in the substance		(B): the angle of refraction	(C): the angle of incidence	(D): The speed of light in vacuum divided by the substance
6-	At what distance in front of a concave mirror must an object be placed so that both the incident wave and the reflected wave have the same curvature			
(A): a focal length		(B): half a focal length	(C): center of curvature	(D): less than half focal length
7-	Two thin lenses (focal lengths *f1* and *f2*) are in contact.Their equivalent focal length is:			
(A): f1 + f2		(B): f1f2/(f1 + f2)	(C): 1/f1 + 1/f2	(D): f1 – f2
8-	When light travels from air to glass:			
(A): both the speed and the frequency decrease		(B): both the speed and the frequency increase	(C): both the speed and the wavelength decrease	(D): both the speed and the wavelength increase
9-	Which of the following types of electromagnetic radiation travels at the greatest speed invacuum?			

(A): Radio waves	(B): Visible light	(C): X rays	(D): All of these travel at the same speed
10- The separation of white light into colors by a prism is associated with:			
(A): wave nature of light	(B): variation of index of refraction with wavelength	(C): a decrease in the speed of light in the glass	(D): non of the above
11- Light is focused on the retina by			
(A): The cornea	(B): The outer surface of the crystalline lens	(C): The inner surface of the crystalline lens	(D): all of them
12- Light diffraction at the eye occurs mainly at			
(A): The outer surface of the crystalline lens	(B): The cornea	(C): The inner surface of the crystalline lens	(D): all of them
13- The image formed at the retina is			
(A): an erect dimensioned image	(B): an inverted dimensioned image	(C): an inverted elongated image	(D): an erect elongated image
14- The focal point of cornea-lens system in a normal eye is formed:			
(A): at the retina	(B): behind the retina	(C): in front of the retina	(D): none of them
15- A nearsighted person eye will have the image			
(A): at the retina	(B): in front of the retina	(C): behind the retina	(D): none of them
16- What type of eyeglasses should a longsighted person wear?			
(A): diverging lenses	(B): bifocal lenses	(C): converging lenses	(D): plano-convex lenses
17- Astigmatism is a result of:			
(A): an increase in the curvature of the cornea of the eye	(B): an decrease in the curvature of the cornea of the eye	(C): asymmetry o the cornea	(D): an increase of the diameter of the eye ball
18- The minimum size of an object that the eye can see at one meter distance is around:			
(A): 0.3 mm	(B): 3 mm	(C): 1 cm	(D): 0.5 cm
19- In the compound microscope, the object must be placed:			
(A): at the focal point of the eyepiece lens	(B): inside the focal point of the objective lens	(C): outside the focal point of the eyepiece lens	(D): inside the focal point of the objective lens
20- The image formed by a simple microscope is:			
(A): erect, real and enlarged	(B): erect, virtual and enlarged	(C): erect, virtual and demensioned	(D): inverted, virtual and enlarged

Part II: Answer the following questions (17 marks) *optics*

1- Draw a diagram of a compound microscope, showing the rays coming from the object and from the images by the objective lens and the eyepiece lens **(7 marks)**

Answer:

2- Draw a diagram of a telescope, showing the image formed by the objective lens and the eyepiece lens. **(5 marks)**

Answer:

3. In the following finger, each number indicates a type of the electromagnetic waves in the spectrum. Choose the type of the electromagnetic waves corresponding to each number from the following (5marks):
gamma rays, visible light, ultravilot, microwaves, x rays, radio waves

Part III: Answer four of the following questions (28 marks, 7 marks for each)

1. Calculate the apparent diameter of a solid glass sphere of 20 cm diameter and 1.5 refractive index

Answer:

2. Calculate the power of a refracting spherical surface of radius 20 cm when the medium on its convex side has an absolute refractive index of 1.3 and that on its side is 1.6.

Answer:

3. A thin double convex lens has a refractive index 1.5 and each surface has a radius of curvature of 20 cm, calculate the power when placed in
(a) air, (b) in water of refractive index 1.3

Answer:

4. If the near point of a long sighted eye is at 100 cm, find the power of the lens suitable for reading (to read a book at 25 cm from the eye)

Answer:

5. Assuming that the radius of curvature of the cornea in the human eye is 8 mm and the external and internal surfaces of the lens within the eye have radii of 1 cm and 6 mm respectively, the refractive index of the lens is 1.41 and that of the eye liquid is 1.34

Calculate:

a. The combined power of the cornea and the lens
b. The distance of the retina from the lens when the eye is looking at an object at infinity

Answer:

Assiut University June 2012
Faculty of Science /Chemistry Department

Final exam of Organic Chemistry for prepharmacy students

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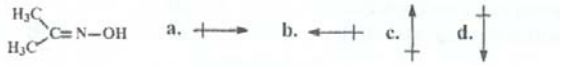
Answer the following questions ..... (80 marks)

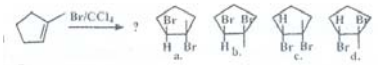
I. Choose the correct answer(s): ..... (40 marks)

1. Who is believed that organic chemicals found in nature contained a special *"vital force"* that directed their natural synthesis. a. Berzelius b. Frederich Wohler c. Kekule d. no one of them.
2. The first organic compound was synthesized from inorganic compound in the laboratory is: a. ethanol b. benzoic acid c. urea.
3. Circle the nucleophile species. Underline the electrophile species H_3C-COOH CH_3NH_z Br* BH_3 $H_2C=CH_2$
4. The number of nonbonding electrons in O=C=O is: a.8 b. 12 c. 10 d.6
5. The No. of bonding electrons in ClO_3^{-1} is: 8 b.12 c.I0 d.6
6. Which of the following is nonpolar molecule: a. H_2O b. CO_2 c. CH_3CO_2H? d. CH_3COCH_3
7. Which pair of the following compounds is miscible: a. Acetic acid/water b. n-hexane/methanol c.ethanol/acetone.
8. Which ofthe following is protic solvent: a. C_6H_6 b. CH_3COCH_3 c. C_2H_5OH?
9. Which of the following is an isomer of CH_3CH_2COOH? a. $HCOOCH_2CH_3$; b. $CH_3CH_2OCH_3$ c. $CH_3COCH_2CH_3$ d.CH_3COOCH_3
10. The compound CH_3COCH_3 is classified as: a. an acid; b.an alcohol; c. an ester d. a ketone.
11. What atomic orbitals are involved in making a C-C bonds in ethane: a. SP3-SP3 b. P-P c. SP2-SP2 d. SP3-S e. SP2-S
12. Which of the following is Lewis base: a. CH_3NHCH_3 b. $CH_3CH_2CH_3$ C. CH_3NO_2.
13. What is the direction of the dipole moment in the molecule whose structure is shown below?

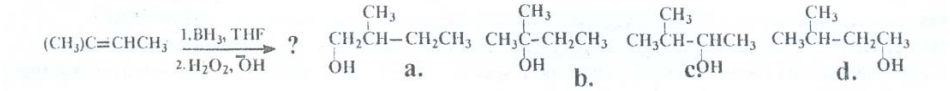


14. Which normal alkane has the highest density: a. C_2H_6; b. C_3H_8; c. C_4H_{10}; d. C_7H_{16}
15. In a molecule of C3H8, the total number of covalent bonds is a. 11; b. 10; c. 3 d. 8.
16. Which compound is a ketone? a. CH_3COOH; b. CH_3CHO; c. CH_3COOCH_3; d. CH_3COCH_3.
17. Ethyne has which one of the following shapes? a. tetrahedral; b. planar triangular; c. linear; d. bent.
18. A specific arrangement of several which gives characteristic properties to an organic molecule is known as a (an): a. carboxyl group; b. functional group; c. group; d. alkyl group.
19. How many carbon atoms are in one molecule of 2,3,3-trimethyl- pentane? a.5; b.8; c.6; d.13
20. In the above how many 1° C, 2° C, 3° C, 4°C
21. In Newman Projection Formulas of ethane: a. staggered form has greater potential energy than eclipsed form. b. eclipsed fonn has greater potential energy than staggered. c. the two forms are equal in potential energy
22. Normal alkenes and cycloalkanes are similar in: a. general formula b. in elements of unsaturation c. physical properties d. some chemical properties
23. 3-bromopent-2-ene can be exist as: a. E and Z form b.cis and trans form, c. z form d. E form.
24. a. 3-methylbut-l-ene has more potential energy than 2-methylbut-2-ene b. 2-methylbut-2-ene has more potential energy than 3-methylbut-l-ene c. the two have equal energy.
25. In dehydrohalogenation of I-chloro-l-methylcyclohexane using in the presence of t-butoxide the major product is: a. I-methylcyclohex-I-ene b. methylenecyclohexane c. methylcyclohexane.
26. Reduction of but-2-yne with diboran (B_2H_6) gave: a. cis-but-2-ene b. trans -but-2-ene c. but-I-ene d. but-l-ene.

27. Ammonium ion was considered as: a. electrophile b. conjugated acid c. lewis base d.lewis acid e. electrophile.
28. 28. Inductive effect is: a. pennanent polarity or polarizability of that substrate. b. a polarization of molecule through transfer of electrons through conjugated double bonds. c. is the inducement of charge either towards or away from a substituted group.
29. What is the relationship between keto and enol tautomers? a. resonance forms b. stereoisomers c. constitutional isomers d. different conformations of the same compound.
30. Which of the following reaction sequences can be used to perform the conversion shown? $(CH_3)_2C=CH_2 \rightarrow \rightarrow (CH_3)_3CBr$ a .. Br_2, light; then Zn, HBr b.Br_2, light; then H_2, Pt c. $NaNH_2$; then Br2, light d. H_2, Pt: lhen Br_2, light
31. Which ofthes~ is the best method for preparing I-bromopropane, $CH_3CH_2CH_2Br$? a. $CH_3CH_2CH_3 \xrightarrow{CCl_4}$ $CH_3CH_2CH_3$. light $\longrightarrow$ c. $CH_3CH=CH_2$ HBr/peroxid:. d. $CH_3CH=CH_2$ "Br/no peroxid~ $\longrightarrow$



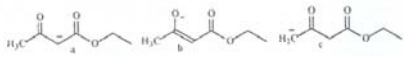
32.What are the major product of the following reaction
33. What is the major product of the following reaction?



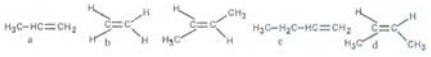
34. Which of the following solutions can' be used in a test to-distinguish' between the compounds $CH_2=CHCH_2CH_3$ and $CH_3CH=CHCH_2$? a. H_2SO_4/H_2O b. $Hg(OAc)_2/H_2O$ C. H_2/Pt d. $KMnO_4/H_2O$

35.Which of the following is the most stable and which is the least stable?
36.Which of these alkenes can be drawn in both *cis* and *trans* configurations? a. $(CH_3)_2C=CH_2$ b.$CH_3CH=CH_2$ c. $Cl_2C=CBr_2$ d. CClBr=CClBr
37. Which of the following is the strongest acid and which is the weakest one: a. CF_3CO_zH, b. CH_3CO_zH, c. $CHCl_2C\ O_2H$, d. CH_2lCO_2H

38.Which resonance structure is the best representation of $C_6H_9O_3$

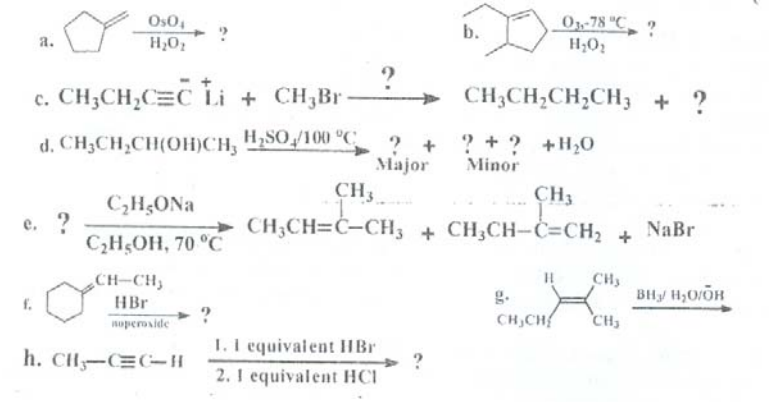


39. Which of the following is the most stable and which is the least one



40. Which molecule contains a triple covalent bond? a. C_2H_6; b. C_4H_6; c. C_3H_6; d. C_3H_8

II. Provide the product(s) or reagents missed in each reaction....(20 marks)



III.Give reason Answer in one sentence:.....(10 marks)

1.In addition of H-Br to 2-methyl-2-butene in absence of peroxide; the major product is 2-brolllo-2-methylbutane not 2-bromo3-methylbutane

2. In addition of H-Br to 2-methyl-2-butene in the presence of peroxide; the major product is 2-bromo-3-methylbutane not 2- bromo- 2- m eth y I butan e
3. Fluorine is more electronegative than chlorine. However, methyl chloride is *more* polar than methyl fluoride Explain.
4. 2-Methyl-pent-2-ene is more stable than 4-Methyl-pent-2-ene
5. Hexane immiscible with water while ethanol miscible with water

IV. Correct these wrong statements: ..... (10 marks)

1. σ bond in methane was created by overlapping of SP3-SP3 orbitals
2. Inductive effect is a polarization of molecule through transfer of electrons through conjugated double bonds.
2. the most of the reactions of alkenes are nucleophilic substitution
4. hydration of bropene in the presence of BH3 produced 2-propanol
3. Addition of bromine. to propene in the presence of water produced 1- bromopropane

Good Luck

Prof. Dr. Adel Kamal & Dr. Molwmed Saad Abbady
Assiut University- Faculty of Pharmacy
Pharmaceutics Department

Introduction to Pharmacy

Final Exam for Preparatory year

(Maximum Marks: 80)

Time allowed: 2 hours Date: 13/6/2012

ملحوظات: ورقة الاجابة تتكون من ثمانية صفحات – اقرأ كل سؤال جيدا قبل أن تبدأ بالاجابة

Part I (Prof. Dr. Ahmed Moustafa)

(20 Marks)

40

All Questions Should be Attempted

I. Complete the following sentences: **(6 Marks)**

A-One milligram (mg) is equal to ..... nanogram (ng)

B- If the drug delivery system is successful at maintaining constant drug levels in the blood or target tissues, it is considered a ---------- release system

C- Prodrugs are used to overcome some undesirable characteristics such as :

i.----------

ii ----------

iii----------

D-Intra-arterial injections are used mainly in ----------

E- The dose Volume of an intravenous injection is vary from

..... to .....

F - Vaginal dosage forms may be :

i- ii-

iii- or iv-

2.Mention the main differences between each of the followings :

(14 Marks)

A- As descriptive terms of solubility:

	soluble	and	Sparingly Soluble
Parts of solvent for one part of solute:	----------		----------

B- As age group for pediatric population:

	Neonate	and	Infant
Description:	----------		----------

C- As categories for geriatric population:

	Middle-Old	and	Old-Old
Age:	----------		----------

D-	Sutures	and	Ligatures
	----------		----------
	----------		----------
	----------		----------
	----------		----------
	----------		----------

E-	Prescription Order	and	Medication Order
	----------		----------
	----------		----------
	----------		----------
	----------		----------
	----------		----------

F-	Douches	and	Irrigation solutions
	----------		----------
	----------		----------
	----------		----------
	----------		----------
	----------		----------

G- Ointment and Fatty Pastes

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40

Part II Dr Fergany A. Mohammed (40 Marks)

A) Choose the most appropriate answer {Write the selected letter only in the table below: (5 marks)

(1) Abimol extra is:

a. Trade name
b. Generic name
c. Chemical name
d. all

(2) Patent application is considered:

a. Primary drug information sources
b. Secondary drug information sources
c. Tertiary drug information sources
d. All of above

(3) The health professionals most accessible to the public:

a. Hospital pharmacists
b. Community pharmacists
c. Clinical pharmacists
d. All the Above

(4) Pharmacists whose main activities are responding to symptoms of minor ailments are:

a. Hospital pharmacists
b. Community pharmacists
c. Clinical pharmacists
d. All the Above

(5) Pharmacists who Promote the rational prescribing and use of drugs are:

a. Hospital pharmacists
b. Community pharmacists
c. Private pharmacists
d. All the Above

1	2	3	4	5

B) <u>Write (T) for the true statement and (Fl for the false one</u>: <u>(Write your answer only in the table below:</u> <u>(10 marks)</u>

(1) The pharmacist is not responsible for patient monitoring and the provision of cognitive services.

(2) Drugs processed on large scale by pharmaceutical manufacturers are known as medicines.

(3) Pharmacy orientation means to be familiar with all aspects of medical profession and drugs

(4) Egyptian society of hospital pharmacists issues a scientific journal in pharmaceutical sciences.

(5) WHO is the organization responsible for the quality of food and drug in USA.

(6) FDA is the organization responsible for the health care all over the world.

(7) Dissertation, thesis & Technical reports are considered tertiary drug information sources.

(8) Community pharmacists educate other health professionals about the rational use of drugs.

(9) Hospital pharmacists takes part in the planning and implementation of clinical trials.

(10) Bioinequivalence products show comparable bioavailability

Answer table

1	2	3	4	5	6	7	8	9	10

C) Give scientific term that is described by each of the following sentences: (10 Marks)

(1) Drug processed on large scale by pharmaceutil~al manufacturers.

(2) An organization responsible for educating pharmacists through issuing a journal and holding conferences.

(3) The gross physical form in which a drug is administered to or used by a patient.

(4) Pharmaceutical organization responsible for the regulations concerning the use and abuse of narcotic drugs.

(5) A book containing a list of pharmaceutical substances along with their formulas, uses, and methods of preparation.

(6) Department that deals with the synthesis, analysis and drug design of different compounds.

(7) Department that deals with the role of pharmacist in health care to help people get the best outcomes from medication therapies to achieve a healthier society.

(8) The science of poisoning of drugs and other agents.

(9) Organization responsible for the quality of food and drug in US.

(10) The science dealing with the study of the effect of drug on the body and its mechanism of action.

(11) The science dealing with cultivation, collection and preservation of medicinal herbs.

(12) The science concerned with the formulation and preparation of dosage form.

(13) Organization responsible for pharmacy profession in Egypt

(14) Organization Responsible for educating pharmacists through Issuing a journal & Holding conferences

(15) A product that has undergone all stages of production.

(16) Drug information derived from the secondary or primary sources.

(17) Drugs that satisfy the priority health care needs of the population.

(18) Contain information derived from iry sources which has been modified, selected, rearranged or compacted by someone other than the original author.

(19) (USP/ N F)----------

(20) (I PA) ----------

D) Write shortly on each of the following Giving: (15 Marks)

a) Difference between Official and Nonofficial compendia?

b) Difference between OTC and prescription drugs?

c) Mention TWO examples for each source of drug information sourses?

d) Mention the factors affecting the selection criteria of essential medicines?

e) Mention the limitation of using OTC medications?

تاريخ الصيدلة (أ.د. أحمد مصطفى السيد)
(20 درجة)

أجب عن الأسئلة الآتية:

السؤال الأول: ضع خط تحت الاجابة الصحيحة بين القوسين: (5 درجات)

1- تتابعة الأفكار الجديدة والتطورات بصورة مكثفة فى عصر النهضة فى أوروبا وبدأت تؤثر بشكل كبير على علوم الصيدلة فقد قام (فرانسوا سلفياس – لويس باستير – سانتوريو) بتصميم أول لأداه لقياس حرارة الجسم واكتشف العالم (روبرت كوخ – جوزيف لستر – الكسندر فلمنج) عقار البنسلين عام 1928 كما اكتشف (بانتج – برون - جوزيف لستر) الأنسولين عام 1922 كما قام (سلفياس وارلنج – لافوازييه – سرترنر) بفصل المورفين من الأفيون فى أوائل القرن التاسع عشر كما اكتشف العالم الامريكى (سلمان واكمان – روبرت كوخ – بانتنج) الستربتومايسين عام 1944.

السؤال الثانى: أذكر الآتى: (6 درجات)

1- مضمون بردية شتيينى الطبية (درجة ونصف)

.....
.....
.....
.....

2- استعمال نبيذ النخيل فى التحنيط عند قدماء المصريين (واحد درجة)

.....
.....
.....
.....

3- استعمال خانق الذئب كعقار نباتى عند قدماء المصريين (نصف درجة)

.....
.....

4- الصيدلة فى الاسلام: (3 درجة)

عرف العرب المسلمون وبالذات فى العصر العباسى كثير من المواد التى تستخدم فى صنع الدواء مثل ..... و .....
وادخلوا كثير من العقاقير التى لم تعرف من قبلهم مثل ..... و .....
وصنعوا بعض أجهزة التحضير لاجراء عمليات صيدلية مثل ..... و .....

السؤال الرابع: تكلم عن الآتى: (9 درجة)
1- أذكر ثلاث كتب قام بتأليفها كل من: (3 درجات)
أولا: بن سينا:
أ-
ب-
ت-

ثانيا: البيرونى:
أ-
ب-
ت-

2- أهم المواد الصيدلية التى اكتشفها أبو بكر الرازى والتى تستخدم فى صناعة الأدوية والعلاج واذكر اسم كتابين من مؤلفاته (3 درجات)

3- اسهامات لافوازييه فى الصيدلة والكيمياء فى العصر الحديث (3 درجات)

مع أطيب تمنيات أ.د. أحمد مصطفى السيد وأ.د. فرجانى عبد الحميد محمد

ملحوظة: يعقد الامتحان الشفوى بعد الامتحان النظرى مباشرة بقسم الصيدلانيات بقسم الصيدلانيات بالدور الثانى والثالث بمبنى الكلية وعلى النحو الاتى:
من رقم 1 الى رقم 450 من الساعة الثالثة

ومن رقم 451 الى للآخر من الساعة الخامسة

****GOOD LUCK****

Assiut University
Faculty of Medicine Date: 18/6/2012
Human Anatomy & Embryology Department
Time: one & half hours

Anatomy examination for Preparatory year pharmaceutical students

Answer the following questions: (60 Marks)

1. Illustrate with a diagram types and subtypes of joints with an example to each type. **(15 Marks)**

2. Describe with a diagram the structure of the heart and the great blood vessels connected to it **(15 Marks)**

3. Mention parts of the vertebral column and illustrate with a diagram the general features of typical vertebra.

(15 Marks)

4. Illustrate with a diagram anatomy of the urinary system in male

(15 Marks)

Good Luck

انتهت الأسئلة

Assiut University
Faculty of Medicine
Histology Department

Date: 18/6/2012

Time: 11/2 hour

Final Histology examination
For Preparatory year (pharmacy students)

A- Choose the correct answer: (One mark each)

1- Interstitial cells of Leydig:
a.Have numerous lipid granules.
b.Form the blood testicular barrier.
c.Undergo a complex process called spermiogenesis.
d.Support the developing germ cells.

2- Microfold cells (M cells):
a.Are mainly present in the lamina propria of the small intestine.
b.Are tall columner cells.
c.Are members of diffuse neuroendocrine cells (DNECs).
d.Phagocytose and transport antigens present in the intestinal lumen.

3-The glomerular blood capillaries are:
a.Continuous capillaries.
b.Fenestrated capillaries.
c.A network of arteriovenous anastomosis.
d.Sinusoidal blood capillaries.

4- The appendex has:
a.Abundant lymphatic tissue.
b.Appendices epiploicae
c.Numerous long crypts.
d.A structure similar to that of small intestine.

5- The cornea has the following except:
a.Stratified squamous non keratinized epithelium.
b.Many free nerve endings.

c.Numerous blood vessels and lymphatics.
d.Parallel collagen bundles in substantia prpria.

6- Which of the following is not an "epidermal appendage"?

a.Sebaceous gland.
b.Hair follicle.
c.Duct of sweat gland.
d.Arrector pili muscle.

7 - Clara cells:

a.Secrete a surfactant like substance.
b.Act as a progenitor for other types of cells.
c.Are columnar cells with apical microvilli.
d.All of the above.

باقى الأسئلة فى الخلف

8 - The medulla of lymph node is formed of:

a. Cortical lymphatic sinuses.
b. Lymphatic cords and lymph sinuses.
c. Lymphatic nodules.
d. Thymus dependent zone.

9- In the wall of large arteries, there is:

a. Abundant amount of elastic fibers.
b. Abundant amount of collagen fibers.
c. Few amount of elastic fibers
d. b&c

10- Contraction of the seminiferous tubule is:

a. Rhythmic.
b. Peristaltic.
c. The responsibility of myoid cells.
d. Both a&c
e. Both b&c

B- Enumerate only:

1- Epithelial lining of intestinal crypts. (5 marks)
2- Types of ovarian follicles. (4 marks)
3- Cells of pars distalis. (4 marks)
4- Types of blood capillaries .. (3 marks)

C- Mention the components of:

1- Jaxtaglomerular apparatus. (3 marks)
2- Blood air barrier. (4 marks)
3- Uveal tract. (3 marks)

D- In a table form compare between: (3marks each)

1- Proximal and distal convoluted tubule.
2- Rods and Cones.

E- Draw an ElM structure of the following: (3marks each)

1- Melanocyte
2- Thyroid follicular cell.

F- Give an account on each of the following (without diagram): (4 marks each)

1- Classic liver lobule.
2- Sertoli cell.
3- Lymphatic nodule.

(Good Luck)

كلية التربية
قسم علم النفس
*****

مادة: علم النفس
الفرقة: إعدادى صيدلة
الزمن:ساعتان

امتحان الفصل الدراسى الثانى للعام الجامعى 2012م

أجب عن الأسئلة الآتية: (ملحوظة: الاجابة فى نفس الورقة)

من فضلك: تأكد أن بين يديك خمس صفحات

(يرجى عدم كتابة أية بيانات شخصية داخل الورقة)

السؤال الأول: (20 درجة)

ضع علامة صواب أو خطأ أمام كل عبارة ثم صوب العبارة الخطأ فى السطر الذى يليها:

1- يختلف معدل النمو عبر مراحل النمو المختلفة. ( )

.....

2- تتميز انفعالات أطفال مرحلة الطفولة المتأخرة بالحدة والتطرف. ( )

.....

3- تعد المقابلة العلاجية من الأدوات المهمة التى يستخدمها الباحث فى جمع المعلومات( )

.....

4- يتضمن التخيل مجموعة من العمليات العقلية ولا يرتبط بالواقع. ( )

.....

5- يعتبر العناد فى مرحلة الطفولة المبكرة سلوكا مرضيا. ( )

.....

6- تبدأ مرحلة المراهقة المتوسطة من 12-18. ( )

.....

7- من خصائص الأساليب المعرفية الثبات النسبى. ( )

.....

8- تنمو اللغة فى مرحلة الطفولة المبكرة بسرعة كبيرة مقارنة بجميع مظاهر النمو. ( )

.....

9- تقبل الأساليب المعرفية التغيير والتعديل. ( )

.....

10- تنمو خصائص النمو العقلى فى مرحلة المراهقة المبكرة على حساب النمو الجسمى( )

.....

11- توفر الطريقة الوصفية الطولية الوقت والجهد والمال للباحثين. ( )

.....

12- من عيوب الاستخبار المقيد عدم الموضوعية من الباحث عند تفسير البيانات. ( )

.....

13- تتداخل مراحل النمو مع بعضها حتى يصعب التمييز بين نهاية المرحلة وبداية التالية. ( )

.....

14- سرعة النمو ليست مطردة ولا تسير على وتيرة واحدة. ( )

.....

15- تتميز القدرات المعرفية بأنها ثنائية القطب. ( )

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16- يعتمد منهج الاستبطان على ملاحظة سلوك الأفراد. ( )

.....

17- التذكر عملية تعنى إدراك العلاقات القائمة من أجل حل المشكلات. ( )

.....

18- سلوكيات الفرد التى تعد طبيعية فى مرحلة تعد كذلك فى باقى المراحل. ( )

.....

19- اعتبر ابن سينا أن الشكل الخارجى يشير الى خلق وطباع صاحبه. ( )

.....

20- يمكن قياس النمو الانسانى بطريقة مباشرة. ( )

.....

السؤال الثانى: اختر الإجابة الصحيحة من البدائل التى تلى كل عبارة: (20 درجة)

1- تمتد مرحلة الطفولة المبكرة من .....

أ- 2-6سنوات ب- 5-10سنوات ج- 6-9سنوات د- 3-6سنوات

2- يعرف توحد طفل مرحلة الطفولة المتأخرة مع دوره الجنسى المناسب له بـ.....

أ- التثبيب الجنسى ب- التنميط الجنسى ج- الثبات الجنسى د- النشاط الجنسى

3- تتميز انفعالات الطفل فى مرحلة الطفولة المبكرة .....

أ- الثبات ب- التقلب ج- البساطة د- الهدوء

4- يستطيع طفل عمره خمس سنوات استرجاع نشيدا حفظه دون فهم لأنه يتذكر الأشياء.....

أ- ذات المعنى ب- الخيالية ج- بطريقة آلية د- ذات التفاصيل

5- يغلب على لغة الصفل التعلق بالأمور .....

أ- المحسوسة ب- المجردة ج- الخيالية د- الغامضة

6- إذا قام باحث بملاحظة مظاهر النمو الاجتماعى لطفل أو مجموعة قليلة من الأطفال خلال مراحل نموهم فقد استخدم الطريقة .....

أ- الوصفية المستعرضة ب- التاريخية ج- الوصفية الطولية د- التجريبية

7- تمتد مرحلة الطفولة المتأخرة من .....

أ- 6-12 ب- 4-6 ج- 2-6 د- 9-12

8- التفكير الذى يشبع رغبات الفرد ويرضى مشاعره هو التفكير .....

أ- الاستقرائى ب- الخيالى ج- الواقعى د- النقدى

9- يصل متوسط طول طفل فى السادسة من عمره الى ..... سم

أ- 150 ب- 100 ج- 110 د- 140

10- يتصف الأفراد ذو التفكير ..... بأنهم يفضلون المهن ذات الطابع الإبداعى

أ- التشريعى ب- التنفيذى ج- الهرمى د- الاشتراط

11- صريقة الفرد المميزة فى استقبال المعلومات والتعرف عليها والاحتفاظ بها هى .....

أ- اسلوب التفكير ب- الأسلوب العرفى ج- اسلوب التعليم د- الشخصية

12- يقصد بالقدرة على رد الشيء الى أصله بعدما يعتريه من تغير بـ.....

أ- الاستدلال ب- التفكير العكسى ج- التصنيف د- ثبات الشيء

13- تستمر الرئاسة ثلاثة أجيال ثم تهدم. قائل هذه العبارة .....

أ- فرويد ب- ابن سينا ج- الفارابى د- ابن خلدون

14- الفرع الذى يدرس الاتجاهات والرأى العام والشخصية وخصائصها هو علم النفس .....

أ- التجارى ب- الحربى ج- الجنائى د- الاجتماعى

15- عندما ينسب الانسان الى نفسه صفات وانجازات الآخرين لإشباع دوافع معينة فهذا يعد .....

أ- تقمصا ب- تبريرا ج- اسقاطا د- كبتا

16- عند وصولك لأكثر من حل للمشكلة الواحدة يعد تفكيرك .....

أ- ناقدا ب- استنتاجيا ج- استقرائيا د- ابتكاريا

17- من الحيل اللاشعورية .....

أ- الغضب ب- النكوص ج- الغيرة د- الكذب

18- إن الحقيقة لا تعرف كسلطة مطلقة ولكنها كامنة فى العقل. قائل هذه العبارة هو.....

أ- سقراط ب- أفلاطون ج- أرسطو د- ديكارت

19- اعتقد ..... أن الأحلام ليست إلا إشباعات بديلة للعواطف المكبوته.

أ- سقراط ب- أفلاطون ج- أرسطو د- أبفراط

20- الفرع الذى يدرس القوانين التى يقوم عليها علم النفس هو علم النفس .....

أ- الجنائى ب- العام ج- البيئى د- النمو

السؤال الثالث: (10 درجات)

ضع مكان كل عبارة من العبارات التالية قانونا من قوانين النمو التى درستها:

1- العقل السليم فى الحسم السليم

.....

.....

2- التعليم فى الصغر كالنقش على الحجر

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.....

3- معدل النمو يختلف من طفل الى آخر

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4- وينشأ ناشئو الفتيان منا: على ماكان عوده ابوه

.....

.....

5- يستخدم الطفل كلمة بابا للدلالة على أى رجل ، وماما للدلالة على كل امرأة.

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************(انتهت الأسئلة)********* مع تمنياتى بالتوفيق والنجاح**

د./ عبد الله محمد عبد الظاهر

	Assiut University Faculty of Science Botany Department 1st Semester – Final Exam Date: 31/12/2012	Pharmacy Program Course: General Botany Pre-pharmacy Students Time: 3 hours Marks: 150	
No. of pages: 14		No. Of Questions: 10 (5+2+3)	

Part A (Taxonomy, macro- and micro-morphology)

Question No. 1 (24 marks)

Put the suitable number of (24 sentences only) in the table:- (1 mark each)

(1) Collenchyma present in mid-rib on one or both sides of the vein

(2) Legumeinous with 5 or 10 stamens and posterior petal differ

(3) Openings where gaseous interchange takes place

(4) Elastic supporting tissue in rapidly growing parts

(5) Diploid internal food storage tissue that originates from nucellus

(6) A palm belonging to family Arecaceae

(7) Arrangement of sepals & petals in bud

(8) Mainly supporting tissue of testa in Brassicaceae

(9) A condition when filaments & anthers are fused

(10) Seedless fruits

(11) Fruit that develops from a whole inflorescence

(12) Botanist who named as the father of botany

(13) A vegetable plant belonging to family Liliaceae

(14) Composed of cellulose, hemicellulose and pectic substances

(15) Photosynthetic cells present in leaves

(16) Plant subfamily characterized by 20 stamens (10+5+5) and pome

(17) Seed with mechanical layer differentiates in the inner integument

(18) Consists of sieve tubes and companion cells only

(19) Ovule with chalaza and micropyle on same axis but not the funicle

(20) Plants with modified organs for trapping insects

(21) Pair small scale-like appendages that standing at the leaf base

(22) Occur in plant cells in different forms (solitary, raphides & druses)

(23) Innermost layer of cells surrounding the anther locule

(24) Originate from permanent tissues returned meristematic

(25) Characterized by cross-like petals and tetradynamous stamens

(26) Looks like a single flower, peduncle terminates into a single female flower surrounded by male flowers arranged in scorpioid cyme

1 ry cell wall	
Ca-oxalate	
2ry meristems	
Stomata	
Collenchyma	
Regular phloem	
Tapetum	
Tegmic seeds	
Palisade like	
Dicot leaves	
Stipules	
Mesophyl	
Aestivation	
Synandrous	
Cyathium	
Perisperm	
Anatropous	
Parthenocarpic	
Composite	
Theopharastus	
Brassicaceae	
Caesalpiniaceae	
Allium cepa	
Insectivorous	
Pyroideae	
Phoenix dactylifera	

Question No. 2 (24 marks)

Choose the correct answer, Put your answer of (48 of them) in the table:- (0.5 mark each)

(1) Both the integuments participate in the formation of the seed-coat as in:-
a. *Gossypium* b. Brassicaceae c. pulses d. Leguminosae

(2) In drupe, the fleshy layer or pith composed of:-
a. parenchyma b. sclereides c. fibers d. collenchyma

(3) In Citrus fruits, the exocarp contains essential oils thus called:-
a. flavedo b. albido c. oiledo d. Exedo

(4) Play function in selective permeability:-
a. plasma membrane b. cell wall c. Golgi body d. all the preceding

(5) Protoplasmic threads that connect protoplasm of adjacent cells through pits are:-
a. plasmolysis b. plasmodia c. plasmids d. plasmodesmata

(6) When a parenchyma is adjacent to conducting element, the formed pair of pits is:-
a. simple b. bordered c. branched d. half-bordered

(7) In Ficus leaf, a Ca-carbonate protrusion is deposited forming a cluster-like called:-
a. raphides b. aleurone grain c. cystolith d. druses

(8) The fibres are oriented in different direction to those in next layer in the fruit of:-
a. *Senna* pod b. Tomato berry c. *Citrus* hesperldium d. *Ammi* cremocarp

(9) The protoderm cells initial differentiate by cell expansion of the epidermis to form:-
a. dermal cell b. Guard cell c. stomata d. trichome

(10) The leaves of desert plants modified into to avoid loss of water:-
a. scales b. small leaves c. fleshy leaves d. all the preceding

(11) A sieve element and its companion cell derive from a single parent cell known as:·
a. Sieve tube mother cell b. companion cell mother cell
c. Sieve companion mother cell d.all the preceding

(12) The plastids that associated with the storage of oils in them is best called:-
a. leucoplasts b. elaioplasts c. amyloplasts d. starchoplasts

(13) Develop from permanent tissues that renew their ability to divide again:-
a. promeristem b. protoderm c. 2ry meristem d. 1 ry meristem

(14) The osmotic pressure of the guard cells increase due to:-
a. photosynthesis b. starch analysis c. Iow acidity d. ail the preceding

(15) The types of parenchyma that play a function in supporting are called:-
a. aerenchyma b. chlorenchyma c. spongy d. lignified

(16) Annular and Spiral shape lignifications are characteristic of:-
a. 2ry xylem b. metaxylem c. protoxylem d. all the preceding

(17) The vascular bundle with the phloem surrounds the xylem is called:-
a. collateral b. bicollateral c. amphivasal d. amphiceribral

(18) When two leaflets arise from the tip of petiole, it is called:-
a. bipartite b. bipinnate c. bifoliate d. all the preceding

(19) The phenomenon of water secretion as liquid water is called:-
a. transpiration b. guttation c. respiration d. evaporation

(20) Some petals and sepals contain:-
a. crystal cells b. hypodermis c. mesophyll d. all the preceding

(21) The layer that contribute to the anther dehiscence mechanism is:-
a. epidermis b. endotheciallayer c. tapetum layer d. vasculature layer

(22) The two carpellary vascular bundles of the gynoecium wall diverge into:-
a. ovules & style b. stigma & style c. ovules & stamens d. all of the preceding

(23) In *Ricinus* seed, the oily reduced aril or outgrowth present near the hilum is:-
a. micropyle b. operculum c. chalaza d. Caruncle

(24) The mesophyll is mostly differentiating into palisade and spongy tissues in:-
a. menocet leaves b. *Pinus* leaves c. dicet leaves d. all the preceding

(25) The dark colour of seeds is almost due to:-
a. waxy layer b. thick sclereides c. hourglass layer d. pigmented layer

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عذرا:-لضمان تصحيح اجابتك دون أخطاء....يجب وضع الاجابة فى الجدول

(26) Which of the following plants is belonging to family Lamiaceae:-
a. *Nerium oleander* b. *Mentha viridis* c. *Olea europaea* d. *Datura stramonium*

(27) Which of the following plants is belonging to family Asteraceae:-
a. *Lactuca sativa* b. *Artemisia judaica* c. *Helianthus annus* d. all the preceding

(28) Among the botanists who proposed an phylogenitical system for plant systematic is:-
a. Theopharastus b. Linnaeus c. De Candolle d. Takhtajan

(29) Inflorescence with sessile flowers grows from a globose flattened main axis is called:-
a. capitate b. catkin c umbel d. corymb

(30) The cyme with successive lateral branches develops on alternate sides (zig-zag) is:-
a. corymb b. Helicoid c. scorpioid d. verticillaster

(31) Unilocular, unicarpellary ovary that has 1 group of ovules placed along the fused margins of the carpel. The placentation should be:-
a. axile b. marginal c. parietal d. free central

(32) Scar which marks the position of attachment of the seed to the placenta is called
a. micropyle b hilum c. pit pore d. funicle

(33) The special type of cells that associated with sieve tubes are:-
a. vessels b. companion c. tracheids d. sclereides

(34) In *Gossypium* seed, the outer palisade layer formed from
a. outer integument b. inner integument c. both integuments d. non of the precec

(35) If the sepals become colored like petals, it is called as
a. sepaloid petals b. petaloid calyx c. tepals d. perianth

(36) 6 stamens (4 inner long + 2 outer short):
a. tetradynamous b. hexadynamous c. didynamousd. tetra, didynamous

(37) When the flower is hypogenous, the ovary is called
a. superior b. inferior c. semi .. inferior d. semi-superior

38) In corn seed, the protective cap over the plumule is called
a. euplumule b. testa c. coleorhiza d. coleoptile

(39) The embryo sac of a dicot at the time of fertilization is
a. 8-celled b. 4-celled c. 16-celled d. 2-celled

(40) Large sized flowers, colored petals & nectar glands are adapted to:-
a. entomophilly b. anemophily c. hydrophily d. self-pollination

41) Berry is a fruit which is commonly
a. dry b. fleshy c. aggregate d. composite

(42) Pepo fruit is generally found in:-
a. Compositae b. Gramineae c. Cucurbitaceae d. Apiaceae

(43) The nature offruit depends on the type of
a. fertilization b. androecium c. gynoecium d. pollination

44) In drupe fruit, the stony part is;·
a. pericarp b. endocarp c. mesocarp d. exocarp

(45) The correct scientific name of Mango (~Wl) plant
a. *Mangifera sp.* b. *Mangifera indica* c. *Mangifera indica* L. d. all the preceding

(46) Four o'clock family that characterized by a petaloid tepals is
a. Lamiaceae b. Apiaceae c. Fabaeeae d. Nyctaginaceae

(47) Plant subfamily thatcharacterized by 30 stamens (10+10+10) and drupe fruits is
a. Rosoideae b. Prunoideae c. Pyroideae d. Faboideae

(48) The plant family that characterized by papilionaceous flowers is called
a. Fabaceae b. Caesalpiniaceae c. Mimosaceae d. Brassicaceae

(49) Potato, tomato and bazengane are belonging to family:-
a. Lamiaceae b. Apocynaceae c. Brassicaceae d. Solanaceae

(50) The stem of family Cyperaceae is:
a. solid, triangular b. hollow, rounded c. solid, rounded d. hollow, triangular

(51) Which of the following plants is belonging to family Fabaceae
a. *Lupinus termis* b. *Phaseolus vulgaris* c. *Vicia faba* d. all the preceding

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ونؤكد:-لضمان تصحيح اجابتك <u>دون أخطاء</u>....يجب وضع الاجابة فى الجدول

Question no. 3

Answer all the questions (26 marks)

اجب عن جميع فقرات هذا السؤال

a. Write short notes on cell wall of plant cell (3 marks)

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b. Enumerate 1 botanical name its importance belonging to families:

Brassicaceae, Caesalpiniaceaae, Fabaceae, Poaceae & Asteraceae. (5 marks)

Family	Botanical name	Importance
Brassicaceae		
Caesalpiniaceaae		
Fabaceae		
Poaceae		
Asteraceae		

c. Draw an illustration showing eight only of the lamina shapes (2 marks)

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d. Describe floral characteristics of Papaveraceae with floral diagram.
Enumerate 2 plants. (5 marks)

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e. Compare between each of the following: (11 marks)

a. Monocot and dicot leaves (4 marks)

b. Racemose and cymose (3 marks)

c. Caesalpiniaceae & Fabaceae (2 marks)

d. Solanaceae & Lamiaceae (2 marks)

	monocot leaves	dicot leaves
Hypodermis		
Mesophyll		
Phloem		
Xylem vessels		

	Racemose	cymose
Main axis		
Terminal apex		
arrangrment		

	Caesalpiniaceae	Fabaceae
Corolla		
stamens		

	Solanaceae	Lamiaceae
sepals		
petals		

Question no. 4 (10 marks)

Draw and write short notes on <u>Two only</u> of the following: (5 marks each)

a.Differentiation of the trichomes
b. Micro-morphology of pulses seed coat
c. Pericarp anatomy of cremocarp

لاتجب الا على اثنين فقط ، المساحة تسمح لاجابتين فقط
نؤكد: سوف يتم تصحيح اول اجابتين فقط

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Question no. 5 (10 marks)

Write short notes on <u>Two only</u> of the following: (3 marks each)

a.Mechanism of stomatal opening
b. Advanced characters of flowers
c. Entomophilly and their adaptation

لاتجب الا على اثنين فقط ، المساحة تسمح لاجابتين فقط
نؤكد: سوف يتم تصحيح اول اجابتين فقط

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Best wishes

Prof. Momen fareh

Part B (Plant phsiology)

Question No. 1 (15 marks)

Choose the correct answer, Put your answer of (15 of them) in the table:-

(1 mark each)

(1) Cofactors are :-

a. vitamins b. metal ions c. amino acids d. protein

(2) Which one of the following metabolic pathways is common in aerobic and anaerobic organisms?

a. oxidative phosphorylation b. chemiosmosis c. glycolysis d. the citric acid cycle

(3) The end products of the citric acid cycle include all of the following except:

a. CO_2 b. NADH c. pyruvic acid d. $FADH_2$ e. A'TP

(4) In the electron transport chain, the final electron acceptor is:

a. water b. CO_2 c. ADP d. ATP

(5) The enzyme that rearrange atoms is:-

a. transferase b. ligase c. hydrolase d. isomeras

(6) Enzymes work on bonds by:

a. weakening b. stringing c. lowering d. hardening

(7) An enzyme binds a substrate in a region called:

a. complex b. active site c. alosteric site d. non active site

(8) Enzyme that produced in the cell by the same concentration all the time is called:

a. exo- b. constitutive- b. indo- c. inducible-

(9) The inhibitor that competes with substrate for active site is called:

a. competitive b. noncompetitive c. end product c. feed back

(10) Which two colours of.light does chlorophyll absorb most?

a. red and yellow b. green and blue c. red and green d. red and blue

(11) Electrons to replace those released at the reaction center of PSII come from:

a. oxygen b. hydrogen c. water d. chlorophyll

(12) The oxygen released into the air as a product of photosynthesis comes from:

a. chlorophyll b. carbon dioxide c. water d. none of the preceding

(13) Where is chlorophyll found in a plant cell?

a. thylakoid membranes b. stroma c. matrix d. cristae

(14) Which of the following is the initial product of CO_2 fixation in C_4 plants?

a. pyruvate b. oxalate c. phosphoglycerate d glucose

(15) The term anaerobic means:

a. with CO_2 b. with O_2 c. without CO_2 d. without O_2

(16) Which of the following processes produces the most ATP per molecule of glucose oxidized?

a. aerobic respiration b. alcoholic fermentation

c. lactic acid fermentation d anaerobic respiration

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Question No. 1 (15 marks)

Complete the equation of (15) only of the followings:- (1 mark each)

1. Ribulose-1,5-bisphosphate + CO_2 $\xrightarrow{\text{.....}}$ 3-Phosphoglycetate

2. Glucose 6-phosphate $\xrightarrow{\text{.....}}$ Fructose 6-phosphate

3 2 H_2O $\rightarrow$ O_2+4H^+ ..... $\rightarrow$ 2 Photosystem 11

4. Apoenzyme + Coenzyme $\rightarrow$ .....

5. Enzyme + Substrate $\rightarrow$ .....

6. Enzym e + ... $\rightarrow$ No reaction

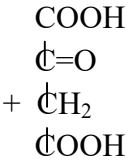
7. Phosphoenolpyruvate + NADPH + H^+ + ... $\rightarrow$ Malate + NADP

8. H_2OH–C=O–CH_2OP + ... $\xrightarrow{\text{aldolase}}$ CH_2OP–C=O–$(CHOH)_3$–CH_2OP

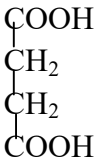
Dihydroxyacetone phosphate Fructose-1.6-bisphosphate

9. COOP–CHOH–CH_2OP + NADPH + H^+ $\xrightarrow{\text{dehydrogenase}}$ NADP + Pi +.....

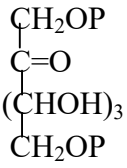
1.3-hisphosphoglycerate

10. ..... + NADH $\xrightarrow{\text{dehydrogenase}}$ NADH + H^+ + 

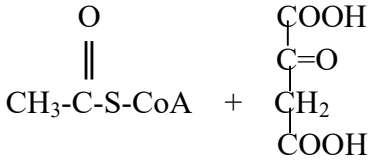
Oxaloacetate

11.  + FAD $\xrightarrow{\text{dehydrogenase}}$ $FADH_2$ + ...

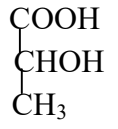
Succinate

12.  $\xrightarrow{\text{aldolase}}$ ..... + ...

Fructose-1,6-bisphosphate

13.  $\longrightarrow$ .....

Acetyl-CoA Oxaloacetate

14. ..... + NADH + H^+ $\xrightarrow[\text{Dehydrogenase}]{\text{Lactate}}$  + NAD

Lactic acid

15.  + 2ADP $\xrightarrow{\text{Kinase}}$ ..... + ATP

Phophoenolpyruvate

16. ADP + Pi $\longrightarrow$ ATP

Good Luck

Prof. Dr. Afaf M. Hamada

Part C (Mycology & Phycology)

Question No. 1 (15 marks)

Give short notes on three only of:- (5 mark each)

a. Three stages in life cycle of *puccinia graminis*

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b. Sexual reproduction In Volvox

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c. Types of sexual sporocarps produced by fungi

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d. Economic importance of Diatoms

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Question No. 2 (10 marks)

Compare between each of the following: **(1 mark each point)**

	Chlamydomonas	*Euglena*
Shape		
Chloroplast		
Motility		
Reserve food		

	Aspergillus	*Penicillium*
Conidiophore		
Vesicle		

	Rhodophyta	Cyanophyta
Pigments		
Reserve food		
Cell wall		
Reproduction		

Question No. 3 (5 marks)

Choose the correct answer, put your answer of (5 of them) <u>in the table</u>:- (1 mark each)

1. A substance produced by a fungus, used medically to control uterus hemorrhage

a. Agar b. Penicillin c. Ergot alkaloid d. Cyclosporin

2. Which of the following is characterized by numerous discoid chloroplasts

a. *Rhizopus* b. *Vaucheria* c. *Fucus* d. *Nostoc*

3. The single spore present inside sporangiole is called:

a. Sporangium b. Pseudoconidium c. Sporangiospore d. conidium

4. Which of the following is produced by Phaeophyta and used to stop bleeding?

a. Algin b. gonidium c. mycelium d. chlorellin

5. A fungus causing club root disease

a. *Penicillium* b. *Plasmodiophora* c. *Puccinia* d. *Albugo*

6. Common human diseases caused by yeast

a. Tuberculosis b. Aspergillosis c. Candidiasis d. Penicillosis

7. The main component of the cell wall of Chlorophyta

a. Cellulose b. Peptidoglycan c. Starch d. paramylium bodies

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عذرا:-لضمان تصحيح اجابتك دون أخطاء....يجب وضع الاجابة فى الجدول

Best wishes .....Dr/ Nemmat A, Hussein

Faculty of Science Department of Zoology Exam: Zoology for pharmacy students	كلية العلوم – قسم علم الحيوان	امتحان الفرقة: إعدادى صيدلة المقرر: علم الحيوان رقم المقرر ورمزه: PZO 108 الزمن: **ثلاث ساعات** ٩ يناير ٢٠١٣

Taxonomy

I- Choose the suitable number from (A) in (B): (25 marks/1 for each)

(A)	(B)	
1- Invertebrates	-is a class belon s to Mollusca with a one late shell.	
2-Protista	-are the locomota or ans of Echinodermes.	
3-Conjugation	-is a marine animal lives mostly in medusa form.	
4- Metamorphosis	-segmented worms with anterior and osterior suckers.	
5-Coxal land	-is a larval sta e a ears in the life c cle of some trematodes	
6-Sporocyst	-an excretory organ of some arthropods	
7 -Hirudinea	-a process where egg hatches a larvae not resemble their parents	
8-Jellyfish	-is a type of reproduction occurs in some protozoan animals.	
9- Tubefeets	-includes unicellular organisms with true nucleus.	
10-Gastropoda	-includes all animals without notochord	
ll-Cestoda	-is the common name of *Plasmodium* sp.	
12- The family	-is a substance secreted by some mussels.	
13 - Arthropoda	-consists of funnel, tubule, bladder and nephropore.	
14- Bivalvia	-a nematode arasite lives in intestine.	
15-Blood flukes	is an infective stage of some trematodes	
16- Metacercaria	-are flat worms live in blood vessels of vertebrates	
17-Ascaris	-is a molluscan class with two lates shell.	
18-Nephridium	-is a phylum with jointed appendages and segmented body	
19- Pearles	-is a taxonomic rank includes genera and species.	
20-Malaria	-is a class includes tape worms	
21-*Heterophyes* sp	-are parasitic arachnids.	
22-Squids	-characterizes animal which la e s outside their bodies.	
23-Silkworm	-is one of the useful insects.	
24-oviparous	-are molluscan animals with internal shells.	
25-Ticks	-is a parasite lives in three hosts.	

II -Choose the correct answer: (25 marks/1 for each)

1-Arthropods include all of the following except (Scorpions-Mites-Oysters -Insects).
2- The adult sponges have (true tissues - no true tissues - no tissues).
3-Chordates characterized by presence of (ventral nerve cord - gillslits - both).
4-Cercaria with rounded head and cystogenus glands (Lophocercus - Leptocercus - Furcocercus).
5-Nematode's life cycle usually (indirect - direct -both).
6-Macronucleus in ciliates responsible for (reproduction - metabolism - both).
7- Heart dorsal and with I or 2 auricles and I ventricle of (nematods - mollusks - annelids).
8- The process of removing the old exoskeleton in arthropods called (excretion - molting - both).
9-Digestive tract with layers of muscles in (Nematoda - Annelida -Cnidaria).
10-Starfish moves by (legs - Tube feet - wings).
11-One of the following is not related to others (lungbook - radula - trachea).
12-Green glands are organs of excretion in (Mollusca - Arthropoda - Annelida).
13-Belharzia's life cycle not include (sporocyst - metacercaria - both).

14-Multiple fission is a type of (sexual- asexual- both) reproduction.
I5-*Homo sapiens* is a human (specific name - scientific name - common name).
16- The first phylum has digestive tract is (Nematoda - Platyhelminthes - Cilliophora).
17-Lobosea is a class includes *(Plasmodium- Entamoeba - Trypanosoma).*
18- Nematocysts are cnidarian's cells found in (endoderm - ectoderm - mesoderm).
19-*Paramecium, Entamoeba* and *Trypanosoma,* attribute to (animals -monerans - protistans).
20- The circulatory system of earthworms is (open - closed - both).
2I-Anticoagulant substances secreted by leeches (Organine - hirudin - both).
22-Annelids classified according to (number of segments - number of chaetae - both).
23- Important appendages used in arthropod's classification (antennae - chelicera - both).
24- The parasite usually lives in (intermediate host - final host - both).
25-Plasmodium sp. lives in (human blood - liver - both).

III- Draw five diagnostic characters for animal classification (10 marks/2 for each)

Characters	Diagram
1	
2	
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Cytology

1- : Choose the correct answer: (10 marks)

1-Channel proteins in the plasma membrane are mainly specific for (uncharged small molecules uncharged large molecules - ions) transportation.
2-0ne of the following molecules can't penetrate the synthetic lipid bilayer easily (Ethanol - Ca^{+2} - O_2).
3-DNA synthesis takes place during (G I phase - M phase - S phase).
4- The only cellular organelle rather than nucleus that contains DNA is (Golgi - RER - None).
5- The plasma membrane fluidity is due to the presence of (Cholesterol- integral protein - Both).
6-Autophagosome is resulting from attacking of Iry lysosome to a (phagosome - foreign body - None).
7-P53 is a (turnor suppressor protein - oncogene - both)
8-Induction of p21 induces (G2/M - S phase - both) cell cycle arrest.
9-Drugs induce apoptosis via inactivation of (Bax – BCl_2 - p21).
10-Enzymes-secreting cells are expected to be rich in (SER - Mitochondria - RER).

II-: Put *(√)* or (X) in front of the following sentences:

1- The DNA encoding ribosomal RNA is located in nucleus ( )
2-Melanin is an edogenous pigment, secreted by melanocytes ( )
3-Immature vesicles emerges from the mature face of Golgi ( )
4-P53 acts as a transcriptional repressor for p^{21} ( )
5-Malpighian cells of the epidermis are expected to have open face nucleus ( )
6-Decoding of mRNA takes place in cytoplasm ( )
7- The mitochondrial translocation of Cytochrome-C enhances apoptosis ( )
8- The mitochondrial translocation of Bax induces programmed cell death ( )
9-Nucleolus consists mainly of proteins, rRNA, DNA and certain enzymes ( )
10-p53 induces apoptosis via transcriptional upregulation of BCl_2 ( )

Ill- Define <u>four</u> only of the followings: (10 marks)

1- Membrane fluidity
.....
.....

2- Nucleosome
.....
.....

3- Lipofuscin
.....
.....

4- Euchromatin
.....
.....

5- Telomere
.....
.....

انتهت الأسئلة مع تمنياتنا بالتوفيق

د. اسماعيل أحمد **أ.د. ناصر الشيمى**

Department of Mathematics		قسم الرياضيات
Faculty of Science		كلية العلوم
امتحان نهائى الفصل الدراسى الأول 2013/2012م		
التاريخ: 16/1/2013م	درجة الامتحان:50 درجة	الفرقة: اعدادى صيدلة
الزمن: ساعتان	كود: MTH-129	اسم المقرر: اساسيات الرياضيات والاحصاء

أجب عن الأسئلة الآتية:- **(الأسئلة فى صفحتين)**

السؤال الأول: **(١٠ درجات)**

(١) أوجد $\frac{dy}{dx}$ للدوال الآتية:

1. $y = \ln((x-1)^5 (x^2+2)^2)$
2. $y = \frac{xe^x}{1+x}$
3. $y = (\tan^{-1} x)^2$
4. $y = \sqrt{e^{2x}} + e^{\sqrt{2x}}$

(ب) أوجد النقاط الحرجة للدالة $f(x) = \frac{x}{1+x^2}$ وبين ايها تمثل نقطة نهاية عظمى محلية وأيها تمثل نقطة نهاية صغرى محلية.

السؤال الثانى: **(١٠ درجات)**

(أ) احسب التكاملات الآتية:

1. $\int x^2 e^x dx$,

2. $\int \frac{1}{\sqrt{x}(1+\sqrt{x})^2} dx, \quad (let: u = (1+\sqrt{x}))$

3. $\int \frac{x^2}{(1-x^2)^{3/2}} dx, \quad (x = \sin\theta)$

4. $\int_0^{\frac{\pi}{4}} \{[\sec x(\sec x + \tan x)] + 2\sin 2x\} dx$

(ب) أوجد المساحة المحصورة بين المنحنى $y=1-x^2$ ومحور السينات من x=-1 الى x=1

باقى الأسئلة بالخلف

السؤال الثالث: (١٥ درجه)

أ) باستخدام المصفوفات أوجد حل مجموعة المعادلات الآتية: (٥ درجات)

$$2x + 3y + z = -1, \qquad x + 2y + z = -1, \qquad 2x + y - 6z = 4$$

ب) أوجد قيمة μ التى تجعل لمجموعة المعادلات حل غير الحل الصفرى: (٥ درجات)

$$\mu x + y + z = 0, \qquad x + \mu y + z = 0, \qquad x + y + \mu z = 0.$$

ج) حلل الكسر الآتى الى كسوره الجزئية ، ثم أوجد مفكوكه بدلالة قوى x مبينا قيم x التى تجعل المفكوك صحيحا: (٥ درجات)

$$\frac{4+3x}{6-x-x^2}$$

السؤال الرابع: (١٥ درجة) (فقرة (أ) ٩ درجات ، فقرة (ب) ٦ درجات)

أ) اذا كان لدينا ٩ قياسات لانصهار الحديد فى منطقة $\mathcal{A}$ ، ولدينا ٧ قياسات لانصهار الحديد فى منطقة أخرى $\mathcal{B}$ حيث كانت النتائج كما يلى:

$$\bar{X}_{\mathcal{A}} = 1498, \qquad \bar{X}_{\mathcal{B}} = 1499.7, \qquad S^2_{\mathcal{A}} = 256, \qquad S^2_{\mathcal{B}} = 152.24$$

١- اختبر ما اذا كان متوسط الانصهار للحديد مختلف فى المنطقتين عند مستوى معنوية $\alpha = 1\%$.

٢- كون فترة ٩٥% ثقة لتقدير الفرق بين متوسطى انصهار الحديد فى المنطقتين.

ب) أخذت عينة حجمها ١٦ من توزيع طبيعى N(3,4) فإذا كان $\bar{X}$ يمثل متوسط العينة. احسب قيمة الاحتمال: $p(\bar{X} > 1.5)$.

استخدم ما يلزم من القيم الجدولية التالية:

$$T[.995, 14] = 2.98, \qquad T[.99, 14] = 2.62, \qquad \phi(2) = 0.4772$$

$$T[.975, 14] = 2.14, \qquad Z_{.995} = 2.58, \qquad Z_{.975} = 1.96, \qquad Z_{.95} = 1.65$$

انتهت الأسئلة مع أطيب تمنياتنا لكم بالتوفيق،

د./ محمد الكاشف ، د./ صابرين جاد الحق

Faculty of Science Jan.:2013
Chemistry Department Time: 3 hours

Final Examination of Physical and Inorganic Chemistry for Pre-Pharmacy Students

Section (I)

Answer only three of the following: (60 Marks)

1) a- Discuss the effect of temperature on reaction rate. Then calculate the activation energy for a reaction when its rate is doubled by increasing its temperature from 30° till 45°C.

b-Derive the following thermodynamic relations:

i- Volume and pressure in adiabatic processes.

ii-Entropy change for processes accompanied by temperature change.

2) a- Discuss the following:

i-Two methods used for reaction order determination.

ii-The kinetics of a first order opposing reaction.

b- i- For a certain gas $C_v = 8.0$ cal./ mol^{-1} K^{-1}, what will be ΔS, ΔH, ΔE, q and w if 10 moles of the gas are heated from a volume of 100 liters at 50°C to a volume of 150 liters at 75°C.

ii- Write short note on measurement of single electrode potential.

3) a- Discuss the kinetics of the following reactions:

$A \xrightarrow{K_1} B$ $3A \xrightarrow{K_3} B$

Where K_1 and K_3 are rate constants for first and third order reactions respectively.

b- i- State the third law of thermodynamics and show how it can be applied to calculate the absolute entropy of a compound in order to calculate entropy change of any chemical reaction.

ii-Discuss the following:

a-measurement of e.m.f of an electrochemical cell. b-standard cells.

4) a- Show how can you proceed to calculate W, q, ΔE, ΔH and ΔS for the following thermodynamic processes:

i- Isothermal and reversible expansion of an ideal gas.

ii- Processes carried out at constant pressure.

b-Assuming CO_2 to be an ideal gas, calculate the work done by 10 moles of CO_2 in expanding isothermally and reversibly from a volume 5 liters to 10 Liters at 27°c, what are q, ΔE, ΔH and ΔS for the process.

Section (H)

Answer Four Only of the following questions: (30 Marks)

1)When 3.06g of solid NH4HS is introduced into a 2 liter evacuated flask at 27°c, 30% of the solid decomposed into gaseous ammonia and hydrogen sulphide According to the following equation : $NH_4HS(s) \rightleftharpoons NH_{3(g)} + H_2S_{(g)}$

Calculate Kc for the former reaction at 27°C.

2) a- State Le Chatelier's principle. What should be the effect of decrease of partial pressure of oxygen and increase of total pressure on the following equilibrium:

$C_2H_{2(g)} + 5O_{2(g)} \rightleftharpoons 4CO_{2(g)} + 2H_2O_{(g)}$ +heat

$2CO_{(g)} + O_{2(g)}$ + heat $\rightleftharpoons 2CO_{2(g)}$

b- Describe how the surface tension of a liquid can be determined by using the capillary rise method?

إنظر خلفه،،،

c-Calculate density, root mean square velocity, and kinetic energy of dinitrogen tetroxide

(N_2O_4) at S.T.P.
d-Prove that Avogadro's and Gay-Lussac's laws agree with kinetic gas equation
e-Compare between ideal gas and real gas, Illustrate briefly application of Van der Waals equation at low and high pressures.

Section (III)

Answ(~r the following: **(put your answers in tables)** (60 Marks)

l)Complete the following:
i-The bond order of NO equals .....
ii-The energy required to remove an electron from M-leyel in hydrogen atom to produce the H^+ ion is .....Joule.
iii-The experimentally dipole moment of ICl = 0.65 Debye, while the dipole moment of imaginary I^+Cl^- = 11.06 Debye, then the partial ionic character of ICl bond equals .....%
iv-The molecule of ClF_3 has ..... geometry.
v-The radius of $_{92}U^{238}$ nucleus = ...cm.

2)Choose the correct answer:
i-B_2 molecule is .....
(a)paramagnetic (b)diamagnetic (c)ferromagnetic
ii-A molecule with a central atom surrounding by 5-bonding pairs and one lone pair has .....geometry.
(a) square pyramidal (b)octahedral (c)trigonal bipryramidal
iii-A series in hydrogen spectrum results when an electron jumps from an outer arbit to the third orbit is called ..... series.
(a)Brakett (b)Pfund (c)Paschen
iv-A nuclear change of a radio active nuclide that results in decrease the atomic number by one with no change in mass number is called .
(a)Beta emission (b)electron capture (c)Gamma radiation
v-A molecular orbital which is cylindrically symmetrical about a line joining the two nuclei is called .....orbital.
(a) π (b) π* (c) σ

Answer Only Two of the following:

l)For SF_4 molecule, answer the following: i-Draw it's lewis structure.
ii-Calculate the formal charge on each atom.
iii-Using VSEPR theory, predict the geometrical shape of the molecule.
iv- What type of hybrid orbitals is employed by the central atom (S-atom)

2)For the complex $[CoCl_2(en)_2]Cl$ write: i-the coordination number of the metal
ii-The IUPAC name of the complex. iii-The geometrical shape of the complex.
iv-The possible isomers showing by the complex (en = ethylendiamine).

3)A sample of carbon from a wooden artifact is found to give 10.8 $_6C^{14}$ counts per minute per gram of carbon. What is the approximate age of the artifact? The $_6C^{14}$ from wood recently cut down decays at the rate of 15.3 disintegrations per minute per gram of carbon. The half-life of $_6C^{14}$ is 5770 years.
Atomic numbers: B =5, N = 7, O =8, F = 8, S = 16, Cl = 17
Atomic masses (H = 1, N = 14, S = 32, O = 16 , C = 12)

Good Luck,,,

Examiners:
Prof. Dr. Rabei Gabr , Prof. Dr. Ahmed H. Osman , Dr. Gamal Abd EI-Wahab

Assiut University	Faculty of Pharmacy	January, 2013
Faculty of Arts	Preparatory Year	Time: 2 hours
Department of English	Language Exam	Total: 50 marks

Part I: Paragraph Writing

Write a paragraph on one of the following:

1- Obesity maybe the most serious health problem facing people today.

2- Whether physical or emotional in origin, stress is harmful to man.

Part II: Comprehension Passages

Read the following passage, then answer the questions: . (6 **x 2= 12 marks)**

The immune system is equal in complexity to the combined intricacies of the brain and nervous system. The success of the immune system in defending the body relies on a dynamic regularity communications network consisting of millions and millions of cells. Organized into sets and subset these cells pass information back and forth like clouds of bees swarming around a hive .The result is a sensitive system of checks and balances that produces an immune response that is prompt, effective and self- limiting.

At the heart of the immune system is the ability to distinguish between self and non-self. When immune defenders encounter cells or organisms carrying foreign or non-self molecules, the immune troops move quickly to eliminate the intruders. Virtually every body cell carries distinctive molecules that identify it as self. The body's immune defenses do not normally attack tissues that carry a self- marker. Rather, in1rrll.mecells and other body cells coexist peaceably in a state known as *self- tolerance.* When a normally functioning immune system attacks a non-self molecule, the system has the ability to remember the specifics of the foreign body. Upon subsequent encounters with the same species of molecules, the immune system reacts accordingly.

Any substance capable of triggering an immune response is called an *antigen* .Antigens are not to be confused with *allergens,* which are most often harmless substances (such as ragweed pollen or cat hair) that provoke the immune system to set off the inappropriate and harmful response known a *allergy.* An antigen can be a virus, a bacterium, a fungus, a parasite, or even a portion or product of one of these organisms. Tissues or cells from another individual (except an identical twin, whose cells carry identical self- markers) also act as antigens; because the immune system recognizes transplanted tissues as foreign, it rejects them.

Questions:

1- What is the analogy used to describe the communications network among the cells in the immune system?

a. the immune system's memory **b.** immune troops eliminating intruders

c- bees swarming around a hive **d.** a sea of microbes'

2- What is the specific term for the substance capable of triggering an inappropriate or harmful immune response to a harmless substance such as ragweed pollen?

a. antigen **b.** microbe

c. allergen **d-** auto immune disease

3- How do the cells in the immune system recognize an antigen as foreign or non- self?

a. through an allergic response b. through blood type

c.through fine hairs protruding from the antigen surface

d.through characteristic shapes on the antigen surface

4- Why would tissue transplanted from father to daughter have a greater risk of being detected as foreign than a tissue transplanted between identical twins?

a. The age of the twins' tissue would be the same and, therefore, less likely to be rejected.
b. The identical twin's tissue would carry the same self- markers and would, therefore, be less likely to be rejected.
c. The difference in the sex of the father and daughter would cause the tissue to be rejected by the daughter's immune system.
d. The twins' immune systems would remember the same encounters with childhood illnesses.

5- Which of the following best expresses the main idea of this passage?

a. An antigen is any substance that triggers an immune response.
b. The basic function of the immune system is to distinguish between self and non- self.
c. One of the immune system's primary functions is the allergic response.
d. The human body presents an opportune habitat for microbes.

6- What is the meaning of the underlined word *intricacies* as it is used in the first sentence of the passage?

a. elaborate interconnections b. confusion of pathways

c- inherent perplexity d. comprehensive coverage

Part III: Morphology

1- Corn plete the following sentences: (3 marks)

a- Derivatives (secondary) words are divided into three kinds--------,--------and---------

b- Prefixes and suffixes come from three sources: ----------,----------and---------- .

2- Write the antonym of the word indicated by adding the proper prefix: (5 marks)

a- legible ---------- b- place----------

c- conspicuous---------- d- attenti ve----------

e- commissioned---------- f- approval----------

g- centralization ---------- h- pronounce----------

i- interpret---------- j- resistance----------

3- Choose the correct answer giving one example at least for each: (1 mark)

a. The prefix 'Arch, archi t (chief) comes from a/ an (Greek-Latin- Old English) origin.
b. The prefix 'Equi " (equally) comes from a/an (Old English- Latin- Greek) origin.

4- By using suffixes give the noun- agent of: (1 mark)

Sculpture Mathematics

Part IV: Grammar

1- Put the verbs between brackets into their correct forms: (3 marks)

a. She said her biology professor was so boring that several of the students (sleep, actually) in class. Some of the students (talk) about their plans for the weekend and the student next to her (draw) a picture of a horse.

2- Rewrite the following dialogue putting the verbs between brackets into their correct forms: (5 marks)

Robin: I think the waiter (forget) us. We (wait) here for over half an hour and nobody (take) our order yet.

Michele: I think you're right. He (walk) by us at least twenty times. He probably thinks we (order, already).

Part v: Translation

Translate the following into Arabic: (10 marks: 5 marks each)

1- Medical waste has been a growing concern because of recent incidents of public exposure to discarded blood vials, needles(sharps) , empty prescription bottles, and syringes. Medical waste can typically include general refuse, human blood and blood products, cultures and stocks of infectious agents, laboratory animal carcasses, contaminated bedding material, and pathological wastes.

2- An upsurge of new research suggests that animals have a much higher level of brainpower than previously thought. Before defining animals' intelligence, scientists defined what is not intelligence. Instinct is not intelliger.ce . It is a skill programmed into an animal's brain by its genetic heritage. Rote conditioning is also not intelligence. Tricks can be learned by repetition, but no real thinking is involved. Cuing, in which animals learn to do or not to do certain things by following outside signals, does not demonstrate intelligence. Scientists believe that insight, the ability to use tools, and communication using human language are all efTective measures of the mental ability of animals.

Good Luck

Board of Examiners: Dr. Hanan M.Mahmoud
Dr. Lobna Shaddad
Dr. Eman Ameen

Assiut University Faculty of Science Botany & Microbiology Department		General Botany Exam Pre-pharmacy Students (تخلفات) 10 February, 2013
Time allowed: 3 hours		**امتحان هذا الجزء فى ٤ صفحات**

Plant Anatomy

Firstly:l-Give reasons for four only of the following (8 marks)

a- Xylem vessels are wide, Jtard and strongly lignified.
b- Sieve tubes have specialized perforated cross walls (sieve plates) 011 the end walls.
c- Parenchyma is considered simple and primitive tissue.
d- Collenchyma support fast growing organs of plant.
e- Sometimes, sieve tube loses its function.

2- Name with drawing various parts of periderm. (2 marks)

3- Name two products obtained from bark. Mention their uses. (2 marks)

4- Differentiate between two only of the following:- (2 marks)

(a) porous and non-porous wood.
(b) Gramine stoma and universal stoma.
(c) Amphistomatic and hypostomatic leaf.

5-Draw with labeled diagrams each of the following:- (6 marks)

(a) Any three types of epidermal trichomes.
(b) Any three types of sclereids.
(c) Any three types of simple unspecialized tissue.
(d) Any three types of pits.

6- Describe the electron microscopic structures and functions of any two major cell organelles of a typical plant cell. (3 marks)

7- Write in table the function of each of the following: (3 marks)

- Trachieds.
- Hydathods.
- Laticiferous cells.
- Sclereids.
- Leucoplasts.
- Parenchyma.

Secondly: Answer three only of the followint: questions (6 marks each)

1- Define and describe different types of vascular bundles with well labeled diagrams. Give the examples of plants and their organs where these are found.

2- Differentiate between heart wood and sap wood? Which of the two is more durable? Why? List the changes that occur during transformation.

3- What are the various criteria on the basis' 'of which meristems can be classified? Give a brief account of various types of meristems based on any criterion? Mention the characteristic features of meristematic cells.

4- a) Write short notes with diagrammatic sketch on cell wall formation? Mention its chemical components?

b) What do you know about:

Tyloses OR Annual rings.

"Good Luck"

Prof. M.A.Elnagdy

Plant Morphology

Firstly: Answer the following question:-"

1) Write short notes on: (4 marks)

a) Food storage in the seeds.

b) Pneumatophores, giving ex-ample.

c) Vivipary.

2) Give reasons for each of the following: (2 marks)

a) Some plants develop non green, underground stems.

b) Modification of stem into thorn and phylloclade.

Secondly:Answer five questions only of the following: (4 marks each)

1- What are the two major types of roots? How do they differ from one another? Name various regions of root and their function.

2- Differentiate between Root a'nd underground stems.

3- Describe with drawing different types of venation found in angiosperms.

4- Differentiate between monopodial and sympodial branching pattern of the stem.

5- Define adventitious buds? And mention their types.

6- Define seed dormancy? List the common causes of dormancy.

"Good Luck"

Prof. M.A.Elnagdy

Fungi and Algae

Firstly: Fungi

Answer three only of the following:- (6 marks each)

1- a) Discuss the mechanism of nutrition in fungi and algae.

b) Write in table one difference'between:

i) Myxomycota and Eumycota.

ii) Ascomycetes and Deuteromycetes.

2- What are the basis of which fungi are classified? Write an illustrated account of various types of sexual ascocarps (ascomata) in Euascomycetes.

3- Give an illustrated account of asexual reproduction in *Clavicepes,* with special reference to its medical importance?

4- a) Draw Chlamydospores and mention their function.

b) Describe with the help of drawing sexual reproduction in Yeast, with special reference to its economic importance.

Secondly: Algae:

1) Answer the following guestion:-

a) Differentiate between two only:

(i) *Volvox* and *Pandorina* coenobia.

(ii) Cyanobacteria and algae.

(iii) *Euglena* and Diatoms.

b) Mention name and uses of three products obtained from algae. (3 marks)

c) Name the organisms in which akinetes and gonidia are present. Mention their function. (2 marks)

2) Answer Two only of the following:(5 marks each)

a) Write an illustrated account of asexual reproduction in green unicellular algae studied by you.

b) Write a brief account on the importance of pigments and reserve food materials in the classification of algae.

c) Write short notes with drawing on various types of sexual reproduction and range of vegetative thallus in algae with suitable examples.

"Good Luck"

Prof. M.A.Elnagdy

Assiut University Faculty of Science Botany Department		جامعة أسيوط كلية العلوم قسم النبات
General Botany Exam for Pre-pharmacy Students, February, 2013		
Time allowed: 3 hours	تخلفات	175 points

Plant Physiology (35 points)

Answer All The Following Questions

1. Underline the correct answer (1/2 Mark each, two point free):

1. Stroma in (chloroplasts - mitochondria) is similar to matrix in (chloroplasts - mitochondria); they both accommodate biochemical reactions.
2. Thylakoid membranes resemble cristae; they both contain (electron transport components - photosynthetic enzymes - chlorophylls).
3. Cytochromes are electron carriers in (mitochondria only - chloroplasts only - mitochondria and chloroplasts).
4. Ferridoxin is the electron acceptor from (PSI - PSI! - H_20).
5. Ferridoxins are proteins conjugated with (iron - cupper - magnesium).
6. Plastoquinone pool (PO) accepts electrons from (PSI - PSI! - H_20).
7. Ferridoxins donate electrons to (NADP+ - NADPH+H+ - ATP).
8. Respiration starts by glycolysis in the (mitochondria - cytosol - chloroplasts).
9. Release of respiratory CO_2 takes place in the (mitochondria - cytosol - chloroplasts).
10. Oxidation of pyruvate into acetyl CoA is a transition reaction linking glycolysis to (Krebs cycle - Calvin cycle - oxidative phosphorylation).
11. Carotenoids exist in the (thylakoid membranes - stroma - lumen).
12. Carotenoids are absolutely stable because of their (isoprenoid structure - their yellow or red color - both).
13. Carotenoids are subdivided into carotenes and xanthophylls; xanthophylls are of (red - yellow - red and yellow) color.

14. Each molecule of (carotenoids - chlorophyll - cytochrome) contains one single magnesium atom.

15.(Glycolysis - Light - Dark) reactions of photosynthesis are independent on the presence of light.

16.The formation of reduced nicotinamide adenine dinucleotide phosphate (NADPH+H+) implies (cyclic - non cyclic - oxidative) photophosphorylation.

17.(Two _ Three - Four) electrons release per each oxygen molecule evolved in photosynthesis.

18.Light excites electrons of (water - chlorophyll - glucose) to a higher energy state.

19.Enzymes (accelerate - start up - inhibit) cellular reactions.

20.Each polypeptide chain contains (one - two - multiple) active center(s).

21 . Enzymes resemble catalysts as they both (lower the energy of activation - act under physiological conditions of temperature, pH, etc. - neither).

22.Esterases act on (bond - group - absolute) specificity.

23.ATP synthesis can be driven by (light energy only - food oxidation - light energy or food oxidation).

24.The substrate of Rubisco is (ribulose 1,5 bisphosphate - oxaloacetic acid - glyceraldehyde 3 phosphate)

25.Organisms lacking (chlorophyll a - chlorophyll b - carotenoids) cannot perform photosynthetic activity.

26.The active center is best illustrated in (primary - secondary - tertiary) structure of the protein.

2. Put (√) in front of the right sentence and (X) in front of the wrong one (1/2 Mark each, one point free).

1	Porphyrin ring is composed of four pyrrol rings	
2	Electrons move freely in solution.	
3	Electrons reduce reducible compounds.	
4	Electrons reduce oxidizable compounds	
5	Plastoquinones do not donate electrons directly to PSI	
6	PSII reaction center absorbs longer wave lengths than that of PSI.	
7	Specificity of enzymes is always absolute.	

8	Feedback inhibition is determined by the last step in a reaction.	
9	Enzyme-substrate complex is a reversible reaction.	
10	Enzymes always end with the suffic "ase".	
11	Enzymes are classified by the Enzyme Commission number (E.C.).	
12	Key and lock theory explains the mode of Enzyme action.	
13	There is an optimum temperature for all Enzyme.	
14	Enzymes are denatured by high temperatures.	
15	Coenzymes are tightly bound to the enzyme molecules.	
16	Prosthetic groups are divided to cofactors and coenzymes	
17	Photophosphorylation is cyclic and non-cyclic.	
18	Carotenoids play a dual function in photosynthesis, absorption of light spectra as accessory pigments and protective action against oxidative stress (e.g. solarzation).	
19	Before fitting into active sites enzymes and their substrate molecules must collide.	
20	Photosynthesis is driven by visible light only.	
21	The oxygen released in Photosynthesis comes from CO_2.	

3. Write down the scientific term best expressing the following information (1/2 Marks each, one point free):

1	A metabolic process cleaves one glucose molecule into two pyruvates.	
2	The stage of aerobic respiration that takes place in the cytosol.	
3	The stage of Calvin cycle that consumes most of the assimilatory power	
4	A type of respiration its energy output is only 2 ATP molecules per each glucose molecule.	
5	The inhibition of enzyme3 activity by compounds similar to the substrates.	
6	The specific position at which a substrate molecule fits into the enzyme molecule	
7	The compound (carbon source) first enters the mitochondria.	
8	The organelle at which Photosynthesis occurs.	
9	The part of a photosystem that undergoes charge separation	
10	Synthesis of ATP	
11	The potential at which a Photosynthetic or respiratory compound gains or loses electrons.	

4. Write down the name of the part which does the opposite function (3 Marks):

	Name	Function
1		Charge separation
2		Absorption of light
3		Photosynthesis

5. In the space below. Draw a diagrammatic representation (only) of the following: Light reactions, Calvin cycle or Krebs cycle (5 Marks).

Best wishes,

Rafat Abdel-Basset

Section: Taxonomy of Flowering Plants

Answer the following guestions: (35 points)

I-A) **T**rue or **F**alse?/ correct the False ones. (18 points)

1) Sporopollenin is a major component of the tough outer walls of the pollen grain.
.....

2) Sorosis is a multiple fruit formed by merging of many flowers into a fleshy mass.
.....

3) When the whole inflorescence is surrounded by one or more whorls of bracts forming what is called peduncle.
.....

4) Chalaza is the tissue where the integuments and embryo sac are joined.
.....

5) In a campylotropous ovule, an ovary is orientated transversely on the funicle and the micropyle is being close to the funicle.
.....

6) In the axile placentation, placentas develop from the central axis and locules as many as ovules.
.....

7) Polyadelphous means that the stamens are completely free.
.....

8) Calyx is the outermost reproductive whorl of the flower.
.....

9) The anther lobe is made of two embryo sacs filled with pollen grains.
.....

10) Cyathium looks like a single flower that composed of a single male flower and surrounded by female flowers.
.....

11) The axis of an inflorescence is called pedicel.
.....

12) Capsule is a dry and indehiscent fruit derived from an ovule with 2 or more carpels with one to many-loculed .
.....

I-B) Choose the correct answer: - (12 points)

1) The seed coat originates from:)

a- endosperm b- residues of sepals c- ovary d- integuments

2)A disk floret is a bisexual.

a- True b-False

3)Which of the following is NOT a characteristic of the Angiosperms?

a- ovary b- flower

c- trees and shrubs d- ovules exposed to the environment

4)Which of the following structures the female gamete is formed?

a- endosperm b- seed c- pollen d- ovule

5)Which of the following structures do pollen grains develop?

a- ovule b- stigma c- style d- anther

6)Double fertilization in flowering plants results in forming:

a- two male gametes b- eight nuclei in an ovule

c- one endosperm and one ovule d - one embryo and one endosperm

7) Grains have two cotyledons, a hilium, and a micropyle to protect the embryo.

a-True b- False

8) The second word in an organism's scientific name indicates:

a- one species within the genus b- the specific epithet

c- no clue as to species if used alone d- all of the preceding

1	2	3	4	5	6	7	8

II) Show using labeled diagram(s) only: (5 points)

1- Development of the gametes in flowering plants.

_____THE END_____

Good Luck

Assiut University
Faculty of Science
Chemistry Department

Feb.:2013
Time: 3 hours

تخلفات

Final Examination of Physical and Inorganic Chemistry for Pre-Pharmacy Students

Section (I)

Answer <u>only three</u> of the following:

1) a- Discuss the kinetics for the following reactions:

$2A \xrightarrow{K_2} B$ and $A \xrightarrow{K_1} B \xrightarrow{K_1'} C$

Where K_2 is the rate constant for a second order reaction and K_1, K_1' are values for first order kinetics.

b- Write a brief account on the following:

i-Calomel electrode. ii-Single electrode potential measurement

2) a- Derive the following relations:

i-volume and temperature for adiabatic processes.

ii-entropy change for isothermal and reversible' expansion of a gas.

b- The half-life periods for a certain reaction at different initial concentrations are given below:

Initial concentration (mol/liter)	0.20	0.15	0.10	0.05
Half-life (min)	5	6.66	10	20

Calculate the reaction order and its rate constant.

3) a- Two mole of a gas are expanded isothermally and reversibly from volume of 10 liters to 20 liters at 27°c. Calculate w, q, ΔE, ΔH and Δs for the process.

b- Derive an expression for the efficiency of heat engine working between two temperatures T_1 and T_2 °K.

4) a- Show how can you proceed to derive the mathematical expression for the entropy change related to the following processes.

i-Isothermal and reversible expansion of a gas.

ii-Isothermal processes accompanied by phase change.

b- Discuss the following:

i-Reversible and irreversible cells.

ii-Measurement of e.m.f of a cell.

Section (II)

Answer <u>Three Only</u> of the following:

1) Mathematically define Boyle's, Charle's and Dalton's law of partial pressures of ideal gases.
2) A dry air sample composed of N2, 02 and argon with mole fractions 0.781, 0.210 and 0.009 respectively, calculate the partial pressures of the gases when the barometric pressure is 474 mm Hg.
3) Classify types of crystalline solids and describe their bonding.
4) Calculate the approximate molar mass of a gas whose measured density is 3.33 g /l at 30°c. And 780 torr. note R = 0.082 $l.atm.K^{-1}$ mol^{-1}.

انظر خلفه ،،،

Section (III)

Answer <u>Only Four</u> of the following:

1) A-Calculate the energy liberated when an electron drops from the fifth to the second energy level in hydrogen atom.

B-Choose the correct answer:

(i)The energy change accompanying the addition of one electron to a neutral gaseous atom is called .....

(a) electron affinity (b) ionization energy (c) electronegativity

(ii)Bond order of He_2^+ is .....

(a) 0 (b) 1 (c) ½

(iii)A substance which is weakly repelled by a magnetic field is .....

(a) paramagnetic (b) diamagnetic (c)ferromagnetic

(iv)The oxidation number of Mo in $K_2Mo_4O_{13}$ is .....

(a) 2 (b) 4 (c) 6

2) A- If an element consists of 75.53% of atoms with a mass of 34.97 u and 24.47% of atoms with a mass of 36.95 u, what is the atomic weight of the element?

B- Draw the Lewis structure of $N0_3$- ion and calculate the formal charge of each atom.

3) A- Discuss the structure of SO_3 in terms of resonance.

B- Write the nomenclature of the following complexes:

(i) $K_2[Ni(CN)_4]$ (ii) $[CoCl_2(NH_3)_4]Cl$

4) A- Draw molecular orbital energy level diagrams for O_2 and O_2^{2-} and state the bond order for each.

B- The nuclide $_{35}Br^{76}$ has a half-life of 16.5 hours. How much of a 0.010 g sample remains at the end of 1.00 day.

5) A- Use the concept of electron-pair repulsions to predict the geometric shape of

(i) H_2O (ii) BrF_5

B- Write equations for the following examples of radioactive decay:

(i) alpha emission by 84P0210.

(ii) positron emission by $_{19}K^{38}$.

Atomic numbers: H = 1, He = 2, N = 7, O = 8, F = 9, Br = 35

Good Luck,,,,

Examiners: Prof. Dr. Rabei Gaber, Prof. Dr. Ahmed H. Osman, Dr. Zahr A. Kafagy

Assiut University	Faculty of Pharmacy	February, 2013
Faculty of Arts	Preparatory Year	Time: 2 hours
Department of English	Language Exam	Total: 50 marks

Part I: Paragraph Writing

Write a paragraph on one of the following: (10 marks)

1- Malnutrition

2- Everyday life is hazardous to your health

Part 11: Comprehension Passages

Read the following passage, then answer the questions: (5 x 2= 10 marks)

There are two types of diabetes, *insulin-dependant* and *non- insulin dependant.* Because the second type of diabetes usually begins in adults over the age of 40 and is most common after the age of 55,it used to be called adult-onset diabetes. Its symptoms often develop gradually and are hard to identify at first; therefore, nearly half of all people with diabetes do not know they have it. For instance, someone who has developed Type II diabetes may feel tired or ill without knowing why. This can be particularly dangerous because untreated diabetes can cause damage to the heart, blood vessels, eyes, kidneys, and nerves. While the causes, short- term effects, and treatments of the two types of diabetes differ, both types can cause the same long-term health problems.

Most importantly, both types affect the body's ability to use digested food for energy. Diabetes does not interfere with digestion, but it does prevent the body from using an important product of digestion, *glucose,* for energy. After a meal, the normal digestive system breaks some food down into glucose. The blood carries the glucose or sugar throughout the body, causing blood glucose levels to rise. In response to this rise, the hormone insulin is released into the blood stream and signals the body tissues to metabolize or burn the glucose for ftIel, which causes blood glucose levels to return to normal. The glucose that the body does not use right away is stored in the liver, muscle, or fat.

Questions

1- According to the passage, what may be the most dangerous aspect of Type II diabetes?

a. Insulin shots are needed daily for treatment of Type 11 diabetes.

b. Type II diabetes may go undetected and, therefore, untreated.

c. In Type II diabetes, the pancreas does not produce insulin.

d. Type II diabetes interferes with diges,tion.

2- Which of the following are the same for Type I and Type II diabetes?

a. treatment b. long- term health risks

c. short-term effects d. causes

3- According to the passage, one place in which ex;s;ess glucose is stored is the -------

a. stomach b. insulin:receptors

c. pancreas. d. liver

4- Which of the following is the main function of insulin?

a. It signals tissues to metabolize sugar.
b. It breaks down food into glucose.
c. It carries glucose throughout the body.
d. It binds to receptors.

5- According to the passage, in normal individuals, which of the following processes occur immediately after the digestive system converts some food into glucose?

a. The glucose is metabolized by body tissues.
b. Insulin is released into the bloodstream.
c. Blood sugar levels rise.
d. The pancreas manufactures increased amounts of insulin.

Part III: Morphology

1- Choose the correct answer: (2 marks)

a. The prefix' Inter' comes from a / an (Greek- Latin- Old English) origin.
b. The prefix "Hyper' comes from a / an (Greek- Old English- Latin) origin.

2- Write the antonym of the word indicated, by adding the proper prefix: (5 marks)

a. logical---------- b. common ----------
c. connect ---------- d. sense ----------
e. conductor f. calculate
g. regular h. legitimate
i. emotional j. lead

3- By using suffix give the noun- agent of : (3 marks)

Electric mission conquer

Part IV: Grammar

1- Put the verbs between brackets into their correct forms: (8 marks)

a. Right now, Liam (sit) with the owner of the inn. They (discuss) the differences between life in England and life in Nepal. I (know, not) the real name of the owner, but everybody (call, just) him Tam. Unfortunately, Liam (seem) to have difficulty learning foreign languages ..
b. I (have, not) this much fun since I (be) a kid.
c. Sam (arrive) in San Diego a week ago.

2- Decide which form of the verb is correct in the following sentences: (2 marks)

A. Why are you holding a piece of paper?
B. I (will write/ am going to write)' a letter to my friends back home in Texas.
C. I'm about to fall asleep. I need to wake up!
D. I (will get/ am going to get) you a cup of coffee. That will wake you up.

Part V: **Translation** **(10 marks: 5 marks each)**

1- The worst and longest economic crises in the modem industrial world, the Great Depression in the United States had devastating consequences for American society. Millions of Americans lost their jobs, their savings, and even their homes. The homeless built shacks for temporary shelter - these emerging shantytowns were nicknamed Hoovervilles; a bitter homage to President Herbert Hoover, who refused to give government assistance to the jobless. The effects of the Depression-severe unemployment rates and a sharp drop in the production and sales of goods - could also be felt abroad, where many European nations still struggled to recover from World War I.

2- The atmosphere forms a gaseous, protective envelope around Earth. It protects the planet from the cold of space, from harmful ultraviolet light, and from all but the largest meteors. After traveling over 93 million miles, solar energy strikes the atmosphere and Earth's surface, warming the planet and creating what is known as the biosphere, the region of Earth capable of sustaining life.

Good Luck

Board of Examiners: ***Dr. Hanan M. Mahmoud***
Dr. Lobna Shaddad

Department of Mathematics		قسم الرياضيات
Faculty of Science		كلية العلوم
امتحان (تخلفات) الفصل الدراسى الأول 2013/2012م		
التاريخ: 13/2/2013م	درجة الامتحان:50 درجة	الفرقة: جميع الفرق
الزمن: ساعتان	كود: MTH-129	اسم المقرر: اساسيات الرياضيات والاحصاء

أجب عن الأسئلة الآتية:- **(الأسئلة فى صفحتين)**

السؤال الأول: **(١٠ درجات)**

(١) أوجد $\frac{dy}{dx}$ للدوال الآتية:

1. $y = \ln \frac{x\sqrt{x-3}}{(4x+5)^{10}}$
2. $y = (\ln(\tan x))(\sin^{-1}\sqrt{x})$
3. $y = (\tan^{-1} x)^2$
4. $y = 5^{\sin x}$
5. $y = x^3(3^{\tan^{-1} x})$

(ب) أوجد النقاط الحرجة للدالة $f(x) = x\sqrt{4-x^2}$ وبين ايها تمثل نقطة نهاية عظمى محلية وأيها تمثل نقطة نهاية صغرى محلية.

السؤال الثانى: **(١٠ درجات)**

(١) أوجد $\frac{dy}{dx}$ للدوال الآتية:

1) $x = t\sin t, \quad y = t\cos t$

2) $x\tan^{-1} y + xy = \frac{\pi + 4}{4}$

٢. اذا كانت $y = \cos(m\sin^{-1} x)$ اثبت أن

$$(1-x^2)\frac{d^2y}{dx^2} - x\frac{dy}{dx} + m^2 y = 0$$

السؤال الثالث: **(١٥ درجة)**

أ) باستخدام المحددات أوجد حل مجموعة المعادلات الآتية: (٥ درجات)

$$x + 2y + z = 4, \qquad 3x - 5y + 3z = 1 \qquad 2x + 7y - z = 8$$

ب) أوجد معكوس المصفوفة: $A = \begin{bmatrix} 0 & 1 & 2 \\ 1 & 2 & 3 \\ 3 & 1 & 1 \end{bmatrix}$ (٥ درجات)

باقى الامتحان فى الخلف

جـ) حلل الكسر الآتى الى كسوره الجزئية: $\frac{9x^2 - 4x - 8}{(2x-3)(x+1)^2}$ (٥ درجات)

السؤال الرابع: (١٥ درجة)

قيست كمية النيتروجين فى أوراق نوع من النباتات بعد تجفيفها بواسطة طريقتين مختلفتين *A, B* فكانت النتائج كما يلى:

A	9	18	11	13	15
B	11	8	13	15	18

١- كون فترة ٩٩% ثقة لتقدير الفرق بين متوسطى كمية النيتروجين المقاسة بالطريقتين.

٢- اختبر ان كان متوسط الكمية الناتجة بالطريقةA أكبر منه بالطريقة B عند مستوى معنوية 5% =α.

استخدم ما يلزم من القيم الجدولية التالية:

T[.995, 8] = 3.36, T[.99, 8] = 2.90

T[.95, 4] = 2.13, $Z_{.995}$ = 2.58, $Z_{.975}$ = 1.96, $Z_{.95}$ = 1.65

انتهت الأسئلة مع أطيب تمنياتنا لكم بالتوفيق،

د./ محمد الكاشف، د./ صابرين جاد الحق

Assuit University
Faculty of Medicine
Department of Anatomy

Date: 22 /6/ 2013
Time: 1hour &25 minutes
Total marks: 75

Term Examination in Anatomy
For students of Faculty of Pharmacy (تخلفات)

الإمتحان في خمس صفحات

I-Essay questions(40 marks):

1) Mention **five** differences between small and large intestine.
(5 marks)

Small intestine	Large intestine
----------	----------
----------	----------
----------	----------
----------	----------
----------	----------

2) Enumerate 5 types of bones and give an example for each.
(10 marks)

1)----------

2)----------

3)----------

4)----------

5)----------

3) Mention **four** orifices which open into the **right atrium.**

(8 marks).

1)

2)

3)

4)

4) Give an account of the anatomy of the uterus. Add a note on its the normal position. **(7 marks)**

5) Enumerate 5 endocrine glands and mention the site of each one. **(10 marks)**

1)----------

2)----------

3)----------

4)----------

5)----------

II-Match (15 marks)

A) Match each system from column (A) with its suitable organ in column (B) (6 marks)

Column (A)	Column (B)
a. Male genital system.	1. Papillary muscles.
b. Nervous system.	2. Membranous urethra.
c. Respiratory system.	3. Vermiform appendix.
d. Urinary system.	4. Epididymis.
e. Digestive system	5. Cerebellum.
f. Cardiovascular system	6. Nasal conchae

B) Match each joint from column (A) with its suitable type in column (B) **(4 marks)**

Column (A)	Column (B)
a. Shoulder joint.	1. Primary cartilaginous joint.
b. Joint between the bodies of the vertebrae.	2. Secondary cartilaginous joint.
c. The joints between the bones of the skull	3.Synovial joint.
d. Joint between the epiphyses and diaphysis of long bones.	4.Fibrous joint.

C) Match each cranial nerve from column (A) with its suitable function in column (B)) (5 marks)

Column (A)	Column (B)
a.Oculomotor (3rd cranial) nerve	1. Parasympathetic to the heart.
b.Facial(7th cranial)nerve	2.Parasympathetic to parotid gland.
c.Trigeminal (5th cranial) nerve	3.Constricts the pupil
d.Vagus (10th cranial)nerve.	4. Motor to muscles of mastication.
e.Glossopharyngeal (9th cranial) nerve.	5.taste sensation from anterior 2/3rd of the tongue.

III-MCQ (10 marks): Choose the correct answer:

1) Which one of the following anatomical planes divides the body into anterior and posterior parts?

a. Median sagittal plane.
b. Transverse plane
c. Coronal plane
d. Paramedian plane

2) Eruption of milk teeth

a. starts at 4 month and completed at 2 years.
b. starts at 7month and completed at 2 years.
c. starts at 6 month and completed at 2.5 years.
d. starts at 6 month and completed at 2 years.

3) The long axis of the spleen is parallel with.

a. 7, 8, 9 ribs
b. 8,9,10 ribs.
c. 9, 10, 11 ribs
d. 10, 11, 12 ribs

4) The left kidney extends from

a.The level of T10-L2
b. The level of T11- L5
c. The level of T12-L3
d.The level of T10- L1

5) The ejaculatory ducts are the union of:

a) Ducts of prostate with seminal vesicle.
b) Ducts of seminal vesicle with urethra.
c) Ducts of vas deferens with seminal vesicle.
d) Union of bulbourethral duct with vas deference.

6) The following are branches of arch of aorta, EXCEPT:

a Right common carotid artery.
b. Brachiocephalic artery.
c.Left common carotid artery.
d.Left subclavian artery.

7) The superior cerebellar peduncle connects the cerebellum with which of the following structures?

a. Pons
b. Spinal cord
c. Midbrain
d. Medulla oblongata

8) The parathyroid glands are ----- in number and present in ------

a. Four- on the anterior surface of the thyroid gland.
b. Four- on the posterior surface of the thyroid gland.
c. Two -above the kidney.
d. Three- on the posterior surface of the thyroid gland.

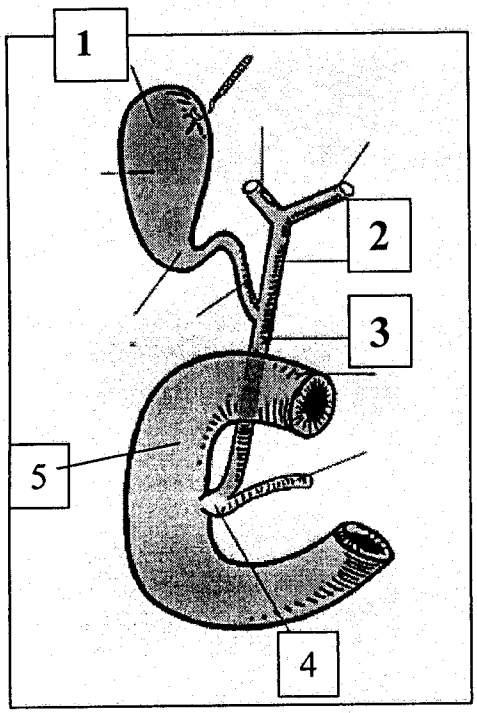
9) The primary sex organ in male is

a. Testis.
b. epididymis.
c. vas defense.
d. Seminal vesicle.

10) Which one of the following structures of the spinal nerve is purely motor?

a. anterior ramus.
b. posterior ramus
c. anterior root.
d. posterior root

IV-Label the diagrams(All are 10 marks):



1----------.

2----------.

3----------.

4----------.

5----------.

(B)

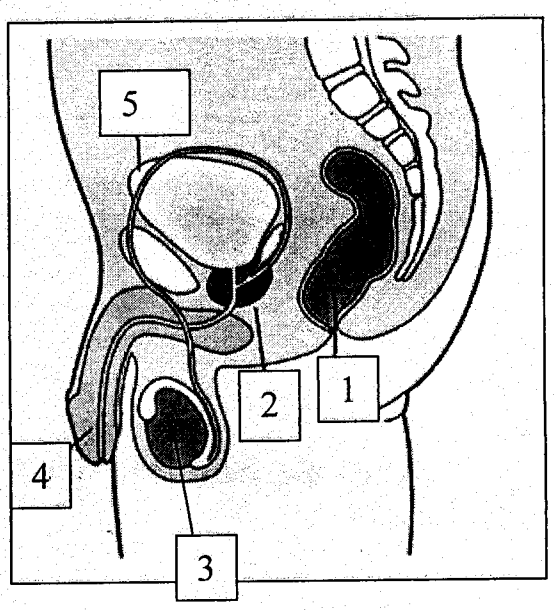
1-_____

2-_____

3-_____

4-_____

5-_____



انتهت الأسئلة

GOOD LUCK

Assuit University
Faculty of Medicine
Department of Anatomy

Date: 26 /5/ 2013
Time: 1hour &25 minutes
Total marks: 60

Term Examination in Anatomy
For Preparatory year students (Faculty of Pharmacy)

الإمتحان في أربع صفحات

I-Essay questions(30 marks):

1) Mention **three** differences between right and left lungs. **(3marks)**

Right lung	**Left lung**
----------	----------
----------	----------
----------	----------

2) Illustrate the anatomy of the **right atrium.** Mention **four** orifices which open into it. **(10 marks)**.

3) Enumerate the first five cranial nerves and mention one function for each. **(10 marks)**

1)

2)

3)

4)

5)

4) Give an account of the male urethra (length and divisions). **(7 marks)**

II-Match (10 marks)

A) Match each bone from column (A) with its suitable type in column (B)

Column (A)	Column (B)
a. Scapula.	1. Small short bone
b. Vertebra.	2. Long bone.
c. Carpal bones.	3. Irregular bone.
d. Nasal sinuses.	4. Flat bone.
e. Femur.	5. Pneumatic bone.

B) Match each organ from column (A) with its suitable length in column (B)

Column (A)	Column (B)
a. Seminifrous tubules	1. 4 centimeters
b. Vas deferens.	2. 10 inches
c. Female urethra	3. 2 Feet
d. Trachea	4. 45 centimeters
e. Duodenum	5. 10 centimeters

III-MCQ (10 marks):

Choose the correct answer:

1) The syndesmology system includes which one of the following structures?
a. Muscles b. Joints
c. Blood vessels d. Organs of sense

2) The function of the skin is:
a. It protects deeper structures
b. It helps to regulate body temperature
c. Secretions from its sweat and sebaceous glands play special functions
d. All of the above

3) The pharynx extends from the base of the skull to which one of the following levels?
a. Level of 4^{th} cervical vertebra. b. Level of 5^{th} cervical vertebra.
c. Level of 6^{th} cervical vertebra. d. Level of 7^{th} cervical vertebra.

4) The right colic flexure is related to which one of the following structures?
a. Liver. b. Spleen.
c. Stomach. d. Caecum.

5) Which one of the following structures is related to the anterior surface of the right kidney?
a.Spleen b. Second part of duodenum
c. Pancreas d. Stomach

6) The brain is protected by the skull bone and meninges in a specific order. Which of the following is the order of meningeal layers from superficial to deep?
a. dura, arachnoid, and pia . b. arachnoid, dura, and pia.
c. pia, dura, and arachnoid. d. dura, pia, and arachnoid.

7) The superior cerebellar peduncle connects the cerebellum with which of the following structures?
a. Pons b. Spinal cord
c. Midbrain d. Medulla oblongata

8) The parathyroid glands are ----- in number and present in ------
a. Four- on the anterior surface of the thyroid gland.
b. Three- on the posterior surface of the thyroid gland.
c. Two -above the kidney.
d. Four- on the posterior surface of the thyroid gland.

9) Ejaculatory duct opens into.
a. Duct of epididymis. b. Prostatic urethra.
c. Membranous urethra. d. Penile urethra.

10) Which one of the following structures of the spinal nerve is purely motor?
a. anterior root. b. posterior root
c. anterior ramus. d. posterior ramus

IV- Label the diagrams: (10 marks)

(A)

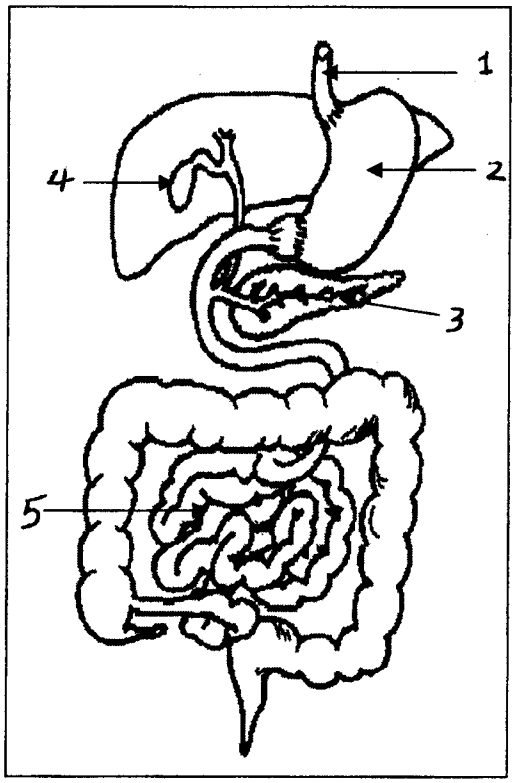
1-_____

2-_____

3-_____

4-_____

5-_____



(B)

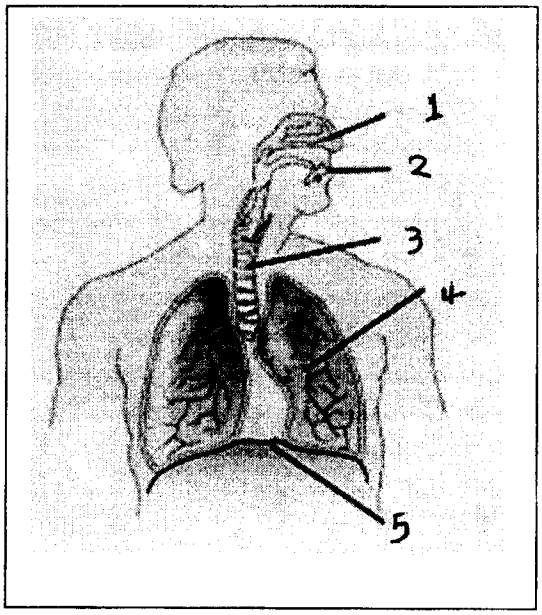
1-_____

2-_____

3-_____

4-_____

5-_____



الامتحان الشفوى:
أرقام الجلوس ١ - ٣٠٠ مباشرة بعد التحريرى
يوم ٢٠١٣/٥/٢٦ بالقسم
أرقام الجلوس من ٣٠١ - الآخر يوم ٢٠١٣/٥/٢٧
الساعة الثامنة صباحاً بقسم الشرح

انتهت الأسئلة

GOOD LUCK

Assiut University		**Term: 2nd Spring 2013**
Faculty of Science		**Date: June. 1st 2013**
Department of Physics		**Time: 3 hours**
Course Title: Bio-Physics		**Total Marks : 150**
For: 1st Grade of Pre-pharmacy		

Bio-Physics I (75 marks), (Dr. Mohamed Rashad)

Answer the following question

Question 1: (25 marks) السؤال الاول اجبارى

A) Prove the Bernoulli's equation that gives the relationship between velocity, pressure, and elevation in a line of the flow. **(15 marks)**

B): Find the laminar flow of the blood with viscosity of 1.05 dyn (sec/cm^2) through the artery in 10 cm length and 0.2 cm radius. Note that, the difference between the fluid pressures at the two ends of the cylinder is 1 atm. **(10 marks)**

Answer ONLY TWO of the following: اختار فقط سؤالين مما يلى

Question 2: (25 marks)

A): Prove that, when a liquid is contained in a vessel, it will wets the container wall then rise in a narrow tube to a specific height ($h=2T\cos\theta/R\rho g$). **(15 marks)**

Answer:

B): A person stand at rigid attention with height from shoulders to his foot is 140 cm, his weight is 80 Kg and his foot width is 10 cm. **a)** Calculate the magnitude of the external applied force needed to topple this person. **b)** Calculate the applied force needed to topple this person if he stand with spreading his length with 100 cm. **(10 marks)**

Answer:

Question 3: (25 marks)

A) Sketch how image is formed in both of telescope & compound microscope. **(10 marks)**

Answer:

1) Telescope

2) Compound microscope.

B) Three types transfer heat from one region to another, state the definition of every type together with its descriping relation. **(15 marks)**

Answer:

Question 4: (25 marks)

A) Sketch the geometry of the normal eye and how is deferent from Hyperopic eye. **(10 marks)**

Answer:

B) Show the deference between the three classes of the levers.(Sketch them) **(15 marks)**

Answer:

With my best wishes (Dr. Mohamed Rashad)

Bio-Physics II (75 marks), (Dr. Mahmoud Bakr)

Answer the following question

Question 1: Insert √ or X in front of the following statements (24 Marks)

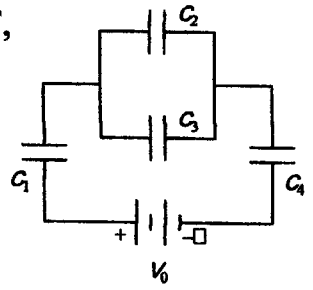
1. The difference between the inside and outside membrane voltages is the real indicator for the membrane potential. ( )
2. The electrical conductivity of a conductor has the units of ($\Omega\ m^{-1}$). ( )
3. The peripheral protein is employed in the membrane as channel to molecules that have poor solubility in lipids or cannot go through the membrane with the normal ways. ( )
4. The established electrical energy due to the field gradient in the cell membrane can be formulated as W =R z F E. ( )
5. In case of electrochemical potential V >0, the ions enter the cell=influx, while in case of V < 0, the ions leave the cell=efflux. ( )
6. The permeability of the membrane to different ions is effective value in the Goldmann-Hodgkin-Katz formula. ( )
7. There is no upper limit to the frequency of impulses in the axon. ( )
8. $V(x)=V_a\ e^{-\lambda/x}$ States that if a steady voltage V_a is applied across one point in the axon membrane, the voltage decreases exponentially at distance x. ( )
9. The Myelin sheath has an effective rule in speed up the action potential. ( )
10. For steady-state diffusion condition, the net flow of atoms from high to low concentrations is given as: $\emptyset = DS\frac{dC}{dx}$. ( )
11. Simple and facilitated diffusions are types of passive transport that allows the movement of substances through the membrane with energy generation. ( )
12. The T wave amplitude is usually increase with a person has muscular exercise or Hyperthyroidism. ( )
13. Excitability is the ability of the cardiac muscle cells to initiate an electrical impulse without being stimulated by a nerve or other source. ( )
14. If QRS complex is prolonged more than 0.1 sec, it is pathologically means: sympathetic over activity. ( )
15. The electromagnetic blood flow meter is a device used to measure the blood volume flow inside the artery and vessels, and expressed as: V= (L x B) v. ( )
16. The recording of potential changes produced by the eye when the retina is exposed to a flash of light is called electroretinogram (EOG). ( )

Question 2: Choose the correct answer & explain why it's correct (28 Marks)

Constants ($R=8.315\ J K^{-1} mol^{-1}$, $F=9.649\times10^{4}\ C\,mol^{-1}$, $\varepsilon=8.85x10^{-12}\ C/N\,m^{2}$)

1. Find the ratio of the concentration of K^+ ions inside to the concentration outside the cell membrane if the Nernst potential is measured to be 93.0 mV, at T=25 °C.
   A. 37.4
   B. 3.4
   C. 29.1
2. In which temperature the cell membrane is exist if the measured Nernst potential and the concentration ratio of Na^+ ions are 90 mV and 29.1 respectively.
   A. 25
   B. 37
   C. 33
3. Find the ions valence if the measured Nernst potential is 75 mV, and the ratio of the concentration inside a cell to the concentration outside the cell is 17.2 at T=33° C.
   A. 3
   B. 1
   C. -2
4. Determine the number of Na+ ions penetrating the axon during the variation of the potential if V= 93 mV and the capacity of the axon given as 9 μF?
   A. $5.2x10^{12}$
   B. $6.4x10^{12}$
   C. $7.2x10^{12}$
5. Suppose that we have an axon that is 10 cm long and has a radius of 10 μm. Given a typical membrane thickness of about 10^{-8} m and a dielectric constant for cellular fluid of 3, what is the capacitance of the axon?
   A. $1.7\ x10^{-8}$ F
   B. $2.5\ x10^{-8}$ F
   C. $5.6\ x10^{-8}$ F
6. A neuron is stimulated with an electric pulse. The action potential is detected at a point 2.1 cm down the axon 2.4 ms later. When the action potential is detected 5.9 cm from the point of stimulation, the time required is 3.5 ms. what is the speed of the electric pulse along the axon?
   A. 30 m/s
   B. 35 m/s
   C. 100 m/s

7. A cell membrane can be modeled as a capacitor. What is the magnitude of the electric field across a cell membrane if the membrane is 1.5×10^{-8} m thick and a resting potential difference across the cell membrane is -75 mV?
   A. 3.5×10^{6} V/m
   B. 7.3×10^{6} V/m
   C. 5.0×10^{6} V/m
8. Determine the energy stored by C_4 when $C_1 = 20\ \mu$F, $C_2 = 10\ \mu$F, $C_3 = 14\ \mu$F, $C_4 = 30\ \mu$F, and $V_0 = 45$ V.
   A. 3.8 mJ
   B. 3.2 mJ
   C. 2.2 mJ



Question 3: Answer the following: **(13 Marks)**

1- What are the main characteristics of the cardiac cells that make the heart function continuously?

2- List the sodium potassium pump steps with indicating the effect of the ATP in the mechanism?

Question 4: Answer *ONLY TWO* of the following **(10 Marks)**

1. Describe the principle of the electromagnetic blood flow meter?

2. Explain the propagation of the action potential from the axon permeability of the Na^+ and K^+ point of view?

3. Explain the function of the synapse in transmitting the action potential?

With my best wishes (Dr. Mahmoud Bakr)

Answer the Following Questions: ***The Exam consists of 4 Pages.***

Question One: Information Technology (12 Points)

Chose one answer for each item: (1 point each)

1. The speed of the Central Processing Unit is measured in
   a. Bits per second
   b. Hectares
   c. Megahertz
   d. Revolutions per minute
2. It has a significant influence on the speed of the computer.
   a. Adding a CD-ROM drive
   b. Increasing the amount of RAM
   c. Installing a new application
   d. Using a smaller monitor
3. Which one is a storage device?
   a. CPU
   b. Hard Disk
   c. Headphones
   d. Modem
4. It enables all other programs to run.
   a. A programming language
   b. An application program
   c. An operating system
   d. Microsoft Word
5. When you use a PC, you are using a
   a. Personal computer
   b. Powered calculating machine
   c. Processing contraption
   d. Programmable console
6. It helps you to input data and give commands.
   a. Keyboard
   b. Mouse
   c. Pointer
   d. Speaker
7. Which one of these is computer software?
   a. Monitor
   b. Scanner
   c. System case
   d. Windows XP
8. The hard drive in the computer is usually
   a. Drive A:
   b. Drive B:
   c. Drive C:
   d. Drive H:
9. The Gigabyte is 2^{20} of
   a. Bit
   b. Byte
   c. Kilobyte
   d. Megabyte
10. It is a permanent memory
    a. CPU
    b. RAM
    c. REM
    d. ROM
11. Which one of the following devices can be used to output and input data
    a. Keyboard
    b. Light pen
    c. Printer
    d. Touch screen
12. Which one of these is an operating system?
    a. Internet Explorer
    b. Linux
    c. MS Office 2007
    d. Outlook

Question Two: MS Windows XP & Internet (12 Points)

Chose one answer for each item: (1 point each)

13. It a network that links computers in different countries?
    a. LAN Network
    b. PAN Network
    c. PSTN Network
    d. WAN Network
14. To retrieve a file from Recycle Bin, open Recycle Bin and select that file, and:
    a. Click Restore
    b. Click Undelete
    c. Both A and B
    d. None of the above

15. An Internet address is known as a/an ___.
    a. AOL
    b. ISP
    c. URL
    d. WWW

16. Which one is the AT symbol?
    a. #
    b. @
    c. ©
    d. &

17. Which domain extension represents an education facility?
    a. .com
    b. .edu
    c. .gov
    d. .mil

18. Click ___ to access drives (C:, Flash Drive, CD/ROM):
    a. Internet Explorer
    b. My Computer
    c. My Documents
    d. Programs

19. What is Windows XP?
    a. A mouse technique
    b. An operating system
    c. Part of Office 2007
    d. Shareware software

20. What is Internet Explorer?
    a. A free email program
    b. A free game
    c. A web browser
    d. None of the above

21. In Windows XP, what is a folder?
    a. A graphic transmission tool
    b. A large box kept beside your computer
    c. A location to store files and folders
    d. Space on the desktop

22. The location of Start Button, active programs, Quick Launch, and current time is the ___
    a. Desktop
    b. My Computer
    c. Task Bar
    d. Windows XP

23. What menu do you use to open a program?
    a. File menu
    b. Open menu
    c. Start menu
    d. None of the above

24. What is the function of the right click on the mouse?
    a. Activate
    b. Drag and release
    c. Open menu of options
    d. Select

Question Three: MS Word 2007 (12 Points)

Chose one answer for each item: (1 point each)

25. The Header and Footer commands are located on the ____.
    a. Header and Footer tab
    b. Home tab
    c. Insert tab
    d. Page Layout tab

26. The small tool bar that exists at the top of a Word 2007 file and shows the save disk icon is:
    a. Find Me
    b. My Documents
    c. Quick Access
    d. Title Bar

27. The ruler exists in the ____ tab.
    a. Developer
    b. Home
    c. Page Layout
    d. View

28. What tab is used to layout the page of a document?
    a. Home
    b. Page Layout
    c. Review
    d. View

29. The black vertical blinking line in the typing area is the
    a. Grammar error.
    b. Inconsistent formatting.
    c. Insertion point.
    d. Spelling error.

30. Keyboard shortcut for CUT command is ____.
    a. Ctrl + C
    b. Ctrl + V
    c. Ctrl + X
    d. Ctrl + Z

31. If you typed a long paragraph with Caps Lock on. What is the best thing to do?
    a. Press Ctrl + Shift + C
    b. Retype the paragraph
    c. Set Caps Lock off
    d. Use the Change Case command
32. What is Microsoft Word 2007?
    a. It is a calculating tool.
    b. It is a computerized tool.
    c. It is a spreadsheet tool.
    d. It is a typing tool.
33. What is NOT a group on the home tab?
    a. Clipboard
    b. Page Setup
    c. Paragraph
    d. Styles
34. To add a chart, you have to use the ___ tab
    a. Insert
    b. Page Layout
    c. Reference
    d. View
35. The ___ wavy line indicates a grammar error.
    a. Blue
    b. Green
    c. Purple
    d. Red
36. Press Ctrl + A to select
    a. The current line
    b. The current paragraph
    c. The current word
    d. The entire document

Question Four: MS PowerPoint 2007 (12 Points)

Chose one answer for each item: (1 point each)

37. What button is this? 
    a. Copy
    b. Format Painter
    c. Paste
    d. Text Color
38. To change the background of a particular slide, choose ___ tab
    a. Design
    b. Insert
    c. Page Layout
    d. View
39. Effects that are added in a PowerPoint are called
    a. Animations
    b. Clip art
    c. Movies
    d. Pictures
40. What is the maximum number of slides that can be included in a PowerPoint?
    a. 12
    b. 20
    c. 25
    d. Unlimited
41. What icon is this? 
    a. Copy
    b. Font Color
    c. Insert Picture
    d. Next Comment
42. To create a PowerPoint presentation quickly, you can use:
    a. A blank presentation
    b. A picture
    c. A template
    d. A wizard
43. What is this icon? 
    a. Insert Symbol
    b. Italic
    c. Numbering
    d. Underline
44. Which of the following statements is true?
    a. Scroll bars allow you to scroll between different type of views
    b. Scroll bars allow you to zoom into and out of a slide
    c. Scroll bars help to move vertically and horizontally in the pane
    d. All of the above
45. What is this icon? 
    a. Bullets
    b. Insert Picture
    c. Line Spacing
    d. Numbering
46. What is this icon? 
    a. Handout master view
    b. Header and footer
    c. Start a slide show from beginning
    d. Start a slide show from current slide

47. It creates a higher level paragraph.
    a. Demoting
    b. Line wrap
    c. Placeholder
    d. Promoting

48. The application used to make a presentation:
    a. Microsoft Clipart
    b. Microsoft Excel
    c. Microsoft PowerPoint
    d. Microsoft Word

Question Five: MS Excel 2007 (12 Points)

Chose one answer for each item: (1 point each)

49. It is an instruction used by Excel to perform a calculation.
    a. Comment
    b. Formula
    c. Operator
    d. Text

50. The intersection of a column and a row on a worksheet is called a/an
    a. Address
    b. Cell
    c. Default
    d. Formula

51. How are columns identified in a worksheet?
    a. Letters
    b. Numbers
    c. Symbols
    d. Any of the above

52. ___ is NOT correct to calculate the average of the numbers in column B?
    a. =sum(b1+b2+b3)/3
    b. =average(b1:b3)
    c. =average(a1+a2+a3)/3
    d. =sum(B1:b3)/3

53. Which of the following is NOT valid to calculate a value in a worksheet?
    a. =b2*d2
    b. b2/c18
    c. =A1 +A2 +A3
    d. =a1+a2+b7+d3

54. What term describes a group of cells?
    a. Cell group
    b. Column
    c. Command
    d. Range

55. A text label automatically aligns to the ____.
    a. Center
    b. Left
    c. Right
    d. Top

56. As you type data, it appears at the same time in the ____.
    a. Adjacent cell
    b. Formula bar
    c. Function dialog box
    d. Name box

57. Excel displays ____ to tell you to increase the column width
    a. @@@
    b. ******
    c. ???????
    d. ######

58. Numbers automatically aligns to the ____.
    a. Center
    b. Left
    c. Right
    d. Top

59. The default number of worksheets in a workbook is ____
    a. 1
    b. 3
    c. 5
    d. Unlimited

60. Which of the following is a false statement?
    a. AA3000 can be a column name
    b. One can type data in the formula bar
    c. Excel's files extension is .xlsx
    d. A valid cell reference is A34.

End of the Exam. *Best Wishes, Dr. Emad H.A. Mabrouk & Dr. Tarik M.A. Ibrahim*

Assiut University
Faculty of Medicine
Histology department

Date: 26/5/2013

Time: 1 1/2 hour

Final Histological examination
For Preparatory Year (Pharmacy Students)

I) Enumerate only:

1- Components of the filtration barrier. (3marks)
2- Layers of the adrenal cortex. (3marks)
3- Skin appendages. (4marks)
4- Types of cells of the fundic glands. (4marks)
5- Sex cells lining the seminiferous tubules. (4marks)

II) Mention the epithelium of:

1- Trachea. (2mark)
2- Endometrium. (2mark)
3- Proximal convoluted tubule. (2mark)

III) In a table form compare between:

1- Medium sized artery and vein. (4marks)
2- Classic liver lobule and hepatic acinus. (4marks)
3- Rod and cone cells. (4marks)

IV) Give an account on each of the following (without diagram):

1- Corpus luteum. (4marks)
2- Pigmented epithelium. (4marks)
3- Type II alveolar cell. (4marks)
4- Exocrine part of pancreas. (4marks)
5- Red pulp of spleen. (4marks)
6- Thyroid follicular cells. (4marks)

انتهت الأسئلة

(Good Luck)

بســم اللــه الرحمن الرحيم

Assiut University
Faculty of Pharmacy
Pharmaceutics Dept.

Introduction to pharmacy & pharmacy history
Preparatory Year Students Final Exam.
{80 marks}

Time allowed 2hr. **8 pages** **5/ 6/2013**

Part 1. Prof. Dr. Tahani Elfaham (30 marks)

I.Choose the most suitable answer: , *Using the table below* (10 marks)

1. Factors affecting patient noncompliance:
   A) The type of disease.
   B) The frequency of dosing.
   C) Both (A) and (B).

2. The record citing all the characteristics of the patient on admission to the hospital is;
   A) Patient compliance record.
   B) Patient counseling record.
   C) A patient medication record.

3. The first known chemical processes in pharmacy were carried out by the artisans, in
   A) Europe
   B) Tigris and Euphrates
   C) Egypt & China

4. Medication orders are,
   A) Referring to drug orders for persons who are in-patients
   B) Describe drug orders for ambulatory patients
   C) Drug orders for outpatients

5. Doctor of Pharmacy (Pharm. D.) is,
   A) The master degree
   B) A professional degree.
   C) A doctor's degree, usually a Ph.D

6. Courses found in all pharmacy curriculums are :
   A) English as a foreign language
   B) Basic sciences, nonscientific courses and professional courses
   C) All of the above

7. Medication errors are due to:
   A) Side effects of drugs
   B) Mistakes from physician, pharmacist, nurse or patient
   C) Toxicity of the drug

8. pharmaceutical care plans include:
   A) Selection purchasing, distribution and administration of drugs.
   B) Every step of medicine management.
   C) Both A & B.

9- The community pharmacist presents services to general practitioners as;
   A) Examines the patients instead of him.
   B) Gives him information about drugs.
   C) Gives him free samples of drugs.

10. Drugs that cause addiction are called;
   A) Over the counter drugs (OTC).
   B) Prescribed drugs.
   C) Narcotic drugs.

1	2	3	4	5	6	7	8	9	10

II. Tick (√) for right and (X) for wrong statements, with correcting the false ones. , *Using the table below* **(10 marks)**

1-The term school of pharmacy is restricted to an educational program requiring one or more years of colligate study for admission ( )

.....

2- The agency that is responsible for creating guidelines for the approval and use of drugs is the USP. ( )

.....

3-Ancient peoples of the world believe in the close association of drugs, medicine, and religion or faith. ( )

.....

4- Pharmacology courses , focus on the mode of action, the therapeutic use and the effects of misuse of drugs. ( )

.....

5- The oldest of the various fields of pharmacy is the hospital pharmacy. ( )

.....

6- The first edition of the *United States Pharmacopeia* was written both in English and Latin.

.....,,

( )

7- Industrialization had an effect on creation of new drugs. ( )

.....

8- Quality control department concerned with manufacture of dosage forms and solving manufacture processes problems. ( )

.....

9-Clinical pharmacy was pioneered in Europe during the 1960s -1970s ( )

.....

10-Pharmaceutical care describes a patient-focused orientation to pharmacy practice. ( )

.....

1	2	3	4	5	6	7	8	9	10

II. Complete the following: (10 marks)

1. **The FDA requires that all approved drugs fulfill two requirements:**
   a.....
   b.....
2. **Pharmacopeia is**

.....

.....

.....

3. **House bound patients are;**

.....

.....

.....

4.Examples of health promotion role of community pharmacist

.....

.....

5 .R & D means

.....

.....

.....

6- Total parentral nutrition is.....

.....

.....

7- Types of medical care are ;.....; .....; .....

.....

8- Concordance is ;

.....

.....

9- The hospital pharmacist duties as .....

.....

.....

10- Pharmacy is .....

.....

.....

Part II (30 points) (د منى المهدي)

Q1: Donate (T) for the true statement and (F) for the false one and correct the false one **(5 points)**

1) The base unit for amount of substance is the kilogram (Kg) ( )

2) The symbol R of a prescription, stating the ingredients and the quantity of each. ( )

3) Bulk powder usually contains potent active drug ( )

4) Oral route of drug administration is used when rapid absorption is essential, as in emergency situation. ( )

5) Liniments are molded solid dosage forms ( )

Q2) Give the reason(s) for each the following: (6 points)

a) Insulin is not taken orally

b) Sorbitol syrups are used instead of sugar based medicines

c) Spirit should be stored in tight container and in cool place

d) Injection prepared with an oleaginous base are not given I.V.

Q3) Select the right answer **(10 points)**

1) Liquid preparation containing pyoxlin in a mixture of ethyl ether and ethanol with or without added medicinal substances

a) Ointments b) Collodions
c) Liniments d) Elixirs

2) Semisolid dosage forms are

a) Creams b) Ointments
c) Gargles d) Both (a &b)

3) Spirit is defined as
a) Alcholic or hydroalcholic solution of volatile substance.
b) Concentrated, aqueous solution of a sugar
c) Sterile aqueous solution.
d) Alcholic or hydroalcholic solution.

4) The body, stating the ingredients and the quantity of each is
a) Superscription
b) Inscription
c) Subscription
d) Signature

5) The base unit for mass is the
a) Kilogram(Kg)
b) mole (mol)
c) Liter (l)
d) Meter (m)

6) Are highly medicated aqueous solution used in the treatment of throat infection after dilution with warm water
a) Mouth washes
b) Spirits
c) Glycerities
d) Gargles

7) Are semi-solid emulsions for external use
a) Creams
b) Gels
c) Suppositories
d) Pessaries

8) Routes of drugs **cannot** be administered to unconscious patients
a) Buccal route
b) Rectal route
c) Parenteral route
d) Oral route

9) Sterile dosage forms include
a) Eye drop
b) I.V
C) I.M
d) All of them (a &b &c)

10) Solid dosage forms in which one or more medicinal are enclosed within a small shell prepared from **gelatin**
a) Tablets
b) Capsules
c) Pills
d) Lozenges

4) Discuss (Three) of the following: **(9 points)**

1) Advantages of rectal route

2) Code of ethics

3) Parts of a prescription order

4) Capsules as a solid dosage form

GOOD LUCK

الجزء الثاني : تاريخ الصيدلة (ا.د. احمد مصطفى السيد)

(٢٠ درجة)

السؤال الأول : أذكر مثالين لكل من الآتي : (٨ درجات)

١-فوائد دراسة تاريخ الصيدلة

٢-الكتب التي ألفها البيروني أحد مشاهير العرب الذين أسهموا في تقدم الصيدلة

٣-المدارس الطبية في مصر القديمة

٤-المواد التي إستخدمها قدماء المصريين للكتابة عليها

٥-الكتب الدوائية العربية الشائعة وأصبحت كدساتير طبية عربية

٦-الطرق الممكنة لحفظ الأجسام ومنعها من التلف

٧-أعظم الكتب العربية التي أثرت في الصيدلة في أوروبا

٨-العقاقير النباتية التي أدخلها العرب للأستعمال العلاجي

السؤال الثاني : تكلم عن الآتي : (١٢ درجة)

١-الدلائل التي تشير الى وجود تخصص في العلوم الطبية عند قدماء المصريين

٢-بردية إدوين سميث

٣-مضمون كتاب الأدوية المفردة لأبن البيطار

٤-ابتكارات ابن سينا في الطب النسوي

Assiut University — June 2013

Faculty of Science/Chemistry Department — Time allowed: 2 hours

Final exam of Organic Chemistry for prepharmacy students

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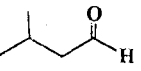
Answer the following questions.....(80 marks) Each point with 2 marks

1. Complete the spaces (reagents or products) in the following equations:

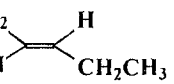
a. $CH_3-C\equiv CH \xrightarrow{HgSO_4,\ H_2SO_4} ?$

b. $Ph-C\equiv CH \xrightarrow[2.\ HCl,H_2O]{1.\ KMnO_4,\ OH^-,\ heat} ?$

c. $(CH_3)_2CH-C\equiv CH \xrightarrow{?}$ 

d. $CH_3-CH_2-CH(Br)-CH_2(Br) \xrightarrow{?} CH_3-CH_2-C\equiv CH$

e. $CH_3-CH_2-C\equiv CH \xrightarrow{2\ mol\ HBr} ?$

f. $CH_3-CH_2-C\equiv CH \xrightarrow{?} ? \longrightarrow$ 

2. For the following acid/base equilibrium: $F_3C-CH_2-\ddot{O}:^{\ominus} + Cl_3C-CH_2-OH \rightleftharpoons F_3C-CH_2-OH + Cl_3C-CH_2-\ddot{O}:^{\ominus}$

i. Indicate stronger and weaker ACID. ii. Indicate stronger and weaker BASE iii. Indicate which has the LARGER and which the SMALER pKa iv. Indicate clearly in which side the equilibrium lie.

3. Which of the following compounds would be the strongest acid?

a) $CHF_2CH_2CH_2COOH$ b) $CH_2FCHFCH_2COOH$ c) $CH_3CH_2CF_2COOH$ d) $CH_3CH_2CH_2COOH$

4. Which of the following would be a reasonable synthesis of $CH_3CH_2CH_2CH_2OH$?

(A) 1-Butene $\xrightarrow{H_3O^+,\ H_2O,heat}$

(B) 1-Butene $\xrightarrow{BH_3,\ THF}$

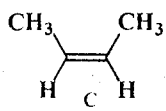
(C) 1-Butene $\xrightarrow[2.\ NaBH_4]{1.\ Hg(OAc)_2,\ H_2O}$

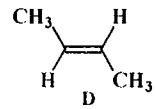
(D) More than one of them

(E) None of them

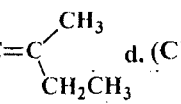
5. What is the major organic product of the following reaction?

$CH_3C\equiv CCH_3 + Li \xrightarrow{liquid\ NH_3} CH_3C\equiv C^{\ominus}\ ^{\oplus}Na$ (A) $\quad CH_3C\equiv C-CH_2^{\ominus}\ ^{\oplus}Na$ (B)


(C)


(D)

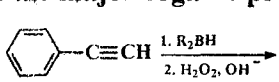
6. What is the major organic product of the following reaction? $(CH_3)_2COH-H_2C-CH_3 \xrightarrow{H_3O^+/catalyst}$

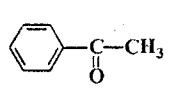
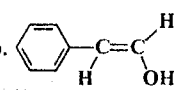
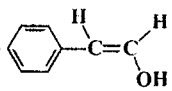
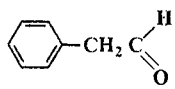
a. $(CH_3)_2CH-H_2C-CH_3$ b. $(CH_3)_2C=HCCH_3$ c.  d. $(CH_3)_2CH-HC=CH_2$

7. What is the major organic product of the following reaction? $CH_3-C\equiv CH \xrightarrow{2\ HBr} ?$

A. $BrCH_2CH_2CH_2Br$ B. $CH_3CBr_2CH_3$ C. $CH_3CH_2CHBr_2$ D. $CH_3CHBrCH_2Br$

8. What is the major organic product of the reaction shown?



a.  b.  c.  d. 

9. Which of the following reacts with $[Ag^+(NH_3)_2]OH^-$ giving a white precipitate?

a. $CH_3-CH_2HC=CCH_3$ b. $CH_3-CH_2-C\equiv CCH_3$ c. $CH_3-CH_2-C\equiv CH$ d. $CH_3CH_2CH_2CH_2OH$

10. What is the major organic product of the reaction shown?

$CH_3-C\equiv CH + \ddot{N}H_2^{\ominus} \longrightarrow$ a. $CH_3-C\equiv CNH_2$ b. $CH_3-C\equiv C^{\ominus}$ c. $CH_3-C\equiv CNH_3$ d. $CH_3-C\equiv C^{\oplus}$

11. Which of the following reactions proceeds through a free radical mechanism?

a. $(CH_3)_2CH-HC=CH_2 \xrightarrow{HBr} (CH_3)_2CBr-H_2C-CH_3$

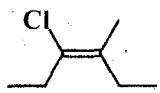
b. $(CH_3)_2CH-HC=CH_2 \xrightarrow{Br_2} (CH_3)_2CH-HCBr-CH_2Br$

c. $(CH_3)_2CH-HC=CH_2 \xrightarrow[ROOR]{HBr} (CH_3)_2CH-H_2C-CH_2Br$

d. $(CH_3)_2CH-HC=CH_2 \xrightarrow[H_2O]{Cl_2} (CH_3)_2CH-HC(OH)-CH_2Cl$

12. Which of the following is the LEAST soluble in water?

A. CH_3CH_2OH B. CH_3COOH C. CH_3COCH_3 D. $CH_3CH_2OCH_2CH_3$

13. What is the IUPAC name for the molecule shown? 

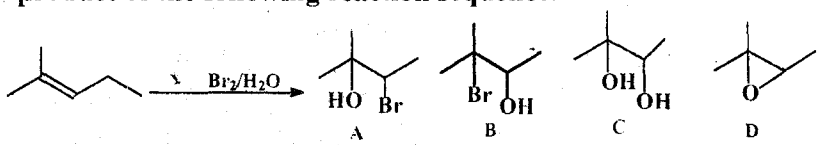
a. *cis*-1,2-diethyl-1-chloro-2-methylethene

b. E-3-chloro-4-methyl-3-hexene

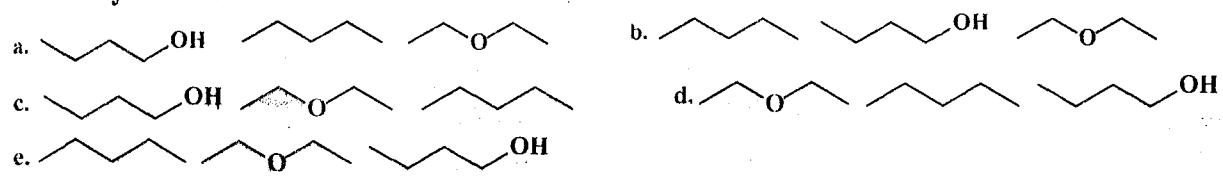
c. E-1-chloro-1-ethyl-1-pentene

d. Z-1-chloro-1-ethyl-1-pentene

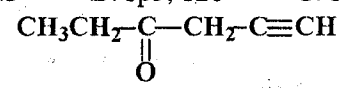
14. Choose the major product of the following reaction sequence.



15. Choose the order that has the following compounds correctly arranged with respect to increasing solubility in water



16. for the molecule shown, what are the hybridization of the oxygen atom and the approximate C-C-O bond angle, respectively? A. sp3, 109.5° B. sp3, 120° C. sp2, 120° D. sp2, 180°



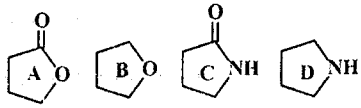
17. What functional group is present in the molecule shown?

A. alcohol B. ester C. amide D. ether

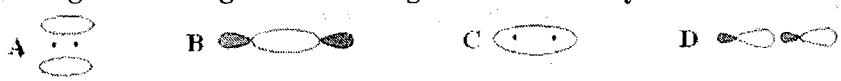
18. Which of the following is NOT a product of the reaction shown? $CH_3CH_2CH(CH_3)_2 \xrightarrow[light]{Cl_2}$

A. $CH_2ClCH_2CH(CH_3)_2$ B. $CH_3CH_2CCl(CH_3)_2$ C. $CH_3CHClCH(CH_3)_2$ D. $CH_3CH_2CCl_2CH_3$

19. Which of the following compounds is an ester?

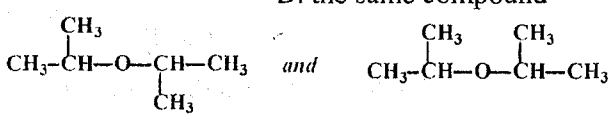


20. Which of these is a sigma bonding orbital arising from two SP3 hybridized atomic orbitals?



21. What is the relationship between the structures shown?

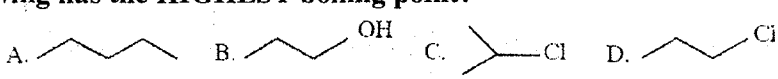
A. different compounds that are isomers B. **different** compounds that are not isomers
C. resonance structures D. the same compound



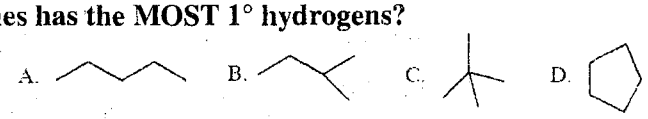
22. The compound CH3CH2CH2-SH will form hydrogen bonds with:

A. other molecules like itself, but not water. B. water, but not other molecules like itself.
C. both water and other molecules like itself. D. neither water nor other molecules like itself.

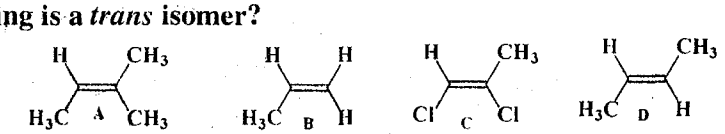
23. Which of the following has the HIGHEST boiling point?



24. Which of these molecules has the MOST 1° hydrogens?



25. Which of the following is a *trans* isomer?



26. Predict the products of the following reactions: