Assiut University   Clinical Pharmacy, 1st level
Faculty of Pharmacy   Pharm. Organic Chem.(l) Final Exam
Dept. Pharm. Organic Chem.   Time allowed: 2 h   Jan., 3, 2012
    Illustrate your answers with chemical equations and reaction mechanisms
                            whenever possible

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الإمتحانات الشفهية عقب الامتحان النظرى مباشرة لجميع الطلبة

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This booklet is composed of 5 pages
Answers should be in the specified places
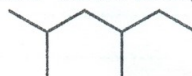
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المشاركون فى الامتحان النظرى

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Prof. Dr. Abdel Alim M. Abdel Alim
Prof. Dr. Adel M. Kamal

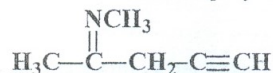**Final exam of Organic Chemistry for clinical pharmacy students**

Answer the following questions: ……………………………………………….(25 marks)

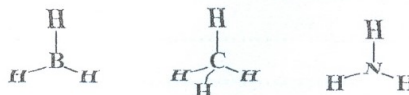**I. Answer the following:** ………………………………………………….(10 marks)

a. Circle the $2°$ carbon atom. Underline the $3°$ carbon atom(s).

b. Circle the sp^2 hybridized carbon atom. Underline the sp hybridized carbon atom(s).
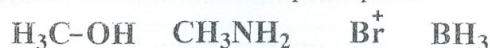
$$NCH_3$$
$$\|$$
$$H_3C—C—CH_2—C\equiv CH$$

c. Circle the Lewis base. Underline the Lewis acid.

d. Circle the functional group which is polar. Underline the functional group which has a pi (π) bond.

$$H_3C—OH \qquad H_2C{=}CH_2 \qquad H_3C—CH_3$$

e. Circle the nucleophile species. Underline the electrophile species

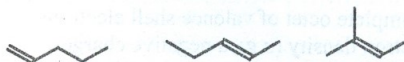$$H_3C—OH \quad CH_3NH_2 \quad \overset{+}{Br} \quad BH_3$$

f. Circle the structure of 4-ethylheptane, Underline the structure of 3-ethylhex-3-ene
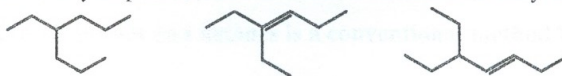
g. Circle the structure of ester Underline the structure of amide.

$$CH_3CO_2CH_3 \quad CH_3CH_2OCH_3 \quad CH_3COCH_3 \quad CH_3CONHCH_3 \quad CH_3CH_2NHCH_3$$

h. Circle the structure of the C5H10 isomer which is most stable. Underline the structure of the C5H10 isomer which is least stable.

i. underline the orbitals are involved in making a C-H bond in methane?
　a) a 2p orbital on C and a 1s orbital on H　　　b) a 2s orbital on C and a 1s orbital on H
　c) an sp3 orbital on C and a 1s orbital on H　　d) an sp2 orbital on C and a 1s orbital on H

j. underline the reagents must be used with HBr to convert 1-hexene to 1-bromohexane?
　(a) HSO$_3^-$　　(b) NaBH$_4$　　(c) ROOR　　(d) Pd/C　(e) no other reagent is necessary

k. Circle the pairs will be immiscible Underline the pairs will be miscible
(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

II. Complete the following equations: ………………………………..(10 marks
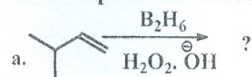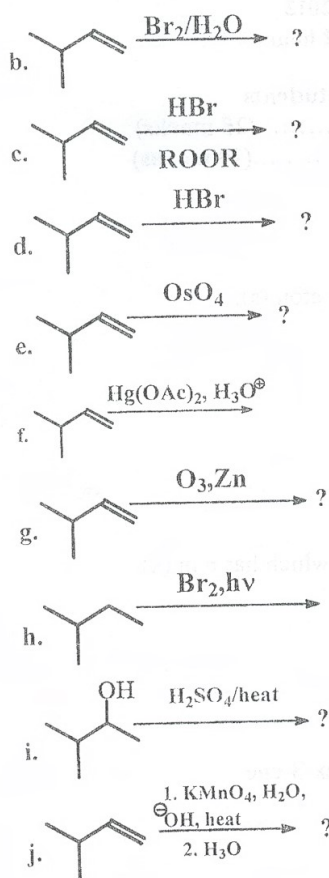
a.
$$\xrightarrow[\text{H}_2\text{O}_2. \ \overset{\ominus}{\text{OH}}]{\text{B}_2\text{H}_6} \quad ?$$

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b. $\ce{->[Br_2/H_2O]}$?

c. $\ce{->[HBr][ROOR]}$?

d. $\ce{->[HBr]}$?

e. $\ce{->[OsO_4]}$?

f. $\ce{->[Hg(OAc)_2, H_3O^\oplus]}$

g. $\ce{->[O_3,Zn]}$?

h. $\ce{->[Br_2,hv]}$

i. OH $\ce{->[H_2SO_4/heat]}$?

j. $\ce{->[1.\ KMnO_4, H_2O, {}^\ominus OH,\ heat][2.\ H_3O]}$?

III. Which of the following statements is not true? ....(5 marks)

a. The heterolysis of a bond between atoms which do not bear formal charges always produces a cation and an anion

b. Carbon atoms of carbanions have a complete octet of valence shell electrons

c. Nucleophiles seek centers of high electron density *(e.g.,* a negative charge).

d. Polarity of bond created due to the difference in electl'Onegativity of atoms forming bond.

e. Zaitsev's rule: formation of the most substituted alkene is favored with a bulky base.

f. CH₂Ch was considered a non polar solvent and have zero dipole moment.   .

g. Ozonolysis of symmetrical alkenes produce single aldehydes.

h. As the molecular mass of the compounds of the alkane series increases their boiling points decreases.

i. The carbocation carbon is SP2 hypridized carbon.

j. 1t bond in ethene was created by overlapping of SP3-SP3, P-P orbitals.

Good luck
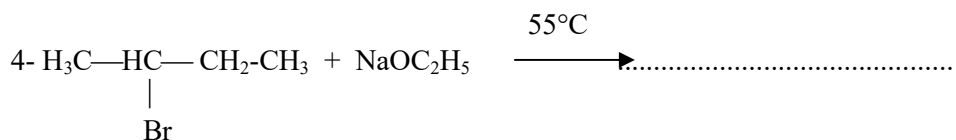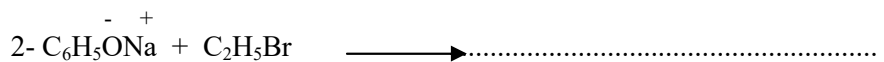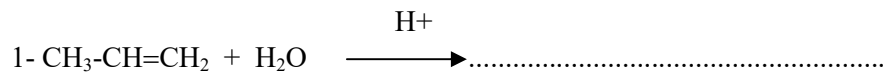*Prof. Dr. Adel Mohamed Kamal*

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Section B (60 min. 25 points)

1- Complete the following statements OR mark (√) or (x) whenever required: (10 points)

1) S_N1 reaction proceeds through the formation of a transition state. (   )

2) SN2 reactions proceed through back-side attack of nucleophiles to the leaving group of the appropriate substrate.   (   )

3) Alcohols have higher boiling points than the corresponding alkanes of the same molecular weights because ....
....
....
....

4) Alcohols have higher boiling points than ethers because ....
....
....
....

5) Primary alcohols are more acidic than tertiary ones.   (   )

6) Explain your answer of (5)...
....
....
....
....

7) Addition of RMgX to aldehydes and ketones is a conventional method for preparation of alcohols. (   )

8) The structure of 15-crown-5 ether is ....
....
....
....

9) Ethanol has higher hoiling point than ethanethiol.   (   )

10) Statement (9) is explained because ....
....
....
....

II- <u>Complete equations 1-4 and answer question 5:</u>   (7.5 points)

1- $CH_3\text{-}CH=CH_2 + H_2O \xrightarrow{H+}$ ....

2- $C_6H_5\overset{-}{O}\overset{+}{N}a + C_2H_5Br \longrightarrow$ ....

3- $CH_3CH_2CONH_2 + NaOH + Br_2 \longrightarrow$ ....

4- $H_3C\text{—}\underset{\overset{|}{Br}}{HC}\text{— }CH_2\text{-}CH_3 + NaOC_2H_5 \xrightarrow{55°C}$ ....

5- How can you separate a mixture of ethylamine and diethylamine (use equations) and very short notes.

....
....
....
....

III- Given below are the relative rates of <u>hydrolysis</u> of some alkyl bromides (30, 0.00001, 1.0, 0.03 and 0.0). Anticipate each relative rate to the appropriate alkyl bromide. (7.5 points)

Alkyl bromide   Relative rate

1- $(CH_3)2$-CH-Br   ....

2- CH_3-Br   ....

3- CH_3-CH_rBr   ....

4- (CH_3)]-C-CH_2-Br   ....

5- $(CH_3$h-C-Br   ....

(GOOD LUCK)

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Assiut University
Faculty of Medicine   Date: 10/1/2012
Medical Physiology Dept.   Time allowed: 1 hour

Final Exam of Biophysics For 1st Year Clinical Pharmacy Students
First Semester, 2012.

Answer the following question :-   (Total marks:-65)
__First question:-__
a- **Mention** the characters of facilitated diffusion and **discuss** its   (8)
   mechanism
b- **Describe** factors affecting permeability of the membrane.   (10)

__Second question:-__
a- **Describe** the depolarization stage and **mention** its causes.   (7)
b- **How** does the excitation of skeletal muscle occur   (8)

__Third question:-__
a- **Compare** between isometric and isotonic muscle contraction.   (8)
b- **Define**:
1- latent period
2-ECG
3-Lead
4-EEG

__Fourth question:-__
- **Give a short account on:**
                    a - P-R interval
                    b - Alpha wave

Good Luck
Dr. Nashwa A Abd EI-Mottaleb and Dr. Azza Salah

I- Put (√) or (X) in front of the following sentences: (24 marks)

1	Steriod hormones-secreting cells are expected to be rich in rough endoplasmic reticulum.	( )
2	DNA replication takes plece during S phase.	( )
3	P53 is a tumor suppressor protein.	( )
4	Highly dividing cancer cells are expected to have open face nuclei.	( )
5	Nucleolus consists mainly of proteins, tRNA, DNA and certain enzymes.	( )
6	Decoding of mRNA takes place in ribosomes.	( )
7	The 1 ry transcripts of ribosomal RNA are located in ribosomes.	( )
8	Melanin is an exogenous pigment and secreted by melanocytes.	( )
9	Incoming transport vesicles enter the mature face of Golgi apparatus to be concentrated.	( )
10	Drug inducing G2/M cell cycle arrest are expected to activate p21 death.	( )
11	Bax upregulation lesds to induction of programmed cell death.	( )
12	On apoptosis, Cytochrome C translocated from cytoplasm into the mitochondria.	( )

II- : Choose the correct answer: (24 marks)

1- Cell inclusions are (temporary - permanent - both).

2- Passive transport means transport from (high to low - low to high - need energy) concentration.

3- Residual body is (secondary - primary - both) lysosome.

4- Endocytosis done by (pseudopodia - autophagy - exocytosis).

5- Tail of phospholipids are (hydrophobic - hydrophilic - both).

6- Cells lack nuclear membrane are (prokayotic - eukaryotic - both).

7- Cell coat consists of (glycolipids - glycoprotein - both).

8- Apocrine secretion means that (apex - whole - base) of the cell exocytosed.

9- Phagocytic vesicle is a vacuole containing (solid material- enzymes - both).

10- Carrier proteins (change - fixed - rotate) their position during transport.

11- Antigens are located on the (cell coat - cell membrane - mitochondria).

12- One of the followings can penetrate the synthetic lipid bilayer easily (O_2 - ethanol - Ca^{+2}).

III- Write briefly on the followings: (17 marks)

A- Factors affecting the cell shape. (8.5 marks)	B- Structure and functions of centriole. (8.5 marks)

Best wishes

Dr. Hanem Abdel Tawab   Dr. Ismail Ismail

Answer the following questions

First Question:-
(a) (Answer one item only)   (6 points)

(i) Find the second derivative of the function $y = (x^2 + 1)^5$.

(ii) If $e^{XY} = 3xy^2$, find $\dfrac{dy}{dx}$?

(b) Integrate: (Choose 3 only)   (9 points)

(i) $\int x^3 e^{x^4} + 2 \, dx$,   (ii) $\int (\ln x)^2 \, dx$,   (iii) $\int_1^e x \ln x \, dx$,   (iv) $\int_0^1 8x(x^2 + 1)^3 \, dx$.

(c) (Answer one item only)

(i) Find the intervals of increase and decrease and the relative extrema of the function $f(x) = x^4 + 8x^3 + 18x^2 - 8$.

(ii) Find the area of the region bounded by the curves $y = x^2 + 1$ and $y = 2x - 2$ between $x = -1$ and $x = 2$.

Second Question:- (Answer 2 only)   (20 points)
a) Determine all the solution by using Gaussian elimination of the following system of equations:
$$2y + 4z = 3 , \quad x - 3y + 5z = 1 , \quad 3x - y - z = 1.$$

b) Find A-l and solve the homogeneous system Ax = 0, where $A = \begin{pmatrix} 1 & 1 & 1 \\ 0 & 2 & 3 \\ 5 & 5 & 1 \end{pmatrix}$

c)   Find k such that $\begin{vmatrix} k-4 & 0 & 0 \\ 0 & k & 2 \\ 0 & 3 & k-1 \end{vmatrix} = 0$.

ee the next page

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Statistics Part:

Answer Two Questions of the Following: (45 degrees)

1- (a) A town has 2 ambulances operating independently. The probability that a specific ambulance is available when needed is 0.96. What is the probability that:

(i) An ambulance is available when needed, (ii) Neither is available when needed.

(b) Determine the constant value C that makes the following function as a mass function

$$f(x) = \begin{cases} C(x^2 + 4), & x = 0,1,2,3 \\ 0, & \text{o.w.} \end{cases}$$

Then, calculate (i) $P(0 < X < 3)$, (ii) $E(X)$, and (iii) $Var(X)$.

2- (a) Determine the constant value C that makes the following function as a density function

$$f(x) = \begin{cases} C\sqrt{x}, & 0 \le x \le 2, \\ 0, & \text{o.w.} \end{cases}$$

Then, calculate (i) $P(1 < X < 1.5)$, (ii) $E(X)$, and (iii) $Var(X)$.

(b) Suppose that the lifetime of a certain type of motors is normally distributed with mean life time equals 12 years, and a standard deviation of 2 years. Find the probability that:

(i) A motor will fails before 10 years, (ii) A motor will stay alive more than 15 years.

3- (a) If the two events A and B are independent, such that P(B-A)=0.4, P(B)=0.6, calculate the probabilities: (a) $P(A' \cup B)$, (b) P(A).

(b) The following measurements are the drying times, in hours, of a certain type of latex paint: 2.7, 3.6, 4.1, 2.6, 3.7, 3.1, 4.2, 3.5, 4.5, 3.0. Assuming that these measurements are a random sample from a normal population, construct 95% confidence intervals for the mean and variance of the drying time.

You may use the following tabulated values:

$P(0 < Z < 1.0) = \Phi(1.0) = 0.34$, $P(0 < Z < 1.5) = \Phi(1.5) = 0.43$, $P(0 < Z < 2.0) = \Phi(2) = 0.48$,

$T_{0.975}(9) = 2.26$, $X^2_{0.025}(9) = 2.70$, $X^2_{0.975}(9) = 19.02$, $X^2_{0.005}(9) = 1.7$, $X^2_{0.995}(9) = 23.6$.

Best wishes, Prof. Dr. Mohamed Adel, and Dr. Osama Rashed.

بـسم الله الـرحمن الـرحيم

Final Examination in General Botany
For Clinical Pharmacy Students (1st Level)

2011/2012   Time: One hour

Complete each of the following:

1- Fungi are characterized by:
   a) --
   b) --
   c) --

2- Saprolegnales are characterized by:

3- Algae differ from fungi in:
   a) --
   b) --

4- The modern concepts of classification of algae are based on:
   a) --
   b) --
   c) --

5- From the economic and medical importance of fungi are:
   a) --
   b) --

6- Phloem parenchyma are characterized by:
   a) --
   b) --

7- Secretory tissuses are present in:
   a) --
   b) --

8- The function of hydathodes is

بقية الأسئلة بالصفحة الثانية

9- Permanent tissues can be differentiated into:

11

a) ---
b) ---
c) ---
d) ---

10- The most common shapes of hairs are:
a) ---
b) ---
c) ---

11- Regular phloem is composed of:
a) ---
b) ---

بسم الله الرحمن الرحيم

Assiuf University   Course: PG 101
Faculty of Pharmacy   Final Exam.
Depf.of Pharmacognosy   20/1/2012

I-Complete the following with suitable words:(7.5 Marks)

1- Drugs containing Cardiac Glycosides are:

.... and ...., they

are used as ....

2- Talc is ....

....

and used in ....

....

....

3 - Volatile Oils are ....

....

....

They are used as ....e.g ....

and .... e. g ………………………

4-The Antimalarial Alkaloid is .... and

found in ....Bark.

5-Mucilage is ....

....

Found in .... and can be tested with

....Giving .... color.

II-Mark on the correct Answer (s).:

1- The Volatile Oils containing drugs must be fumigated with Formaldehyde at intervals to :

a) Kill insects   b) Stabilize constituents   c) keep their colors

2- *Buchu* leaves are used as Diuretics for their content of:

a)Flavonoids   b) Tannins   c) Volatile Oils

3-*Frangula* bark is used as a laxative drug for its contents of:

a) Alkaloids   b)Volatile Oils   c) Anthraquinone glycosides

4- The specific reagent for detection of Tannins in a crude drug

a) Mayer's Reagent   b) 5% KOH   c) Ferric chloride

5-0pium latex must be collected from the unripe but fully grown capsules of *Papaver somniferum* by incision in:

a) The morning   b) Afternoon   c) The course of light

6- The Calcium Oxalate crystals that can distinguish the powdered *Datura stramonium* are found in the form of:

a) Clusters   b) Crystal sheath   c) Crystal layer

7- The ideal temperature for drying *Digitalis* leaves is:

a) 25-30°C   b) 55-65°C   c) 35-40°C

8-*Lupulin* is used as a Sedative and Hypnotic drug for its content of:

a) Alkaloids   b) Resins   c) Volatile Oils

9-*Rhubarb* rhizomes should be collected in :

a)Winter   b)Summer   c) Spring

III- Give One Word for Each of the Following: (10 Marks)

No.	Sentence	Word
1	A powdered drug found in the form of spores.	
2	A Powdered drug consists of glands & hairs.	
3	A process used in drug preparation and affecting the shape, size and color of the plants.	
4	An intended partial replacement of the required drug by any article.	
5	A type of calcium oxalate crystals that can aid in the identification of powdered squill.	
6	A drug used as a central Nervous System (CNS) Stimulant for its contents of Purine bases as main constituents.	
7	A drug used as a Laxative for its contents of Anthraquinone glycosides.	
8	A dehydrating agent which must be added to the crude drugs to get rid of moisture contents	
9	A drug which must be stored for at least one year before using it medicainally.	
10	A drug which must be collected in the afternoon to keep its active constituents.	

Good Luck

Answer the following questions:

First: Write an essay on ONE of the following topics: (30 Marks)

A. Some students prefer to live at university dorms, while others prefer to rent their own apartments.

B: Progress in the field of information technology has contributed a great deal to our lives.

Second: Choose the best option to complete the following sentences: (40 Marks: 5 each)

1- Not until about a century after Julius Caesar landed in Britain _____actually conquer the island.

A the Romans did   B. did the Romans
C. the Romans   D. that the Romans

2- These plants _____ insect to obtain nitrogen.

A. are generally trapped   B. trap generally
C. are trapped generally   D. generally trap

3. Federal type of government results in _____

A. a vertical distribution of power   B. power is distributed vertically
C. vertically distributed   D. the distribution of power is vertical

4. Evidence suggests that one-quarter of operations _____ bypass surgery may be unnecessary.

A. they involve   B. involve
C. involving   D. which they involve

5. Sports medicine is a medical specialty that deals with the identification and treatment of injuries to persons _____

A. sports are involved   B. involved in sports
C. they are involved in sports   D. sports involve them

6. _____ in the planet Uranus dates from its discovery in 1781 is not surprising.

A. That scientific interest   B. It was scientific interest
C. Scientific interest   D. Though scientific interest

7. _____a tornado spins in a counterclockwise direction in the northern hemisphere, it spins in the opposite direction in the southern hemisphere.

A. However   B. Because of
C. although   D. That

8. The Medal, _____ for the best children's picture book, is awarded each January.

A. is a prize which   B. which prize
C. which is a prize   D. is a prize

Third: Translate the following text into Arabic: (20 Marks)

Only about three percent of children have clinically proven allergic reactions to foods. In adults, the prevalence of food allergy drops to about one percent of the total population. This difference between the clinically proven prevalence of food allergy and the public perception of the problem is in part due to reactions called "food intolerances" rather than food allergies. A food allergy, or hypersensitivity, is an abnormal response to a food that is triggered by the immune system. The immune system is not responsible for the symptoms of a food intolerance, even though these symptoms can resemble those of a food allergy. It is extremely important for people who have true food allergies to identify them and nrevent allergic reactions to food because these reactions can cause devastating illness and, in some cases, be fatal.

<div align="center">Good Luck

Main Examiner: Prof. Abdelgawad Mahmoud</div>

Assiut University
Faculty of Science   Jan.: 2012

Section (1)

Answer <u>only four</u> of the following: **(32.5 Marks)**

state the postulations of the molecular kinetic theory of gases, and show how could you use these postulations to derive an expression for the pressure of a gas.

Discuss the following:

Dalton's law of partial pressures.

i)Graham's law of diffusion.

ii)Numerical values of the universal gas constant.

Calculate the following:

i)The mass of Ca that reacts with 41.5 g Cl_2 to produce $CaCl_2$ [Ca=40.08, Cl=35.5].

ii) The simplest formula, if a 25.0 g sample of an orange compound contains 6.64 g of potassium, 8.84 g of chromium and 9.52 g of oxygen. [Cr=52.0, O=16.0, K=39.1].

A sample of liquid acetone is placed in a 3.0 litre flask and vaporized by heating to 90°C at 1.02 atm. The vapour, filling the flask at the same temperature and pressure weighs 5.87 gm. Calculate the molar mass of acetone.

A 250 ml flask, open to the atmosphere, contains 0.011 mole of air at 0°C. On heating, part of the air escapes; How much air remains in the flask at 100°C?

Section (11)

Answer <u>Only Four</u> of the following: **(32.5 Marks)**

Draw lewis structure of CO_3^{-2} and calculate the formal charge on each atom.

Choose the correct answer:

i)The energy change accompanying the addition of one electron to a neutral gaseous atom called .....

a)Electron affinity   b)Electronegativity   c)Lattic energy.

ii)Bond order of He_2^+ is ....

a) 0   b) l   c) 1/2.

v)A substance which is weakly repelled by a magnetic field is ....

a)Paramagnotic   b)Diamagnetic   c)Ferromagnotic.

vi)Vitamin B_{12} coenzyme is a complex of ....

a)Cobalt   b)Iron   c)Magnesium.

Draw molecular orbital energy-level diagrams for C_2 and C_2^{2-} and state the bond order in each. Write the nomenclature of the following complexes.

i) $[Co(NH_3)_6]Cl_3$ ii)$K_4[Fe(CN)6]$.

A sample of carbon from a wooden artifact is found to give 10.8 $^{14}C_6$ counts per minute per gram of carbon. What is the approximate age of the artifact? The $^{14}C_6$ from wood recently cut down decays at the rate of 15.3 disintegrations per minute per gram of carbon. The half-life of $^{14}C_6$ is 5770 years.

atomic numbers: H=l, He=2, B=4, Be=5, C=6, N=7, O=8, F=9, P=15, Cl=17, S=32.

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Good Luck

Examiners: Prof. Dr. Rabei Gabr, Prof. Dr. Ahmed H. Osman.

Assiut University, Faculty of Arts, Dept. of English

English for the Clinical Pharmacy Program, First Year .
Time: Two hours
Final Exam, Second Semester, June 2012.

Answer the following questions:

First: Write an essay on ONE of the following topics: (40Marks)

 A: Your future plans after graduation

 B: The role of television programs nowadays

 C: Learning foreign languages

Second: Complete the following sentences by choosing the best option:
(30 Marks: 6 each)

1- Hydrogen peroxide .... as a bleaching agent.

 A- used   B- is used   C- is using

2- This phenomenon occurs in valleys and on low grounds .... on mountains.

 A- With frequently as B- as frequently than C-more frequently than

3- The blue whale is........................... known animal

 A- the large   B- the larger   C- The largest

4- Technically, glass is a mineral and ....

 A- water so   B- so is water   C- water is so

5. A perennial is............for more than two years.

 A.- any plant that it continues to grow

 B- any plant that it continuing to grow

 C- any plant that continues to grow .

Fourth: Translate the following text into Arabic: **(20 Marks)**

  To a large extent, mathematics is the language of science. The accuracy of prediction depends on the accuracy of calculations and measurements used in the experimentation. We have come a long way since ancient times when mathematics were regarded by some people as mysterious or supernatural. Mathematics gives precision to science. Our calculations tell us, for example, not merely that light travels fast but it travels at a speed of 186,000 miles per second .

. We know not just that bacteria are so small that they are invisible but, also that several hundred thousand bacteria could fit on the dot at the end of this sentence.

Good Luck
Main Examiners: Prof. A. T. Mahmoud

Dept. of Mathematics	Final Exam of First Year	Mathematics and

Faculty of Science	Clinical Pharmacy- 2011/2012	Statistics MS 101
Assiut University	Time: 2 hour	90 Marks

Mathematics Part:
Question 1: Answer <u>two items</u> of the following: (24 Marks)

(a) Find $\dfrac{dy}{dx}$ of the following functions: (12 Marks)

$$(i)\, y = \frac{1}{\sqrt[3]{e^{4x} - 2x^3}}, \quad (ii)\, y = \sqrt{1-x^2}\cdot e^{\frac{1}{x}}, \quad (iii)\, y = \frac{e^{2x} - 5x}{x - \ln x}.$$

(b) Find the local extrema for the function $Y = x^3 + 6x^2 + 9x + 5$. (12Marks)

(c) Find the point of inflection for the function $Y = xe^x$. (12 Marks)

Question 2:   (21 Marks)

(a) Find the following integrations: 12 Marks)

$$(i)\int \sqrt[3]{1 + e^{-3x}}\cdot e^{-3x}\, dx, \quad (ii)\int \frac{xe^{\sqrt{1-x^2}}}{\sqrt{1-x^2}}\, dx, \quad (iii)\, y = \int \frac{1}{x\ln^4 x}\, dx.$$

(b) Use Kramer's rule to solve the following system of equations: (9 Marks)

$$x + Y + z = 6,\ x - Y + z = 2,\ 2x + y - z = 1.$$

Please turn over the page ...

 Statistics Part:
Answer Five Questions of the Following: (45 degrees)

19

1- A town has 2 fire engines operating independently. The probability that an engine is available when needed is 0.95. What is the probability that:

(i) At least one engine is available when needed, (ii) No engine is available when needed. 2- If A and B are two independent events such that P(A)=0.4, P(B.)=0.3. Find:

(i) $P(A \cup B)$ (ii) $peA' \cap B)$

3- Determine the constant value C that makes the following discrete function as a mass probability function

$$f(x) = \begin{cases} C(x^2+1), & x = 0,1,2,3 \\ 0 & ,o.w. \end{cases}$$

Then, calculate (i) $P(0 < X \le 3)$, (ii) E(X).

4- Determine the constant value C that makes the following function as a density function

$$f(x) = \begin{cases} C x^2 , & -1 \le x \le 2, \\ 0 & ,o.w. \end{cases}$$

Then, calculate (i) $P(1 < X < 1.5)$, (ii) E(X).

5- The probability that a patient recovers from a rare blood disease is 0.4. If 10 persons are known to have this disease, what is the probability that:

(i) At least 6 persons will survive, (ii) From 3 to 7 persons will survive.

6- Suppose that the lifetime of a certain type of motors is normally distributed with mean life time equals 15 years, and a standard deviation of 3 years. Find the probability that:

(i) A motor will fails before 12 years, (ii) A motor will stay alive more than 20 years.

You may use the following tabulated values:

$P(0 < Z < 1.0) = \Phi(1.0) = 0.34$, $P(0 < Z < 1.67) = \Phi(1.67) = 0.45$.

Best wishes, Prof. Dr. Mohamed Adel, and Dr. Mansore Al-said.

 Inorganic and Physical Chemistry Examination for Clinical Pharmacy Students

Section(I) (32.5 marks)

Answer TWO only of the following

1) i- Give reasons for the following:
   a. Decrease of the atomic radius across a given period.
   b. the bond energy of F_2 is about 33 kcal/mole while that of H_2 is 103 kcal/mole.
   c. Atoms in the fluorine family have relatively larg electron affinities.
   ii-Compare between stochastic and nonstochastic effects of radiation on the biological systems.

2) i-Give the nomenclature of the following complexes:

$[Ag(CN)_2]^-$, $[CoCl_6]^{3-}$, $[Cr(NH_3)_3Cl_3]$, $[Cr(H_2O)_4Cl_2]Cl$
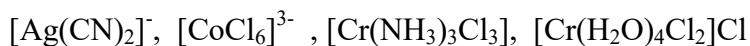
ii - Give the principle components of the basic structure of vitamin B_{12}
Hi - Complete the following equations:
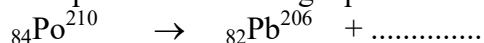
$$_{84}Po^{210} \quad \rightarrow \quad _{82}Pb^{206} \quad + \ ....$$

$$_{6}C^{11} \quad \rightarrow \quad 5B11 \quad + \ ....$$

$$_{49}In^{115m} \quad \rightarrow \quad .... \ + \ _{49}In^{115}$$

3) i-Draw the potential energy curve for hydrogen molecule formation and then tomment. .
   ii- Draw the molecular orbital energy levels aufbau order of B_2 molecule. Is the molecule paramagnetic or diamagnetic? Give the bond order of this molecule .

أنظر خلفه باقى الاسئلة

1

Section (Il)

Answer FIVE only of the following

1) Discuss the deviation of real gases from their ideal behaviour and derive an equation explaining this deviation.

2) Into 5.0 liters container at 18°C are placed 0.20 moles of H_2, 20g of CO_2 and 14g of O_2• Calculate the total pressure in the container and the partial pressure of each gas.

3) From the kinetic theory of gases derive the mathematical expression of the following:

i- Graham's law   ii- Dalton's law and   iii-Boyl's law

4) What volum of N_2 gas can be produced from the decomposition of 37.6 liters of ammonia $2NH_{3(g)} \rightarrow N_{2(g)} + 3H_{2(g)}$, when both gases are measured at 725°C and 5.05 atm. Pressure.

5) How many liters of $CO_{2(g)}$ can be produced in the reaction of 5.24 liters of $CO_{(g)}$ and 2.65 liters of O_2 gas if all gases are measured at the same temperature and pressure.

6) A gaseous hydrocarbon contains 14.37% H by mass and has a density of 1.69 g/liter at 24°C and 743 torr. What is the molecular formula of this hydrocarbon?

$$(N = 14, C=12, H =1, 0=16)$$

Prof. Dr. Rabi Gabr

Prof. Dr. Aref A. M. Aly

I- Choose the correct answer (3 marks each)

1-Phospholipid molecules heads are linked to tails by
a) phosphate group   b) glycerol group   c) cholesterol group

2- Flip-flop movement of lipid molecules in the plasma membrane occurs
          a) very rarely   b) continuously   c) rapidly

3- Sphingomyelin is
a) choline phospholipid   b) non-choline phospholipid   c) non-mammalian phospholipids

4- Phosphatidylethanolamine is found almost exclusively in
a) outer leaflet of plasma membrane b) inner leaflet of plasma membrane
c) between the inner and onter leaflets of plasma membrane

5- Phosphatidylserine is
a) positively charged   b) negatively charged.   c) not charged

6- More kinks in the tails of phospholipid molecules in the plasma membrane leading to
a) less fluidity   b) more fluidity   c) prevention of fluidity

7- I n many cases sperms recognize eggs by
a) glycerol   b) glycogen   c) glycocalyx

8-sulfotransferase enzyme is found abundantly in
a) RER   b) SER   c) Golgi bodies

9-Lysosomes are synthesized in
a) RER   b) Golgi bodies   c) a and b

10-Cathepsins are proteases found exclusively in
 a) Golgi bodies   b) mitochondria   c) lysosomes

11-SER lacks
a) ribophorin I and II b)phosphatidylcholine   c) a and b

12- Toxins neutralization in hepatocytes occurs in .
a) RER   b) SER   c) a and b

13-Catalase is not found in
a) mitochondria   b)peroxisomes   c) a and b

14-Tubulin is a protein found in
a) microbodies   b) microtubules   c) microfilaments

Continuous→

3

I5-centriole consists of 9 sets of microtubules
a) triplets   b) doublets   c) singlets
16-Desmin is a type of intermediate filaments found in
a) nerve cells   b) musele cells   c) epithelial cells
17-lnactive genes in the nucleus are represented by
a) folded wrapped DNA   b) less folded wrapped DNA   c) euchromatin
18-Kartagener's syndrome is characterized by
a) lacking of iduronidase   b) lacking of tubulin   c) lacking of dynein
19-During interphase, production and accumulation of energy occur in
a)G1 phase   b) S phase   c) G2 phase
20-Cel1 cycle is controlled by proteins called
a) cyelins   b) cyelin-dependent kinases   c) a and b

11- Write the missing labels of the following diagram (1 mark each)

(1)
(2)
(3)
(4)
(5)
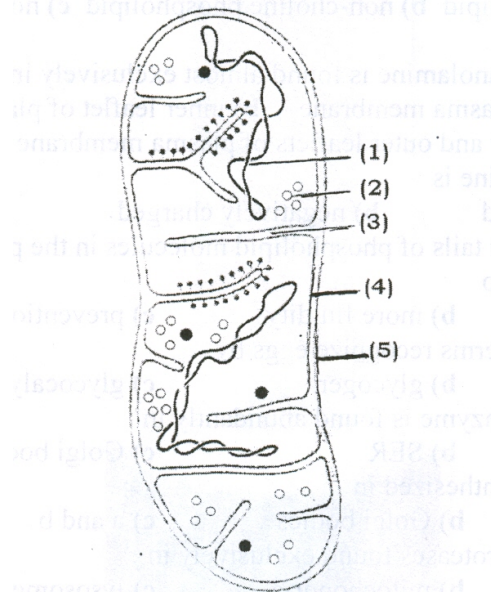
Good luck.
Dr. Abo Bakr M. Eltayeb

4

1- Answer four items only   (40 Marks)

a) Differentiat the function $y = (1 + (1 + x^2)^2)^2$.

b) Find y' for the function $x^3 + y^3 = xy$.

c) Find $\dfrac{d^2 y}{dx^2}$ in terms of x and y for the function $2x^2 - 3y^2 = 7$.

d) Evaluate the integrals $\displaystyle\int \frac{10x^3 - 5x}{\sqrt{x^4 - x^2 + 6}} dx$ and $\displaystyle\int Inx\ dx$.

e) At a certain factory, the marginal cost is $6(q\text{-}5)^2$ E.P. per unit when the level of production is q units. By how much will the total manufacturing cost increase if the level of production is raised from 10 to 30 units?

٢-   (٢٥ درجة)

أ) أوجد قيمة (قيم) كل من μ ، λ التى تجعل نظام المعادلات الآتية

$X + 2Y + 2Z = 1$, $X+3Y+9Z=4$, $X+3Y+\lambda^2 Z = \mu^2$

أولا: لها حل وحيد ثم أوجده   ثانيا: لها عدد لانهائى من الحلول   ثالثا: ليس لها حل

ب) أوجد حلا (إن وجد) لنظام المعادلات الخطية

$X + Y + 2Z = 7$, $X - Y + Z = 1$, $2X + Y - Z = 2$.

3- Answer **two** items only   (25 Marks)

The following tabulated value may be used t(.025, 11) = 2.2;

t(.05, 20) = 1.72.

(a)The following table showed the ages x and systolic blood pressure y of 6 women

Age (x)	40	42	44	45	48	50
Blood pressure (y)	121	129	137	141	153	162

Find the equation of the least-square curve of the form $y = \alpha x^\beta$ to the data.

b) The following are intraocular pressure (mm Hg) values recorded for a sample of 21 elderly subjects.

14.5 , 12.9 , 14.0 , 16.1 , 12.0 , 17.5 , 14.1 , 12.9 , 17.9 , 12.0 , 19.6 , 16.4 , 24.2 , 12.2 , 14.4 , 17.0 , 10.0 , 18.5 , 20.8 , 16.2 , 14.9

Can we conclude from these data that the mean of the population from which the sample was drawn is greater than 14 ? let $\alpha = 0.05$.

(c) Two types of chemical solutions A and B were tested for their PH. The following table showed the analysis of 7 samples of A and 6 samples of B

Chemical Solutions	PH						
A	5.78	5.74	5.84	5.81	5.92	5.97	5.92
B	5.42	5.49	5.92	5.71	5.31	5.41	

Using 0.05 significance level determine whether the two types of solution have different PH values. Assume the population variances are equal.

إنتهت الأسئلة

مع أطيب تمنياتنا لكم بالتوفيق والنجاح

أ.د./ أحمد عبد المنصف علام

أ.د./ خلف الضبع أحمد

Program: Clinical Pharmacy   **Subject:** English Language
<u>**Students:** First Year</u>   <u>**Time allowed:** 2 Hours.</u>

l- Writing: Write a paragraph on <u>One Only</u> of the following topics: (15 Marks)
a)A critical (or ironical) situation you have experienced.
b)Do you feel a difference between university life and school life?

ll- Comprehension:
Read the following Passage and then answer the questions below:
One of the most dangerous drugs for pregnant women to consume is alcohol. Because alcohol is delivered quickly into the blood and passes quickly into the tissues and membranes, the human fetus is particularly vulnerable to its effects. The reality is that the negative effects on a fetus are so pronounced that babies born after exposure to alcohol are said to be suffering from fetal alcohol syndrome. As a pregnant woman drinks alcohol, the alcohol is passed into her bloodstream almost simultaneously. Moreover, because the bloodstream of the fetus is inextricably tied to that of the mother, the alcohol passes directly into the bloodstream of the fetus as well. And, what is more, the concentration of alcohol in the fetus is exactly the same as in the mother. For the mother, this concentration is not a problem because her liver can remove one ounce of alcohol from her system per hour. However, the fetus's liver is not completely developed (how developed it is depends on its stage of development). The rate at which it is able to eliminate the alcohol from the blood of the fetus is much slower. Eventually, the alcohol will be returned to the mother's system by passing across the placenta, but this process is slow. By the time this takes place, major neurological damage may have already occurred. Research has shown that as little as one drink of alcohol can produce significant, irreversible damage to the fetus. Babies born after exposure to alcohol generally exhibit facial distortion, inability to concentrate, and difficulty in remembering. Simply speaking, it is imperative that pregnant women avoid alcohol.

Questions: **(30 marks: 6 questions X 5 marks each)**
1- What is the main topic of this passage?
(A) Women and drugs   (B) The dangers of pregnancy
(C) The fetus and alcohol   (D) Drinking and the human body

2- In line 4 the word "its" refers to
(A) the fetus   (B) the blood   (C) the tissue   (D) the alcohol

3- In line 4, the word "pronounced" most closely means
(A) evident   (B) spoken   (C) described   (D) unfortunate

4- How much time can it be inferred that it takes alcohol to enter a woman's bloodstream after she takes a drink?
(A) about one hour   (B) a few seconds
(C) several minutes   (D) at least 24 hours

5- In line 8 the word "inextricably" most nearly means
(A) unexplainedly   (B) formerly   (C) forcefully   (D) inseparably

6- According to the passage, how does the concentration of alcohol in a fetus compare to 'that in the mother?
(A) The concentration is more.   (B)The concentration is less.
(c)The concentration is equivalent. (D) The concentration cannot be measured

lll- Structure and written expression:
1- The consistency of protoplasm and that of glue ....
(a) they are like.   (b) are similar to   (c) are similar   (d) the same
2- The lights and appliances in most homes use alternating current ....
(a) instead direct current   (b) instead of direct current
<u>(c) that instead direct current</u>   <u>(d) for direct current instead</u>
(Turn to the back of this sheet)

7

3- When Franklin Roosevelt decided to run for a fourth term, the opposition said that he was ....

(a) so old   (b) too old   (c) oldest   (d) very old

4- The decomposition of microscopic animals at the bottom of the sea results in an accumulation of .... porous tacks.

(a) the oil   (b) oil   (c) an oil   (d) oils

5- The U.S. postal service policy for check approval includes a requirement that two pieces of identification ....

(a) must present   (b) presented   (c) be presented   (d) for presentation

6- Nerve impulses ....to the brain at a speed of about one hundred yards per second.

(a) sending sensations   (b) to send sensations
(c) send sensations   (d) sensations

7- Although exact statistics vary because of political changes, ... separate nation states are included in the official lists at any one time.

(a) more than two hundred   (b) as much as two hundred
(c) many as two hundred   (d) most that two hundred

8- Influenced by Ross, and worthy of being linked with him, ... , who proved in 1900 that the vehicle of the deadly yellow fever organism is the common house mosquito of tropical America.

(a) who was Walter Reed   (b) was Walter Reed
(c) Walter Reed was   (d) Walter Reed

9- The Indian variety of crocodile is the most widely researched crocodile in the world........... anatomical structure is so unusual.

(a) because its   (b) because of its   (c) it is because   (d) is because

10- ....a cold front meets a warm front, an area of turbulent air is created often producing thunderstorms and tornadoes.

(a) And   (b) When   (c) That   (d) However

IV- Translation: Translate the following passage into Arabic:

Vitamins are organic nutrients that do not provide calories for energy. They are needed in the diet in tiny amounts. Vitamins in foods come in the form of precursors, also known as provitamins. Precursors are compounds that can be converted into active vitamins. Vitamins do not make you strong nor do they provide you with energy. However, they help other nutrients do their work properly. For example, Vitamin B1 called Thiamin helps in the breakdown of carbohydrates for energy. Other vitamins, such as Niacin and Riboflavin help in the breakdown of protein and fat to produce glucose for energy.

(15 Marks)

Good Luck
Board of Examiners:
Prof. Abdel Gawad T. Mahmoud
Dr Ahmed S. M. Mohammed

Nitrogen is the most common substance in Earth's __ (1) __ In the Earth's atmosphere, nitrogen is a gas. The particles of a gas move very quickly. They run around and bounce into everyone and everything. The hotter a gas is, the __ (2) __ the particles move.

When a gas is _____ (3) _____ , its particles slow down. If a gas is cooled enough, it can change from a gas to a liquid. For nitrogen, this happens at a very ___ (4) ___ temperature. If you want to change nitrogen from a gas to a liquid, you have to bring its temperature down to 77 Kelvin. That's 321 degrees below zero __ (5) __!

Liquid nitrogen looks like water, but it acts very differently. It disappears as soon as it touches the floor because it rapidly __ (6) __ and changes back to a gas at room temperature. A flower dipped in liquid nitrogen will shatter because all of the water in the flower freezes instantly. An inflated __ (7) __ placed in liquid nitrogen will appear to slowly deflate. The air isn't leaving the balloon, though. It's just taking up less space because it's getting cold and its __ (8) __ are moving slower. Once the balloon is removed from the liquid nitrogen, it warms back up and returns to normal.

Although experimenting with liquid nitrogen is fun, we still need to be careful with it. We always need to protect our __ (9) __ by wearing goggles and our __ (10) __ by wearing gloves. After all, we wouldn't want to freeze and shatter like a flower!

1- (a) crust	(b) ocean	(c) atmosphere	(d) trees
2- (a) slower	(b) faster	(c) hotter	(d) colder
3- (a) cooled	(b) wormed	(c) heated	(d) compressed
4- (a) strange	(b) warm	(c) low	(d) high
5- (a) Kelvin	(b) Celsius	(c) Centigrade	(d) Fahrenheit
6- (a) explodes	(b) boils	(c) freezes	(d) dries
7- (a) flower	(b) sock	(c) puppet	(d) balloon
8- (a) particles	(b) heads	(c) members	(d) files
9- (a) ears	(b) eyes	(c) nose	(d) mouth
10- (a) feet	(b) ears	(c) eyes	(d) hands

9

Final Exam. of Biophysics For 1st Year Clinical Pharmacy Students
First Semester, 2011.

Answer the following question :-   *(Total marks:-65)*

First question:-

a- Define simple diffusion of transportation and explain it   (6)
   with example.

b- Describe osmosis.   (5)

c- Describe the process of exocytosis.   (5)

Second question:-

a- Mention the role of ions in causing resting membrane   (6)
   potential.

b- Define and describe the process of repolarization.   (6)

c- Mention the functions of proteins of cell membrane.   (5)

Third question:-

a- Describe the isometric contraction with an example.   (6)

b- Define excitability.   (3)

c- Discuss the factors which decrease excitability.   (3)

Fourth question:-

a- Define ECG and discuss the unipolar chest leads.   (7)

b- Define EEG and discuss slow waves of EEG.   (7)

c- Write notes on the S-T segment of ECG.   (6)

Good Luck

Prof. Mamdouh Anwar and Assc. Prof. Asmaa Fargaly

Final Exam. of Biophysics For 1st Year Clinical Pharmacy Students
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Good Luck

Prof. Mamdouh Anwar and Assc. Prof. Asmaa Fargaly

Match the following (Choose 20):   (20 degree)

1- Centrioles	A- Excellent conductor of electricity.
2-Glandular cells	B- Nerve cell.
3-Cell membrane	C- Surface tension.
4- The cytoplasm.	D- Bar body.
5 -Eukaryotic cells.	E- Lipid - protein &- carbohydrates.
6- Nissl bodies.	F- Duplication and replication
7 -Cell shape depends on.	J- Ergastoplasm.
8- Temporary components of cytoplasm.	H -Cell division.
9-Adenosine triphosphate (ATP).	G-Selective pemieability
10-Linker &Transporters.	K-Presence of nuclear membrane.
11- Apoptosis.	L-Golgi apparatus.
12-Membrane proteins'.	M-Stored cell energy.
13- Polarity.	N-Membrane protein functions.
14-Carbohydrates.	O- Perpheral & Integral proteins.
15.Hemoglobin in RBCs.	P-Ribosomes.
16-Mature phase of Golgi.	Q-PAS Stain.
17-Polyribosome.	R.Protein synthesis.
18-Heterochromatin.	S-PCD
19-Active chromatin .	T-Few larger secretory vacuoles.
20- Cell coat	U - Myoglobin.
21-Endogenous pigments.	V -Glycoprotein.

2

Mention whether each of the following statement is true (T) or false (F) Choose 10 (20 degree)

I-Viscosity of protoplasm and surface tension affect cell shape

2-Majority of animal cells visible by L M (1-5 μ)

3-Cytoskeleton network of filaments responsible for cell shape and cell movement

4- N on membranous organelles participates directly in cellular metabolism

5-Coated vesicles are non membranous organelles

6-Carrier proteins are essential in the passive & active transport.

7 -Basophilic staining of cytoplasm due to presence of lysosomes.

8-SER in muscle fiber known as sarcoplasm.

9- In eukaryotes ribosomal RNA synthesized in the nucleolus.

10-Exogenous pigments such as hemoglobin& tatto mark.

11-Cell membrane is thin & fragile.

12- Endogenous pigments are formed inside the body such as myoglobin.

13-PCD is needed to destroy cell that represent a threat to the integrity of the organIsms.

Choose the correcte answeres   **(20 degree)**
   1- Ribosomes composed of (**6-4-8**) types.
   2-Phospholipids (**Bi- one - tri**) Layer.
   3-Head of phospholipids linked to tail by (**P04- S04 - Mn04**)
   4-Water moves across cell membranes from (**low solute to high solute -high solute to low solute -or both**)
   5-Cell coat are present on (**External surface of PM-internal surface of PM-between the PM**)
   6- Tip of microvilli of absorptive cells contains (**Acid phosphatase - Alkaline phosphatase- both of the them**)
   7 -Number of mitochondria &cristae are proportional to rate of (**Metabolism - catabolism- anabolism**).
   8-Lysosomes originate from (**RER- SER- Golgi - RER+Golgi, SER+ Golgi**).
   9-Autophagosomes 2ry lysosomes contain digested (**Aged organelles - carbohydrates - solution - minerals**)
   10-RER responsible of synthesis of (**local- export - both**) protein.
   11-Local proteins synthesis by (**RER-SER- polyribosmes atlached - polyribosones not attached**).
   12-Bar body one of(**Male sex chromosome- female sex chromosome - active chromatin**)
4-Put the labeleson the diagram.   **(5 degree)**
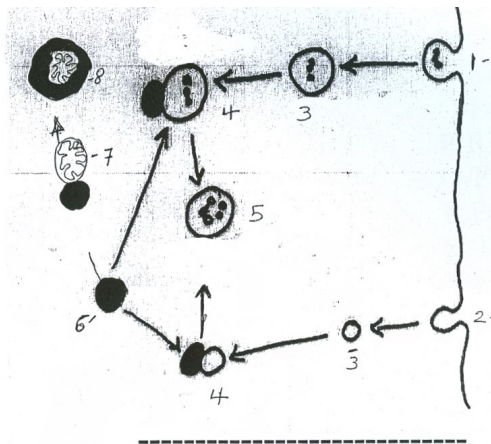
Good Luck
Dr. Hanem Saad Abdel- Tawab

Assiut University, Faculty of Arts, Dept. of English
English for the Clinical Pharmacy Program, First Semester
Time: Two hours
Final Exam, Jan. 2011.

Answer the following questions:

First: Write an essay on ONE of the following topics: (20 Marks)

    A: Cross-cultural communication and its role in developing international peace.

    B: Social justice and its role in supporting human development

    C: The importance of traveling abroad for understanding their cultures

Second: Read the following text, then answer the questions that follow: (20 Marks: 4 each)

       All kinds of food contain different amounts of energy in the form of fat, carbohydrate and protein. Fat is the richest: a gram of butter gives us twice as much energy as a carbohydrate, such as potato. Human milk contains about 5% fat, but a polar bear's contains almost 50% fat to help young polar bears stay warm and grow quickly in the artic. Our bodies' burn food at different speeds - this is known as our metabolic rate. It helps explain why some people can eat a lot of food and remain thin, and others only have a chocolate bar and put on weight. A shrew has such a high metabolic rate that it has to eat twice its own weight every day. In other words, it is like a human being eating 500 cheeseburgers.

    1. What type of food that produces the highest rate of energy?

    2. What is meant by the metabolic rate?

    3. Why does a shrew need to eat twice its own weight every day?

    4. Why do some people get fat?

    5. Summarize the text in one sentence of your own

Third: Complete the following sentences by choosing the best option: (30 Marks: 6 each)

    1- Neptune is an extremely cold planet, and..............................

      A- so does Uranus   B- so has Uranus   C- so is Uranus

    2- ....that gold was discovered at Sutter's Mill and that the California Gold Rush began.

      A- Because in 1848   B- That in 1848   C- It was in 1848

    3- Frost occurs in valleys and on low grounds ....on adjacent hills.

      A- more frequently as B- as frequently than   C-more frequently than

    4- In a new culture, many embarrassing situations occur. . . . . a misunderstanding.

      A - for   B- of   C- because of

    5- When a body enters the earth's atmosphere, it travels ....

      A- very rapidly   B- with a rapid way   C- fastly

Fourth: Translate the following text into Arabic: **(20 Marks)**

Many scientists describe Vitamin A as the most versatile vitamin. The foremost and important role of Vitamin A is for eyesight in such a way that a vitamin A compound is required in the transformation of the light's reception by the brain. For example, the signal transmitted by nerves to convey different colors requires a specialized type of light-sensitive cells. Other types of cells are required by the eyes to adapt to the intensity of light, thus allowing the eyes to accommodate and adjust to see bright light at night. These different types of cells are nourished by protein molecules and other elements which are derived from Vitamin A.

Good Luck

Main Examiner: Prof. A. T. Mahmoud

Assiut University
Faculty of Science   Jan.: 2011
Chemistry Department   Time: 2 hours
<u>Final Exam of Physical and Inorganic Chemistry for 1st year Clinical Pharmacy Students</u>
Section (1)
Answer <u>only five</u> of the following: (32.5 Marks)

1) Draw the Lewis structure of SF_4 and calculate the formal charge on each atom.

2) Choose the correct answer:
   (i)The bond in HF molecule is (pure ionic - polar covalent - pure covalent)
   (ii)The bond order in H_2- equals (1, 1/2, 0)
   (iii)Electron capture is a decay mode accompanied by emission of
   (neutrino, gamma rays, X rays)

3) The bond distance of N_2 is 109 pm and in N_2 + is 112 pm .Draw molecularorbital diagrams for each and explain why the distance vary in the way described.

4) For the complex $[Cr(H_2O)_4Cl_2]Cl$ give its nomenclature, the coordination number of the central atom and the geometrical shape of this complex.

5) "The Chlorophyll molecule is a magnesium complex of porphyrin" .Discuss the role of magnesium ion in the function of this complex.

6) A radionuclide often used in medical procedures is ^{99m}Tc. It undergoes gamma decay with decay constant of 0.115 h^{-1}.Calculate the amount of time would take for the activity injected into a patient to be reduced to 0.1% of the original level.

<u>Atomic numbers: H=1 , N=7, F=9 and S=16</u>

Section (II)
Answer <u>Only Five</u> of the following: (32.5 Marks)

1) An organic compound contains 57.14% C, 6.16% H, 9.52% N, and 27.18% O. Calculate its empirical formula.

2) Describe how the kinetic theory of gases supports Avogadro's law and Boyle's law.

3) What is the pressure of a mixture of 1 g of hydrogen and 1.4 g of nitrogen stored at 500 mL. at 127° C.

4) Discuss how Van del' Waals equation accounts for the behavior of real gas at:
   i) High pressure.   ii) High volume.

5) How many grams of hydrogen react with excess of oxygen to produce 5.4 g of water?

6) Define the Following:
   i) Critical temperature   ii) Normal boiling point   iii) Surface tension.
                Molar masses (H = 1 , C = 12, N = 14,0 = 16)
                              Good Luck
           Examiners: Prof. Dr. Ahmed H. Osman & Dr. Gamal A. Ahmed

6

Dept. of Mathematics

Faculty of Science

Assiut Uuiversi!y

1st Semester - Final Exam

2010/2011 - January,20/ 2011

Course:Mathematics and Statistics

Code:UMS 111

Time: 2 Hours

Marks: 75

Clinical Pharmacy program..

- This exam measures ILOs no.: a1,a2, a3,a4,a5 &b1,b2,b3,b4,b5, & cl,c2,c3,e4& dl,d2,d3,d4,d5

Important remarks

- No. of pages: 1- No. of questions:4

- ....

Answer the folIowing guestions

Question no. 1   (19 points).

a-- Find $\frac{dy}{dx}$ for the following functions:

(i)$y = \sqrt{\sin \sqrt{x}}$ (ii) $Y = x\,2 + e^x \tan x$ (iii) $Y = x^x$ (iv) $x = a\cos^2 x$, $y = a\sin^2 x$ (9.5points)

b- Find the points at which the function: $y = x^3 + 6x^2 - 15x + 3$ has maximum and minimum value.   (9 points)

Question no. 2   (18.5 points).

a - (i) Evaluate: $\int_{-1}^{1}(x^5 + \sin x)dx$, $\int_{1}^{2}\frac{2x^5 - x^4 + 3x^3 + x}{x^2}dx$

(ii) Find the area between two curves: $y = \sqrt{x}$, $Y = X^2$ (9.5points)

b- .Find x so that: (9.5points)

$$\begin{bmatrix} 1 & x & 1 \end{bmatrix}\begin{bmatrix} 1 & 3 & 2 \\ 0 & 5 & 1 \\ 0 & 3 & 2 \end{bmatrix}\begin{bmatrix} 1 \\ 1 \\ x \end{bmatrix} = 0$$

Question no. 3 (18.5 points)

(a) For The following table:

Classes	10-	15-	20-	25-	30-	35-40
Freq.	3	7	12	18	6	4

Find the median and standard deviation.   (9.5 points)

(b)- If $P(A) = 0.2$, $P(B) = 0.3$, $P(BC) = 0.12$ and the all events $A, B,$ C are independent, compute

$p(A + B)$, $P(\bar{C})$, $p(A + \bar{C})$ (9 points)

Question no. 4(19 points).

(a) A random variable X has Piosson distribution with parameter $\lambda = 2$ $(p(X) = \lambda^x e^{-\lambda}/x!$ x=0.1,2, ...)

Compute: $P(X=3)$, $P(0<X<4)$, $P(X> 1)$ ($e^{-2} = 0.135$).   (9.5 points)

(b) If the masses of *500* students is normally distributed with mean 65 *kg* and variance 25 *kg,* how many student have masses (i) greater than 62 *kg*   (ii) between 68 and *70 kg*.

(where: $\Phi(0.6) = 0.2257.$, $\Phi((1) = 0.3413$).   (9. 5 points)

Examiners: Prof. Dr. M.I .Mahmoud and Prof. Dr. R.A.Rashwan.   Best wishes

7

- This exam measures ILOs no.: a1,a2, a3,a4,a5 &b1,b2,b3,b4,b5, & cl,c2,c3,e4& dl,d2,d3,d4,d5

Important remarks • No. of pages: 1- No. of questions:4

Answer the following guestions

Question no. 1   (19 points).

1-a) Find   (i) $\lim\limits_{x\to\infty} \dfrac{4x^2 + x^6}{1 - 5x^5}$ (ii) $\lim\limits_{x\to\infty} \dfrac{\tan^4 2x}{4x^4}$ (9.5 points)

   b) for the following : $\dfrac{dy}{dx}$ find

(i) $y = e^{3x^3 + 2\sin\sqrt{x}}$ (ii) $\sqrt{x} + \sqrt{y} = \sqrt{5}$ (9.5 points)

Question no. 2 (18.5 points).

2-a) Find the following integral

(i) $\int (35^x + \cos(\ln x) + 10\sec^2(\sqrt{x}))dx$ (ii) $\int\limits_{-2}^{2}(x^3 + \sin x)dx$ (9.5 points)

b) Let: $A = \begin{pmatrix} 1 & 1 \\ 2 & 2 \end{pmatrix}$, $B = \begin{pmatrix} -1 & 1 \\ 1 & -1 \end{pmatrix}$ is AB-BA   (9 points)

Question no. 3 (18.5 points).

(a) for the following table:

Classes	4-	6-	8-	10-	12-	14-16
Freq.	3	7	12	18	6	4

Find the mode and the mean value.   (9.5 points)

(b)-If P(A)=0.3 , P(B)=0.6 , P(AC)=0.2 , P(C)=0.4 and the events B,C are independent,

compute   P(B+C),   P(A+C) ,   P(B+$\overline{C}$)   (9 points)

Question no. 4 (19 points).

(a) A ransom variable X has following distribution

X	0	1	2	3
P(X)	118	318	c	118

Find value of c and compute the variance σ^2 (9.5 points)

(b) A random variable X is normally distributed with mean 65 and variance 25 find
        P(X≤ 62) , P(68 ≤ X ≤ 70)

(where: Φ(0.6) = 0.2257 , Φ(1) = 0.3413).   (9.5 points)

---End-------------

Examiners: Prof. Dr. M.I .Mahmoud and Prof. Dr. R.A.Rashwan.   Best wishes

Assiut University   Clinical Pharmacy
Faculty of Pharmacy   Pharm. Organic Chem-l
Dept. Pharm. Organic Chem.   Dec., 26, 2012
Time allowed: 2 h
The exam in 6 pages
<u>Illustrate your answers with chemical equations whenever possible</u>
Oral exam start at 2:30 pm immediately after the written exam
Answers should be in the specified positions

Examiners:
1- Prof. Dr. Adel Kamal
2- Dr. Bahaa Gamal M Youssif

Final exam of Organic Chemistry for clinical pharmacy students 1st level

Part 1

Answer the following queations:...(25 marks)

I. Provide the structures and reagents to complete the following reaction schemes.....(10 marks)
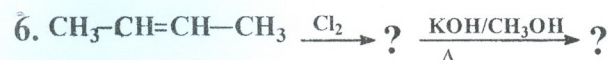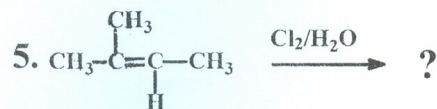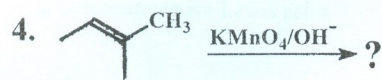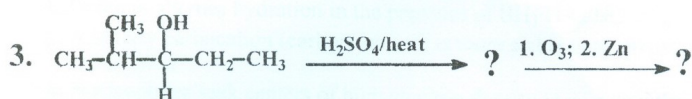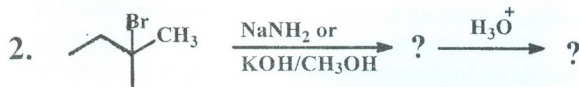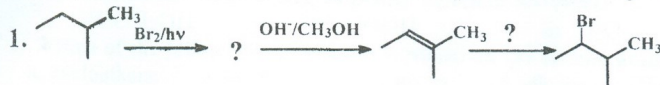
II. Choose the correct answer: ....(10 marks)

i.Which of the following statements concerning a carbocation is not true?
    a. The hybridization of its carbon is sp2.   b. The geometry is trigonal planar.
    c. They cannot be observed, isolated or trapped.   d. The hybridization of its carbon is sp3.
    e. All statements (a)-(c) are true.

ii. Which of the following compounds does not soluble with water?
    a. CH_3OH b. CFhCOCl-h   C. CI-hCON(CH_3)2   d. CH_3CH_2CI-hClhCH_3

iii. Which of the following molecules will not have a dipole moment?
    a. CH3Cl   b. IhO   C. NH_3 d. CCl_4

iv. 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

v.Credit for the first synthesis of an organic compound from an inorganic precursor is usually given to:
    A. Berzelius   B. L ewis   C. Wöhler   D. Arrhenius

vi. In which of the following compounds is hydrogen bonding absent?
   a. 2° amine   b. alcohol.   c. aldehyde   d. carboxylic acid

vii. Which of the following pairs will be miscible?
   (i) $CH_3CH_2CH_2CH_2CH_3$ and $CH_3CH_2CH_2CH_2CH_2CH_3$
   (ii) H_2O and CCl_4 (iii) C_6H_6 and H_2O

viii. Which atomic orbitals are used in the C-C 1t-bond of ethylene?
   (a) sp3, sp3   (b) p, p   (c) sp2, sp2   (d) sp3, sp2   (e) sp2, s

ix. which of the following is polar aprotic solvent:
   i. CH_3CH_2OH ii. CH_3COOH iii. H_2O iv. CH_3COCH_3

x. Which of the following compounds contains an sp2 carbon atom'!
   a. cycloalkane   b. ketone   c. alkyne   d. alkane

III. Which of the following statements is not true?   (5 marks)
   a. Polarity of bond created due to the difference in electronegativity of atoms forming
      bond.
   b. In elimination reaction, formation of the most substituted alkenes is favored in using
      bulky base.
   c. CH_3COOH was considered an isomer to $HCOOCH_3$
   d. As the molecular mass of the compounds of the alkane series increases their boiling
      points decreases
   e. σ bond in methane was created by overlapping of SP3-SP3 orbitals.
   f. Terminal alkynes hydration in the presence of $BH_3/H_2O/HO^-$ to give an aldehyde.
   g. A tertiary carbocation (carbonium ion) is more stable than either a secondary or primary
      carbocation
   h. Nucleophiles seek centers of high electron density (e.g., a negative charge).
   i. The heterolysis of a bond between atoms which dD not bear formal charges always
      produces a cation and an anion
   j. Carbocations are Lewis acids

Good Luck
Prof. Dr. Adel M. Kamal

I- Give the IUPAC nomenclature or draw the chemical structure for the following: (5 points)
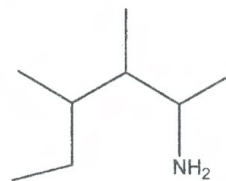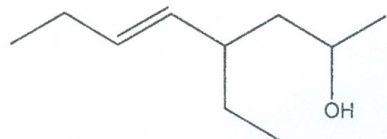
Allyl chloride   *tert-* **Butyl phenyl ether**

II- Complete the following equations and then answer the questions: (6 points)

1- H_3C—$\overset{\overset{\displaystyle CH_3}{|}}{\underset{\underset{\displaystyle CH_3}{|}}{C}}$—Br $\xrightarrow{\text{NaOH}}$ ....

2- CH_3CH_2—$\overset{\overset{\displaystyle O}{\|}}{C}$—$OCH_3$ $\xrightarrow{\text{LiAlH}_4}$ .... + ...

4

3-

1- Hg(OAc)₂/H₂O
$\xrightarrow{}$
2- NaBH₄

4-

$\xrightarrow{\text{KOH}}$ .... (A) $\xrightarrow{\text{CH}_3\text{Cl}}$ .... (B)

(B) $\xrightarrow[\text{ethanol, reflux}]{\text{NH}_2\text{NH}_2}$ .... (C) +
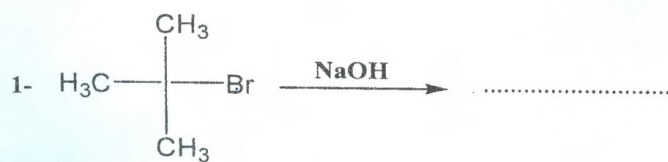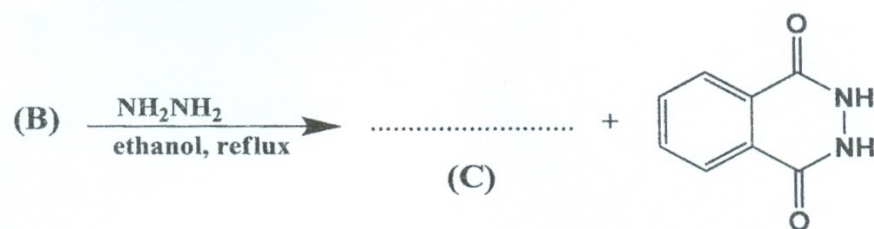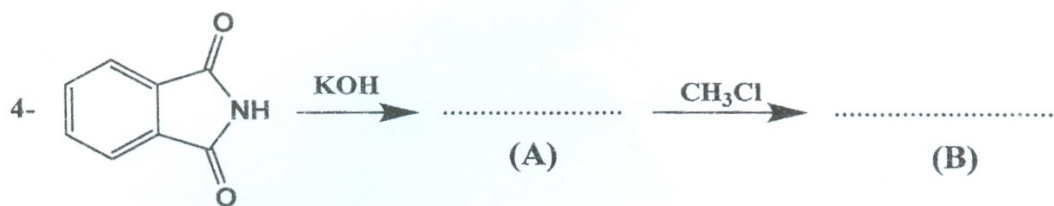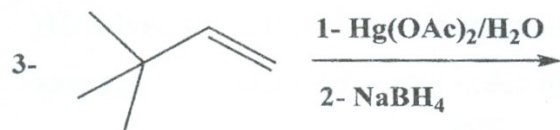
A) Mechanism of reaction 1

B) Name of reaction 4

5

III- Given three types of aliphatic amines (primary, secondary and tertiary), arrange them in a decreasing order of their basicity in both gas phase and aqueous phase giving a very short explanation for your answer. (6 points)

V-Mark the following statements as true or false and correct the false statement if any: (3.5 points)

1- Alcohols have lower boiling point than ethers. (   )

2- The order of reactivity of alkyl halides in SN^2 reactions is that primary alkyl

halide is more reactive than 2ry and 3ry alkyl halides. (   )

3- Reduction of acetone using H_2/Pt gives *tert*-butyl alcohols. (   )

4- Amines are moderately non-polar substances. (   )

5- Eliminations with charged substrates tend to follow what is called the Hofmann rule and yield mainly the more substituted alkene. (   )

v- By chemical equations only, outline the following conversions: (4.5 points)

1- Methanol to *tert-butyl* alcohol

2- H_3C—$\overset{\overset{\displaystyle O}{\|}}{C}$—$Cl$ $\longrightarrow$ CH_3NH_2

2- H_3C—$\overset{\overset{\displaystyle O}{\|}}{C}$—$Cl$ $\longrightarrow$ CH_3NH_2

Assiut University   Botany and Medicinal plants
Faculty of Pharmacy   First year clinical pharmacy
Pharmacognosy Dept.   Time allowed: 2 hr.
Date: 30/12/2012

Question (1): (15marks)

Choose the correct answer/s and write the answer/s in the table 1 : .

1. Pharmacognosy involves

a)Entire knowledge e of drugs   b)Knowledge of botany alone
c)knowledge of Pharmacology alone d)None of the previous

2. Alkaloids are

a) Basic nitrogenous compounds   b) Mostly bitter in taste
c) Compounds with pharmacological activity d) All of the previous

3. Lieberman's test

a) Is a test for all types of tannins b)For only combined anthraquinones
 c) For the steroidal ring   d)All of the previous

4. A nonofficial drug

a)1s not present in the pharmacopoeia b)Has no pharmacological activity
c)Doesn't give +ve chemical test   d) is all the previous

5. Any drug should be collected when

a)It contains the highest concentration of active constituents b)1t's fully ripened
c) It's fully mature   d)It's all of the previous

6. Cardiac glycosides are identified by

a) Kedde's reagent   b) Killer killiani test
c) Both a) & b)   d) Neither a) or b)

7. Rhubarb is collected in spring because

a)It contains anthranols   b) Anthraquinones are in higher concentration
c) It is used as a laxative   d) All the previous

8-Digitalis is better collected in the afternoon as it contains a higher concentration of.

a) Cardiac glycosides .   b) Sugars
c) Aglycones   d) a& b

9. From the objectives of drying .

a) Stopping enzymatic action   b) Reduction of size
c) Facilitation of packaging & transport d) All of the previous

10. Volatile oils

a) Give a permanent stain on filter paper b) Give a blue colour with sudan III
c) Consist of terpenes with oxygenated compounds d) Are saponifiable

11. intended addition of adulterants is called
a) Substitutlon   b) Admixing
c) Sophistication   d) Deterioration

12. Collection of the drug at an improper time is considered
a) Deterioration   b)Substitution
c) Spoilage   d)None of the previous

13. Freezing could be used for insect control as
a) It doesn't affect eggs of insect   b) It doesn't effect thermolabile constituents
c) It's both a) & b)   d) Its none of the previous

14. Fixed oils are
a) Saponifiable   b) Steam distillable
c) Triglyceride esters of fatty acids.   d) Called essential oils

15. Bufadienolides are
a) Glycosides with a 6 membered lactone ring   b) Tested by kedde's reagent
    c) Affects cardiac muscle   d) All of the previous

Table 1: Answer of question (1)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Question (1): (10 marks)

Put the mark (V) for the light and (x) for the false statements and write your answers in table (2)

1-Both starch and dextrin can be hydrolyzed by beta-amylase enzyme............................( )

2-The value of volatile oils is attributed to the hydrocarbon part ....( )

3-Laxative effect of anthraquinons is explained by their ability to absorb water in intestine...( )

4-Flavonoids give pink colour when tested with Born-Trager test ....( )

5- The steroidal part of card iac glycosides is responsible for their action. ....( )

6-Starch is better than dextrin as infant food.. ( )

7- The crystal layer is parenchyma surrounding xylem vessels which contain clusters of Ca-Ox............( )

8-Gum tragacanth gives nothing with benzidin and H_2O_2.. ( )

9-Saponins have the ability to haemolysis of R.B.Cs... ( )

I0-Tannins are used as antidotes for heavy metal poisoning... ( )

Table 2 : Answer of question (2)

1	2	3	4	5	6	7	8	9	10

Question 3: Choose the correct answer .... **(20 marks)**

1 Chitin is a component of cell wall in:
 a- Flowering plants b- Fungi c- Algae
2 Saprophytic fungi obtain their food from:
 a- living cells b- Dead organic matter c- Toxic antifungal agents
3 Predatory fungi obtain their food by attacking:
 a- Cellulose b- Nematodes c- Bacteria
4 Lichens represent a kind of mutualistic relationship between fungi and:
 a- Insects b- Algae c- Plant leaves
5 Asexual reproduction in *Rhizopus* takes place by:
 a- Zysospores b- Sporangiospores c- Budding
6 Sexual spores produced after antheridial and oogonial contact are called:
 a- Conidia b- Oospores c- Zoos pores
7 Sexual spores produced by *Agaricus* are called:
 a- Zygospores b- Basidiospores c- Endospores
8 *Rhizopus* can produce anti-inflammatory compounds called:
 a- Penicillins b- Corticosteroids c- Vitamins
9 *Acremonium chrysogenum* can produce antibiotics called:
 a- Starch b- Cephalosporin c- Cyclosporine
10 Dermatophytic fungi can be treated with antibiotics as:
 a- Fusidin b- Griseofulvin c- Chloramphenicol
11 Some fungi such as *Botryodiplodia* can produce anticancer compounds as:
 a- Taxol b- Penicillin c- B- Lactam
12 L-asparaginase in a kind of enzymes useful in treatment of:
 a- Lymphoblastic leukemia b- Headache c- Mycotoxicosis
13 Simvastatin is a cholesterol lowering compounds produced by:
 a- *Aspergillus terreus* b- Spirulina c-Viruses
14 Migraine *and* bleeding after child birth can be treated with:
 a- Ergot alkaloids b- *Ganoderma* extract *c-Nostoc* cells
15 *Corodyceps sinensis* is used in the traditional chinese medicine for:
 a-Enhancement of immunity b- Immunosuppression c-Insect repelling
16 *Tolypocfadium* can produce immune suppressing compounds as:
 a- Cyclosporine b- Cephalosporine c-Ergotamine
17 Dermatophytic diseases in humans and animals can result from infection by:
 a- *Microsporum* b- Diatoms c- *Nostoc*
18 Oral thrush in children and immunosuppressed patients results from infection by:
 a- *Candida albicans* b- *Trichoderma* *c-Fucus*
19 Aflatoxin consumption can lead to:
 a- liver damage b- Kidney failure d- Health improvement
20 *Candida* is a Yeast like fungus which reproduce asexually by:
 a- budding cells b- Zoospores c- Ascospores
21 Spindle-shaped, multicellular, rough walled conidia are produced by:
 a- *Aspergillus* b- *Penicillium* c- *Microsporum*

Best wishes Professor A. M. Moharram

22   A coiled filamentous organism characterized by rapid rotating motion:
        a- Diatom   b- *Rhizopus*   c- *Spirulina*
23   A member of cyanobacteria able to fix nitrogen with the aid of heterocysts:
        a- *Aspergillus*   b- *Euglena*   c- *Nostoc*
24   Non-motile unicellular green alga used as food supplement:
        a- *Saccharomyves*   b- *Aspergillus*   c- *Chlorella*
25   Unicellular yellow green algae used in water filters, toothpaste and dynamite:
        a- *Candida*   b- *Euglen*   c- Diatom
26   Female conceptacles of *Fucus* are sexual structures containing:
        a- Chlamydospores   b- Antheridia   c- Oogonia
27   Members of Phaeophyta are used in herbal medicine as a rich source of:
        a- Penicillin   b- Fusidin   c- Iodine
28   Members of Rhodophyta are useful sources of microbiologically important compounds as:
        a- Ascospores   b- Ochratoxins   c- Agar agar
29   Spikes are racemose inflorescences in which flowers are:
        a- absent   b- Petiolate   c- Sessile
30   Anthers of flowering plants contain male gametes called:
        a- Sepals   b- Eggs   c- Pollen grains
31   Simple fruits with fleshy mesocarp and woody endocarp is called:
        a- Drupes   b- Berries   c- Capsules
32   Classified as dry dehiscent fruits:
        a- Legumes   b- Nuts   c- Caryopsis
33   Dry fruits provided with wings are called:
        a-Samara   b- Spadex   c-Berries
34   Dry dehiscent fruits releasing small seeds through pores are called:
        a- Capsules   b- Legumes   c-Achene
35   The floral formula {% ♀ S_5P_5 $A_{5+5}G_{(l)}$ marginal placentation } is seen in the family:
        a- Caesalpinaceae   b- Convolvulaceae   c- Papilionaceae
36   Single layer of living cells covering and protecting the surface of the plant:
        a- Stone cells   b- Epidermis   c- Fibers
37   Cells rich in chloroplasts and re~ponsible for photosynthesis in plants:
        a- Root hairs   b- Chlorenchyma   c- Cambium
38   Stomata of Monocotyledonous plants are often:
        a- Kidney-shaped   b- Dumb-bell shaped   c- Branched
39   Living cells with walls thickened with cellulose often at the corners are called:
        a- Companion cells   b- Collenchyma   c- Simple hairs
40   Dead plant tissues with heavily lignified cell walls:
        a- Parenchyma   b- Fibers   c- Compound hairs

Question 4: Describe with labeled illustrations the microscopic features of the following structures then ention their functions:..(5 marks)
a- Sieve tubes and companion cells
b- Xyle vessels and xylem parenchyma
c- Schizogenous glands
d- Zygospore of *Rhizopus*
e- Compound hair   (End of questions)

Best wishes   Professor A. M. Moharram

Final Exam of Biophysics For 1st Year Clinical Pharmacy Students
First Semester, 2013.

Answer the following question :-   (Total marks:-65)

First question:-
a- **Describe** factors affecting permeability of the membrane.   (5)
b- **Mention** the characters of active transport **enumerate** its types and **describe** the mechanism of Na$^+$ -K$^+$ pump.   (10)

Second question:-
a- **Discuss** the origin of the normal resting membrane potential.   (8)
b- **Describe** the steps of sliding theory.   (9)

Third question:-
a- Define muscle fatigue, the possible sites and causes.   (7)
b- Write a short notes about the type of muscle contraction in which the muscle can lift a weight.   (8)

Fourth question:-
- **Discuss the following:**
    a- Bipolar limb leads   (6)
    b- ST segment   (4)
    c- Slow brain waves   (8)

Good Luck

Dr. Nashwa A Abd EI-Mottaleb and Dr. Azza Salah

Assiut University
Faculty of Science
Dept. of Zoology
Exam of Cell Biology (MD 102) for 1st year clinical pharmacy students
January 2013   Time: 1 hour

الامتحان فى ثلاث صفحات

1- Choose the correct answer: 36 marks

1- The immature phase of Golgi apparatus receives:

   a) enzymes   b) lysosomes   c) the transfer vesicles from the RER

2- The phagocytic cells contain large amount (abundant of):

   a) lysosomes b) RER   c) microtubules

3- Ribosomes are composed of almost 4 types of ribosomal RNA and:

   a) 60 different proteins   b) 80 different proteins   c) 100 different proteins

4- The "purce-string" ring in the dividing cell is formed by:

   a) micro filaments   b) microtubules   c) microvilli

5- Endogenous pigments include: a) tattoo marks   b) carotene   c) lipofuscine

6- Perinuclear cisterna is a narrow space between the two parallel membranes of:

   a) nuclear envelope   b) cell membrane   c) nuclear membrane

7 - The generation time is the time required for the number of cells in the population to exactly:

   a) one third   b) double   c) half

8- Synchrony by induction involves changes in:

   a) temperature and light cycles b) chemical concentrations   c) both

9- Cell growth and protein production are stop at certain stage in the cell cycle. This stage is?

   a) M phase   b) GI phase   c) G_2 phase

10- The anterior chamber of the eye is immunologically privileged site because their cells express high levels of: a) TNF-a   b) Fas   c) Fas L

11- Sarcoplamic reticulum is a specialized form present in:

   a) Liver cells   b) Nerve cells   c) Muscle cells

12- Euchromatin is: a) Visible by the LM   b) Represents the metabolically inactive DNA
    c) Not visible by the LM

13- The lipid bilayer of the cell membrane is made up of:

   a) phosphoproteins   b) phospholipids and cholesterol   c) phspholipids only

14- The participation of the non-membranous organelles7lar metabolism is:

   a) direct   b) indirect   c) both

13

15- Lysosomal enzymes are synthesized and segregated in:

a) RER   b) Golgi apparatus   c) SER

16- Which one of the following statements concerning cilia is FALSE? a) they are nearly

identical to basal bodies b) they contain dynein arms c) they contain 9 pairs of microtubules

17- The hallmark of AIDS appears when the number of CD4+ T cells is declines below:

a) 200 peq.11   b) 400 peq.11   . c) 500 peq.11

18- DNA replication occurs during this phase of the cell cycle:

a) S phase   b) G$_1$ phase   c) G$_2$ phase

II- Write the following data: **13 marks**

A- There is a variety of techniques for quantitation of cells such as:

1-

2-

3-

B- Synchrony by selection involves the mechanical isolation of cells of similar age from the

culture by:

1-

2-

3-

C- Damage or error theories of aging are:

1-

2-

3-

4-

5-

D- There are two ways in which cell die:

1-

2-

14

III- Write the label for the diagrams: 16 marks

A

1-

2-

3-

4-

B

1-

2-

3-

4-

5-

C

1-

2-

3-

4-

D

1-

2-

3-

15

Final Exam of Introduction to Computer Science   Mathematics Dept.
1ˢᵗ Year Clinical Pharmacy - Faculty of Pharmacy   Faculty of Science
1ˢᵗ Term 2012/2013   1 Hours - 65 Points   Assiut University
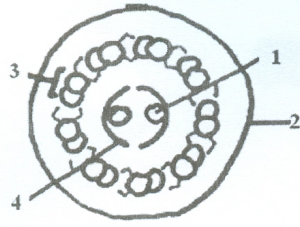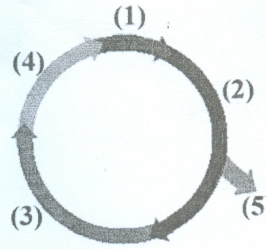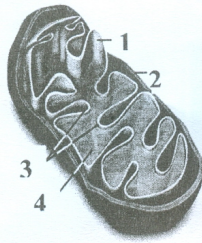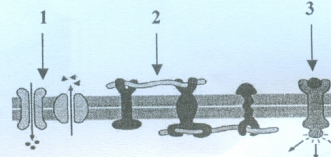
Answer the Following Questions:

Please consider the following notes:

- Be careful "Time is limited".

- The Exam is consisting of 3 Pages.

- Answers will be here.

- Put a clear circle around the correct answers for questions One and Two.

- Write your answer in clear font for question Three.

Question One: (21 Points)

State TRUE or FALSE for each of the following items: (1.5 Points each)

1. CPU means Comuter Programming Unit	TRUE	FALSE
2. Touch screen is used to input data to a computer	TRUE	FALSE
3. You can use View tab to put a header and footer in a document.	TRUE	FALSE
4. HTTP stand for Hyperlink Transfer Protocol.	TRUE	FALSE
5. In WORD, Spelling/grammar check can be shown on the status bar.	TRUE	FALSE
6. Superscript, subscript, strikethrough are three font effects.	TRUE	FALSE
7. Sheet button displays the name of each sheet at the bottom of the workbook	TRUE	FALSE
8. You need not to select a new background every time you add a new slide.	TRUE	FALSE
9. A Power point presentation can include up to 25 slides.	TRUE	FALSE
10. A group of cells in Excel is called a Range.	TRUE	FALSE
11. Each time you save a worksheet, you can open the save as dialog box.	TRUE	FALSE
12. The $ symbol must be entered in a cell before the rest of the formula.	TRUE	FALSE
13. The network that links computers in one site or location is called WAN.	TRUE	FALSE
14. The WWW made the internet a user friendly for personal computer users.	TRUE	FALSE

16

Question Two: (15 Points)
Chose one answer for each item: (1.5 points each)

1. The Slide Sorter view will allow you to do which of the following?
   a. Insert pictures
   b. Insert a chart or graph
   c. Editing the master slides.
   d. Change the order of the slides

2. If a cell in Excel contains too long number to display, then the cell displays_.
   a. @@@@@@
   b. **********
   c. $$$$$$$$$$
   d. ##########

3. What is NOT on the Page Layout ribbon?
   a. Change ~tyles
   b. Columns
   c. Themes Fonts
   d. Paragraph indents.

4. Which one is used to save our documents?
   a. Home tab
   b. Microsoft Office Button
   c. Page Layout tab
   d. Insert tab

5. Which formula computes correctly the mean value of cells Bl up to B5 in Excel?
   a. =average(bl:b3)
   b. (Bl+B2+B3+B4+BS)jS
   c: =average(bl:bS)j3
   d. =sum(bl:bS)jS

6. Microsoft Word cannot be used as?
   a. A typing tool.
   b. A calculating tool.
   c. Preparing reports tool.
   d. An office tool.

7. What is the name of the small tool bar at the top that can show the save disk?
   a. Title Bar
   b. My Documents
   c. Quick Access
   d. Find Me

8. To change the background of a particular slide, you can choose_.
   a. The View tab
   b. The Insert tab
   c. The Quick Access too/bar
   d. The Design tab

9. If you press double click on a word, what will be selected?
   a. The entire document
   b. The current line
   c. The current paragraph
   d. The current word

10. By default, where in the Word window is the vertical scroll bar?
    a. Left
    b. Right
    c. Top
    d. Bottom

17

Question Three: (29 Points)

A. COMPLETE spaces in the following items: (1.5 points for each space)

1. WINDOWS and _____ are two types of the closed-source operating systems.

   However, _____ is an example of the open-source operating systems.

2. In WORD, Ctrl+V means _____ and Ctrl+S means _____

3. The most common protocol of network protocols is _____ However, the protocol that

   moves files from a server to a user's computer and reverse as well is _____

4. The buttons B and [icon] mean _____ and _____ respectively.

5. A PowerPoint slide may contains _____ and _____ .

B. Use the data in the following picture to COMPLETE the spaces: (2 points each space)

1. The result of **cell C2** in the figure is _____.

2. To compute the values summation in column

   A, use the formula_____

3. The smallest value in **column B** can be

   computed by the formula _____.

4. Number of values in **columns A** and **B** can be computed by the formula _____.

5. If the **cell C2** is dragged to the **cell C3**, the output result of the **cell C3** will be _____.

6. Dragging the **cell C2** to the **cell D2** will result the value _____.

7. If the formula in **cell C2** modified as _____, then dragging it to the **cell D3**

   will not change its result.

	A	B	C	D
1	-1	-2		
2	3	4	= 2*A2 – B$2	
3	7	1		
4				

The End. of the Questions   *Best Wishes, Dr. Emad H.A. Mabrouk*

18

![]	Final Exam	First term
Math. Dept.	Math. & Statistics	90 marks
1433/1434 H	Clin. Phar. Program	2 Hours
2012/2013	(1st grade)	

All The Questions Are To Be Attempted:

(1) (a) Two dice are rolled. Let *A* be the event that the sum is 9 and *B* be the event that at least one dice showed 6. (i) Find $P(A)$, $P(B \cap A^C)$, $p(B/A)$, $p(B/A^C)$ (ii) Use (i), and the average rule to find $P(B)$.

(b) Assume that X is normally distributed with mean 6 and standard deviation 4. Find: (i) $P(X > 7)$ (ii) $P(5 < X < 9)$ (iii) $P(10 < X < 12)$

$P(0 < Z < 0.25) = 0.0987$, $P(0 < Z < 0.75) = 0.2734$,

   [use:]. (23 marks)

$P(0 < Z < I) = 0.3413$, $P(O < Z < 1.5) = 0.4332$

---

(2) (a) Let $f(x) = 2(1 - x)$, $0 \le x < 1$, and $f(x) = 0$ elsewhere, be a density function. Find: (i) $P(0.4 < X < 0.7)$ (ii) $E(X)$ (iii) $V(X)$

(b) Consider the followin9.pairs of measurements:

X	1	2	3	4	5	6	7
y	3	5	4	6	7	7	10

(i) Construct a scattergram for these data.

(ii) Find the least square line in the form $y = bx + a$, and plot it on your scattergram. (iii) Find the correlation coefficient *r*.   (22 marks)

---

(3) (a) If $f(x) = \sqrt[3]{x} - 3$, $g(x) = 3x - l$,   find $(fo\ g)(x)$, $(go\ f)(x)$ and find the domain of $(fo\ g)(x)$

(b) Solve the equation $3^{6x} - 3^{4x} + 7 = 0$

(c) Find $\dfrac{dy}{dx}$ if: (i) $y = e^{-3x} \sec(\cos(x^2))$ (ii) $y = \tan^3(\sin(\dfrac{\sqrt{x}}{x+1})$.   (23 marks)

---

(4) (a) If $f(x) = (x-l)^{3/2} + 2$, find the maximum and minimum values of $f(x)$ on [0,9).

(b) Evaluate:

(i) $\int (1 + \cos x) \sin x\, dx$ (ii) $\int \dfrac{(1+e^x)^5}{e^{-x}} dx$ (iii) $\int \dfrac{1+\sqrt{x}}{x^2} dx$

(c) Solve the following system

$4x - 3z - 1 = 0$, $5z - 4y - 1 = 0$, $3x - 4y + 2z = 1$.   (22 marks)

Good luck

أ.د. عبد الباسط عبد الله أحمد + د. أحمد ماهر

19

Final Examination of Physical and Inorganic Chemistry for First Year
Clinical Pharmacy Students

Section (I)

Answer **Only Five** of the following: (32.5 Marks)

(1) a-From the fundamental assumptions of the kinetic molecular theory of gases, show how to derive an expression for the gas pressure.
b-For calcium nitrate, How many (i) calcium ions and nitrate ions are there in one mole of calcium nitrate. Also how many nitrogen and oxygen atoms are there in 0.1 mole of calcium nitrate.

(2) Define each of the following, giving example:
i-mixture.   ii-molar mass.   Hi-simplest and structural formula.

(3) A gaseous hydrocarbon contains 14.37% H by mass and has a density of 1.69 glliter at 24°c and 743 torr. What is the molecular formula of the hydrocarbon.

(4) Into 10 Iiters container at 27°c are placed 0.20 moles of H_2, 20 gm of CO_2 and 14 gm of O_2 ,calculate the total pressure in the container and the partial pressure of each gas.

(5) From the kinetic theory of gases, show how to derive each of the following:
i-Boyl's law.   2-Avogadro's law.
iii-Dalton's law of partial pressure.

(6) a-Determine the number of moles of calcium carbonate in a stick of chalk Containing 14.89 gm of calcium carbonate.
b-What mass of calcium must react with 41.5 gm of Cl to produce one mole of $CaCl_2$.

[Ca = 40.0 , C = 12.0 , O = 16.0 , H = 1.008]

Section (II)

Answer Only Four of the following: (32.5 Marks)

(I) Draw Lewis structure of the chlorate ion (ClO_3^-) and calculate the formal charge on each atom.

(2) Draw molecular orbital energy level diagrams for Nz and N_2^+ and state the Bond order for each.

(3) "The chlorophyll molecule is a magnesium complex of porphyrin" Discuss the role of magnesium ion in the function of chlorophyll.

(4) Write the nomenclature of the following complexes:
(a) $[CrCl_2(NH_3)_4] Cl$
(b) $K_3[Fe(CN)_6]$

(5) The nuclide $_{79}Au^{198}$ has half-life of 64.8 hours. How much of a 0.010 g sample remains at the end of 1.0 day?

[atomic number N= 7, O= 8, Cl=17]

Good Luck

Examiners: Prof Dr. Rabei Gaber, Prof. Dr. Ahmed H. Osman

20

Faculty of Pharmacy	Date: (Wed. 23rd Jan. 2013)
Clinical Pharmacy	Time: 2 hours
Course: English Language and terms	Year/Level: Preparatory Year

Part (A) Writing (20 marks) - Write an essay on **One Topic Only** of the following:

a) Should animals be used for research in laboratories?

b) Do you think that cell phones may prove to be dangerous in the future?

Part (B) Comprehension (30 marks)

Directions: Read the passage. Then answer the questions below.

English Ivy betrays its poor reputation as a nuisance by its unparalleled ability to provide shade. By seamlessly covering the exterior of a building, it works as a natural insulator, blocking the sun and decreasing air conditioning costs. This means big savings for both building tenants and homeowners alike. And it can happen quickly, too. Under the proper conditions, established English Ivy can grow to cover an area of roughly 500 square feet per year. Given that most homes have a roof measuring roughly 2000 square feet, ivy-friendly homeowners can rest assured that their roofs will be completely covered in about four years. When considering growth rates of newly planted ivy, just remember the old adage First year, it sleeps. Second year, it creeps. Third year, it leaps! For English Ivy, this is especially true.

Now, detractors may take this opportunity to remind readers about how invasiye English Ivy can be. For what ivy enthusiast hasn't been cautioned about its ability to burrow holes, fracture windows, and even deteriorate brick? But be warned. Oftentimes, this suggestion is taken to the comical extreme. Naysayers take a strange pleasure in spinning yams about a particularly malevolent strand of ivy-one that slips in through the cracks on a hot summer night, silently strangling homeowners in their sleep. Admittedly, this can be a funny story to tell. But are we to believe such a tale? The intelligent gardener will quickly dismiss such rubbish for what it is.

Questions

1)The primary purpose of the passage is to

A.highlight the reasons why English Ivy's fast growth rate is beneficial

B. educate readers about how to use English Ivy to insulate their homes

C. defend the reputation of English Ivy

2-As used in paragraph 1, which is the best definition for betrays?

A. gives away   B. contradicts   C. reveals

3) As used in paragraph 2, which is the best definition for deteriorate?

A. wear away   B. shield   C. add to

4) Based on information in paragraph 1, which of the following would most likely be considered ail insulator?

A. an umbrella   B. skin   C. a winter jacket

5) As used in,paragraph 2, which is the best antonym for malevolent?

A. wary   B. sensitive   C. virtuous

6) This passage would most likely be found

A. in a scholarly journal about botany.   B. in a magazine article about gardening

C. in a letter from one gardener to another.   D. on a website identifying insects

7) The author's tone can best be described as

A. passionate   B. indignant   C. persuasive

8) English Ivy is ....

21

(A) an insect.   (B) a plant.   (C) a tree

9) The Naysayers are .... with negative attitude.
(A) people   (B) insects   (C) plants.

10) The word invasive means..............................
(A) leaning   (B) lying   (C) trespassing

Part (C) Grammar and Structures (25 marks)

A- choose the correct answer that would best complete the meaning in the following sentences:

1- Long hours and unsociable shifts __ take their toll on health, relationships and family life.
(a) can   (b) must   (c) are able to   (d) shouldn't

2- The number of girls in school and women in parliaments has risen, and their overall access to contraception has improved in the past decade, __ new report.
(a) according a   (b) published in a   (c) as stated in a   (d) according to a

3- Food is, after all, an important part of Chinese culture and mission controllers say it is important _____ China's space pioneers do not go hungry
(a) so that   (b) make sure   (c) to ensure that   (d) that food is provided for

4- Nearly all the brown bears in the United States __ in Alaska, which has an estimated 30,000 to 40,000 brown bears, also called grizzlies.
(a) live   (b) are resident   (c) reside   (d) inhabit

5- The hospital is now discounting 10 standared operations and ____ , rangjng from having a baby and treating a cataract to undergoing a heart bypass.
(a) procedures   (b) equipment   (c) visits   (d) medications

6- I have trouble_____
(a) to remember my password   (b) to remembering my password
(c) remember my password   (d) remembering my password

7- Do you have ___ to do today? We could have a long lunch if not
(a) many work   (b) much work   (c) many works   (d) much works

8- Person A: "I've never seen that movie." Person B: " ____have I
(a) So   (b) Either ,   (c) Neither   (d) Too

9- He likes his new job very much and____
(a) works hardly   (b) hard works   (c) hardly work   (d) works hard

10- I'll give you another hour. __
(a) making your mind up   (b) making up your mind
(c) make up your mind   (d) to make up your mind

Part (D) Translation(Total: 15 marks)

Translate the following passage into English

تثير قضية صناعة الدواء المصرى كثيرا من الشجون وبعض الجدل، فقبل أكثر من ٧٥ عاما انشىء أول مصنع للأدوية (١٩٣٤) والأسباب معقدة، فقد تأخرت هذه الصناعة الوطنية وتراجعت مكانتها مقارنة بدولة مثل الأردن، لأسباب فسرها الخبراء فى صناعة الدواء الى توقف مصر عن مصانعها والاعتماد على الدواء المستورد فى السنوات الماضية وتعرض صناعة الدواء لإضطرابات كثيرة منها الاعتماد على شراء المواد الخام من الهند والصين وكان معيار الشراء هو الأقل ثمنا وليس الأكثر فاعلية بالإضافة الى انتشار الأدوية المغشوشة والمهربة، وذلك ساهم بشكل كبير فى تدهور صناعة الدواء المصرى.

GOOD LUCK
Dr. Ahmed S. M. Mohammed

22

**Inorganic and Physical Chemistry Examination for
Clinical Pharmacy**

Section (I):   (25 Marks)
1) Answer **Two Only** of the following:
   (a) State the third law of thermodynamics and show how it can be applied to calculate the absolute entropy of a chemical compound.
   (b) One mole of an ideal gas expands isothermally from 20 atm. pressure to 10 atm. pressure. Calculate ΔE, ΔH, ΔS, q and w for the processes.
   (c) According to the posotulates of kinetic theory of gases, derive an expression for the pressure of and ideal gas.
2) Answer **Two Only** of the following:
   a) Derive the following relationships: (i) C_p and C_v.
        (ii) Entropy changes with temperature either at constant volume or constant pressure.
   b) For a certain gas $C_p = 12.0$ cal. $mol^{-1}K^{-1}$. What will be the change in entropy of 10 moles of the gas when it expanded from a volume 200 liters at 3 atm. pressure to a volume of 400 liters at 1 atm. pressure?. Calculate also ΔE, ΔH and w for the process.
   c) Show how can you proceed to drive the mathematical expression for the following:
   (i) Work obtained from isothermal and reversible expansion of an ideal gas.
   (ii) The relation between volume and temperature for adiabatic processes.

Section (II): (25 Marks)
Answer **Only Two** of the following questions:
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)   Give short notes on stochastic and nonstochastic effects of radiations.
2) a)   Distribute the 12 electrons of O_2 molecule into its bonding and antibonding molecular orbitals. Is the molecule diamagnetic or paramagnetic?
   b)   Give the nomenclature of the following complexes:
        $[Co(NH_3)_5CO_3]Cl$, $[Cr(H_2O)_4Cl_2]Cl$, $[Ag(CN)_2]^-$, $[CoCl_6]^{3-}$
3) a)   Complete the following equations:
        $_{84}Po^{210} \longrightarrow {}_{82}Pb^{206} +$ ……………………
        $_{38}Sr^{90} \longrightarrow {}_{39}Y^{90} +$ ……………………
        $_{6}C^{11} \longrightarrow {}_{5}B^{11} +$ ………………………
        $_{17}Ag^{110m} \longrightarrow {}_{47}Ag^{110} +$ ………………………
   b)   Draw the resonance forms for: NO_2^- , NO_3^- and C_6H_6

┌─────────────────────────┐
│   *Good Luck*   │
└─────────────────────────┘

1

Assiut University   May 2008
Faculty of Science
Chemistry Department   Time : 2 hours

Inorganic and Physical Chemistry Examination for Clinical Pharmacy Students

Section(I) (marks)

Answer **Two only**

1) i- Give reasons for the following:
    a. The second ionization potential of an atom is larger than the first one.
    b. The bond energy of F_2 is about 33 kcal/mole while that of H_2 is 103 kcal/mole.
    c. CCl_4 and $MgCl_2$ molecules have zero dipole moment.
   ii- Compare between stochastic and nonstochastic effects of radiation on the biological systems.

2) i- Give the nomenclature of the following complexes:

$[Ag(CN)_2]^-$, $[Co(H_2O)_6]^{+3}$, $[Cr(NH_3)_3Cl_3]$, $[Co(NH_3)_5CO_3]Cl$
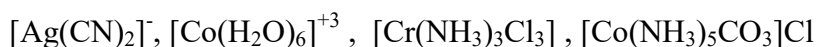
   ii- Calculate the formal charge of N and H in the $[NH_4]^+$ ion.
   iii- Complete the following equations:

$_{84}Po^{210}$ $\longrightarrow$ $_{82}Pb^{206}$ +   …………….

$_{6}C^{11}$ $\longrightarrow$ $_{5}B11$ +   ……………

$_{49}In^{115m}$ $\longrightarrow$ ………….   + $_{49}In^{115}$
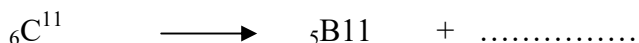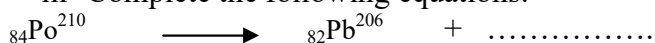
3) i- Draw the potential energy curve for hydrogen molecule formation and then comment.
   ii- Draw the molecular orbital energy levels aufbau order of O_2 molecule. Is the molecule paramagnetic or diamagnetic?.
      Compare between this molecular orbital aufbau and the Lewis structure of O_2.

أنظر خلفه باقى الأسئلة

Section (II)

1. Answer Two Only
    a) In the light of molecular kinetic theory of gases, derive an expression for the gas pressure.
    b) Chemical analysis of dry air shows that the mole fractions of nitrogen, oxygen and argon are 0.781, 0.210 and 0.009, respectively.
       Calculate the partial pressure of each gas when the barometric pressure is 747 mm Hg.
    c) Show how to calculate the different values of the universal gas content, R.

2. Answer Two Only
    a) Show how the deviations of gas from its ideal behavior can be explained through Van der Waal's equation.
    b) A sample of liquid acetone is placed in a 30 liter flask and vaporized by heating at 95°C at 1.02 atm. The vapour filling the flask at this temperature and pressure weighs 5.879 g. Calculate the molar of acetone.
    c) Discuss the different postulates of the kinetic molecular theory of gases.

Prof Dr. Aref A. M. Aly
Prof. Dr. Rabi Gabr

Good Luck

3

Final Organic Chemistry Examination for 1ˢᵗ Year Pharmacy Students (Clinical Pharmacy)

Answer all the following questions:

Q1=(a)- Give the IUPAC Nomenclature of the following alkyl groups.   (2 Marks)
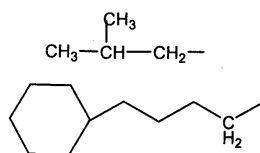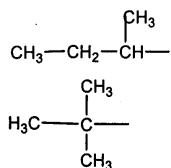
(b)- Give the IUPAC Nomenclature of the following   (5 Marks)
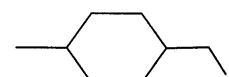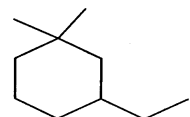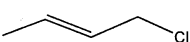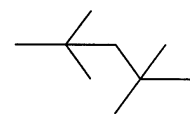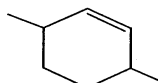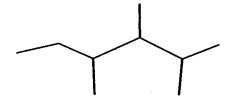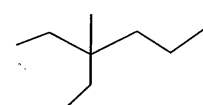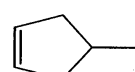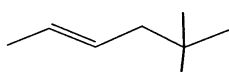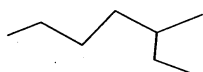
©- Write the possible isomers of C_4H_{10} and C_5H_{12}.   (3 Marks)

(d)- Complete the following equations.   (2.5 Marks)

(1)

4

2- [cyclobutylmethyl bromide] $\xrightarrow{\text{Zn / H}^+}$

3- $\left[\text{C}_6\text{H}_5-\text{CH}_2 \right]_2 \text{CuLi}$ $\xrightarrow[\text{Diethylether}]{\text{CH}_3\text{Br}}$

4- (CH$_3$)$_2$CH— + Cl$_2$ $\xrightarrow{\text{hv, 35 C}}$

5- (CH$_3$)$_2$CH—CH$_2$—CH$_3$ + Br$_2$ $\xrightarrow{\text{hv, 60 C}}$
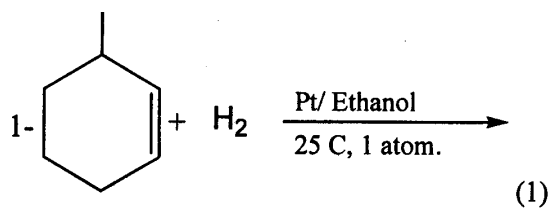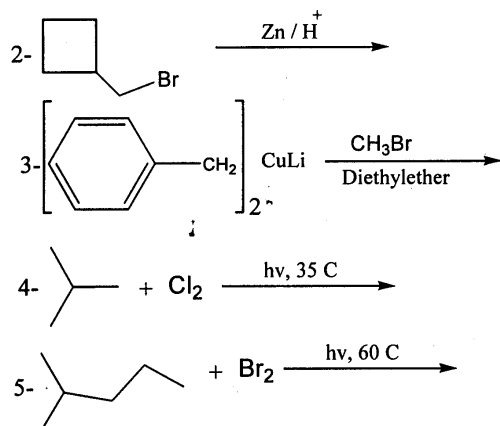
Q2-(a) Discuss the mechanism of chlorination of methane at high temperature.(3 Marks)

(b)- Arrange the following compounds in order of increasing ionic character of the indicated bonds (least first). **(2 marks)**

$H_3C{\downarrow}Cl$ $\qquad\qquad\qquad\qquad$ $H_3C{\downarrow}SH$

$H_3C{\downarrow}OH$ $\qquad\qquad\qquad\qquad$ $H_3C{\downarrow}NH_2$
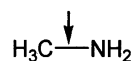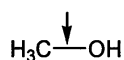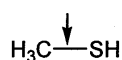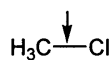
(c)-Which of the following structures could be classified as electrophiles or nucleophiles? (3 Marks)

$AlCl_3$, $\quad NH_3$, $\quad H_3C{-}C{\equiv}\overset{-}{C}$, $\quad BF_3$, $\quad H_3C{-}OH$, $\quad$ [C$_6$H$_5$]$-\overset{+}{C}H_2$
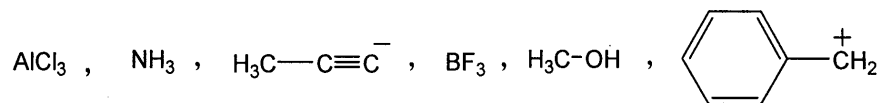
(d)- what is the order of decreasing basicity (strongest first) for the following anions? (2 Marks)

$H_3C{-}C{\equiv}\overset{-}{C}$ $\qquad$ $\overset{-}{C}H_3$ $\qquad$ $H_2C{=}\overset{-}{C}H$ $\qquad$ $H_3C{-}\overset{-}{C}H_2$ $\qquad$ $\overset{-}{N}H_2$
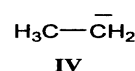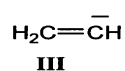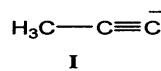
$\qquad$ **I** $\qquad\qquad\qquad$ **II** $\qquad\qquad$ **III** $\qquad\qquad\qquad$ **IV** $\qquad\qquad\qquad$ **V**

(a)-I, II, IV, III, V $\qquad\qquad\qquad\qquad\qquad\qquad$ (b)- IV, II, III, V, I
(c)- II, IV, III, I, V $\qquad\qquad\qquad\qquad\qquad\qquad$ (d)- V, I, III, IV, II

(e)-Which of the following compounds are polar and/or nonpolar?

$\qquad\qquad$ H_2O , CO_2 , NH_3 , BF_3 , $CHCl_3$
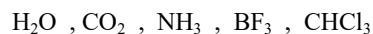
Q3-(a)- Arrange the following carbocations in the order of increasing stability (least stable first). (2 Marks)

$\qquad$ **I** $\qquad\qquad\qquad$ **II** $\qquad\qquad\qquad$ **III** $\qquad\qquad\qquad$ **IV**
(a)- IV, I, III, II $\qquad\qquad\qquad\qquad\qquad\qquad\qquad$ (b)- III, I, IV, II
(c)- III, IV, II, I $\qquad\qquad\qquad\qquad$ (2) $\qquad\qquad\qquad$ (d)- IV, III, II, I

5
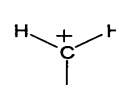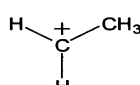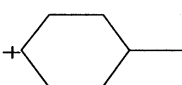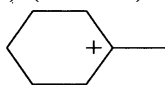
(b)- What are the correct orbital hyperidizations for carbon atom in the following? (3 Marks)

i- CH_4 ii- CH_3^+ iii- CH_3^- iv- $H_2C=CH_2$ v- $HC\equiv CH$ vi- $\overset{\uparrow}{CH_3}$
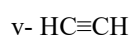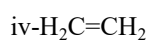
(c)- Draw formulas to illustrate the various types of hydrogen bonds they can form between molecules of each of the following pairs. Be sure to show the unshared pairs of valence electrons in your formulas.   (2.5 Marks)
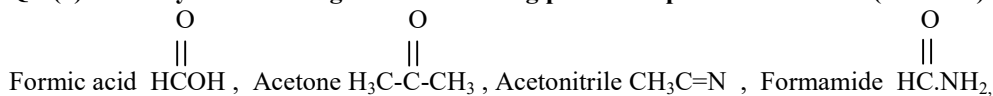
I- CH_3CH_2OH and CH_3OH 　　　　　　　　　II- $(CH_3)_2NH$ and CH_3OH

III- H_2O and

VI-

and H_2O

V- $CH_3\overset{O}{\overset{\|}{C}}-OH$ and CH_3OH
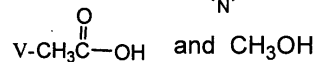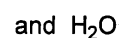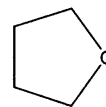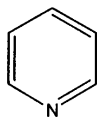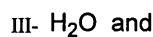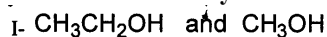
(d)- Circle and name the functional groups in the following compounds.   (4 Marks)

I-

II-

III-

VI-
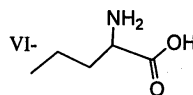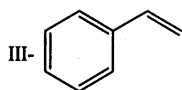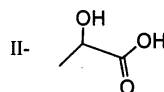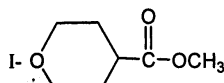
(e)- Use a crossed arrow to show the direction of the dipole in each of the following structures. (one Mark)

I- CH_3Br 　　　　　　　　　II- NCl_3
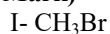
**Q4-(a)- Classify the following solvents as being protic or aprotic.   (4 Marks)**

Formic acid $HC\overset{O}{\overset{\|}{O}}H$, Acetone $H_3C\text{-}\overset{O}{\overset{\|}{C}}\text{-}CH_3$, Acetonitrile $CH_3C=N$, Formamide $HC\overset{O}{\overset{\|}{.}}NH_2$,

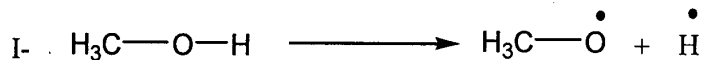Sulfure dioxide SO_2,   Amonia NH_3,   Triethylamine $N(C_2H_5)_3$,   Ethyleneglycol $HOCH_2CH_2OH$

(b)- For each of the following hydrocarbons circle and label each 1°, 2° and 3° hydrogen. (2 Marks)
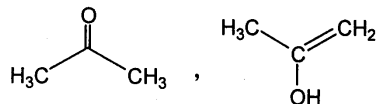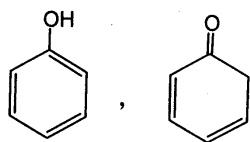
I-

$-CH_2CH_3$

II-

III-

IV-

6
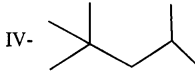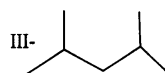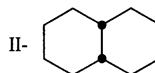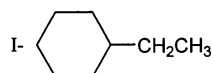
(C)- What Hybrid orbitals or atomic orbitals are used to form each of the indicated covelent bonds. (3 Marks)

I- $H-C\equiv C-CH=CH_2$

II- $H_3C-C(H)=N-OH$

III- $H_3C-C(=O)-H$

IV- $N\equiv C-H_2C-C\equiv N$
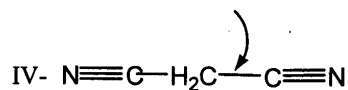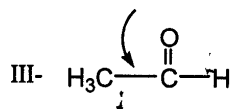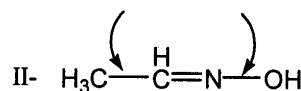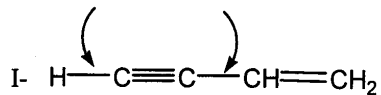
(d)- State whether each of the following dissociation is homolytic or herterolytic. (2 Marks)

I- $H_3C-O-H \longrightarrow H_3C-\overset{\bullet}{O} + \overset{\bullet}{H}$

II- $C_6H_5-O-H \longrightarrow C_6H_5-\overset{-}{O} + \overset{+}{H}$

(e) Which of the following pairs of structures represent toutomers?   (1.5 Marks)

I

II

III- $H_3C-C(H)=C(H)-OH$, $H_3C-C(=CH_2)-OH$

II

$H_3C-C(=O)-CH_3$, $H_3C-C(=CH_2)-OH$

IV
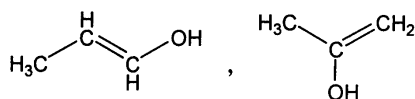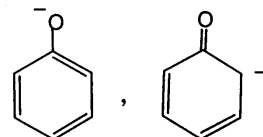
(Good Luck)

Prof. Dr. Maher El-Zohry

Assiut University
Faculty of Medicine
Department of Physiology

Biophysics Examinations for
First Year Clinical Pharmacy Students
Final examination

January 2007   Time: One Hour

1- Discuss briefly the following: (25)

   * Stages of action potential

   * Factors affecting net rate of diffusion

2-Define the following: (20)

   * EMG (Electromyogram)

   * Resting membrane potential

   * Cell membrane

   *Cell specialization

   * Active transport

3- Mention the following: (20)

   * Augmented Unipolar EGG (Electrocardiogram) leads

   * EEG (Electroencephalogram) waves

   * Types of carrier

   * Types of channels

Assiut University   First Year Clinical Pharmacy
Faculty of Pharmacy   Summer Course Final Exam.
Pharmacognosy Dept.   Date: 15/9/2007, Time allowed:2 hrs

N.B.: Illustrate your answers with drawing whenever possible

1- Complete the following:………………………………..(15 marks)

    1- Digitalis leaf is ………….. Family: ………… it is used as a …………..drug because it contains ……………..

    2- Idioplast is ………….. present in ……….. and ……………..

    3- The main constituents of cinchona bark are ……………. Which are used as ………….. and ………….

    4- The callus formation is …………… which is formed by ………… of ………… in …………..

II- Draw the deiagnostic elements of the following powdered drugs: (8 marks)

    1- Senna leaf

    2- Squill

    3- Cascara bark

    4- Quillaia bark

III- Mention the name of drug used as   (7 marks)

    1- laxative

    2- Cardiotonic

    3- Astringent

    4- Anthementic

    5- How you can test for the active constituents in drug no (1) and (3).

VI- Give the missed words in a table according to the given numbers: (10 marks)

    1- The diagnostic elements in clove powder are (1) whose main content is (2), while the key elements for identification of pyrethrum are (3)

    2- The water conducting elements in woods are (4) and (5), the difference between them is (6)

    3- The wood containing santalol is (7) which is used in (8), while the wood containing santaline is (9) which is used as (10).

9

V- *Give the mark (√) or (x) corresponding to the given items for a yellow flower having the floral diagram $\male$, %, K_5, C_5, A_{7+3}, $\underline{G}_I$* (10 marks)

1- Atypical
2- Hermaphrodite
3- Zygomorphic
4- Pentamerous
5- Gamosepalous
6- Polysepalous
7- Polypetalous
8- Isomerous
9- Inferior ovary
10- Monocarpellary

11- Unilocular
12- Polyandrous
13- It is a part of capitulum
14- Obdiplostemonous
15- Has a gynostemum
16- Tetradynamous
17- Has anthocyanins
18- The colour is pH-dependant
19- Pigment free
20- The content give yellow with KOH

أجب عن الأسئلة التالية:

السؤال الأول:　　　　　　　　　　　(٢٥ درجة)

a) Find $\dfrac{dy}{dx}$ for the equation $e^{xy} = xy^3$.

b) Find the integral $\int (2e^x + \dfrac{6}{x} + \ln 2)dx$.

c) Find the area of the region R bounded by the curve $y = 1 - x^2$ and the x axis

السؤال الثانى:　　　　　　　　　　　(٢٠ درجة)

(أ) أوجد قيمة (قيم) الثابت λ التى تجعل للنظام المتجانس

$(\lambda-4)x + 9y = 0, \quad x + (\lambda-4)y = 0$

عدد لانهائى من الحلول، ثم أوجد تلك الحلول غير الصفرية.

(ب) أوجد قيم الثوابت μ، λ التى تجعل النظام التالى ليس له حل على الاطلاق.

$x + y + z = 6, \quad x + 2y + 3z = 10, \quad x + 2y + \lambda z = \mu$

السؤال الثالث:　　　　　　　　　　　(٢٠ درجة)

(أ) أوجد قيمة الثابت C الذى يجعل الدالة التالية تمثل دالة كثافة احتمالية: $f(x) = cx^2$, $0 \le x \le 2$ ،
ومنها احسب كل من القيمة المتوقعة والانحراف المعب\يارى للمتغير العشوائى X.

(ب) البيانات التالية $32.4, \ 33.1, \ 34.1, \ 32.5, \ 33.9, \ 32.3, \ 30.6, \ 35.4, \ 31.4, \ 30.3$ تمثل
عشرة قراءات مأخوذة من مجتمع طبيعى $N(\mu, \sigma^2)$ ، أوجد 95% فترة ثقة لمتوسط هذا المجتمع
μ ، علما بأن: $t_{0.975}(9) = 2.26$

Best wishes,,,,,,,,

Assiut University　　　　　　　　　　　　　　　Preparatory year

الإمتحان صفحتان

I- Write a paragraph on ONE only of the following: [20 marks]
A) The importance of computer.   B) The side-effects of drugs. C) A good pharmacist.

II- Underline the incorrect ONE word or phrase and correct it: [25 marks]
1- The cine-camera has become out of date since its invention of video recording technology.
2- Most babies will grow up to be the cleverer as their parents.
3- America's first satellites exploded before it had risen three and half feet off the ground.
4- There have recently been any important findings in medical technology.
5- Students are expected to attend classes regulary, make their homework, and dress appropriately for class.
6- A barometer is a device with a sealed metal chamber designed to reading the changes in the pressure of air.
7- If my daughter is here, I would be very happy.
8- It is imperative that your signature appears on your identification card.
9- Sugar cane is a plant who can be planted in many parts of Upper Egypt.
10-Egypt shares extremely long borders with either Libya and Sudan.

III- Choose the best answer (a,b,c, or d) to complete the sentence: [20 marks]
1- It is true that our grandfather …………………. this city.
a) building   b) built   c) has built   d) build
2- It costs about sixty pounds to have a tooth ……………
a) filling   b) to fill   c) filled   d) fill.
3) Most foreign students don't like American coffee, and …………
a)I don't too.   b) either don't I.   c) neither don't I.   d) neither do I.
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- It is important that the post-graduates office ………. your registration.
a) confirm   b) confirms   c) will confirm   d) must confirm
6- Staying in a hotel costs ………..renting a flat.
a)twice more than b) twice as much as   c) as much twice as   d) as much as twice
7-The registration policy for Master Degree includes a requirement that two photos………..
a) must present   b) presented   c) be presented.   d) for presentation.

IV- Translate into Arabic: [10 marks]
Smoking is the inhalation and exhalation of the fumes of burning tobacco. Leaves of the tobacco plant are smoked in various ways. After a drying and curing process, they may be rolled into cigars, or shredded for insertion into smoking pipes. Cigarettes consist of finely shredded tobacco rolled in lightweight paper and are the most popular method of smoking. Smoking was considered harmless, but laboratory and clinical research has since proved that cigarette smoke contains some highly toxic chemicals.

V- Read the passage and choose the best answer for the questions below:[15 marks]

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I soon realized that I had entered an unusual kind of shop. There were no goods on display; there was no shop-window: nothing but a number of empty shelves at one end of the room in front of which a man was standing on a raised platform, and shouting loudly that the greatest sale of the year was about to begin. I decided to stay and see what would happen. A harassed assistant began to pile all sorts of odds and ends on the shelves: table-lamps, cutlery-sets, clocks, electric razors. Crockery, vases, and a large quantity of small packets all similarly wrapped in bright red paper. When the man at the table was satisfied that a sufficiently large crowd of people had collected, he began distributing the packets, asking for the small sum of three pence in return, and declaring that the value of the content was fifty times as much. I paid three pence for my packet and was immediately informed that I should not open it until after the sale. The money I had given, I found, *entitled me* to bid for anything on the shelves All these beautiful and extremely valuable objects, the man announced, would be given away, simply given away. *He was as good as his word*, for he held up an electric razor and asked a young man (who from the looke of his face needed it) whether it was worth six pence. The man had no doubt about the matter and was promptly handed the razor for the sum asked. The same occurred with a number of other articles. Then, instead of asking for small sums like sixpence, the man began to demand larger amounts for 'very rare, high quality antiques'. The people present, thinking that these too were being 'given away', soon found themselves paying a great deal of money for useless, yacht-like lamps and ugly clocks in carved, heavy frames. I decided I had better go quickly before being tempted into buying something I did not want. I went into the street and opened my prize-packed, only to find that I had been rewarded with a cheap bottle of scent!

1-One of these statements is true. Which one?
A) The price of the objects were clearly marked.
B) Anyone could walk into the shop and buy what he wanted.
C) Everything in the shop was auctioned.
D) Nobody bought any of the small packets.

2- The writer ………………..
A) didn't bid for anything.   B) only bid for one of the small red packets.
C) bought an electric razor for sixpence.   D) paid a lot of money for an antique.

3- The greatest sale of the year……… begin.
A) would just   B) was due to   C) would be going to   D) should

4- I decided ……………. to go quickly.
A) in order   B) it would be best   C) I must   D) for

5- The phrase "entitled me" means …………….
A) rewarded me.   B) prevented me.
C) gave me the right to.   D) gave me the honour to.

6- The sentence "he was as good as his word" means ……………
A) he wasn't to be trusted   B) he kept his promise
C) he talked a lot   D) he was a very good person

Dr. Nader S. Fahim

1- Read the following passage and choose the correct answer: (15 Marks)

Lillian Hellman would grow up to be one of the few people who bridged the gap between the left wing theatre- movie world and upstage American society, a fact which kept style with the conflicted life she led, a life that began with strong moral ideals very early on. Lillian Hellman's clashing childhood experiences in New York and New Orleans fostered a more cosmopolitan way of thinking as well as a rebellious artistic spirit that would later, with the help of her peers, influenced her to participate in various left wing movements. Her flamboyant personal characteristics and paradoxical life-influences developed to form literary works showcasing her views on social injustice due to moral corruption.

1- Lillian Hellman was famous ....
(A) British dramatist.   (B) American dramatist.   (C) British poet.   (D) American pianist.

2-Lillian Hellman lived .... life.
(A) a turbulent   (B) an easy   (C) an outdoor   (D) an immoral

3- With the help of her peers means......................................
(A) with the help of her enemies.   (B) with the help of the FBI
(C) with the help of her rivals.   (D) with the help of her companions.

4- Her work was greatly influenced by ....
(A) personal characteristics.   (B) life influences.
(C) both (A) and (B)   (D) neither (A) nor (B).

5- The word " showcasing" in the last line would probably mean.....................
(A) showing   (B) ignoring   (C) fighting   (D) damaging

2- Choose from the following the answer that would best complete the meaning:

(60 Marks)

1. Do you have _____ to do this afternoon? If not, I'd like to take you to a movie.
(a) many work   (b) much work   (c) many works   (d) much works

2. We _____ that concert.
(a) were disappointed by   (b) were disappointed of
(c) were disappointing   (d) were disappointing in

3- Mr. Johnson has lived here_____ ten years.
(a) for   (b) during   (c) since   (d) while

4. The fact _____ money orders can usually be easily cashed has made them a popular form of payment.
(a) of   (b) that   (c) is that   (d) which is

5. Gifted though he was by remarkable natural musical talent,_____ to have had little knack for the necessities of social life at court.
(a) Mozart, who seemed   (b) Mozart seemed
(c) it was Mozart that seeming   (d) Mozart, seeming

6- Intelligent life on other planets, while remaining an intriguing possibility, _____ yet to be discovered.
(a) has   (b) has been   (c) has not   (d) have

7- Despite being basically arboreal in nature, koalas_____ to inhabit a specific territory and range of some 30 square miles.
(a) knowing   (b) which know   (c) are knowing   (d) are known

(Go to the back of this Sheet)
(Page Two)

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8- Initially elected as a labor leader, Jimmy Hoffa _____ mysteriously.
(a) vanishing   (b) who vanished   (c) vanished   (d) vanishes
9- Broccoli _____ best in gardens having loose, well-composted soil, and full sunlight.
(a) had grown   (b) grows   (c) growing   (d) which grows
10- Many of the novels of Kurt Vonnegut _____ a remarkable skepticism about the ultimate value of technological advances.
(a) display   (b) will have displayed   (c) they display   (d) had displayed
11- because of copper's conductivity, it _____ for housing electrical cords and circuitry.
(a) values   (b) is valued   (c) is being valuable   (d) has valued
12- In the quiet of the woods,_____ sometimes hears the thrush breaking snail shells.
(a) the one   (b) one   (c) ones   (d) those ones
13- The _____ the forest reached their highest price in the 1980s.
(a) products of   (b) productions by   (c) producers   (d) products with
14- _____ amazing curiosities of the northwestern topographical area of Chile.
(a) They are few   (b) Some   (c) There are any   (d) It is one of the
15- Made of white silk appliquéd on maroon satin, _____, found in the smoking room of the colonial palace, form a festive backdrop.
(a) figure   (b) it is this figure   (c) There is a figure   (d) these figures
16- Once in China, the tourist may shop in quaint bazaars_____ silks, laces, and Jade.
(a) in   (b) for   (c) on   (d) at
17- _____ was awarded the Nobel Prize in Physics for his work on the photoelectric effect.
(a) That Einstein   (b) It was Einstein   (c) Einstein who   (d) Einstein
18- _____ of Willa Catha present an unadorned picture of life on the prairies of the Midwestern United States during the 19th century.
(a) The stories who (b) That the novels   (c) The novels which   (d) The novels
19- Unlike the climate of the other islands of Hawaii, _____Kona contains 54 different temperate zones.
(a) that of   (b) this is   (c) these are   (d) those that
20- With few exceptions, _____ are warm-blooded, have live births, and are suckled with milk from their mother's body.
(a) which mammals   (b) mammals   (c) mammals that   (d) mammals, they

3- Translate the following into Arabic: *(15 Marks)*

One of the most dangerous drugs for pregnant women is drinking alcohol. Because alcohol is carried quickly into the blood and passes quickly into the tissues and membranes, the human fetus is particularly vulnerable to its effects. The reality is that the negative effects on a fetus are so pronounced that babies born after exposure to alcohol are said to be suffering from fetal alcohol syndrome. When a pregnant woman drinks alcohol, the alcohol is passed into her bloodstream almost simultaneously. Moreover, because the bloodstream of the fetus is tied to that of the mother, the alcohol passes directly into the bloodstream of the fetus as well.

Good Luck

Time allowed:2h   Illustrate your answer by chemical equations whenever possible

مواعيد الشفهى بعد الامتحان النظرى مباشرة لجميع الطلاب
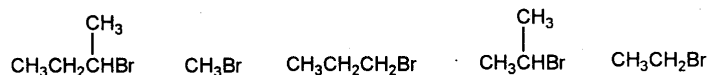
Section A (12.5 points 30 min)

Answer the following:

1- How could you carry out the following conversions?

   a) *n*-Propanol to *t*-butanol   b) Propene to *n*-Propanol

II- By equations, illustrate the synthesis of ethylamine either by Gabriel method or by Hofmann rearrangement.

III- Arrange in a descending order, the following alkyl bromides according to the rate of hydrolysis (SN^2 reaction):

$$CH_3CH_2\overset{\overset{\displaystyle CH_3}{|}}{C}HBr \qquad CH_3Br \qquad CH_3CH_2CH_2Br \qquad CH_3\overset{\overset{\displaystyle CH_3}{|}}{C}HBr \qquad CH_3CH_2Br$$

Section B (12.5 points 30 min)

I- Using the following structures (a-e), answer the given questions:

a)   b)   c)   d)   e)
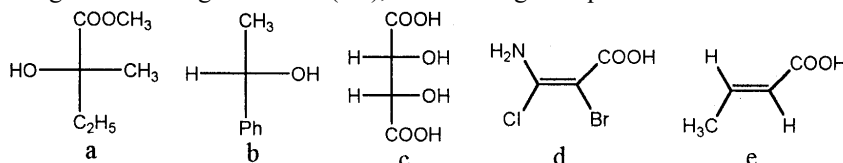
a) Designate structures (a) and (b) as *R* or *S*.
b) Allocate the symbols *E* or *Z* to structures (d) and (e).
c) Translate structure (c) into Newmann projection.

II- Give the product(s) and assign the stereochemistry of only *TWO* of the following chemical reactions:
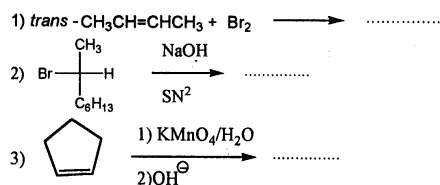
Section C (12.5 points 30 min)

Answer the following questions:

I- How could you carry out only TWO of the following conversions:

    a) D-Arabinose to the corresponding D-aldohexoses.
    b) D-Glucose to meso tartaric acid.
    c) D-Glucose to 2,3,4,6-*tetra-O*-methyl-D-glucopyranose.

II- Draw the Haworth structures of:

    a) β-D-Mannopyranose
    b) Methyl-β-D-mannopyranoside
    c) 2,3,4,6-*tetra-O*-methyl-D-mannopyranose   انظر خلفه

In a tabular form, compare between (a-c) in respect to:

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1) reduction properties   2) mutarotation   3) osazone formation

III- How could you prepare alamine amino acid either by Strecker synthesis or by modified Gabriel synthesis.

Section D (12.5 points 30 min)

I- By chemical equations, outline only *THREE* of the following organic name reactions:

     1) Wolff-Kishner reduction   2) Claisen condensation

     3) Hell-Volhard-Zelinski reaction   4) Hydration of higher terminal alkynes

II- How could you carry out only *THREE* of the following cenversions
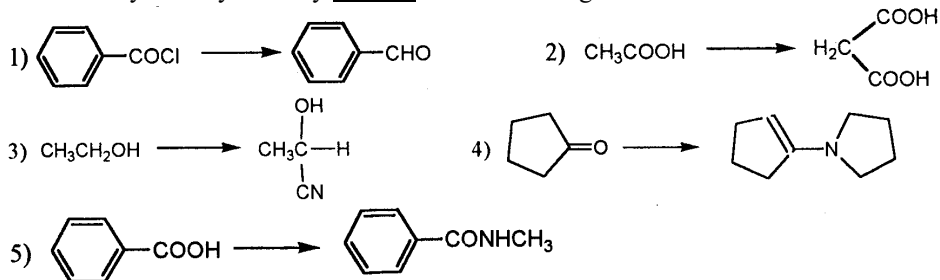
III- Assign true (T) or false (F) for the following:

1) Esters are more reactive than acyl chlorides or anhydrides.
2) Hydroboration-oxidation of terminal alkynes produce aldehydes.
3) Cannizaro reaction of formaldehyde gives methanol and formic acid
4) Reaction of ketones with secondary amines give alkanes.
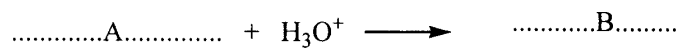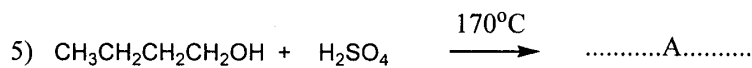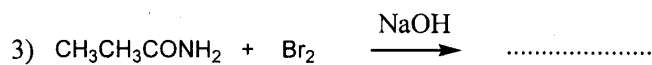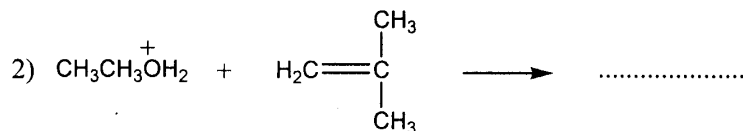5) Carboxylic acids having electron withdrawing groups are stronger acids than uncubstituted ones.

Good Luck

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Assiut University   1ˢᵗ Level Clinical Pharmacy
Faculty of Pharmacy   Final exam, Chempharm 121
Dept. Pharm Org Chemistry.   Sept.,-8-2007

Time allowed:2h   Illustrate your answer by chemical equations whenever possible

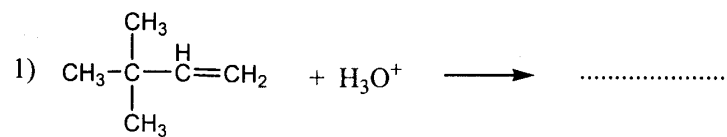الاجابة فى نفس الورقة   مواعيد الشفهى بعد الامتحان النظرى مباشرة لجميع الطلاب

Section A (25 Points, 60 min)

I- Complete the following statements using structures whenever possible:

1) SN^2 reaction proceed by formation of ……………..

2) When SN^2 reaction was carried out in a polar protic solvent, nucleophilicity of Cl^-, I^-, and Br^- ………………………………basicity.

3) Basicity of 1°, 2°, and 3° amines in aqueous solutions have the order of ………………

4) Tertiary alkyl halides can undergo SN^1 reaction because …………………..

5) Vinyl halides can not undergo SN^2 reactions because …………………..

6) Ally halides can perform SN^1 reactions because …………………..

7) Neopentyl bromide can not fulfill SN^2 reaction due to …………………..

8) Acidity of alcohols is related to their structures, thus ………………........ ……………………………

9) Neopentyl bromide reacts with sodium ethoxide at 55° to give …..…….. (equation).
………………………………………………………………………….
………………………………………………………………………….

10) Alcohols can be differentiated by Lucas test, the principle of the latter is …….. …………………………………………………………

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II- Complete the following equations and discuss the mechanisms of reaction involved in equations 1-4:

1)

$$CH_3-\underset{\underset{CH_3}{|}}{\overset{\overset{CH_3}{|}}{C}}-\overset{\overset{H}{|}}{C}=CH_2 \quad + \quad H_3O^+ \quad \longrightarrow \quad \dots\dots\dots\dots$$

2) $\quad CH_3CH_3\overset{+}{O}H_2 \quad + \quad H_2C=\underset{\underset{CH_3}{|}}{\overset{\overset{CH_3}{|}}{C}} \quad \longrightarrow \quad \dots\dots\dots\dots$

3) $\quad CH_3CH_3CONH_2 \quad + \quad Br_2 \quad \overset{NaOH}{\longrightarrow} \quad \dots\dots\dots\dots$

4) $\quad CH_3CHO \quad + \quad NH_3 \quad + \quad HCN \quad \longrightarrow \quad \dots\dots\dots\dots$

5) $\quad CH_3CH_2CH_2CH_2OH \quad + \quad H_2SO_4 \quad \overset{170^oC}{\longrightarrow} \quad \dots\dots A\dots\dots$

$\quad \dots\dots A\dots\dots \quad + \quad H_3O^+ \quad \longrightarrow \quad \dots\dots B\dots\dots$

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III- Draw the Haworth structures of glucose (1), fructose (2), sucrose (3), maltose (4), and cellobiose (5) and answer the following:

1) How you can differentiate between (1) and (2)?

1) How you can differentiate between (3) and (4)?

1) How you can differentiate between (4) and (5)?

Section B (25 Points, 60 min)

I- Answer the following:

1) Calculate the specific angle of rotation of sucrose sample of 25% concentration, measured in a tube of 10 cm length and the angle of rotation of $^+18°$.
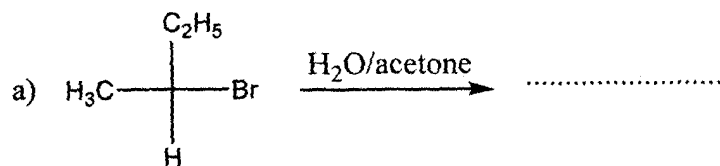
2) Assign the given structures (a and b) as R or S and translate structure (b) into the sawhorse projection.

(a)   (b)
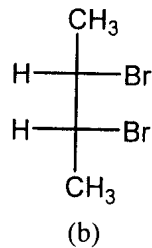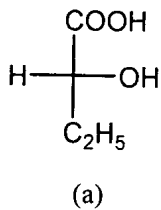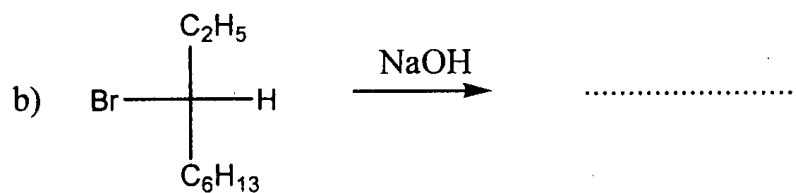
3) Complete the following and assign which structure is the most stable.

R.F.

....
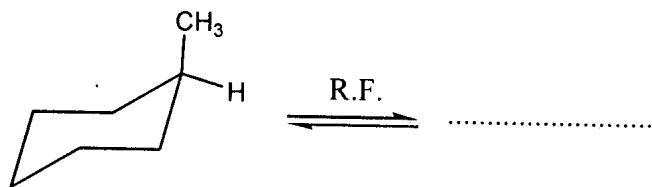
4) Complete the following equations, and assign the stereochemistry of the reaction.

a)

H₂O/acetone

....

b)

$$C_2H_5$$

$$Br—\overset{C_2H_5}{\underset{C_6H_{13}}{\overset{|}{\underset{|}{C}}}}—H \xrightarrow{\text{NaOH}} \dots\dots\dots\dots\dots$$

II- Arrange in a descending order the following compounds according to the specified character:

1) CH_3CHO, CH_3CH_3, CH_3COOH (boiling point)

2) CH_3COOH, CCl_3COOH, $CClH_2COOH$, $CHCl_2COOH$ (acidity).

II- Complete the following equations and give the reaction mechanisms for (2) and (5):

1) ⬡—NH_2 + $CH_3CH_2NH_2$ $\xrightarrow{\text{heat}}$ ....

2) $2\ CH_3CHO$ + $NaOH$ ⟶ ....

3) $CH_3CH_2COCH_2CH_3$ + HCN ⟶ ....

4) CH_3CHO + CH_3MgBr $\xrightarrow{\text{toluene}}$ ....

$\xrightarrow{H_3O^+}$ ....

5) $CH_3CH_2CH_2COCl$ + H_2O ⟶ ....

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