

Assiut University
Faculty of Medicine
Medical Biochemistry Dept.

Date: 30 /5/2009
Time allowed : 2h

Biochemistry -1 examination (PB 401)
For semester -4 clinical pharmacy students

All questions are to be answered and formulae are a must whenever possible :-

1- Complete :- **(1 mark each)**

- 1- The most important metabolic function of rough endoplasmic reticulum is and of nucleus is
- 2- Eicosanoids are synthesized in the body from
- 3- Hydrolysis of a sulfatide produces
- 4- The source of chylomicrons is whereas of VLDL is
- 5- Hemoglobin -F contains the polypeptide chains ,

II-Write down the structural formulae Of:-

- a) Phosphatidyl- inositol (2 marks)
- b) Vitamin – D₃ (2 marks)

(2 marks) (2 marks)

III- Write short notes on :- **(4 marks each)**

- a) Differences between neutral lipids and waxes
- b) Endocytosis of membranes
- c) Uncoupling factors of respiratory chain
- d) Enzyme regulation by covalent modification

IV- Write on the following :- **(5 marks each)**

- 1 - Specific rotation of sugars.
- 2 - Sugar acids.
- 3 - Hyaluronic acid.
- 4 - Separation techniques of proteins.
- 5 - Basic amino acids.

Good Luck

سيعد الامتحان الشفوي عقب الامتحان التحريري مباشرة بالقسم.

I- Potentiometry:

[10 Marks]

1- Complete the following:

a- Liquid junction potential is
..... (1 Mark)

b- Salt bridge is used to: (1 Mark)

c- Ideal reference electrode has a potential that is: (1.5 Marks)

d- A galvanic cell can be represented with the following figure: (2 Marks)

Pakinaz Khashaba

And the short hand notation of this galvanic cell is: (1 Mark)

e- Example of electrode of the first kind is
and is suitable for
(1 Mark)

f- Platinum black in normal hydrogen electrode is used to: (1.5 Mark)

g- The simple formula of Nernst equation is represented with the following
equation: (1 Mark)

II- Chromatography:

[10 Marks]

1- Draw a graph to describe the difference between reversed and normal phase chromatography. (2 Mark)

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2- The components A & B of a pharmaceutical mixture were separated on a C₁₈ column. Calculate the resolution of the two peaks if the retention times of A & B are 6.5 and 9.2 min.; respectively and the peak widths of A& B are 0.75 and 0.85 min.; respectively.

(2 Mark)

3- Complete the following:

(6 Mark)

a- In paper and thin layer chromatography, techniques used for quantitative estimation of unknown samples are:

b- Detectors used in gas chromatography are: (mention four)

c- Types of elution in HPLC techniques are:

III SPECTROPHOTOMETRY:

(15 Marks)

(a) In the provided table, write the name or scientific term for each of the following statements:

(10 x ½ Mark)

No.	Name of scientific term	No.	Name of scientific term
1		6	
2		7	
3		8	
4		9	
5		10	

- 1- The sample cell used for UV measurements.
- 2- A monochromator consisting of a large number of parallel grooves on aluminized surface.
- 3- Decrease in absorption intensity.
- 4- The number of electromagnetic waves per cm.
- 5- A functional group that confers color on light absorbing substance.
- 6- Shift of maximum absorption peak to a longer wavelength.
- 7- The law that correlates light absorption with path length.
- 8- Plot of absorbance versus wavelength.
- 9- A band of benzene absorption appearing at 254 nm.
- 10- Plot of absorbance versus concentration.

(b) Draw a neat labelled diagram for each of the following:

(2x2½ Marks)

1. Photomultiplier tube.
2. Photometric titration curve for an absorbing sample, non-absorbing titrant and non-absorbing product

(c) Explain a spectrophotometric method for the determination of:
(2x2½ Marks)

1. A phenolic compound. (give an equation)

2. A mixture of Cu(II) and Bi(III). (give a curve)

IV. SPECTROFLUOROMETRY: (7½ Marks)

(a) Compare between fluorescence and phosphorescence (2½ Marks)

(b) Mention the influence (↑ or ↓) of the following factors on fluorescence intensity: (6 x ½ Mark)

1. Dissolved oxygen ()
2. Heavy halogen atoms as iodide ()
3. Solvent viscosity ()
4. Temperature ()
5. Intensity of incident radiation ()
6. Concentration of fluorescent species ()

(c) Arrange the following compounds in descending order according to exposed fluorescence intensity: (2 Marks)

dinitrobenzene – anthracene – benzene – naphthalene - cyclohexane

V. ATOMIC SPECTROMETRY:

(7½ Marks)

(a) Sketch a total consumption burner, labeling clearly the ingoing and outgoing substances. (1½ Marks)

(b) Compare between flame emission and atomic absorption spectrometry. (4 Marks)

(c) Mention the type of interferences in AAS, giving an example for each. (2 Marks)

Prof. Dr. Michael E. El-Kommos

Clinical Pharmacy
Clinical Microbiology Examination

I-Explain how can you deal with the following cases to reach diagnosis and to recommend treatment and/Or control:

(25)

- 1-A suspected case of Malta fever.
- 2-A suspected case of gas gangrene.
- 3-A suspected case of pulmonary tuberculosis.
- 4-A suspected case of cholera In non-endemic area (1st case).
- 5-A suspected case of Taenia

II-Give reasons why?

(10)

- a-Only lysogenized strains of C.diphtheria are pathogenic
- b-Sabin vaccine is widely used more than salk.
- c-Not all types of streptococci can produce Scarlet fever.
- d-Meningococcal vaccine does not include group B capsular polysaccharide.
- e-Chlamydia belongs to bacteria not to viruses.

III-Write short account on:

(15)

- a- Investigation of outbreak of nosocomial infection.
- b-Serological tests used in diagnosis of syphilis.
- c-Hepatitis B virus.
- d-Weil- Felix test.
- e-Different strains of E.coli causing diarrhea.

Good Luck

ASSIUT UNIVERSITY
FACULTY OF PHARMACY
Second· Year students
Clinical pharmacy

GENERAL MICROBIOLOGY & IMMUNOLOGY

Date : 23/6/2009

Time : 3 hours

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Part I (General microbiology)

Answer all the following questions:

I-DIRECTIONS: Each of the questions or statements below is followed by four or five suggested answers, **Circle** the letter in front of the right answer
(20 mark)

1-Bacterial conjugation

- a- requires the presence of sex factor.
- b- is mediated by bacterial virus.
- c- require contact between the donor and recipient cell .
- d- a, c

2-Which of the following statements is true concerning fimbriae.

- a- most gram-positive bacteria have a set of fimbriae
- b- most gram-negative bacteria have a set of fimbriae
- c- they are longer than flagella
- d- they are thicker than flagella
- e- once removed, they do not regenerate during cell growth

3- All of the following descriptions refer to the nuclear body in bacteria **Except**

- a- it is referred to as the nucleoid
- b- it is free of ribosomes
- c- it is composed of ribosomes
- d- it represents about 10% of the cell volume
- e- it lacks a nuclear membrane

4- **Teichoic** acids of gram-positive bacteria have the following characters **Except**.

- a- they protrude on the surface
- b- they provide much of the wall's antigenic specificity
- c- they play a role in wall morphogenesis
- d- they consist of chains of glycerol or ribitol residues
- e- they do not provide antigenic specificity

5- Which of the following statements does **NOT** apply to bacterial endospores?

- a- they can survive in the dry state
- b- they are formed by aerobic *Bacillus*
- c- they are formed by anaerobic clostridia
- d- they do not take ordinary stain
- e- they are metabolically active

6- Which of the following statements is true concerning Plasmids.

- a- are single-stranded DNA molecules
- b- carry optional genes
- c- carry genes essential for growth
- d- are always found in linear form
- e- are present in very few bacteria

7 - In which stage of growth is there a slow loss of cells through death that is just balanced by the formation of new cells through growth and division?

- a- lag phase
- b- acceleration phase
- c- exponential phase
- d- maximum station phase
- e- decline phase

8- Bacteria that grow at temperatures as high as 50°C to 55°C are known as:

- a- psychrophiles
- b- thermophiles
- c- mesophiles
- d- cryophiles
- e- halophiles

9- All of the following statements concerning transduction are true Except

- a- transduction may be generalized
- b- transduction may be specialized
- c- temperate phages are preferred vehicles for gene transfer
- d- the phages make slow replicas of their DNA
- e- the phages recombine and replicate rapidly.

- 10- All of the following description refers to conjugation in gram-positive bacteria **Except**
- a- it depends on sex pili
 - b- it does not depend on sex pili
 - c- donor cells form a protein adhesin on the surface
 - d- adhesin on the surface causes aggregation with recipient cells
 - c- recipient cells excrete small peptide sex pheromones (eg, *Streptococcus faecalis*)
- 11- Bacteriophage responsible for lysogenic cycle is called:
- a- temperate phage.
 - b- virulent phage
 - c- lytic phage
 - d- none of the above
- 12- The most primitive mode of gene transfer occurs by :
- a- transformation
 - b- transduction
 - c- conjugation
 - d- cell fusion
 - e- all of these
- 13- The rigid cell wall of gram-positive bacteria has been identified chemically as :
- a- peptidoglycan
 - b- glycopeptide
 - c- mucopeptide
 - d- murein
 - e- all of these
- 14- Up take of naked DNA by a bacterial cell is referred to as :
- a- mating
 - b- transformation
 - c- conjugation
 - d- transduction
 - e- none of these
- 15- Concerning bacterial chromosome, it is :
- a- It is composed of DNA
 - b- It contains no histone
 - c- many of the DNA molecules extracted are circular
 - d- the DNA accounts for about 2 to 3 per cent of the dry weight of the cell
 - e- all of these

- 16- The bacterial cell membrane can be demonstrated by:
 a- plasmolysis b- staining
 c- electron micrographs d- all of these
 e- none of these
- 17- Organisms that can use only molecular oxygen as the final acceptor are referred to as :
 a- obligate anaerobes b- facultative anaerobes
 c- obligate aerobes d- strict anaerobes
- 18- Which of the following is true concerning, teichoic acids
 a- are found in the walls of many gram-positive bacteria.
 b- make up the outer wall of gram-negative bacteria.
 c- provide receptors for phages.
 d- influence the permeability of the membrane
- 19- A mutation in which a purine is replaced by a purine and a pyrimidine by a pyrimidine is known as :
 a- deletion b- insertion
 c- transition d- transversion
 e- none of these
- 20- The difference between gram-positive and gram-negative bacteria is shown to reside in the :
 a- cell wall b- nucleus
 c- lamellae d- cell membrane
 e- mesosomes
- 21- The site of protein synthesis in bacteria is :
 a- ribosomes b- mesosome
 c- inclusion granules d- chromosomes
 e- None of the above
- 22- Which of the following is true concerning the plasmid:
 a- Plasma protein b- genetic material
 c- cytoplasmic storage granules d - none of the above

- 23- Sex pili formation is a function of:
a- ribosomes b- plasmid
c- chromosome d- cytoplasmic membrane
e- none of the above
- 24- Plasmids are:
a- storage granules b- RNA molecules
c- extra-chromosomal DNA d- necessary for the life of bacterial cell.
e- none of the above
- 25- The following structure protect the bacteria from unfavorable environmental conditions:
a- Cell wall b- capsule
c- Spore d- flagella
- 26- Which of the following structure protect the bacteria from phagocytosis:
a- capsule b- spore
c- Flagella d- cell wall
- 27- Endotoxin of bacteria is a component of:
a- cell wall of gram-negative bacteria
b- cell wall of gram-positive bacteria
c- cell membrane of bacteria.
d- spore of gram-positive bacteria
e- capsule
- 28- N- acetyl muramic acid is a component of:
a- cytoplasmic membrane b- cell wall
c- capsule d- flagella
- 29- The cytoplasmic membrane:
a- is the target action of penicillin
b- has specific receptors for bacteriophage
c- is deficient in mycoplasma
d- contains enzymes responsible for active uptake of nutrient
e- all of the above
- 30- The main structure of the cell wall of gram-positive bacteria.
a - peptidoglycan b- lipopolysaccharide
c- fatty acids d- all of the above

MATCH

Choose the appropriate function of each bacterial structure:

- 31- spore ()
- 32- flagella ()
- 33- capsule ()
- 34- fimbria ()
- 35- cell wall ()
- 36- cell membrane()

- g- Helps in adhesion
- h- Contains enzymes responsible for cell wall synthesis
- i- Responsible for motility
- j- Protect bacteria outside human body
- k- Protect against complement and lytic enzymes
- l- Maintain shape of the organism

37 - The only prokaryotic that have sterol in cell membrane is

- a- mycoplasma
- b- bacteria
- c- rickettsia
- d- chlamydia

38-All of the following statements refer to bacteria spores **EXCEPT:**

- a- sporulation begins when nutrition is depleted.
- b- they do not take ordinary stain.
- c- they are formed within certain gram-positive bacteria
- d- they are formed within certain gram-negative bacteria
- e- they are more resistant than vegetative cells.

39- The bacterial cell is referred to as Lysogenic cell when:

- a-when cell contains prophage
- b-when cell contain inclusion bodies
- c-when cell lysed by complement
- d-when cell is put in hypertonic solution

40-Multi-site mutation involves:

- a- the substitution of one nucleotide for another.
- b- the deletion of one or more nucleotide.
- c- extensive chromosomal deletion.
- d- insertion of one or more nucleotides.

II- Circle true (T) or false (F) in front of the following statement (5 marks)

- 1- T F- The prokaryotic nucleoid is not membrane - enclosed .
- 2- T F- One of the main functions of the cell membrane is to act as an osmotic barrier .
- 3- T F- Flagella distributed over the entire cell is known as peritrichous.
- 4- T F- In general , bacteria reproduce by budding.
- 5- T F- The cell wall of gram-positive bacteria consists of lipopolysaccharide.
- 6- T F- Bacterial exotoxin is mainly produced by gram-negative bacteria.
- 7- T F- Exotoxin is more powerful toxin than endotoxin.
- 8- T F- Endotoxin is highly antigenic than exotoxin.
- 9- T F- Heterotrophic bacteria can grow on ordinary media .
- 10- T F- Loss of bacterial capsule is mostly associated with loss of virulence

GOOD LUCK

Part II (immunology)

I) Choose the correct answers: (12.5 MARKS)

1-The central component of complement in all pathways(classical,alternative, lectin) is
a) C3 b)C4 c)C5 d)C9

2-The most cytokine has antiviral activity:
a-IL-2 b-TNF c-interferone d) IL-6

3-Which of the following not applied to cell- mediated:
a-Recognize Ag on MHC class II b-produce cytokines which recruits macrophage
c-activated cells mature to plasma cells d-mature to long lived memory cells

4-Which of the following isn't a differentiated T cells:
a-helper cell b- suppressor cells c-NK cells d-Delayed hypersensitivity cells

5-Which of the following isn't a characteristic of good immunogen
a-Foreignness b-complex structure c-large size d-pure polysaccharide

6- Which of the following is a characteristic of MHC class 1 molecule:
a-Single chain stabilized by B2 microglobulin b-Present Ag to T-helper cells
c-Has a groove that hold lipid Ag d-Present peptide derived from phagosome
e-Gene responsible for synthesis of B2 molecules located in chromosome 6

7-Which of the following pairs is mismatched:
a-Complement binding & IgE b-Placental transfer & IgG c-Pentamer & IgM
d-ADCC & IgG e-antibody in secretion & IgA

8-Which of the following cells have specific receptors for Ag:
a-Esinophils b-Mast cells c-Monocytes d-B-Lymphocyte e- NK cells

9-Regarding cell- mediated immunity ,one statement is true:
a-produce defense against pyogenic organism b-CD8 interact with MHC 11 class molecules
c-Specific receptors are immunoglobulin molecules
d-T-cell receptor is associated with CD3 molecules
e-Ag is processed by phagocytic PMNs

10-Which of the following lists regarding primary generative organs:
a-lymph node& spleen & thymus b-Spleen & bone marrow & tonsils
c-spleen & adenoids d-Bone marrow & thymus e-Appendix & adenoids & tonsils

11-Regarding TH cells, one statements is correct:
a-Recognize Ag associated with MHC class 1 molecules b- produce IL-1
c-can bind with free Ag in the circulation d-Release IL-2 on activation
e-Interact with mast cells to stimulate IgE production

12- Which of the following pairs is mismatched:
a-Plasma cells & Ab production b-Macrophage& Ag presentation
c-B-cells& Type IV hypersensitivity d-Nk cells& non specific cytotoxicity
e- cytotoxic T cell& specific cytotoxicity

13-Immune complexes diseases have all of the following except:

a-Sol. Complexes activate complement b-Complexes deposit in vessels wall
c-involve T cell destruction of target vessels wall d-PMNCs present at the site
e-Involve platelets and basophils

14-Graft versus host disease occur in one of the following transplantation:

a-Kidney transplant b-bone marrow transplant c-liver transplant d-heart transplant

15- Negative selection of T -lymphocytes in thymus consider:

a-peripheral tolerance b-Anergy c-central tolerance d-Autoimmune disease

16-Which one of the following most correctly describes natural killer (NK) cells?

a-NK cells kill susceptible cells by phagocytosis and intracellular destruction.
b-NK cells target primarily extra cellular bacteria
c-NK cells are a subset of granulocytes
d-NK cells are a subtype of lymphocytes
e-The number of NK cells increases in response to specific antigen

17 - T cell receptors recognize which type of molecule presented by MHC molecules?

a-Oligonucleotides b-Oligosaccharides c-Glycoproteins
d-Peptides e-Triglyceride

18-Regarding **Primary immune response**, one statements is **false**:

a-occur after 7-10 days of Ag stimulation b-IgG is major antibody produced
c-No affinity maturation d-No class switching

19-Which of the following **not** relate biological function of the **complement**

a-Cytotoxicity b-opsonization c-ADCC d-chemotaxis

20-One of the following complement component **isn't anaphylotoxin**

a-C3a b-C4a c-C5b d-C5a

21) Differentiation of **TH0 to TH2** occur under the effect of :

a-IL-3 b-IL-8 c-IL-4 d-IL- 9

22) Regarding **TCR** of T- helper cells, one statements is **false** :

0) consists of two chains ,each one contain one variable region and one constant region
b)recognize only peptide when presented by MHC molecules
c) Associated with CD3 for signaling
d)Bind with peptide outside peptide binding groove of MHC

23) One of the following cytokines induce **acute phase protein** formation:

a-IL-5 b-IL- 7 c-IL-13 d-IL-6

24) The effect of **commensals** as part of natural immunity consider

a-physical barrier b-biological barrier c-chemical barrier d-cellular barrier

25) An antigen found in relatively high concentration in the plasma of normal fetuses and a high proportion of patients with progressive carcinoma of the colon is

(A) Viral antigen (B) Carcinoembryonic antigen (C) Alpha-fetoprotein
(D) Heterophil antigen

1	2	3	4	5	6	7	8	9	10

11	12	113	14	15	16	17	18	19	20

21	22	23	24	25

II) complete the following statements: (2.5 marks)

- 1-T-cell cytotoxic kill viral infected cells,, By release of
- 2-Mitogen for T lymphocyte is..... while mitogen for B -lymphocyte is
- 3-Antigen that cross react with other Antigen called
- 4- is the graft that taken from twins
- 5-Deficiency in the thymus lead's to immunodeficiency disease called
- 6- Treatment of Digitalis toxicity is one of application of
- 7 - Tumor marker in liver carcinoma is

III) Match the following (5 marks)

Hay fever- Erythroblastosis fetalis- Contact dermatitis- Arthus reaction-Rheumatic fever-Tuberculin test - Anaphylactic shock- Acute glomerulonephritis- Seum sickness- Ulcerative colitis

Type of hypersensitivity	Suitable statements
Type I hypersensitivity	
Type II hypersensitivity	
Type III hypersensitivity	
Type IV hypersensitivity	

IV) Define the following: (5 marks)

Molecular mimicry	
Hapten	
Tolerance	
Monoclonal antibody	
Interferone	

With my best wishes: Professor Dr. Ahmed Sadek



*Assiut University
Faculty of Medicine
Department of Parasitology*

*Date: 7/5/ 2009
Time allowed: 1 h*

*Mid Year Parasitology Examination For The 4th
Semester For Students of Clinical Pharmacy*

All questions to be answered and illustrated:

- 1- A woman attended the outpatient clinic with her 18 years-old servant. She claimed that the girl has vomited a worm which she brought with her in a container. The worm was about 30 cm long, creamy in colour, unsegmented with tapering ends.
 - a. Mention the name of this worm.
 - b. How did the patient catch infection with this parasite.
 - c. Why did the patient vomit this worm.
- 2- Define autoinfection, mention 3 main parasites, give the host, habitat, infective stages and clinical symptoms.
- 3- Enumerate the parasites causing diarrhea, give the host, habitat, the infective stages.

Good Luck
Prof. Dr. Mahmoud El-Hady



Assiut University
Faculty of Medicine
Department of Parasitology

Date: 14/6/ 2009
Time allowed: 1 h

*PARASITOLOGY EXAMINATION FOR THE
4TH SEMESTER FOR STUDENTS OF CLINICAL
PHARMACY*

All questions to be answered and illustrated (10 marks for each):

- I- A 30 years old patient complained of acute gastroenteritis, vomiting, diarrhea, dehydration. Then may cause death.*
- What is your possible diagnosis.*
 - Name definitive, intermediate hosts and the habitat of the parasite.*

Write short notes on:

- I- Different methods for diagnosis of parasitic infections.*
- III- Two nematodes causing anaemia, give the clinical signs and the diagnostic stages.*
- IV- Three helminthes transmitted to man by auto-infection. Give the infective stages, clinical symptoms and methods of diagnosis.*
- V- Two protozoan parasites causing dysentery, mention the host, habitat, infective stages and methods of diagnosis.*

(Good Luck)
Prof. Dr. Mahmoud EI-Hady

Biochemistry Examination

Discuss the following:

- 1-Glycogenesis
- 2- Biosynthesis of thyroxine
- 3- Transamination.
- 4- α -oxidation of fatty acids.
- 5- Sources and fate of active acetate.
- 6- DNA Mutations and Repair.

الامتحان الشفوي عقب النظرى مباشرة

***Biochemistry 1 examination for
Semester-4 clinical pharmacy students***

All questions are to be answered and formulae are a must whenever possible:

I- Complete: (5 marks)

- 1- The most important metabolic function of Golgi apparatus is whereas, of lysosomes is
- 2- Linolenic acid has double bonds
- 3- Hydrolysis of a lecithin produces, and Hydrolysis of a cerebroside produces,,
- 4- Hemoglobin is classified according to the type of the polypeptide chain into,,,

II- Write down the structural formulae of:

- | | |
|----------------------|-----------|
| A) Tristearin | (1 mark) |
| B) Na- glycocholate | (2 marks) |
| C) Prostaglandins-G | (2 marks) |
| D) β - maltose | (1 mark) |
| E) Sialic acid | (2 marks) |
| F) Heparin | (2 marks) |

III- Give an account on: (5 marks each)

- 1- Facilitated diffusion of membranes
- 2- Chemiosmotic theory for oxidative phosphorylation
- 3- Isoenzymes and give one example

IV- Write on: (4 marks each)

- A) Denaturation of proteins
- B) Bonds in protein structure
- C) Reversible enzyme inhibitors
- D) Chondroitin sulfates
- E) Sugar alcohols

Good Luck

الامتحان الشفوى بعد الامتحان التحريري مباشرة بقسم الكيمياء الحيوية الطبية

Time allowed:
2 hours

Clinical Pharmacy Programme
Biochemistry exam.

6/9/2008

I- Write down the formulae of the followings:

Heparin

Acidic amino acids

Sucrose

Sphingomyline

II- Write on the followings:

- 1- Glutathione (structure & functions).
- 2- Protein bonds.
- 3- Factors affecting enzyme action.
- 4- Rancidity.
- 5- Sceleroproteins.
- 6- Mutatotation.
- 7- Sugar acids.
- 8- Saponification number (definition & significance).

Good Luck



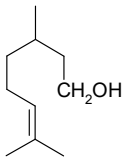
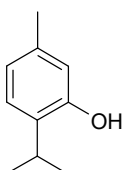
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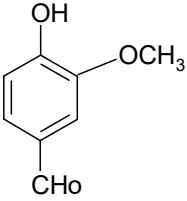
Question I:

(25 Marks)

I-A: Complete the following table as requested:

(12 Marks)

Class	Name / Structure	Origin / Source	Miscellaneous
1- Aromatic hydrocarbon	Structure: Name: p-Cymene		Isolation:
2-	Structure: Name: Ascaridole	<i>Chenopodium oil</i>	Uses:
3- Monocyclic monoterpene alcohol	Structure: Name: Menthol		Uses:
4- Aliphatic alcohol	Structure:  Name:		Isolation:
5-	Structure:  Name:	Oil of thyme	Chemical test:
6- Dihydric phenol	Structure:		Uses:

Class	Name / Structure	Origin / Source	Miscellaneous
	Name: Eugenol		
7-	 Name:	Vanilla fruit, clove oil	Uses:
8- Monocyclic terpene ketone	Structure: Name: Diasophenol		Chemical test:

I-B- Complete the following statements

(10 x 1/2 = 5 Marks)

- The general methods used in the preparation of derivatives of terpene alcohols are,, and
- The terpeneless volatile oils are characterized by,and
- Separation of a mixture of borneol and isoborneol could be achieved by addition of while separation of citronellal from citral could be achieved by

- Citronellol is an example of
while α -santalol is an example of

I-C-(a) α -Pinene (b) Cineole (c) Vanillin (d) Geraniol: (4 x 2 = 8 Marks)

You are provided with the above-mentioned compounds, explain the following:

- (i) How can you prepare camphor from (a).
- (ii) How can you determine (b) quantitatively.
- (iii) How can you prepare (c) from eugenol.
- (iv) How can you separate a mixture of (d) and its isomer.

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

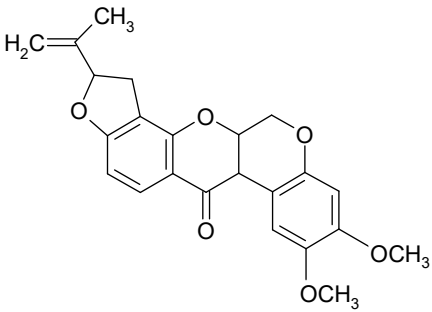
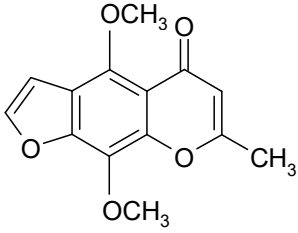
Question II:**(25 Marks)****II-A: Choose the best answer:****(10x½= 5 Marks)**

- 1- Which of the following is an example polysaccharides from seaweed.
 - a) Starch
 - b) Agar
 - c) Glucose
 - d) Inulin
- 2- Which of the following is an example of non-reducing disaccharides
 - a) Trehalose
 - b) Maltose
 - c) Cellobiose
 - d) Raffinose
- 3- An example or resin acids is
 - a) Asafoetida
 - b) Galbanum
 - c) Colophony
 - d) Myrrh
- 4- Abetic acid resulted from isomerization of:
 - a) 1-Pimaric acid
 - b) d-Pimaric acid
 - c) Cinnamic acid
 - d) Ferulic acid.
- 5- The following are example of 2-deoxy sugars Except:
 - a) Digitoxose
 - b) Cymarose
 - c) Rhamnose
 - d) Oleandrose
- 6- Which of the following is incorrect for Guaiacum resin:
 - a) Obtained from the heartwood of *Guaiacum officinale*.
 - b) Contain α - and β -guaiaconic acids sand guaiacic acid.
 - c) It gives a deep blue colour on the addition of oxidizing agents.
 - d) It used as insecticide.
- 7- Which of the is an example of glycoresins resins;
 - a) Jalap
 - b) Balsam Peru
 - c) Colophony
 - d) Cannabis
- 8- Male fern is an example of:
 - a) Resins
 - b) Oleo-resins
 - c) Glycoresins
 - d) Oleo-gum-resins
- 9- Scammony resin is used as:
 - a) Diuretic
 - b) Anti-inflammatory
 - c) Hydragogue cathartic
 - d) Bitter tonic
- 10- Which of the following is an anthelmintic bitter principle:
 - a) Rotenone
 - b) Santonin
 - c) Khellin
 - d) Picrotoxin

II-B: Mark (T) for the correct statement and (F) for false one:**(10x½= 5 Marks)**

- 1- L-arabinose is the pectin sugar ()
- 2- Oxidation of glucose with nitric acid gives gluconic acid ()
- 3- Dextran is used as blood substitute ()
- 4- Cellulose is polymer of β -D-glucose attached by β (1,4) linkages ()
- 5- Sodium carboxymethyl cellulose is used as hemostatic ()
- 6- Guaiacum resin is used as laboratory reagent ()
- 7- Alginate is used as absorbable haemostatic dressings ()
- 8- Gums are fermentable by yeast and soluble in alcohol ()
- 9- β -lactose is sweeter and more soluble than ordinary α -lactose ()
- 10- Glucose oxidase oxidize glucose to gluconic acid ()

II-C: Complete the following tablet as requested:**(6 Marks)**

Name / Structure	Uses	Miscellaneous
1- Humulone Structure:	Main uses:	Occurrence (Source):
2-  Name	Main uses:	Preparation:
3-  Name	Main uses:	Chemical test:
4- Canthridin Structure:	Main uses:	Chemical test:

II-D: Give the reason(s):**(4 x 1 = 4 Marks)**

1- Ketoses react with Benedict's reagent.	2- Colophony gives an emerald-green colour with copper acetate solution
3- Care require with the use of Male-fem resin	4- Odour of benzaldehyde is developed with Sumatra benzoin but not with Siam benzoin

II-E: Complete the following:**(10 x ½ = 5 Marks)**

1. is used to determine liver function test, while is the sweetest carbohydrates.
2. Separation of fructose from glucose may be accomplished by and
3. The main uses of lactulose are and
4. is a 2-deoxy sugar while is C-6 disaccharide (*Draw the structure of both*).

أنتهت الأسئلة مع أطيب التمنيات بالتوفيق

لجنة الممتحنين:

أ.د./ زيدان زيد ابراهيم
أ.د./ أنعام يونس بخيت
إمتحان الشفهي عقب التحريرى مباشرة

MICROBIOLOGY & IMMUNOLOGY

Date: 3/9/2008

Time: 3 hours

I- Differentiate between: (30 Marks)

- 1- Eukaryotic cell and prokaryotic cell.
- 2- Batch culture and continuous culture.
- 3- Type I and type II hypersensitivity.
- 4- Transduction and conjugation.
- 5- B and T lymphocytes.

II- Mark true (✓) or false (X) in front of each of the following statements: (10 Marks)

- () The bacterial chromosomes undergoes duplication prior to cell division.
- () Ribosomes act as an active centre for carbohydrate synthesis.
- () Autograft is a graft between two sites within the same person.
- () The bacterial cell lacks the presence of nuclear membrane.
- () Protoplast is a bacterial cell with intact cell wall.
- () Sporulation occur under unfavorable conditions.
- () Endotoxins are highly toxic and strong antigenic.
- () Viruses are obligatory intracellular parasites.
- () Fungi can grow well in alkaline pH.
- () IgE is the antibody responsible for type I hypersensitivity.

III- Complete each of the following: (10 Marks)

- Immunoglobulin molecule consists of linked together by
- Non chromosomal genetic elements include,,
- Lysogenic bacteria is
- Hapten is
- Stages of virus replication are,,,,
- The first who had described microbes using simple microscope.
- Tyndallization is
- Is the antibody produced during the primary immune response, while is the antibody produced during the secondary immune response.
- Is the antibody that can cross the placenta.
- Monoclonal antibodies are and can be used for
- The complement system is,

GOOD LUCK



Assiut University
Faculty of Medicine

Date: 30-4-2008
Time allowed: 1/2 h

MCQ

Mid Year Parasitology Examination for the 4th Semester Clinical Pharmacy students

Choose the only correct answer for the following questions: (10 points)

1- *Heterophyes heterophyes* eggs hatch in:

- a) Salt water.
- b) Brackish water.
- c) Fresh water.
- d) None of the above.

2- Which of the following is true:

- a) *Ancylostoma doudenale* eggs contain 4 cell stage embryo.
- b) *Ascaris lumbricoides* eggs contain one cell stage embryo.
- c) *Trichocephalus trichiura* eggs takes about 3 weeks for maturation.
- d) All of the above.

3- Halazoon might be due to:

- a) *Wuchereria bancrofti*.
- b) *Fasciola* species.
- c) *Ascaris lumbricoides*.
- d) *Toxocara canis* and *Toxocara cati*.

4- The intermediate host harbours:

- a) The sexual stages.
- b) The cyst stages.
- c) The adult worms.
- d) None of the above.

5- Bather's itch might be due to:

- a) *Cercaria* of some avian schistosomes.
- b) Encysted metacercaria of *Heterophyes*.
- c) Encysted metacercaria of *Fasciola*.
- d) None of the above.

- 6- Man act as final and intermediate host in:
- Taenia solium*.
 - Trichinella spiralis*.
 - Ascaris* worm.
 - Both (a) and (b).
- 7- Which of the following is correct:
- Ancylostoma doudenale* is a pin worm.
 - Trichocephalus trichiura* is a whip worm.
 - Ascaris lumbricoides* is a tape worm.
 - None of the above.
- 8- The following is true for pathogenesis of *Trichinella spiralis*:
- Acute gastro-enteritis, vomiting, diarrhea and death
 - Fever and 20-50% oesinophilia.
 - Myositis and myocarditis in chronic cases.
 - All of the above.
- 9- Select the correct statement:
- Schistosoma* eggs ingested by the snail intermediate host.
 - Fasciola* egg hatch in fresh water.
 - Heterophyes* egg ingested by the snail intermediate host.
 - Both (a) and (b).
- 10- Visceral larva migrans may be produced by the following:
- Toxocara canis* and *Toxocara cati* eggs.
 - Ascaris lumbricoides* eggs.
 - Ancylostoma duodenale* eggs.
 - Encysted larvae of *Trichinella spiralis*.
- 11- Which of the following is true:
- Heterophyes cercaria* encyst in the fish muscles.
 - Fasciola cercaria* encyst on the aquatic vegetation.
 - Schistosoma cercaria* penetrate the skin of the definitive host.
 - All of the above.
- 12-Tissue nematodes characterized by the following:
- Lives in the extra-intestinal tissues and filariform oesophagus.
 - Thread like, unarmed mouth and larviparous.
 - Require an arthropod intermediate host in their cycle.
 - All of the above.

- 13- Routes of entry of the parasites may be:
- Body orifices as nose, eye, urethra, vagina and anal orifice.
 - Mouth and skin contact.
 - penetration of skin and mucous membrane.
 - All of the above.
- 14- Anemia is caused by:
- Ancylostoma duodenale*.
 - Schistosoma haematobium*.
 - Trichocephalus trichiura*.
 - All of the above.
- 15- Which of the following entry sites of *Ancylostoma duodenale* filariform larvae:
- Dorsal surface of the foot.
 - Between the toes.
 - Interdigital spaces of the hands.
 - All of the above.
- 16- Helminths with migratory cycle in the lung is:
- Ascaris lumbricoides*.
 - Ancylostoma duodenale*.
 - Trichinella spiralis*.
 - All of the above.
- 17- Infection with Hydatid disease is done after:
- Eating infected liver with hydatid cyst.
 - Ingestion of *Echinococcus granulosus* eggs.
 - Swallowing of the hydatid sand.
 - None of the above.
- 18- *Taenia saginata* inhabits:
- Small intestine of man.
 - Gall bladder and bile duct of man.
 - Large intestine of man.
 - None of the above.
- 19- All of the following statements are true except:
- Trichinella* cause myositis and respiratory failure.
 - Ascaris* cause microcitic hypochromic anemia.
 - Trichocephalus* may cause anal prolapse.
 - Enterobius* cause acute appendicitis.
- 20- Heterophyes heterophyes eggs are characterized by:
- Dark brown color 30 x 15 microns.
 - Thick shell and with operculum.
 - With full developed miracidium.
 - All of the above.

Good Luck
Prof. Dr. Mahmoud El-Hady

Final examination Date:1/6/2008

Time allowed TWO hours **Total Marks (50 marks)** **Total Pages (7 pages)**

N.B. 1- The examination is formed of part I and part II each= 25 marks

2- All questions are to be answered.

Part I**(25 marks)****(Pages 1-3)****All questions are to be answered**

I- For each incomplete statement cited below mark (T) for the correct completion and (F) for the incorrect one among those following each statement. (10 marks)

- 1- Binding in the die defect occurs during tableting may be due to
 - a) poor lubrication of the granules.
 - b) entrapment of air in the tablet during compression which would escape when the pressure is released.
 - c) poor flow of granules in the die.
 - d) under dried granules.
- 2- Excessive weight variation occurs between tablets during manufacture due to
 - a) size separation of granules.
 - b) presence of too fines in the granules.
 - c) poor flow of granules to the die.
 - d) less quantity or poor mixing of lubricants.
- 3- Sugar coating of tablets is used to
 - a) mask the unpleasant taste and odor of the drug present
 - b) protect the stomach from the irritant effect of the drug upon swallowing the tablet.
 - c) delay drug action.
 - d) protect the ingredients from decomposition on exposure to air and moisture.
- 4- Film coating of tablets are more satisfactory than sugar coating coating because of
 - a) the coating time is reduced considerably.
 - b) the cost of production is decreased.
 - c) tablets of better strength are produced.
 - d) tablets of extended release are produced.

- 5- Tablet hardness depends on
- a) the weight of the material used.
 - b) the space between the upper and lower punches at the time of compression.
 - c) the pressure applied during compression.
 - d) the nature and quantity of excipients used in tablet formulation.
- 6- Lyophobic colloids are
- a) generally composed of inorganic particles dispersed in water e.g. are gold, silver, sulfur, arsenous sulfide, and silver iodide.
 - b) systems containing colloidal particles that interact to an appreciable extent with the dispersion medium.
 - c) owing to their affinity for the dispersion medium, they form colloidal dispersion or sols, with relative ease.
 - d) the particles in such sols are stabilized only by the presence of electric charge on their surface.
- 7- Association colloids
- a) consist of aggregates of amphiphiles or surface-active molecules or ions.
 - b) form spontaneously by dispersion, provided that the concentration of the amphiphile in solution exceeds the cmc..
 - c) consist of particles (micells) which are too small to be seen with an optical microscope.
 - d) are sols the particles in which are stabilized only by the presence of electric charges on their surfaces.
- 8- Dehydration of hydrophilic colloidal particles
- a) can occur on addition of considerable amount of alcohol.
 - b) can convert the hydrophilic sol to one possessing hydrophobic properties.
 - c) can cause lowering of the zeta potential to a value below the critical zeta potential.
 - d) can result in decreased stability of the hydrophilic sol.
- 9- Coacervation is the phenomenon in which macromolecular solutions separate into two liquid layers that
- a) represents in pharmacy a type of physical incompatibility.
 - b) can be caused only when negatively and positively charged hydrophylic colloids are mixed.
 - c) needs not involve the interaction of charged particles.
 - d) if formed in a stirred suspension of an insoluble solid, the macromolecular material will surround the solid particles.
- 10- Microencapsulation is a process or technology that
- a) involves dispersion of small solid particles or liquid droplets in a dispersion medium.
 - b) involves filling a liquid in soft elastic capsules.
 - c) involves envelopment of small solid particles, liquid droplets or gas bubbles with a polymeric coat.
 - d) are used in pharmacy to protect the drug from chemical attack or to prolong the drug action on oral administration.

**II- Complete each of the following statement with suitable word(s):
(5 marks)**

- 1- ----- and ----- are examples of directly compressible vehicles for direct compression tableting.
- 2- Wet granulation method of tablet preparation should not be used for drug materials that are destroyed by ----- or by -----
- 3- Because of their size, colloidal particles can be separated with relative ease from smaller particles dissolved in the medium by ----- and from larger suspended particles by -----
- 4- The conc. of monomer at which micelles form is termed the ----- and the number of monomers that aggregate to form a micelle is known as ----- of the micelle.
- 5- Coacervation of gelatin may be brought about by the addition of ----- or -----.

**III- Give only one reason behind each of the following:
(10 marks)**

- 1- It is desirable that all tablets of a particular batch be uniform in weight.

- 2- It is reasonable to assume that a tablet fails to disintegrate adequately is unlikely to be efficacious.

- 3- Lyophilic colloids form colloidal dispersion or sols, with relative ease.

- 4- MgSO_4 flocculates an agar sol at lower concentration than does MgCl_2 .

- 5- The addition of large amounts of the hydrophylic colloid to hydrophobic colloid of opposite charge stabilizes the system.

Good Luck
Elsayed A. Ibrahim

Question I (10 marks, one mark for each point)

Fill in the spaces with correct word/words

1-The advantages of powder as dosage form are
..... while the disadvantages are
.....

2-Camphor and iodine can be pulverized easily by not by
.....

3-Geometric dilution used for substances. They have to be mixed with large
amount of

4-In an emulsion, the properties and the ability of the
constituents are increased.

5-Emulsion action is and the emollient effect is than that
observed with comparable preparations when applied externally especially with water-oil
emulsion.

6-Many of phenolic compounds and certain vitamins are incompatible with acacia
because
.....

7-The unpleasant taste of soluble soaps and their high alkalinity preclude their use as
emulsifiers for administration.

8-Humectants are added to an emulsion formulation in order to
and the widely used humectants include
.....

9-Stokes law is expressed as
.....

10-Two useful parameters that may be derived from sedimentation studies of suspensions
are and
.....

Question II (10 marks, two marks for each point)

Write briefly on each of the following

1-Properties of an ideal emulsifying agent.

2-Porosity of powder.

3-Plastic or interfacial film theory of emulsion.

4-Physical properties of well formulated suspension.

5-Official powders in USP.

Question III (5 marks, 0.5 mark for each point)

Tick true (T) or false (F) for the following statements

- 1-Powder as dosage form is suitable for many unpleasant drugs
- 2-Sieve number is directly related to the aperture or opening size.
- 3-Acacia as natural emulsifying agent is compatible with phenols, tannic acids and heavy metals.
- 4-Suspensions can be formulated for the parenteral administration to control the rate of absorption of drugs.
- 5-Emulsions prepared with soaps are incompatible with acids of all types.
- 6-In suspensions, the degree of flocculation is a more fundamental parameter than the volume of sedimentation.

- 7-Desirable properties of a preservative for emulsions include bacteristatic rather than bactericidal activity.
- 8-The angle of repose depends on the mutual friction between the particles, with an increase in friction, the resistance to flow is decreased and the angle of repose is increased.
- 9-Preparations containing acacia as emulsifying agent are resistant to attack by microorganisms and not require the presence of preservative.
- 10-Milling process for powder may change the polymorphic form of the active ingredient and rendering it less active.

Good Luck
Amal El Sayeh Fadl



I-Potentiometry

(10 Marks)

A-Complete the followings:

- 1-Example of electrode of second kind is (0.5 Mark)
and it consists of (1.5 marks)

Where electrode reactions are: (2 Marks)

And its electrode potential is calculated using this equation: (1 Mark)

2-Salt bridge in electrochemical cell is used to (1 Mark)

3- The role of platinum black in normal hydrogen electrode is (1 Mark)

B-Draw a labelled diagram representing an electrolytic cell and describe electrode reaction at right and left hand electrode. (3 Marks)

II-Chromatography: (10 Marks)

A- Write the scientific term or chromatographic parameter and equation whenever possible representing the following statements:

1-The use of one and same solvent during whole chromatogram. (0.5 Mark)

2-A factor describing migration rate in plane chromatography. (1.5 Marks)

3-A measure of column efficiency. (1.5 Marks)

B- Predict the order of elution of a mixture of naphthalene, benzene and anthracene from a normal phase column. (1 Mark)

c- Mention briefly the followings: (3.5 Marks)

1- Types of detectors used in Gas chromatography.

2-Two techniques used for quantitative analysis in plane chromatography.

D-Draw a labelled graph representing an HPLC unit. (2 Marks)

(Prof.Dr.Pakinaz Youssif Khashaba)

III-Spectrophotometry & Fluorimetry: (10.5 marks)

I--Multiple choice Questions:

1-Choose the best type of monochromators:

- a- Prism
b- Gratings
c- Filters
d- Non of the above

2-Irregular deviations of Beer's plot is due to:

- a- Unmatched cuvettes
b-Unclean handling
c- Stray light.
d- All of the above

3- Which of the following is considered a chromophore:

- a--C=C
b- C=O
c- N₂
d-- All of the above

4- The most important types of electronic transitions present in HCHO are:

- a- n- π^*
b- π - π^*
c- $\sigma - \sigma^*$ & n- σ^*
d- both a&b

5- Shift of λ_{max} to longer wavelength is called:

- a- Bathochromic shift
b--Hypsochromic shift
c- -Hyperchromic effect
d- Hypochromic effect

6-Peaks associated with n- π^* type of transition is blue shifted in:

- a- Methanol
b-Cyclohexane
c- Ethanol
d- both a & c

7-Absorption band of phenol is red shifted in:

- a- pH 10
b- pH 3
c- pH 2
d- both b & c

2--A sample has absorbance 0.4 and concentration 20 $\mu\text{g/ml}$. What is the absorptivity? (2.5 marks)

3- In a table compare between fluorescence and phosphorescence. (5 marks)

4- Draw different types of photometric titrations curves: (4 marks)

IV-Atomic Methods:

1- Mark (✓) in front of correct statement and (x) in front of wrong one: (5marks)

a- In atomic absorption; the flame is utilized for atomization and excitation.

b- Flame emission spectroscopy is used mainly for the determination of alkali metals.

c- In atomic absorption each element needs a lamp

d-To overcome chemical Interferences, We decrease flame temperature.

e- Spectral Interferences are not present in flame emission spectroscopy.

2-D raw a diagram for an atomic absorption instrument. (3marks)

Pro/. Dr. Fardous Abdel-Fattah Mohamed



Parasitology examination for clinical pharmacy.

Answer the following questions:

- 1- Define with examples. (10 marks)
- Parasitism - Ectoparasite - Intermediate host
- Halzoon - Cytocercosis
- 2- Enumerate 3 parasites of large intestine and mention the life cycle of one which causes peri - anal irritation. (10 marks)
- 3- An Egyptian farmer suffering from terminal haematuria and burning micturition. What is the most probably causing parasite, mention and draw the infective and diagnostic stages. (10 marks)
- 4- Rewrite after completing the following: (20 marks)
- a- Habitat of Wuchereria bancrofti is
- b- Playing with cats may transmit.....
- c- Biting of female Anopheles may transmit.
- d- Biting of Sand fly may transmit.
- e- Sleeping sickness is caused by
- f- Eating undercooked fish may transmit
- g- Eating cattle meat may transmit.
- h- Playing with dogs may transmit
- i- Habitat of Giardia lamblia is
- j- Visceral leishmaniasis is caused by

*امتحان الشفوى بعد النظري مباشرة بقسم الطفيليات
مع تمنياتي بالنجاح أ.د/ عبد الله عبد السميع حسن – رئيس القسم

All Questions Should Be Attempted

1-For each incomplete statement cited below mark (T) for the correct completion and (F) for the incorrect one among those following each statement. (10.marks)

1- The advantages of hard capsule include

- a- low production cost
- b- few formulation problems
- c- better stability than tablets
- d- reproducible disintegration

2 - Selection of the flavor depends upon several factors as;

- a- the taste of the drug substance
- b- the particle size of the drug substance.
- c- the age of the intended patient.
- d- the therapeutic effect of the drug substance

3- Capping and splitting of tablets may be due to:

- a- entrapment of air in the tablet during compression
- b- the:use of too soft granules.
- c- poor lubrication of granules.
- d- the presence of excess of fine powder in granules.

4- Binding in the die (a defect that could occur during tableting) may be due to:

- a- poor lubrication of the granules
- b- entrapment of air in the tablet during compression which would escape when the pressure is released.
- c- poor flow of granules in the die.
- d- under dried granules.

5- Excessive weight variations between tablets that occur during manufacture may be due to:

- a- size separation of granules
- b- presence of too fines in the granules
- c- poor flow of granules to the die.
- d- less quantity or poor mixing of lubricants.

6- Tablet hardness depends on:

- a- the weight of the material used
- b- the space between the upper and lower punches at the time of compression.
- c- the pressure applied during compression.
- d- the nature and quantity of excipients used in tablet formulation.

7- Film coating of tablets are more satisfactory than sugar coating because of

- a.the coating time is reduced considerably.
- b.the cost of production is decreased.
- c.tablets of better strength are produced.
- d.tablets of extended release are produced.

8- Sugar coating of tablets is used to:

- a- mask the unpleasant taste and odor of the drug present.
- b- protect the stomach from the irritant effect of the drug upon swallowing the tablet.
- c- delay drug action.
- d- protect the ingredients from decomposition. on exposure to air and moisture.

9- Lyophobic colloids are:

- a- systems containing colloidal particles that interact to an appreciable extent with the dispersion medium.
- b- owing to their affinity for the dispersion medium, they form colloidal dispersion or sols, with relative ease.
- c- the particles in such sols are stabilized only by the presence of electric charge on their surface.
- d- generally composed of inorganic particles dispersed in water e.g. are gold, silver, sulfur, and silver iodide.

10- Dehydration of hydrophilic colloidal particles

- a- can occur on addition of considerable amount of alcohol.
- b- can convert the hydrophilic sol to one possessing hydrophobic properties.
- c- can cause lowering of the zeta potential to a value below the critical zeta potential.
- d - can result in increased stability of the hydrophilic sol.

II- For each of the incomplete statements cited below state only two correct completions. (10 marks)

1-Drug substances which are available in crystalline form can be compressed directly into tablets if they have the following characteristics.

- a-
- b-

2- The main disadvantages of peroral solid dosage forms are;

- a-
- b-

3- The important advantages of hard capsules compared to tablets include:

- a-
- b-

4- Stabilization of a colloidal system is accomplished essentially by two means:

a-

b-

5- If considerable amount of alcohol, viz. 50% or more are added to an agar sol striking changes become manifested which include;

a-

b-

III- Give only one reason behind each of the following: (5 Marks)

1- Most syrups contain a high proportion of sucrose.

2- It is reasonable to assume that a tablet fails to disintegrate adequately is unlikely to be efficacious.

3- Lyophilic colloids form colloidal dispersion or sols, with relative ease.

4- The addition of large amounts of hydrophilic colloid to hydrophobic colloid of opposite charge stabilizes the system.

5- Addition of a small amount of electrolyte to a lyophobic sol tends to stabilize the system.

GOOD LUCK
Elsayed A. Irahim

Part VI (25points) (د.منى المهدى)

Q1: Donate (T) for the true statement and (F) for the false one and correct the false one (3 points)

a) Dusting powders have systemic action. ()

b) Ionic emulsifying agents can be given orally. ()

c) Pulverization, Levigation and trituration are methods used for measurement of particle size. ()

Q2: Give reason(s) for the following: (3 points)

a) Camphor cannot pulverize easily by triturating.

b) Non- ionic surfactants are preferred in preparation in the preparation of pharmaceutical emulsions.

c) Electrolytes are used as flocculating agents.

Q3: Complete the following sentences (4 points)

a) Tests for identification of emulsion type are:

b) Functions of microcapsules are:

c) Sedimentation parameters are :

Q4: Discuss five of the following with draw in case of need: (15 points)

1) Importance of controlling the particle size and size range in pharmacy

2) Theories of emulsification

3) Microencapsulation based on temperature change method.

5) Wurster process.

6) Difference between flocculated and deflocculated suspension.

GOOD LUCK

بسم الله الرحمن الرحيم

Assiut University
Faculty of Pharmacy
Second- Year students
Clinical pharmacy

(BASIC MICROBIOLOGY & IMMUNOLOGY)

Date: 29/6/2010

Time: 3 hours

1- Write either (T) for true or (F) for false in front of the following statements

(10 marks)

1-	Invasiveness measures the ability of M.O to enter the host tissue
2-	Bacterial exotoxin is mainly produced by gram-negative bacteria.
3-	Lysozymes are acting only on Gram-positive cell membrane
4-	Interferons are glycoproteins produced by any viral infected cells
5-	Flagella distributed over the entire cell is known as lphotrichous
6-	The gyrase enzyme act to unfold the supertwist during the DNA replication
7-	Helicase enzyme separate the two strands of DNA
8-	The transcription is the protein synthesis
9-	Phenotypic variation is occurring in response to environmental conditions
10-	Mutation occur due to improper copy of the DNA
11-	Endotoxin is highly antigenic than exotoxin.
12-	Heterotrophic bacteria can grow on ordinary media
13-	Loss of bacterial capsule is mostly associated with loss of virulence.
14-	Coagulase enzyme is a spreading factor for infection
15-	Louis Pasteur, he was the first to isolate anthrax bacilli in pure cultures.
16-	Robert Koch, he discovered the causative organisms of tuberculosis
17-	Eukaryotic cell wall mainly formed of peptidoglycan, cellulose and chitin
18-	Cytoplasmic membrane is responsible for excretion of hydrolytic enzymes and toxins
19-	Non-transmissible plasmids are of large molecular weight.
20-	Bacteriocins: are toxins or enzymes that are produced by certain bacteria and are lethal for other bacteria.
21-	Virus composed of nucleocapsid containing both DNA and RNA
22-	Anabolism is a process of biodegradation of large organic molecules in the cell into simpler molecules.
23-	Heterotrophs are bacteria which can utilize simple inorganic substances, e.g. CO ₂ as a source of carbon and ammonium salts as a source of nitrogen.
24-	Genome is the sum of all genetic information in the cell
25-	Clostridium tetani grow only in presence of oxygen

26-	Genes responsible for production of endotoxins are located on plasmids and bacteriophages
27-	Fungi grow best at a temperature range between 25 – 40°C
28-	Streptokinase (fibrinolysin), breaks down the DNA
29-	The other name of Microphages is neutrophiles
30-	Bacteria in biofilms are more sensitive to the action of antibiotics

II- Circle the letter of the most appropriate choice of each of the following statements (71/2 Marks)

- 1- Which of the following statement is true concerning Plasmids.
 - a- are single-stranded DNA molecules.
 - b- carry optional genes.
 - c- carry genes essential for growth.
 - d- are always found in linear form.
 - e- are present in very few bacteria.

- 2- The transfer of DNA from a donor into a recipient cell through a bacteriophage is:
 - a) Transcription
 - b) Transduction
 - c) Transformation
 - d) Translation

- 3- The bacterial cell is referred to Lysogenic:
 - a- when cell contain prophage
 - b- when cell contains inclusion bodies
 - c- when cell lysed by complement
 - d- when cell is put in hypertonic solution

- 4- In DNA replication the double strands are usually separated by the action of:
 - a) DNA gyrase
 - b) DNA helicase
 - c) Single-stranded DNA binding proteins (SSBs)
 - d) All of the above

- 5- Which of the following statements is true concerning fimbriae?
 - a- most gram-positive bacteria have a set of fimbriae.
 - b- most gram-negative bacteria have a set of fimbriae.
 - c- they are longer than flagella.
 - d- they are thicker than flagella.
 - e- once removed, they do not regenerate during cell growth .

- 6- All of the following descriptions refer to the nuclear body in bacteria Except.
- a- it is referred to as the nucleoid.
 - b- it is free of ribosomes.
 - c- it is composed of ribosomes.
 - d- it represents about 10% of the cell volume.
 - e- it lacks a nuclear membrane.
- 7- Which of the following statement does NOT apply to bacterial endospores?
- a- they can survive in the dry state.
 - b- they are formed by aerobic *Bacillus*.
 - c- they are formed by anaerobic clostridia.
 - d- they do not take ordinary stain.
 - e- they are metabolically active.
- 8- All of the following description refers to conjugation in gram-positive bacteria Except
- a- it depends on sex pili.
 - b- it does not depend on sex pili.
 - c- donor cells form a protein adhesin on the surface.
 - d- adhesin on the surface causes aggregation with recipient cells.
 - e- recipient cells excrete small peptide sex pheromones (eg, *Strept. faecalis*)
- 9- A mutation in which purine is substituted for pyrimidine, it is known as
- a- deletion
 - b- addition
 - c- transversion
 - d- transition
- 10- All of the following description refers to the function of mesosome except:
- a- play a role in cell division.
 - b- site of excretion of penicillinase.
 - c- site of respiratory enzymes.
 - d- play a role in protein synthesis.
 - e- increase efficiency of cytoplasmic membrane permeability and active transport.

- 11- The length of the lag phase depends on the following factors EXCEPT:
- a- The nature of the organism.
 - b- the size of the inoculum
 - c- the nutritive value of the medium
 - d- the morphology of the organism.
- 12- All the following statements accurately refer to DNA cloning EXCEPT :
- a- a fragment of DNA from any source is inserted into a plasmid.
 - b- plasmid is introduced into bacterial, or yeast cell by conjugation.
 - c- it allows the production of large amount of genes in pure form.
 - d- it will probably allow for gene therapy in human.
- 13- Which of the following statement is true concerning point mutation:
- a- chromosomal duplication ..
 - b- deletion large segment of chromosome.
 - c- the substitution of one nucleotide for another.
 - d- all of the above.
- 14- All the following statements accurately refer to interferons EXCEPT:
- a- interferons have non-specific antiviral effect.
 - b- interferons are host specific.
 - c- interferons block viral replication.
 - d- interferons act extracellular.
- 15- PCR is used in diagnosis of viral infection to detect:
- a- the virus particle during latency.
 - b- minimal amounts of viral nucleic acid.
 - c- integrated viral genome.
 - d- none of the above.

III-In table forms mention the main differences between each of the following: (71/2 Marks)

- a- gram-positive and gram-negative bacteria
- b- glycocalyx and capsule
- c- bacteria and viruses
- d- fungi and bacteria
- e- DNA and RNA

Part II: Immunology Exam

1) Choose the most correct answer: (12 marks)

1- Which of the following **not relate to type II** hypersensitivity :

- a- Rheumatic fever
- b- Rh-incompatibility
- c- Penicillin-induced hypersensitivity
- d- Rheumatoid arthritis

2- Regarding type I hypersensitivity, which of the following statement is **false**:

- a- First exposure to allergen called sensitization
- b- IgE produced against allergen bind to mast cell
- c- Release of mediators from mast cells occur after first exposure to allergen
- d- Anaphylactic shock is an example of generalized type I hypersensitivity

3- Tuberculin test is:

- a- example of type III hypersensitivity
- b- Ab formed react against T.B Ag
- c- involve complement component
- d- read after 48-72 hours

4- Which of the following component **not involved in type III hypersensitivity**

- a- Neutrophils
- b- Anaphylotoxins
- c- Platelets
- d- NK cell

5- A 52-year old patient had skin rash, hypotension. He said that he had taken I.V Penicillin week ago. This is condition may be :

- a- Anaphylactic shock
- b- Arthus reaction
- c- Atopy
- d- Serum Sickness

6- Which of the following Antibody act only as receptor on naive B-Lymphocyte

- a- IgG
- b- IgD
- c- IgE
- d- IgA

7- Which of the following cytokines **not** released by T-Lymphocyte

- a- IL-2
- b- IL-4
- c- IL-7
- d- IL-10

8- Which of the following pairs is **mismatched**

- a- Tb & IL-2
- b- Hypersensitivity type I & IgE
- c- NK & memory cell
- d- C3b & Opsonization

9- A substance that can increase immune response against Ag is called:

- a- Epitope
- b- Paratope
- c- Adjuvant
- d- Hapten

10- Apoptosis of T -Lymphocyte that react against self Ag strongly in thymus is:

- a- Autoimmune disease
- b- Peripheral tolerance
- c- Central Tolerance
- d- Type IV hypersensitivity

11- A patient with severe burn on his chest, undergo a skin transplantation from his leg. This type graft is:

- a- Autograft
- b- Heterograft
- c- Homograft
- d- Isograft

12- Graft versus host disease occur in :

- a- Kidney transplantation
- b- Liver transplantation
- c- Bone marrow transplantation
- d- Skin transplantation

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

II) Comment on the following statement: (5 marks)

- 1- Presence of IgM in fetus means inutero-infection
- 2- Macrophage play a role in both innate & Adaptive immunity
- 3- Administration of Cyclosporine after a kidney transplantation
- 4- Autoimmune disease may occur after infection by certain m.o.
- 5-HIV cause AIDS (acquired immunodeficiency syndrome)

III) Match the following statement (8 marks)

Fab & Fc

Paratop	
Hypervariable region	
Ag binding site	
Light chain of immunoglobulin	

IgM – IgG – IgA – IgE

Antibody that secreted in milk	
Antibody that can present either monomer or pentamer	
Antibody play a role in allergy	
Antibody that can cross the placenta	

Professor/ Ahmed Sadek Ahmed

Assiut University
Faculty of Pharmacy
Biochemistry Dept.

Final Second Semester Exam.

All questions are to be attempted, illustrate your answers
with formulas whenever possible

- 1- Sugar alcohols
- 2- Sucrose & unvert sugar (comparison)
- 3- Hyaluronic acid.
- 4- Gerebrosides (four members by structures)
- 5- 5- Fats & waxes (Comparisons)

ان شاء الله سيكون الامتحان الشفهى عقب الانتهاء من الامتحان التحريرى بالقسم

Good Luck

امتحان الكيمياء الحيوية الطبية
للفرقة الثانية بكلية الصيدلة الإكلينيكية (دور مايو)

الدرجة الكلية: ٢٥ درجة

Write on:

1. Differences between co-enzyme and prosthetic group. (٣ درجات)
2. Enzyme specificity. (٧ درجات)
3. Isozymes and Iysoomes. (٣ درجات)
4. Protein bonds. (٦ درجات)
5. Keratins and histones. (٣ درجات)

Write formulae of:

(٣ درجات)

1. Two acidic amino acids.
2. Two basic amino acids.
3. Two sulfur amino acids.



Instrumental analysis (PC 407) (50 Marks)

Answer the following questions

I-Potentiometry and Chromatography (20 Marks)

1 -Give reasons (5 Marks)

- 1-The electrode of SHE is made from a piece of platinum coated with finely divided platinum black.
- 2- The presence of large excess of KCl in both saturated calomel electrode and silver-silver chloride electrode.
- 3- Glass electrode must be immersed in water for few hours before use.
- 4- The use of salt bridge in electrochemical cell.
- 5- Heating silica gel at 150-250°C before use in chromatography.

2- Put (✓) in front of the correct statement and (X) in front of the incorrect one, then correct it. (5 Marks)

- 1-The stationary phase (column packing) in reverse phase chromatography is polar compound. ()
- 2- Adsorption means on"e substance pentrate into the bulck of another Substance. ()
- 3- Ion-exchange chromatography is a technique used for separation of high molecular weight species. ()
- 4- Resolution for two components on a given column is 0.75. This means Complete separation of the two components. ()

Dr. Salwa

5- HPLC is used for quantitative determination of substances which can be vaporized at a relatively low temperature without undergoing decomposition, ()

3- Complete the followings:-

(6 Marks)

1- Paper chromatography is a form of chromatography

2- Detectors used in HPLC are,

a-

b-

3- Isocratic elution means

4- Carrier gases which are used in GC are,

5- Programmed-temperature gas chromatography is used for

6- In potentiometric titration used for precipitation reaction (e.g.) determination of chloride by silver nitrate), the indicator electrode is ----- and the reference electrode is -----

4- Draw and label the followings:

(4 Marks)

a- A diagram for HPLC

b- A glass electrode and mention the mechanism of its action

Dr. Salwa

II-Spectrophotometry & fluorimetry:

1- Multiple choice Questions:

(15Marks)

1- Energy is inversely related to:

- a- Frequency
- b- Wavelength
- c- Wave number
- d- none of the above

2- Which of the following bands are blue shifted by increasing solvent polarity:

- a- Peaks associated with $n-\pi^*$ transition
- b- Peaks associated with $\pi-\pi^*$ transition
- c- Peaks associated with $\sigma-\sigma^*$ transition

3- At pH 3 absorption band of phenol is:

- a- Red shifted.
- b- Blue shifted.
- c- Not changed.

4- Which of the following is considered an auxochrome:

- a- Cl
- b-OH
- c- SH
- d- All of the above

5- Benzene has the following absorption bands:

- a- 184, 204 & 254.
- b- 270, 280 & 320.
- c- 180, 227 & 400.

6- Which of the following compounds is more fluorescent:

- a- Pyridine.
- b- Thiophane.
- c- Indole.
- d-Cyclohexane

7- Which of the following are considered the best type of monochromators:

- a- Prisms
- b- Gratings
- c- Filters

8- Irregular deviations of Beers plot is due to ----- except:

- a- Unmatched cuvettes,
- b-Unclean handling,
- c- Stray light.
- d- Error in λ scale or slit width

9- Tungsten lamp is used for measurement in:

- a- Visible region
- b-UV
- c- IR
- d- none of the above

10- Increase in the intensity of absorption is called:

- a- Bathochromic shift.
- b- Hypsochromic shift.
- c- Hyperchromic effect
- d- Hypochromic effect.

2- In a table compare between a spectrophotometer and a spectrofluorimeter:

(4 Marks)

III- Flame photometry & Atomic absorption spectrometry:

1- Mark (✓) in front of correct statement and (x) in front of wrong one and correct it: (8 Marks)

1-In flame photometry, the flame is the excitation source and the sample cell.

2-In atomic fluorescence, the monochromator and the detector are set at the same angle to the source lamp.

3-Chemical interference could be removed by decreasing flame temperature.

4-flame emission spectroscopy is used mainly for the determination of alkali metals and easily excited elements.

5-In atomic absorption, excitation is achieved by a source lamp and the emitted light is measured.

6- Ionization interference could be removed by increasing flame temperature

2-Draw a diagram for a hollow cathode lamp.

(3 Marks)

Prof. Dr. Fardous A. Mohamed
Good Luck

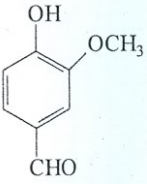


الامتحان مكون من سؤالين في ست صفحات

Question I: (25 Marks)

I-A: Complete the following table as requested: (12 Marks)

Class	Name/Structure	Source	Miscellaneous
1- Unsaturated acyclic hydrocarbon	Structure: Name: Myrcene		Isolation:
2-	Structure: Name:	Eucalyptus oil	Principle of assay:
3- Monocyclic monoterpene alcohol	Structure: Name: Menthol		Chemical test:
4- Aliphatic alcohol	Structure: Name:		Isolation:
5-	Structure: Name:		Chemical test:

Class	Name/Structure	Source	Miscellaneous
6- Ttrihydric phenol	Structure: Name: Myristicin		Uses:
7-	Structure:  Name:	Vanilla fruit, Clove oil	Uses:
8- Bicyclic terpene Ketone	Structure: Name: Camphor		Differntiation between natural and synthetic camphor:

I-B- Complete the following statements: (10x½= 5 Marks)

- The general methods used for isolation of Phenols are
..... and
- The general methods used for structure determination of terpenes are
.....
and
- The esters which are used for isolation and identification of terpene
alcohols are,,
and

- Safrol could be identified by while
diosphenol could be identified by

I-C-(a) α -pinene (b) Fenchone (c) Camphoe (d) Citral (a): (4x2=8 marks)

You are provided with the above-mentioned compounds, explain the following:

(i) How can you prepare (c) from (a)

(ii) Uses for (a)

(iii) How can you isolate (b) from its natural source

(iv) How can you separate a mixture of (d) and its isomer

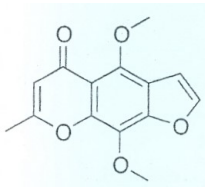
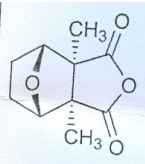
Question II:**(25 Marks)****II-A: Choos the best answer:****(10 x ½= 5 Marks)**

- 1- Which of the following is an example of non-reducing disaccharides
 - a) Trehalose
 - b) Maltose
 - c) Cellobiose
 - d) Raffinose
- 2- Which of the following is a polysaccharide obtained from seaweed.
 - a) Starch
 - b) Cellulose
 - c) Agar
 - d) Inulin
- 3- Pectin is used for treatment of the following except:
 - a) Diarrhea and dysentery
 - b) Ulcers
 - c) Deep wounds
 - d) Scabies
- 4- The first drug used as contraceptive is
 - a) Asafoetida
 - b) Galbanum
 - c) Colophony
 - d) Male fern
- 5- Abietic acid in colophony resulted from isomerization of:
 - a)-l-Pimaric acid
 - b)-d-Pimaric acid
 - c)-Cis-Cinnamic acid
 - d) Trans-ferulic acid
- 6- The main uses of quassin include the following Except:
 - a) Urinary tract antiseptic
 - b) Insecticide
 - c) Anthelmintic
 - d) Bitter tonic
- 7- Regarding to Cantharidin, all the following is true Except:
 - a) Animal bitter principle
 - b) Inner anhydride
 - c) Used internally as diaphoretic
 - d) Obtained from cantharides
- 8- Which of the is an example of glycoresins resins;
 - a) Jalap
 - b) Podophyllum
 - c) Colophony
 - d) Cannabis
- 9- Asafoetida is an example of:
 - a) Oleo-resins
 - b) Resins
 - c) Glycoresins
 - d) Oleo-gum-resins
- 10- Jalap resin is used as:
 - a) Diuretic
 - b) Anti-inflammatory
 - c) Cathartic
 - d) Bitter tonic

II-B: Mark (T) for the correct statement and (F) for false one:**(10 x ½= 5 Marks)**

1. Dextran is used as an antithrombotic ()
2. Glucose oxidase oxidize glucose to gluconic acid ()
3. Oxidized cellulose is used as hemostat ()
4. Cannabis resin is used as anticancer ()
5. Alginate is used as absorbable haemostatic dressings ()
6. Maltose is not digestable by humans and digestable by ruminants ()
7. Glycogen gives a reddish-violet color with iodine ()
8. D-Xylose is the wood sugar ()
9. Lactulose is a natural disaccharide used as a laxative ()
10. The lack of the lactase enzyme is a condition known as galactosaemia ()

II-C- Complete the following table as requested: (5 marks)

Name/ Structure	Main use	Miscellaneous
1-  Name	Main use	Source:
2- Structure Santonin	Main use	Chemical test
3-  Name:	Main use	Preparation:

II-D: Give the reason(s) for each of the following: (4 x1= 4 marks)

- 1- Digitoxose gives positive Keller Kelliani test while rhamnose gives negative results.
- 2- Inulin is used for evaluation of renal function.
- 3- Care required with the use of male-fern resin as anthelmintic.
- 4- Cantharidin not used internally.

II-E: Complete the following in the table below:

(12 x ½ = 6 marks)

1.(1).....is used for treatment of iodine poisoning, while
.....(2).... is the component of the exoskeleton of invertebrates.
2. Separation of glucose from fructose may be accomplished by:
a-(3).....
b-(4)
3. The main uses of lactulose is(5)
4. The main uses of podophyllotoxin and its derivatives are:
a-(6).....
b-(7).....
c-(8).....
5.(9)..... is a C 1-2' non-reducing disaccharide, while
.....(10)..... is a C 1-6' disaccharide (*Draw the structure of both*).

No.	Answer
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

Structure of (9)

Structure of (10)

انتهت الأسئلة مع أطيب التمنيات بالتوفيق

لجنة الممتحنين:

أ.د. إنعام يونس بخيت

أ.د. زيدان زيد ابراهيم

امتحان الشفهي عقب التحريرى مباشرة.



**PARASITOLGY EXAMINATION FOR SECOND YEAR
CLINICAL PHARMACY**

Answer the following question:

- 1) Define with examples (9 marks):
Parasitism - endoparasite - intermediate host.
- 2) Mention two sources of parasitic infection with examples. (4 marks)
- 3) Mention 5 types of cestodes larvae with examples (10 marks)
- 4) Mention the intermediate host and the infective stage of the following
(6 marks)
Fasciola gigantica - Schistosoma mansoni - Heterophyes heterophys.
- 5) A farmer suffering from terminal haematuria and burning of micturition
(6 marks)
 - a. What is the most probably causing parasite?
 - b. Mention and draw the diagnostic stage.
 - c. Mention the intermediate host of this parasite.
- 6) A child suffering from peri-anal itch. (6 marks)
 - a. What is the most probably causing parasite.
 - b. Mention and draw the infective stage.
 - c. How to control this parasite.
- 7) Mention the parasites causing the following diseases. (9 marks)
Amoebic dysentery - steatorrhea - elephantiasis - sleeping sickness
oriental sore - tertian malaria - abortion in pregnant women -
cercarial dermatitis - Chaga's disease.

ملحوظة: الامتحان الشفوي بعد الامتحان النظري مباشرة في نفس اليوم

Good Luck

مع تمنياتي بالتوفيق الدائم ،،،،،،،،
أ.د./ عبد الله عبد السميع حسن
رئيس قسم الطفيليات - كلية الطب - جامعة أسيوط

1-For each incomplete statement cited below mark (T) for the correct completion and (F) for the incorrect one among those following each statement. (10 marks)

- 1- Binding in the die defect that occurs during tableting may be due to:
 - a- excess in lubrication of the granules.
 - b- entrapment of air in the tablet during compression which would escape when the pressure is released.
 - c- poor flow of granules in the die.
 - d-over dried granules.

- 2- Sugar coating of tablets is used to:
 - a- mask the unpleasant taste and odor of the drug present.
 - b- protect the stomach from the irritant effect of the drug upon swallowing the tablet.
 - c- delay drug action.
 - d- protect the ingredients from decomposition on exposure to air and moisture.

- 3- Tablet hardness depends on:
 - a- the weight of the material used
 - b- the space between the upper and lower punches at the time of compression.
 - c- the pressure applied during compression.
 - d-the nature and quantity of excipients used in tablet formulation.

- 4- Film coating of tablets are more satisfactory than sugar coating because;
 - a. the coating time is reduced considerably.
 - b. the cost of production is decreased.
 - c. tablets of better strength are produced.
 - d. tablets of extended release are produced.

- 5- Selection of the flavor depends upon several factors as;
- a- the taste of the drug substance.
 - b- the particle size of the drug substance.
 - c- the age of the intended patient.
 - d- the therapeutic effect of the drug substance.
- 6- Capping and splitting of tablets may be due to:
- a- entrapment of air in the tablet during compression.
 - b- the use of too soft granules.
 - c- poor lubrication of granules.
 - d- the presence of excess of fine powder in granules.
- 7- Excessive weight variations between tablets that occur during manufacture may be due to:
- a- size separation of granules.
 - b- presence of too fines in the granules.
 - c- poor flow of granules to the die.
 - d- less quantity or poor mixing of lubricants.
- 8- Lyophobic colloids are:
- a- systems containing colloidal particles that interact to an appreciable extent with the dispersion medium.
 - b- owing to their affinity for the dispersion medium, they form colloidal dispersion or sols, with relative ease.
 - c- stabilized only by the presence of electric charges on the surfaces of their dispersed particles.
 - d- generally composed of inorganic particles dispersed in water e.g. are gold, silver, sulfur, and silver iodide.
- 9- The pharmaceutical ingredients (excipients) serve to:
- a- increase the therapeutic effects upon administration.
 - b- fashion the medicinal agents into efficacious dosage forms.
 - c- stabilize the medicinal agents in particular dosage forms.
 - d- improve patient acceptance of the particular dosage forms.
- 10- Tablets and/or capsules are generally prepared for medicaments intended for systemic effect using oral administration because they are:
- a- easily handled by the patient.
 - b- most convenient in self administration.
 - c- most convenient to administer to unconscious patients.
 - d- most convenient in emergency situation.

11- For each of the incomplete statements cited below state only two correct completions. (5 marks)

1- Drug substances which are available in crystalline form, can be compressed directly into tablets if they have the following characteristics.

a-

b-.....

2- The important advantages of hard capsules compared to tablets include:

a-

b-.....

3- drug stability considerations could determine

a-

b-.....

4- Compared to syrups, elixirs contain;

a-

b-.....

5 - The preparation methods of lyophobic colloids include;

a-

b-.....

Good Luck
Prof. Elsayed A. Ibrahim

Part 11 (25 points)

(د منى المهدى)

Q1: Donate (T) for the true statement and (F) for the false one and correct the false one (3 points)

a) Emulgent such as cetrimide is used externally and internally. ()

b) Angle of repose is used mainly for measurement of particle size of powders. ()

c) Complex coacervation of poly-component system carried out by employing gelatin as the polycation and gum Arabic and hemoglobin as the polyanion. ()

Q2: Give reason (s) for the following: (3 points)

a) Synthetic emulsifiers are superior to natural gums and proteins

b) Tragacanth is preferred as thickening agent than acacia.

c) Camphor cannot pulverize easily by triturating.

Q3: Complete the following sentences (4 points)

a) Methods of measurement of particle size of powders are:

- | | |
|----|----|
| 1) | 2) |
| 3) | 4) |

b) The velocity of sedimentation is expressed by:

c) Tests for identification of emulsion type are:

- | | |
|----|----|
| 1) | 2) |
| 3) | 4) |

Q4: Discuss FIVE of the following draw in case of need:
(15 points)

1) Problems of powders

2) Function of microcapsules

3) Difference between flocculated and non-flocculated suspensions

4) The oriented wedge theory

5) Microencapsulation based on temperature change method.

6) Wurster process

Good Luck

Answer the following questions, write the formulae whenever possible:

I- Briefly, write on: (2 marks each)

- 1- Isoelectric point.
- 2- Sulfur containing amino acids.
- 3- Three functions of essential fatty acids (give an example).
- 4- Structure and importance of lecithin.

II- Discuss the following statements: (5 marks each)

- 1- Cellulose is very essential in food.
- 2- Hyaluronic acid is an important mucopolysaccharide, plays an important role in many human tissues due to its chemical structure.
- 3- Rancid fat has many hazards, thus rancidity must be prevented.
- 4- Cholesterol (a steroid) has biochemical functions as a precursor for synthesis of biologically important products.
- 5- Bonds are responsible for protein structure.

III- Account on:

- 1- Separation techniques for proteins. (6 marks)
- 2- Sugar acids. (6 marks)
- 3- Differences between albumin and globulin. (5 marks)

GOOD LUCK



لاحظ أن الامتحان يقع في صفتين (وجه وظهر)

رقم الجلوس:

إسم الطالب:

Question I: (Acid base)

(3 Marks)

Dr. Hanaa Mohammed Abdel-Wadood

1- Put the sign (√) for the correct statement and the sign (X) for the incorrect one and then correct it. (2 Marks)

a- Universal indicator is the most suitable for titration.

b- Arrhenius is a scientist who put the electronic theory for definition of acid and base.

c- Boric acid is a weak acid.

d- Sodium carbonate can be determined by displacement titration.

e- Acetylcholine chloride can be determined by direct titration with NaOH.

f- One molar solution equals to two normal solution of H₂SO₄.

g- Benzene is an example of a protogenic solvent.

h- Mixture of H₂SO₄ and Na₂SO₄ is a buffer system.

2- Calculate the pH of solution obtained by mixing 5 ml of 0.1 N NaOH with 5 ml of 0.2M HA (K_a of HA = 1.75x 10⁻⁴). (One Mark)

Question II: (Acid base)**(2 Marks)***Prof. Dr. Ibrahim Hassan Refaat.*

Answer (8 only); Mark the most proper One answer and fill the following answer table:

Question No.	1	2	3	4	5	6	7	8	9	10
Answer letter										

Note That The solubility product constant (K_{sp}) of the following precipitates are:

Ppt.	AgCl	AgBr	AgI	AgScN	Ag ₂ S
K_{sp}	1.1×10^{-10}	5.25×10^{-13}	9×10^{-17}	7.1×10^{-13}	6×10^{-50}

(1) AgCl is more soluble in 0.1M solution of :

- A. AgNO
- ₃
- B. KCl C. NaNO
- ₃
- D. HCl

(2) AgCl is more soluble in:

- A. 0.1 M NaCl B. 0.01 M NaCl C. 0.001 M NaCl D. All are the same

(3) The following precipitate is not soluble in KCN solution:

- A. AgCl B. AgBr C. AgI D. Ag
- ₂
- S

(4) For Pb₃(PO₄)₂, $K_{sp} = \dots\dots\dots$

- A.
- $[Pb^{2+}]^2[PO_4^{3-}]^3$
- B.
- $[3Pb^{2+}]^3[2PO_4^{3-}]^2$
- C.
- $[Pb^{3+}]^2[PO_4^{2-}]^3$
- D.
- $[Pb^{2+}]^3[PO_4^{3-}]^2$

(5) On the titration of halides by AgNO₃; the larger the break at the equivalence point (i.e the larger the inflexion area) is:

- A. AgCl B. AgBr C. AgI D. All are the same

(6) Silver cyanide complex has the following formula:

- A.
- $[Ag(CN)_2]^+$
- B.
- $[Ag(CN)_2]^-$
- c.
- $[Ag(CN)]^-$
- D.
- $[Ag(CN)_2]^{2-}$

(7) The end point of the following method is not a formation of coloured precipitate:

- A. Mohr's method B. Volhard's method C. Liebig's method D. Denige's method

(8) In Volhard's method the following precipitate should be removed before back titration with NH₄SCN standard solution:

- A. AgCl B. AgBr C. AgI D. Non of them

9) In Fajan's method the following adsorption indicaeor may be used for determination of Ag⁺ ion by Br⁻ ion:

- A. Flourescene B. Eosin C. Rhodamine 6-G D. Rose Bengal

(10) In Denige's method the end point is the appearance of a turbidity of:

- A. AgCN B. AgI C. Ag[Ag(CN)
- ₂
-] D. Ag[(NH
- ₃
-)
- ₂
-]
- ⁺



1- Potentiometer: Prof.Dr.Pakinaz Khashaba (10 Marks)

1- Complete the following: (2 Marks)

The liquid junction potential is

.....and it is minimized by

.....

2-Answer the followings: (8 Marks)

a- The shorthand notation of a galvanic cell consisting of a zinc electrode immersed in 0.01M Zn SO₄ and a copper electrode in contact with 0.01M CuSO₄ is: (1 Mark)

b- What is the indicator electrode used to measure the followings in solutions? (4 Marks)

1- Copper ions

2- Chloride ions

3 - Ferric -Ferrous ions

4-pH

c-Mention the followings:

1- The electrode reaction half cell of a saturated calomel electrode:

2- Nerns't equation for a saturated calomel electrode:

3- The role of potassium chloride solution in Calomel electrode:

II- Chromatography: Prof. Dr.Pakinaz Khashaba (10 Marks)

Answer the following questions:

1- Mention the basic components of an HPLC unit: (6x ½= 3 Marks)

2-Explain by graph the difference between normal and reversed phase Chromatography. (3 Marks)

3-Predict the elution order of the following mixture of cations from a cation exchange column:

a- Zn^{2++}

b- Ag^+

c- Al^{3+++}

4-Sketch a gas chromatograph unit, labeling different parts clearly. (3 Marks)

II-Spectrophotometry and Fluorimetry: (Prof. Dr. Fardous A. Mohamed)

I-Give scientific term: (5 marks)

- a- A beam of light that contains single wavelength.
- b- Shift of λ max to shorter wavelength.
- c- A lamp that is used for measurement in visible region.
- d- A function group that is responsible for absorption in UV or visible region.
- e- No. of waves in 1 cm.

2-Draw a diagram for a spectrofluorimeter showing its main parts.
(4 marks)

3- Mention the main types of electronic transitions and arrange them in order of decreasing energy. (4 marks)

III-Flame photometry & Atomic Methods: (Prof. Dr. Fardous

A. Mohamed)

1- Mark (√) in front of correct statement and (x) in front of wrong one and correct it: (12 marks)

1-In atomic fluorescence, the monochromator and the detector are set at the right angle to the source lamp.

2--In flame photometry, the flame is the excitation source and the sample cell.

3- Ionization interference could be removed by decreasing flame temperature

4- Flame photometry is used mainly for the determination of alkali metals and easily excited elements

5--Chemical interference could be removed by increasing flame temperature.

6-In atomic absorption, excitation is achieved by a source lamp and the emitted light is measured.

7- Total consumption burner is used only for atomic absorption.

8-Using hollow cathode lamp, each element needs a lamp.

2-- What are the steps that occur on the flame? (3 marks)

3-Draw a diagram for a flame photometer showing its main parts. (2 marks)

Good Luck

Answer the following questions. Illustrate with the formulae whenever possible:

I- Briefly, write on:

- 1- Isoelectric point. (3 marks)
- 2- Mutarotation. (5 marks)
- 3- Peptide bonds. (5 marks)
- 4- Hazards of rancidity and its prevention. (4 marks)
- 5- Structure, site, and function of hyaluronic acid. (4 marks)

II- Write three differences between the following:(3 marks each)

- 1- Albumin and globulin.
- 2- Sucrose and invert sugar.
- 3- Cellulose and glycogen.
- 4- Prostacyclin and thromboxane.

III- Enumerate: (17 marks)

- 1- Three examples of glycerophosphates and sphingolipids.
- 2- Separation techniques for proteins and amino acids.
- 3- Three examples of saturated fatty acids.
- 4- Three functions of dextran, inulin, and cholesterol.

GOOD LUCK

بسم الله الرحمن الرحيم

Assiut University
Faculty of Pharmacy
Second- Year students
Clinical pharmacy

(BASIC MICROBIOLOGY & IMMUNOLOGY)

Date: 18/6/2012

Time: 3 hours

All Question are to be answered

1- For each of the following ,Write either (T) for true or (F) for false in front of the statements. (15 marks)

1-	Invasiveness measures the ability of M.O to enter the host tissue
2-	Commensals are normal pathogenic M.O
3-	Lysozymes are acting only on Gram-positive cell membrane
4-	Interferons are glycoproteins produced by any viral infected cells
5-	Replication is the synthesis of RNA from DNA template
6-	The gyrase enzyme act to unfold the superwist during the DNA replication
7-	DNA polymerase enzymes are acting in the DNA replication.
8-	The transcription is the protein synthesis
9-	Phenotypic variation is occurring in response to environmental conditions
10-	Mutation occur due to improper copy of the DNA
11-	Teichoic acid represents the special structure of the cell wall of Gram negative bacteria.
12-	Genetic code is universal among almost all living beings.
13-	In silent mutation the expressed protein is not changed.
14-	Mesosome is the site of respiratory enzymes in bacterial cells.
15-	Penicillin is non-lethal to bacterial cells lacking cell wall.
16-	Gene is the sum of all genetic information in the cell.
17-	A- interferon is usually produced by leukocytes
18-	Surface components of bacterial cells can increase the invasiveness
19-	Transposons are genetic elements that regulates DNA replication,
20-	The sequence of bases on one DNA strand dictates the sequence on the other.
21-	Interferons are produced by virus infected cells and posses antitumor and antiviral properties.
22-	During the logarithmic phase of growth, the generation time is constant.
23-	In growth curve, the stationary phase is reached due to exhaustion of nutrients and accumulation of wastes.
24-	As viruses are intracellular parasites they reproduce by binary fission
25-	Bacterial capsule is always made of polypeptide.
26-	Endotoxins are lipoolysaccharide outer membrane of Gram negative bacteria
27-	Prions are proteinacious infectious agents that are inactivated by boiling.
28-	Endospore formation in bacteria lies among Gram positive, Gram negative as well as acid fast bacteria.
29-	Viroids are naked RNA molecules infecting only animal cells.
30-	Mesosomes are found in both Gram positive and Gram negative bacteria and may participate in cell division

**II- Circle the most appropriate choice for each of the following
(10 points)**

- 1- Dipicolinic acid is a key component of:
a) Bacterial flagella b) Bacterial fimbriae
c) Bacterial spores d) Bacterial capsule
- 2- Protoplast, spheroplast and L-forms of bacteria have morphological similarity related to:
a) Absence of pili b) Absence of capsule
c) Absence of cell wall d) Absence of flagella
- 3- The process in which the macromolecules are broken down into simple molecules is:
a) Catabolism b) Anabolism
c) Induction d) Repression
- 4- DNA Gyrase is
a) Responsible for unwinding of the two parental DNA strands during replication.
b) Responsible for permanently joining two DNA fragments.
c) Substance allows a cell to distinguish its self-DNA from foreign DNA.
d) a and b.
e) none of the above.
- 5- Point mutation results in
a) Change in a single nucleotide b) Change in a single codon
c) Change in a single gene d) Change in a single protein
e) Change in a single character f) All of the above
- 6- All the following statements accurately refer to DNA cloning **EXCEPT**:
a) A fragment of DNA from any source is inserted into a plasmid.
b) Plasmid is introduced into bacterial or yeast cell by conjugation.
c) It allows the production of large amount of genes in pure form.
d) It will probably allow for gene therapy in human.
- 7- The following is true about Bacterial chromosome **EXCEPT**
a) Serve as a template for its own replication
b) Store the genetic information
c) Made of amino acids
d) Composed of nucleotides
- 8- Concerning bacterial chromosome, it is:
a- It is composed of DNA
b- It contains no histone

- c- many of the DNA molecules extracted are circular
- d- the DNA accounts for about 2 to 3% of the dry weight of the cell
- e- all of these

9- The following are traits coded by plasmids **EXCEPT**

- a) Antibiotic resistance
- b) Pilus synthesis
- c) Nitrogen fixation
- d) Respiratory enzymes

10- The following are advantages of plasmids when used for genetic engineering

- a) Small
- b) ease of transformation
- c) Fit wide range of genes
- d) All of the above
- e) Only "b" and "c"
- f) Non of the above

11- In DNA molecule the two strands are linked to each other by

- a) Hydrogen bonding.
- b) Purine and purine base.
- c) Purine and pyrimidine base.
- d) Pyrimidine and pyrimidine base.
- e) a & b
- f) a & c

12- All of the following is true about bacterial chromosome **EXCEPT**

- a) Linear with two opening ends
- b) Its genes are distributed on the two strands
- c) Almost diploid
- d) Present in supercoiled configuration
- e) Not affected by gyrase enzyme

13- The following is function of the cell membrane **EXCEPT**

- a) Site of oxidative phosphorylation enzymes
- b) Site of extracellular hydrolytic enzymes
- c) Site of DNA synthesis
- d) Site of protein synthesis
- e) Responsible for selective permeability

14- The following is true about viruses **EXCEPT**

- a) Obligate intracellular parasites
- b) Contain either DNA or RNA
- c) Could infect animals, plants and bacteria
- d) Are metabolically active

15- Which of the following is not true about fimbriae?

- a) They are composed of protein
- b) They may be used for attachment
- c) They are found in Gram negative bacteria
- d) They may be used for motility

16- The transfer of DNA from a donor into a recipient cell through abacteriophage is

- a) Transcription
- b) Transduction
- c) Transformation
- d) Translation

- 17 - Frequency of spontaneous mutation increased by:
- a) Ultraviolet rays
 - b) Heating
 - c) Chemicals
 - d) Disinfectants.
 - e) a & c

- 18-The bacterial cell is referred to Lysogenic:
- a) When cell contain prophage
 - b) When cell contains inclusion bodies
 - c) When cell lysed by complement
 - d) When cell is put in hypertonic solution.

- 19- Which of the following is true concerning, teichoic acids:
- a) are found in the walls of many gram-positive bacteria.
 - b) make up the outer wall of gram-negative bacteria.
 - c) provide receptors for phages.
 - d) influence the permeability of the membrane

- 20- The cytoplasmic membrane:
- a) Is the target action of penicillin
 - b) Has specific receptors to bacteriophage.
 - c) Is deficient in mycoplasma.
 - d) Contains enzymes responsible for active uptake of nutrients.
 - e) All of the above .

III- Give an account on: (5 points)

1- Structure of influenza viruses and function of each structural unit.

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2- DNA- protein relationship.

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IV. Give a short account on the following: (9 points)

1. Types of T cell subsets.

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2. Phagocytosis.

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3. Mechanism of type II hypersensitivity reactions.

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V. Differentiate between the following:

(6 marks)

1. Active and passive immunity.

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2. Classical and alternative pathways of complement activation.

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VI. Draw a simplified diagram of MHC I & II molecules and label them.

(2 marks)

VII. Choose the correct answer:

(3 marks)

1. Allograft rejection is due to:

- a. Cell mediated immunity
- b. Humoral immunity
- c. All of the above
- d. Non of the above.

2. All hypersensitivity reactions are mediated by antibodies EXCEPT

- a. Type I hypersensitivity reactions
- b. Type II hypersensitivity reactions
- c. Type III hypersensitivity reactions
- d. Type IV hypersensitivity reactions

3. The following cytokines inhibit the immune response:

- a. IL 1 & IL6.
- b. IL 10 , TGF β 3
- c. IL4 & IL5
- d. IFN γ , IL2

4. The antibody that plays an important role in respiratory, urinary and bowel infections is:

- a. IgA
- b. IgE
- c. IgM
- d. IgG

- 5. An antibody or an antigenic receptor of the lymphocyte recognizes and responds to what component of an antigen?**
- a. Hapten
 - b. Epitope
 - c. Paratope
 - d. Constant region.
- 6. The process of deletion of lymphocyte clones that react with self molecules with high affinity is called ...**
- a. Negative selection
 - b. Positive selection
 - c. Lymphocyte stimulation
 - d. Antigen dependence

Good Luck

The oral examination will be today at 12:10 pm in the department of Microbiology for all students.



Assiut University
Faculty of Medicine
Department of Parasitology

Date: 24/6/2012
Time allowed: 2 hs.

***PARASITOLOGY EXAMINATION FOR SECOND YEAR OF
CLINICAL PHARMACY
SECOND TERM***

Answer the following question: (10 marks for each):

- 1- Mention 5 sources of parasitic infection with examples.
- 2- Mention intermediate host and infective stage of:
Fasciola gigantica - *Heterophyes heterophyes* *Schistosoma haematobium* - *Schistosoma mansoni* - *Taenia saginata*.
- 3- Mention the parasites causing the following diseases;
Verminous pneumonia - Visceral larva migrans - Elephantiasis -
Cutaneous larva migrans - Human coenurosis.
- 4- A child suffering from peri-anal skin itching:
 - What is the most probably causing parasite?
 - What is the infective stage?
 - How can you control this parasite?
 - How can you diagnose this parasite?
- 5- Complete:
 - Protozoa move by as,as....., asand as
 - *Entamoeba histolytica* habitat is and it causes amoebic
 - African sleeping sickness is caused by.....and its vector is
 - Oriental sore is caused by and its vector is
 - Human malaria is caused byand its vector is.....

أ.د. / عبد الله عبد السميع
رئيس قسم الطفيليات

الامتحان الشفوي بعد الامتحان التحريري مباشرة

Part I (Instructor; Prof. Dr. Elsayed A. Ibrahim) Pages 1-3

Total Marks 25 Marks

All Questions Should be Attempted

1-For each incomplete statement cited below mark (T) for the correct completion and (F) for the incorrect one among those following each statement. (10 marks)

1-Excessive weight variations between tablets that occur during manufacture may be due to;

- a- size separation of granules.
- b- presence of too fines in the granules.
- c- poor flow of granules to the die.
- d- less quantity or poor mixing of lubricants.

2-Film coating of tablets are more satisfactory than sugar coating because of

- a. the coating time is reduced considerably.
- b. the cost of production is decreased.
- c. tablets of better strength are produced.
- d. tablets of extended release are produced.

3-Tablet hardness depends on:

- a- the weight of the material used
- b- the space between the upper and lower punches at the time of compression.
- c- the pressure applied during compression.
- d- the nature and quantity of excipients used in tablet formulation.

4- Sugar coating of tablets is used to; • . .

- a- mask the unpleasant taste and odor of the drug present.
- b- protect the stomach from the irritant effect of the drug upon swallowing the tablet.
- c- delay drug action.
- d- protect the ingredients from decomposition on exposure to air and moisture.

5- Lyophobic colloids are:

- a- systems containing colloidal particles that interact to an appreciable extent with the dispersion medium.
- b- systems that owing to their affinity for the dispersion medium, they form colloidal dispersion or sols, with relative ease.
- c- systems the particles of which are stabilized only by the presence of electric charge on their surface.
- d- system that generally composed of inorganic particles dispersed in water e.g. are gold, silver, sulfur, and. silver iodide.

6- Binding in the die (a defect that could occur during tableting) maybe due to:

- a- poor lubrication of the granules. .
- b- entrapment of air in the tablet during compression which would escape when the pressure is released.
- c- poor flow of granules in the die.
- d- under dried granules.

7- The advantages of hard capsules compared to tablets include;

- a- low production cost
- b- few formulation problems
- c- better stability than tablets
- d- reproducible disintegration

8- Capping and splitting of tablets may be due to:

- a- entrapment of air in the tablet during compression.
- b- the use of too soft granules.
- c- poor lubrication of granules. ,
- d- the presence of excess of fine powder in granules.

9- Tablets and/or capsules are generally prepared for medicaments intended for systemic effect using oral administration because they are:

- a- easily handled by the patient.
- b- most convenient in self administration.
- c- most convenient to administer to unconscious patients.
- d- most convenient in emergency situation.

10-Association (amphiphilic) colloids are systems that:

- a- contain colloidal particles that interact to an appreciable extent with the dispersion medium.
- b- the dispersed phase of which consists of inorganic particles such as gold or silver.
- c- can be prepared spontaneously when the concentration of the amphiphiles exceeds cmc...
- d- The viscosity of which does not greatly increase as the concentration of the amphiphiles increases.

11- For each of the incomplete statements cited below state only two correct completions.

(10 marks)

1- The important advantages of soft capsules compared to hard gelatin capsules include:

a-

b-

2- Drug substances which are available in crystalline form can be compressed directly into tablets if they have the following characteristics.

a-

b-

3- drug stability considerations could determine

a-

b-

4- The main disadvantages of peroral solid dosage forms are;

a-

b-

5- Formulations for filling into capsules should have to meet some basic requirements as;

a-

b-

III- Give only one reason behind each of the following: (5 Marks)

1- Hardness is an important quality standard of tablets

2- It is reasonable to assume that a tablet fails to disintegrate adequately is unlikely to be efficacious.

3- Lyophilic colloids form colloidal dispersion or sols, with relative ease.

4- Most syrups contain a high proportion of sucrose.

5- Dextrose is used in Hydroiodic acid syrup instead of sucrose

GOOD LUCK
Elsayed A. Ibrahim

Part 11 (25 points) (د. منى المهدى)

Q1: Donate (T) for the true statement and (F) for the false one and correct the false one (3 points)

a) Spans are lipophilic in nature and form o/w emulsions while Tweens are hydrophilic in nature and form w/o emulsions ()

b) Angle of repose is used mainly for measurement of particle size of powders. ()

c) Temperature is a microencapsulation process in aqueous solution media. ()

Q2: Give reason (s) for the following: (3 points)

a) Soft water should be used in the preparation of emulsion stabilized with monovalent soaps.

b) Some eye drops like, hydrocortisone and neomycin are available as suspensions.

c) Ionic emulsifying agents should not be administered orally.

d) Camphor cannot pulverize easily by triturating.

Q3: Complete the following sentences (4 points)

a) Methods of measurement of particle size of powders are: .

- | | |
|----|----|
| 1) | 2) |
| 3) | 4) |

b) The parameters of sedimentation are:

c) Tests for identification of emulsion type are:

- | | |
|----|----|
| 1) | 2) |
| 3) | 4) |

Q4: Discuss (five) of the following with draw in case of need:

1) Function of microcapsules.

(15 points)

2) The difference between the flocculated and non-flocculated suspensions.

3) Problems of powders

4) Theories of emulsification

5) Complex coacervation of double wall microcapsules

6) Wurster process

GOOD LUCK

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

ملاحظات: اقرأ الأسئلة جيدا قبل أن تبدأ بالاجابة عليها – تتم الاجابة على كل الأسئلة – مبين على كل سؤال درجته – ورقة الأسئلة تتكون من ست صفحات

الجزء الأول (إ.د. سهير مصطفى الشنواني)

السؤال الأول: ضع علامة صح (√) أو علامة خطأ (x) للاجابة على الأسئلة الآتية:

(١٠ درجات)

١- يتكون مجلس النقابة العامة للصيادلة من النقيب وخمسة وثلاثون عضوا من الأعضاء المقيدون بسجلات النقابة. ()

٢- تعقد الجمعية العمومية لنقابة الصيادلة اجتماعها العادى فى شهر يناير من كل عام ()

٣- يجوز للصيادلة صرف تذاكر طبية تحتوى على مادة مخدرة بعد ثلاثة أيام ()

٤- يجوز للعضو الواحد الجمع بين الترشيح لمجلس النقابة العامة ومجلس النقابة الفرعية فى وقت واحد ()

٥- يجوز لأى صيدلى مزاولة المهنة بأى صورة من الصور قبل القيد فى الجدول العام للنقابة والتسجيل فى النقابة الفرعية ()

٦- يكون انتخاب النقيب لنقابة الصيادلة لمدة أربع سنوات ولا يجوز انتخابه أكثر من مرتين متتاليتين ()

٧- تعقد الجمعية العمومية لأتحاد نقابات المهن الطبية فى مايو من كل سنة ()

٨- لا يجوز جلب أو تصدير الجواهر المخدرة من أو الى خ.م.ع. الا بمقتضى ترخيص كتابى من وزارة الصحة وبالشروط التى حددها القانون ()

٩- على الصيدلى المدير أن يرسل بكتاب موسى عليه الى وزارة الصحة فى الأسبوع الثانى من كل شهر كشفا موقعا عليه منه مبينا به الوارد من الجواهر المخدرة والمنصرف منها خلال الشهر السابق ()

١٠- يجوز للصيدلى أن يروج لمهنته بأى طريق من طرق الاعلان والنشر لجلب العملاء ()

(٢٥ درجة)

السؤال الثانى: أذكر ما يأتى:

١- تكون العقوبات التأديبية لكل صيدلى ارتكن أمور مخلة بشرف المهنة أو اهمل فى عمل يتصل

بالمهنة على الوجه الآتى:

- أ-
- ب-
- ت-
- ث-
- ج-

٢- ما هي البيانات التى يجب ان يشملها قيد التذاكر الطبية التى تحتوى على الجواهر المخدرة:

- أ-
- ب-
- ت-
- ث-

٣- يختص مجلس النقابة العامة للصيادلة بما يأتى:

- أ-
- ب-
- ت-
- ث-
- ج-

٤- ما هي شروط العضوية والقيد بجدول النقابة العامة للصيادلة:

- أ-
- ب-
- ت-
- ث-
- ج-

٥- ما هي الأعمال التى تختص بها الجمعية العمومية لنقابة الصيادلة:

- أ-
- ب-
- ت-

ث-

ج-

السؤال الثالث: أكمل الآتى:

(١٠ درجة)

- ١- ينقسم رجال الضبط القضائى الى ثلاث فئات و و
- ٢- تنتخب الجمعية العمومية للنقابة الفرعية مجلس يتكوم من رئيس وستة أعضاء فيما عدا القاهرة فيكون المجلس من رئيس و أعضاء الاسكندرية من رئيس و أعضاء.
- ٣- يكون انتخاب النقيب لمدة سنوات ولا يجوز انتخابه أكثر من
- ٤- يضم اتحاد نقابات المهن الطبية أعضاء نقابة و
- ٥- الجواهر المخدرة هي مثل و و
- ٦- من خصائص أدوية X لا { بأنها تعالج المشاكل الصحية مثل وليست الحالات
- ٧- تلتزم المكاتب العلمية بالقيام ويحظر عليها القيام
- ٨- يجوز الترخيص بإنشاء مكتب علمى مشترك لعدة أو
- ٩- يجب حفظ التذكرة الطبية التى تحتوى على الجواهر المخدرة فى بعد صرفها ولا ترد ويكون الاحتفاظ بها لمدة
- ١٠- على العضو المشترك فى نقابة الصيادلة عند تغيير مقر مزاولة أن يخطر المسجل بها والنقابة الفرعية الجديدة التى يزاول المهنة فى نطاقها وذلك فى خلال من تاريخ

الجزء الثانى (أ.د. أحمد مصطفى السيد)

طبقا للقانون ١٢٧ لسنة ١٩٥٥ بشأن مزاولة مهنة الصيدلية وكذلك الاشتراطات الصحية الخاصة بإنشاء المؤسسات الصيدلية الصادرة سنة ١٩٥٦ أجب على الأسئلة الآتية:

(١٣ درجة)

السؤال الرابع: أذكر الآتى:

١- الخطوات القانونية الواجب اتخاذها فى حالة وفاة صاحب الصيدلية (٥ درجات)

٢- خصائص المواد التى يشتمل عليها الجدول الثالث الملحق بالقانون ١٢٧ وأذكر مثالين لتلك المواد (٣ درجات)

٣- تعريف المؤسسات الصيدلانية (٥ درجات)

السؤال الخامس: ضع علامة صح (√) امام العبارات الصحيحة وعلامة خطأ (x) امام العبارات الخاطئة وأذكر السبب فى ذلك (٢١ درجة)

١- يجب على الصيادلة تحت التمرين اخطار وزارة الصحة بكتاب موسى عليه بتاريخ بدئهم العمل بهذه المؤسسات وكذلك اخطارها بمجرد تركهم العمل بها ()

٢- يجب أن تكون الصيدلية مزودة على الدوام ببعض الأمبولات المخدرة ()

٣- يجب أن لا تكون أرضية الصيدلية منخفضة عن مستوى الطريق العام أو الأرض المجاورة للمحل
()

٤- تخضع المؤسسة الصيدلية للتفتيش السنوى الذى تقوم به السلطة الصحية المختصة
()

٥- يجوز لوزير الصحة بعد أخذ رأى نقابة الصيادلة أن يرخص لصيدلى أجنبى بمزاولة مهنة الصيدلة
بمصر ()

٦- لا يجوز تحضير أى تذكرة طبية مكتوبة بعبارات أو علامات مصطلح عليها مع كاتبها والصيدلى
مدير الصيدلية ()

٧- كل دواء يحضر بالصيدلية يجب أن يوضح على بطاقته اسم الصيدلية وعنوان واسم صاحبها وتاريخ التحضير ()

السؤال السادس: اشرح الفرق بين المستحضرات الدستورية و المستحضرات الخاصة (٦ درجات)

السؤال السابع: أذكر الشروط اللازمة لوجود حيوانات بمصانع الأدوية؟ (٥ درجات)

مع أطيب تمنيات: الدكتور ه سهير الشنواني والدكتور أحمد مصطفى

بِسْمِ اللّٰهِ الرَّحْمٰنِ الرَّحِیْمِ

ASSIUT UNIVERSITY
FACULTY OF PHARMACY
Second-Year students
Clinical pharmacy

(BASIC MICROBIOLOGY & IMMUNOLOGY)

Date : 16/6/2013

Time : 3 hours

I- Write either (T) for true or (F) for false in front of the following statements (10Marks)

1-	Antigenic shift is a minor changes due to point mutation
2-	Bacterial exotoxin is mainly produced by gram-negative bacteria.
3-	Lysozymes are acting only on Gram-negative cell membrane
4-	Interferons are glycoproteins produced by any viral infected cells
5-	Flagella distributed over the entire cell is known as amphitrichous
6-	At constant temp. bacteria are killed by moist heat in shorter time than dry heat
7-	Hyaluronidase enzyme promote fibrin clotting and localization of organism
8-	During stationary phase there is increase in cell mass rather than cell number
9-	Phenotypic variation is occurring in response to environmental conditions
10-	Mutation occur due to improper copy of the DNA
11-	Endotoxin is generally released from lysogenic cells
12-	Autotrophic bacteria can grow on simple ordinary media .
13-	Loss of bacterial capsule is mostly associated with loss of virulence.
14-	Haemagglutinin antigen is the target of neutralizing Abs
15-	The role of mRNA in gene expression is to carry amino acids
16-	Hot air oven is best used for sterilization of surgical dressing
17-	Eukaryotic cell wall mainly formed of peptidoglycan , cellulose and chitin
18-	<i>Cytoplasmic membrane is responsible for excretion of hydrolytic enzymes and toxins</i>
19-	Conjugative plasmids are of large molecular weight.
20-	Bacteriocins : are toxins or enzymes that are produced by certain bacteria and are lethal for other bacteria.
21-	Virus composed of nucleocapsid containing both DNA and RNA
22-	Catabolism ia a process of biodegradation of large organic molecules in the cell into simpler molecules .
23-	Heterotrophs are bacteria which can utilize simple inorganic substances, e.g. CO ₂ as a source of carbon and ammonium salts as a source of nitrogen .
24-	Absolute alcohol is more efficient than dilute alcohol
25-	<i>Prions: Are infectious protein particles that are composed solely of protein</i>

26-	Genes responsible for production of endotoxins are located on plasmids and bacteriophages
27-	Fungi grow best at a pH range between 7.0 - 8.8
28-	Pasteurization is a powerful method of sterilization, kill all spore and non-spore forming microorganisms
29-	Plasmids and transposons are of essential non variant structure of bacteria.
30-	Bacteria in biofilms are more sensitive to the action of antibiotics

II- Circle the letter of the most appropriate choice of each of the following statements (15 Marks)

1-Bacterial cell :

- a- Contains only one type of nucleic acid (either RNA or DNA)
- b- Contain mitochondria.
- c- Has one circular chromosome.
- d- Has no cell wall .

2- Which one of the following is not adherence factor

- a- Endotoxin
- b- Techoic acid
- c- Pili
- d- Polysaccharide capsule

3- Which one of the following is required for transformation :

- a- Presence of sex pili
- b- Presence of competent receipt cell
- c- Presence of phage
- d- Formation of sex contact between cells

4-Which of the following statements is true concerning fimbriae?

- a- most gram-positive bacteria have a set of fimbriae
- b- most gram-negative bacteria have a set of fimbriae
- c- they are longer than flagella
- d- they are thicker than flagella
- e- once removed, they do not regenerate during cell growth

5-All of the following descriptions refer to the nuclear body in bacteria **Except.**

- a- it is referred to as the nucleoid
- b- it is free of ribosomes
- c- it is composed of ribosomes
- d- it represents about 10% of the cell volume
- e- it lacks a nuclear membrane

6-The **teichoic** acids of gram-positive bacteria are characterized by all of the following **Except**

- a- they protrude on the surface
- b- they provide much of the wall's antigenic specificity
- c- they play a role in wall morphogenesis
- d- they consist of chains of glycerol or ribitol residues
- e- they do not provide antigenic specificity

7- Which of the following statement does **NOT** apply to bacterial endospores?

- a- they can survive in the dry state
- b- they are formed by aerobic Bacillus
- c- they are formed by anaerobic clostridia
- d- they do not take ordinary stain
- e- they are metabolically active

8- Which of the following statement is **true** concerning Plasmids.

- a- are single-stranded DNA molecules
- b- carry optional genes
- c- carry genes essential for growth
- d- are always found in linear form
- e- are present in very few bacteria

9-Resistance of spores to drying , heat is due to the following, **EXCEPT** :

- a- High content of calcium
- b- High content of water
- c- Low metabolic activity
- d- Presence of cortex and outer membrane.

10- In which stage of growth is there a slow loss of cells through death that is just balanced by the formation of new cells through growth and division?

- a- lag phase
- b- acceleration phase
- c- exponential phase
- d- maximum station phase
- e- decline phase

11- PCR is used in diagnosis of viral infection to detect :

- a- the virus particle during latency .
- b- minimal amounts of viral nucleic acid .
- c- integrated viral genome .
- d- none of the above .

12- N-acetyl muramic acid is a component of :

- a- Cytoplasmic membrane
- b- Cell wall
- c- Capsule
- d- Flagella

13- Bacteria that grow at temperatures as high as 50°C to 55°C are known as:

- a- psychrophiles
- b- thermophiles
- c- mesophiles
- d- cryophiles
- e- halophiles

14- All of the following description refers to conjugation in gram-positiv bacteria **Except**

- a- it depends on sex pili
- b- it does not depend on sex pili
- c- donor cells form a protein adhesin on the surface
- d- adhesin on the surface causes aggregation with recipient cells
- e- recipient cells excrete small peptide sex pheromones (eg, *Strept. faecalis*)

15- A mutation in which purine is substituted for pyrimidine, it is known as

- a- deletion
- b- addition
- c- transversion
- d- transition

16- The most primitive mode of gene transfer occurs by :

- a- transformation
- b- transduction
- c- conjugation
- d- cell fusion
- e- all of these

17- All of the following description refers to the function of mesosome **except** :

- a- play a role in cell division .
- b- site of excretion of penicillinase .
- c- site of respiratory enzymes.
- d- play a role in protein synthesis .
- e- increase efficiency of cytoplasmic membrane permeability and active transport .

18- Function of Capsule is :

- a- Protection of bacterial cell from phagocytosis .
- b- giving shape and rigidity to bacterial cell .
- c- Selective permeability .
- d- Secretion of hydrolytic enzymes .

19- Pili have two functions :

- a- Nutrients uptake and storage .
- b- Locomotion and nutrient uptake .
- c- Conjugation and adherence to various kinds of cells .
- d- Helps in typing bacteria and nutrients uptake .

20- The rigid cell wall of gram-positive bacteria has been identified chemically as

- a- peptidoglycan
- b- glycopeptide
- c- mucopeptide
- d- murein
- e- all of these

21- Concerning bacterial chromosome , it is :

- a- It is composed of DNA
- b- It contains no histone
- c- many of the DNA molecules extracted are circular
- d- the DNA accounts for about 2 to 3% of the dry weight of the cell
- e- all of these

- 22- The cytoplasmic membrane :
- a- Is the target action of penicillin
 - b- Has specific receptors to bacteriophage .
 - c- Is deficient in mycoplasma .
 - d- Contains enzymes responsible for active uptake of nutrients .
 - e- All of the above .
- 23 - Organisms that can use only molecular oxygen as the final acceptor are referred to as :
- a- obligate anaerobes
 - b- facultative anaerobes
 - c- obligate aerobes
 - d- strict anaerobes
- 24- Multi-site mutation involves :
- a- The substitution of one nucleotide for another .
 - b- The deletion of one or more nucleotide .
 - c- Extensive chromosomal deletions .
 - d- Insertion of one or more nucleotides .
- 25- Point mutation involves :
- a- Chromosomal duplication .
 - b- Deletion large segment of chromosome.
 - c- The substitution of one nucleotide for another .
 - d- All of the above .
- 26- Which of the following is **true** concerning , teichoic acids :
- a- are found in the walls of many gram-positive bacteria.
 - b- make up the outer wall of gram-negative bacteria.
 - c- provide receptors for phages.
 - d- influence the permeability of the membrane
- 27- Recovery from infectious disease correlates with :
- a- Lag phase
 - b- Stationary phase
 - c- Exponential phase
 - d- Decline phase

28-The bacterial cell is referred to Lysogenic :

- a- When cell contain prophage
- b- When cell contains inclusion bodies
- c- When cell lysed by complement
- d- When cell is put in hypertonic solution.

29- Frequency of spontaneous mutation increased by :

- a-Ultraviolet rays
- b- Heating
- c- Chemicals
- d- Disinfectants.
- e- a & c

30- All the following statements accurately refer to DNA cloning **EXCEPT:**

- a- A fragment for DNA from any source is inserted into a plasmid.
- b- Plasmid is introduced into bacterial or yeast cell by conjugation.
- c- It allows the production of large amount of genes in pure form .
- d- It will probably allow for gene therapy in human.

III Immunology

Choose the correct answer.

- 1) The major disadvantage of passive immunization is that it
 - a- Is ineffective
 - b- Is expensive
 - c- Interferes with active immunization
 - d- Induces short-lived immunity

- 2) The major disadvantage of active immunization is that it
 - a- Causes prolonged immunity
 - b- Induces rapid onset of immunity
 - c- Induces slow onset of immunity
 - d- Causes serum sickness

- 3) Hemolytic disease of newborn infants can be prevented by
 - a- Exchange transfusion
 - b- Administration of allergen
 - c- Antihistamines
 - d- Administration of anti -Rh antibodies

- 4) A group O patient can safely receive
 - a- Type A blood
 - b- Type O blood
 - c- Type B blood
 - d- Type AB blood

- 5) Mast cell granules contain
 - a- Immunoglobulin
 - b- Complement
 - c- Epinephrine
 - d- Histamine

- 6) Transplanted cells are mainly destroyed by
 - a- B cells
 - b- macrophages
 - c- neutrophils
 - d- T cells

- 7) Corneal grafts are not rejected because they
 - a- Are nonantigenic
 - b- Have no lymphatic drainage
 - c- Do not possess histocompatibility antigens
 - d- Are not exposed to antibodies

8) The major target of cytotoxic T cells within a kidney allograft is

- a- neutrophils
- b- macrophages
- c- vascular endothelial cells
- d- glomerular cells

9) The major clinical problem associated with bone marrow allograft in humans is

- a- contact dermatitis
- b- aplastic anemia
- c- allograft rejection
- d- graft versus host disease

10) A hapten is a

- a- carbohydrate side chain
- b- amino acid side chain
- c- small molecule attached to a protein
- d- antibiotic

11) An auto antigen is a

- a- antigen from bacteria
- b- self-antigen
- c- carbohydrate antigen
- d- nucleic acid

12) What is an opsonin?

- a- a chemotactic factor
- b- a type of granulocyte
- c- a substance that enhances phagocytosis
- d- a lysosomal enzyme

13) A receptor that binds antibody to a cell surface is called a

- a- Fc receptor

b- complement receptor

c- CD molecule

d- integrin

14) Macrophages can be activated by

a- interferon

b- antibodies

c- complement

d- all of the above

15) Antigen presenting cells are

a- B lymphocytes

b- dendritic cells

c- macrophages

d- all of the above

16) Class I MHC molecules are found on

a- B cells and macrophages

b- T cells only

c- all nucleated cells

d- neutrophils, T cells, and B cells

17) Exogenous antigen processing mainly occurs within

a- T lymphocytes

b- macrophages

c- plasma cells

d- none of the above

18) Helper T cells are distinguished by having which marker?

a- CD2

b- CD4

c- CD3

d- MHC class II

19) The term " MHC restriction" refers to the

a- inheritance of MHC antigens

b- need for antigen to be recognized in association with MHC molecules

c- problems associated with allograft rejection

d- need for MHC molecules in order to reject grafts

20) Helper T cells recognize antigen on antigen- presenting cells as antigen

a- alone

b- with MHC class I product

c- with MHC class II product

d- with complement

21) A typical delayed hypersensitivity reaction reaches maximum size in

a- minutes

b- 6 to 10 hours

c- 24 to 48 hours

d- 7 to 10 days

22) Among the key molecules that mediate cell- mediated cytotoxicity are

a- perforin

b- immunoglobulin

c- complement

d- integrins

23) Serum IgM molecules usually have

a- 10 light chains

b- 10 heavy chains

c- a j chain

d- all of the above

24) Which class of immunoglobulin activates complement upon binding with antigen?

a- IgM

b- IgA

c- IgD

d- IgE

25) Mature antibody producing cells are called

a- plasma cells

b- T cells

c- neutrophils

d- immunoblasts

26) Antibodies are

a- foreign substances that stimulate an immune response.

b- a form of vaccine.

c- serum proteins that protect the body.

d- a type of cell that protects the body.

27) Complement used for serological tests is usually derived from

a- horses

b- guinea pigs

c- sheep

d- rabbits

28)- The movement of neutrophils under the influence of external chemical gradient is called

a- endocytosis.

b- chemotaxis.

c- phagocytosis.

d- chemolysis.

29) What is an opsonin?

a- a chemotactic factor.

b- a type of granulocyte.

c- a chemokine.

d- a substance that enhances phagocytosis.

30) The thymus is

- a- a primary lymphoid organ.
- b- a secondary lymphoid organ.
- c- a reticuloendothelial organ.
- d- all of the above.

31) Neonatal thymectomy causes an immediate

- a- loss of cell-mediated immune response.
- b- drop in peripheral blood lymphocytes.
- c- loss of antibody-mediated immune response.
- d- all of the above.

32) Which complement component has the higher concentration in serum?

- a- C1q
- b- C1r
- c- C3
- d- factor B

33) Which complement component produces an anaphylatoxin?

- a- C1
- b- C2
- c- C3
- d- properdin

34) Which complement component has chemotactic properties?

- a- C1a
- b- C2a
- c- C4a
- d- C5a

35) C9 is a member of which family of proteins?

- a- immunoglobulins
- b- perforins

c- cytokines

d- acute- phase proteins

36) Which is the antibody that can cross the placenta?

a- IgM

b- IgG

c- IgE

d- IgA

37) The antibody that mediates allergic reactions is

a- IgE

b- IgA

c- IgD

d- IgM

38) Innate immunity involves all except

a- anatomic barriers

b- phagocytic

c- inflammatory mechanisms

d- antibody production

39) The function of macrophages include

a- phagocytosis

b- antigen presenting cells

c- cytokines production

d- all of these

40) Antiviral glycoprotein produced by living cells in response to viral attack is

a- natural killing cells

b- complement system

c- interferons

d- phagocytes

41) The major molecules responsible for rejection of transplant is

- a- B cells
- b- T cells
- c- MHC molecules
- d- antibodies

42) MHC class I is a surface molecule present on

- a- B cells
- b- all nucleated cells
- c- APC cells
- d- T cells

43) Which of the following has the maximum transplantation success rate

- a- autograft
- b- xenograft
- c- allograft
- d- syngeneic graft

44) The transfer of tissue between genetically different individuals of the same species is called

- a- autograft
- b- xenograft
- c- allograft
- d- syngeneic graft

45) Which of the following types of hypersensitivity is antibody mediated

- a- Type I
- b- Type II
- c- Type III
- d- all of these

46) T cell mediates

- a- humoral immunity

- b- non- specific defence
- c- cell mediated immunity
- d- non of these

47) The characteristics of adaptive immunity include

- a- specificity
- b- immunologic memory
- c- discrimination of self from non-self antigens
- d- all of these

48) Injection of anti- venom against snake bite is an example of

- a- passive immunity
- b- active immunity
- c- non-specific immunity
- d- phagocytic immunity

49) Active immunity involves

- a- contact with foreign antigens
- b- immunologic memory
- c- slow primary response
- d- all of the above

50) The characteristics of passive immunity include

- a- immediate relief
- b- no immunologic memory
- c- resistance for a short period only
- d- all of these



Department of Medical Biochemistry
Faculty of Medicine

Final Exam.
For clinical Pharmacy Students (II)

Date: 30-5-2013
Time: 2 h

I- Illustrate with formulae:

(5 marks each)

- 1- Five reactions for synthesis of sugar acids.
- 2- Chemical structure and four functions of glutathione.
- 3- Chemical structures of hydroxyl amino acids.
- 4- Chemical structure and function of cholesterol.

II- Express using one word on the following:

(1 mark each)

- 1- A pH at which zwitter ion is formed.
- 2- The heaviest (M. wt.) one of the twenty amino acids.
- 3- The essential sulfur containing amino acid.
- 4- A derivative of histidine acts as antioxidant.
- 5- The mucopolysaccharide that present in cartilage and tendons.
- 6- Galactosans that used as bacterial media.
- 7- The lipoprotein used as a predictor of atherosclerosis.
- 8- The name of the lung disease caused by deficiency of phospholipids.
- 9- The prostaglandin that induce labor.
- 10- The chemical structure of sphingosine base connected with fatty acid.

III- Enumerate, Four of the following:

(4 marks each)

- 1- Separation techniques for proteins.
- 2- Bonds responsible for protein structure.
- 3- Functions of glycerol.
- 4- Differences between sucrose and invert sugar.
- 5- Functions of cellulose.

GOOD LUCK



Assiut University
Faculty of Pharmacy
Pharm.Anal.Chem. Dept.
Clinical Pharmacy

Instrumental Analysis[PC 407]
Final Exam.
25/5/2013
Time allowed: One hour

I-Potentiometry:

(Prof.Dr. SamiaElgizawy)

[11-Marks]

A- Complete:

- 1-When a metal rod is immersed into a solution of its salt , there is a tendency for metal to dissolve This tendency is termed-----
- 2-The cell where chemical reaction occurs to produce electrical energy (store energy) Called-----
- 3- -Direction of current is reversed in -----cell.
- 4- ----- is a laboratory device used to connect the oxidation and reduction half-cells of a voltaic cell.
- 5- -----is the field of electroanalytical chemistry in which potential is measured under the conditions of no current flow.
- 6- -----,-----,-----
are reference electrodes.
- 7-Indicator electrodes are either-----,or-----

B- Sketch a diagram of combined glass electrode.

II- Chromatography:**(Prof.Dr. SamiaElgizawy)****[11-Mark]****A-Compare between the following pairs:**

1-

	normal phase	reversed phase
stationary phase		
mobile phase		
compounds elute first		

2-

	HPLC	GC
Type of stationary phase		
Type of mobile phase		
Type of detector used [One example]		

3-

	Paper chromatography	TLC
Type of stationary phase		
Type of mobile phase		
Mechanism of separation		

B-Sketch a diagram for GC .

III-Spectrophotometry & fluorimetry:

1- Multiple choice Questions:

(15Marks)

1- Wave no. is inversely related to:

- a- Frequency
- b- Wavelength
- c- Energy
- d- none of the above

2- Which of the following bands are red shifted by increasing solvent polarity:

- a- Peaks associated with $n-\pi^*$ transition
- b- Peaks associated with $\pi-\pi^*$ transition
- c- Peaks associated with $\sigma-\sigma^*$ transition

3- At pH 1 absorption band of aniline is:

- a- Red shifted.
- b- Blue shifted.
- c- Not changed.

4- Which of the following is considered a chromophore:

- a- Cl
- b- OH
- c- SH
- d- none of the above

5- Benzene has the following absorption bands:

- a- 184, 204 & 254.
- b- 270, 280 & 320.
- c- 180, 227 & 400.

6- Which of the following compounds is more fluorescent:

- a- Pyridine.
- b- Thiophane.
- c- anthracene.
- C- benzene

7- Which of the following are considered the best type of monochromators:

- a- Prisms
- b- Gratings
- c- Filters

8- Regular deviations of Beers plot may be due to:

- a- Unmatched cuvettes,
- b- Unclean handling,
- c- Stray light.
- d- Error in λ scale or slit width

9- Hg vapour lamp is used for measurement in:

- a- Visible region
- b- UV
- c- IR
- d- none of the above

10- Decrease in the intensity of absorption is called:

- a- Bathochromic shift.
- b- Hypsochromic shift.
- c- Hyperchromic effect
- d- Hypochromic effect.

2- Mention the difference between a spectrophotometer and a spectrofluorimeter: (4 Marks)

a-

b-

c-

d-

IV- Flame photometry & Atomic absorption spectrometry:

1- Mark (✓) in front of correct statement and (x) in front of wrong one and correct it: (8 Marks)

1-In flame photometry, the flame is the excitation source and the sample cell.

2-In atomic fluorescence, the monochromator and the detector are set at the same angle to the source lamp.

3-Chemical interference could be removed by increasing flame temperature.

4-flame emission spectroscopy is used mainly for the determination of alkali metals and easily excited elements.

5-In atomic absorption, excitation is achieved by a source lamp and the emitted light is measured.

6- Ionization interference could be removed by decreasing flame temperature

2-Draw a diagram for a flame photometer. (3 Marks)

Assiut University
Faculty of Pharmacy
Pharmacy
Dept. of Pharmaceutics

(Clinical Pharmacy) Program
Semester No 4 Clinical

Pharmaceutical dosage forms-1 Final Exam:

Date: June, 11th, 2013

Time Allowed Two Hours Total Marks (50 Marks) Total Pages:

The examination is formed of Two Parts. All parts should be answered.

Part I (Prof. Dr. Elsayed A. Ibrahim) Pages 1-4

Total Marks 25 Marks

All Questions Should Be Attempted

I-Give only one reason behind each of the following: (5 Marks)

- 1- Most syrups contain a high proportion of sucrose.

- 2- It is reasonable to assume that a tablet fails to disintegrate adequately is unlikely to be efficacious.

- 3- Lyophilic colloids form colloidal dispersion or sols, with relative ease.

- 4- The addition of large amounts of hydrophilic colloid to hydrophobic colloid of opposite charge stabilizes the system.

- 5- Addition of a small amount of electrolyte to a lyophobic sol tends to stabilize the system.

II-For each incomplete statement cited below mark (T) for the correct completion and (F) for the incorrect one among those following each statement. (10 marks)

1 - Selection of the flavor depends upon several factors as;

- a- the taste of the drug substance.
- b- the particle size of the drug substance.
- c- the age of the intended patient.
- d- the therapeutic effect of the drug substance.

2- Capping and splitting of tablets may be due to:

- a- entrapment of air in the tablet during compression.
- b- the use of too soft granules.
- c- poor lubrication of granules.
- d- the presence of excess of fine powder in granules.

3- Binding in the die (a defect that could occur during tableting) may be due to:

- a- poor lubrication of the granules.
- b- entrapment of air in the tablet during compression which would escape when the pressure is released.
- c- poor flow of granules in the die.
- d- under dried granules.

4- Excessive weight variations between tablets that occur during manufacture may be due to:

- a- size separation of granules.
- b- presence of too fines in the granules.
- c- poor flow of granules to the die.
- d- less quantity or poor mixing of lubricants.

5- Tablet hardness depends on:

- a- the weight of the material used
- b- the space between the upper and lower punches at the time of compression.
- c- the pressure applied during compression.
- d- the nature and quantity of excipients used in tablet formulation.

6- Film coating of tablets are more satisfactory than sugar coating because of

- a. the coating time is reduced considerably.
- b. the cost of production is decreased.
- c. tablets of better strength are produced.
- d. tablets of extended release are produced.

7- Sugar coating of tablets is used to:

- a- mask the unpleasant taste and odor of the drug present.
- b- protect the stomach from the irritant effect of the drug upon swallowing the tablet.
- c- delay drug action.
- d- protect the ingredients from decomposition on exposure to air and moisture.

8- Lyophobic colloids are

- a- systems containing colloidal particles that interact to an appreciable extent with the dispersion medium.
- b- owing to their affinity for the dispersion medium, they form colloidal dispersion or sols, with relative ease.
- c- the particles in such sols are stabilized only by the presence of electric charge on their surface.
- d- generally composed of inorganic particles dispersed in water e.g. are gold, silver, sulfur, and silver iodide.

9- Dehydration of hydrophilic colloidal particles

- a- can occur on addition of considerable amount of alcohol.
- b- can convert the hydrophilic sol to one possessing hydrophobic properties.
- c- can cause lowering of the zeta potential to a value below the critical zeta potential.
- d - can result in increased stability of the hydrophilic sol.

10-Association (amphiphilic) colloids are systems that:

- a- contain colloidal particles that interact to an appreciable extent with the dispersion medium.
- b- the dispersed phase of which consists of inorganic particles such as gold or silver.
- c- can be prepared spontaneously when the concentration of the amphiphiles exceeds cmc..
- d- The viscosity of which does not greatly increase as the concentration of the amphiphiles increases.

III- For each of the incomplete statements cited below state only two correct completions. (10 marks)

1- Drug substances which are available in crystalline form can be compressed directly into tablets if they have the following characteristics.

a-

b-

2- The main disadvantages of peroral solid dosage forms are;

a-

b-

3- The important advantages of hard capsules compared to tablets include:

a-

b-

4- Stabilization of a colloidal system is accomplished essentially by two means:

a-

b-

5- If considerable amount of alcohol, viz. 50% or more are added to an agar sol striking changes become manifested which include;

a-

b-

GOOD LUCK
Elsayed A. Irahim

Q1: Donate (T) for the true statement and (F) for the false one and correct the false one (2 points)

a) Dusting powders have systemic action. ()

b) An emulsifying agent having a greater hydrophilic character than hydrophobic character will promote a w/o emulsion internally. ()

c) Complex coacervation of poly-component system carried out by employing gelatin as the polycation and gum arabic and hemoglobin as the polyanion. ()

d) Cationic emulsifying agents should not administer orally ()

Q2: Complete the following sentences (6 points)

a) Methods of measurement of particle size of powders are:

- | | |
|----|----|
| 1) | 2) |
| 3) | 4) |

b) The parameters of sedimentation are expressed by:

c) Theories of emulsification are:

- | | |
|----|----|
| 1) | 2) |
| 3) | 4) |

Q3: Give reason (s) for the following: (4 points)

a) Synthetic emulsifiers are superior to natural gums and proteins

b) Tragacanth is preferred as thickening agent than acacia.

c) Soft water should be used in the preparation of emulsion stabilized with monovalent soaps.

d) Microcapsules reduce the side effect of irritating drugs

5) Problems of powder

6) Microencapsulation based on temperature change method.

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