

**All questions should be attempted**

**(70 marks)**

**(1)**

**Write short note on each of the following:**

**(24 marks)**

- 1- Define surface active agents, draw the HLB scale showing the functions on the basis of hydrophilic-lipophilic balance values.
- 2- The relation between the solubility of a compound and its surface activity-giving examples.
- 3- Two types of incompatibility involving surfactants.
- 4- Define emulsion and mention emulsion types.
- 5- Important advantages of emulsions over other liquid dosage forms.
- 6- What are the types of emulgents (emulsifying agents) that can be chosen for parenteral use? Why?

**(2)**

**I- Give a reason for the following:**

**(9 marks)**

- 1- Syrups must not be completely saturated with sucrose.
- 2- The selection of menstrum in the extraction of crude drug is important.
- 3- Solid dosage form is preferred than liquid dosage forms.
- 4- The addition of castor oil and camphor in flexible collodions.
- 5- Glycerites are not popular today as before.
- 6- Tetracycline is contraindicated in presence of calcium.

**II- Mention the difference between each of the following:**

**(5 marks)**

- 1- Spirits and elixirs.
- 2- Oral tablets and suppositories according to site of application, constituents, advantages and disadvantages.

← أنظر خلفه

**III- Write short notes on each of the following:**

**(9 marks)**

- 1- Factors affecting the selection of appropriate base of ointment.
- 2- Patient factors in dosage form design.
- 3- Methods for correcting physical incompatibilities and mention only one example for each method, the problem and how to correct it.

**(3)**

**I- Write briefly about each of the following:**

**(18 marks)**

- 1- Particle size and size distribution of powder.
- 2- Advantages of milling process for particle size reduction.
- 3- Elutriation method for particle size analysis.
- 4- Compound prescription.
- 5- Powder porosity and bulkiness.
- 6- Special problems of powder as a dosage form.

**II- Solve the following problems:**

**(5 maks)**

- 1- How many milliliters of a 1% stock solution of a certified red dye should be used in preparing 4000 ml of a mouth wash to contain 1: 20.000 (W/V) of the certified red dye as a coloring agent.
- 2- How many milliliters of a 2% iodine tincture and 7% strong iodine tincture should be used in preparing 3785 ml of a tincture containing 3.5% of iodine?

سيعد امتحان الشفوى عقب النظرى مباشرة لجميع الطلاب

والله ولى التوفيق

*All questions to be attempted and whenever possible illustrate your answers with drawing:*

**I) A- Mention a crude drug used in the treatment of the following disorders:**  
(20 marks)

- 1- Habitual constipation
- 2- Nasal and rectal bleeding
- 3- Glaucoma
- 4- Fungal infection
- 5- Bronchial asthma
- 6- Urinary tract infections

**B-1- Give the active constituents for the drugs used in (1), (3), (5) and (6)**  
2- Draw the diagnostic elements for the powdered drugs used in (1) and (6)

**II) A- For each of the following characteristic elements give only the name of one drug and its origin**  
(20 marks)

- 1- Crystal sheath ( )
- 2- Schizogenous oil gland in its misophyll ( )
- 3- Isobilateral leaf ( )
- 4- Absence of calcium oxalate ( )
- 5- Branched glandular hair ( )
- 6- Bundles of raphides of calcium oxalate ( )

**B- Mention the active constituents of drug (6) and one chemical test.**

**III) Complete the following:** (18 marks)

- 1- Liquid glucose is a product obtained by ..... and prepared by .....,  
it is employed as .....
- 2- Amylopectin gives ..... Colour with Iodine and hydrolyzed by  
..... to .....
- 3- Talc is ..... and used for .....

- 4- Alkaloids are ..... compounds having ..... activity found in ..... used as ....., ..... and with Mayer's reagent they give .....
- 5- Calcium oxalate is an ..... product, it is formed in the cells as a result of the reaction of .....
- 6- Twinned crystal can be detected in cleared mount of ..... while ..... crystals can be detected in *Datura stramonium*

**IV) A- Write (✓) or (X) and correct the false:** (12 marks)

- 1- Natural drying includes sun drying and freeze-drying ( )
- 2- Vacuum drying is used for drugs that are sensitive to high temp. ( )
- 3- Covering drugs with thin layer of CaCO<sub>3</sub> is called scraping ( )
- 4- Physico-chemical factor affecting storage include bacteria and insects ( )
- 5- Fumigation is the exposure of drugs to high temp. to kill insects ( )
- 6- Sophistication is the unintentional to add inferior material to a drug ( )
- 7- Admixture is the addition of one article to another through accident ( )
- 8- Lyophilization is used for drugs containing thermo labile constituents ( )
- 9- Presence of low % humidity helps fungal and bacterial growth ( )

- B-** Write advantages and disadvantages of collection of drug from cultivated plants (three only).

**Good Luck**

**Acid-base:**

**(Mark:33)**

**1- Give the reason(s) for the following:**

**(Mark =5)**

1- Addition of sucrose in the determination of CaO.

2- In the titration of H<sub>2</sub>SO<sub>4</sub> with NaOH, only one inflection appears.

3- Addition of mercuric acetate in the determination of aniline HCl in non aqueous medium.

4- Phenolphthalein renders colourless at pH 12.

5- FeSO<sub>4</sub> is not a primary standard.

**II- Complete the following:-**

**(Mark=6)**

1- Among the requirements for a substance to be a primary standard

a-----

b-----

c-----

2- Back (residual) titrations are used for

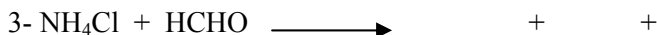
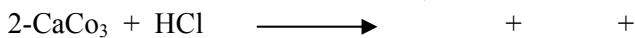
a-----

b-----

c-----

**III- Complete and balance the following equations**

**(Mark=3)**



**IV- Choose the correct answer:**

(Marks=5)

- 1- The pH of solution of 50 ml 0.1M  $\text{NH}_4\text{OH}$  with 30 ml 0.2 M  $\text{HCl}$  is equals to  
a-  $\text{pH} = \text{pK}_w - \text{pK}_b - \log [\text{salt}]/[\text{base}]$   
b-  $\text{pH} = -\log [\text{H}^+]$   
c-  $\text{pH} = 1/2\text{pK}_w - 1/2\text{pK}_b + 1/2\text{pC}_s$   
d-  $\text{pH} = \text{pK}_w - 1/2\text{pK}_b - 1/2\text{pC}_b$
- 2-The following compounds are secondary standard except:  
a-  $\text{NaOH}$                       b-  $\text{HCl}$                       c-  $\text{Na}_2\text{CO}_3$                       d-  $\text{FeSO}_4$ .
- 3- For differentiating the strength of different bases we must use  
a- protophilic solvent                      b- protogenic solvent  
c- aprotic solvent                      d- amphiprotic solvent.
- 4- Upon analysis of mixture of  $\text{Na}_2\text{CO}_3$  and  $\text{NaOH}$  using standard  $\text{HCl}$  and ph.ph indicator, the volume of  $\text{HCl}$  equals to  
a-  $1/2 \text{Na}_2\text{CO}_3 + \text{total NaOH}$                       b-  $1/2 \text{Na}_2\text{CO}_3 + 1/2 \text{NaOH}$   
c-  $\text{Na}_2\text{CO}_3 + \text{NaOH}$                       d-  $1/2 \text{Na}_2\text{CO}_3$  only.
- 5- The scientist who introduced the expression of pH is  
a- Ostwald                      b- Henderson                      c- Sorenson                      d- Lewis.
- 6-  $\text{K}_2\text{S}_2\text{O}_8$  can be titrated against standard  $\text{NaOH}$  after  
a- decomposition of its aqueous solution at room temperature  
b- decomposition of its aqueous solution at boiling temperature in the presence of  $\text{Ag}^+$  as catalyst  
c- decomposition of its aqueous solution at boiling temperature.  
d- decomposition of its aqueous solution at boiling temperature in the presence of glycerol.
- 7- The acid of choice for titration of weak base in non aqueous titration is  
a-  $\text{HClO}_4$  in glacial acetic acid                      b-  $\text{HClO}_4$  in aqueous solution  
c-  $\text{HCl}$  in glacial acetic acid                      d-  $\text{HCl}$  in aqueous solution
- 8- Sodium salicylate can determined by  
a- back titration                      b- displacement titration  
c- double indicator titration                      d- biphasic titration
- 9-  $\text{CaCO}_3$  is being determined through residual titration because it  
a- insoluble in water as well as in  $\text{HCl}$   
b- insoluble in water but soluble in  $\text{HCl}$   
c- soluble in water as well as in  $\text{HCl}$   
d- soluble in water but insoluble in  $\text{HCl}$

10-Upon analysis of mixture of borax and boric acid using standard HCl and on the same sample add glycerol and titrate with standard NaOH, the correlation between these volumes assuming molarity is the same

a-  $V(\text{HCl}) = 2V(\text{NaOH})$

b-  $V(\text{HCl}) = V(\text{NaOH})$

c-  $V(\text{HCl}) = 1/2V(\text{NaOH})$

d-  $V(\text{HCl}) = 3V(\text{NaOH})$

**V- By equations illustrate how you can analyze the following:**

**(Mention the method, standard, indicator, solvent and any percussions required for the determination) (Mark = 6)**

Formaldehyde

Benzoic acid

**VII- Give the scientific terms for the following:**

**(Mark = 5)**

- 1- The effect of solvent which make all the acids or bases have the similar strength.
- 2- A separate determination in which all conditions (vessels, amount of reagents and volumes of solution, temperature, etc) are virtually identical with those employed in the analysis except that the sample is omitted.
- 3-The number of gram equivalent of strong acid or strong base required to change the pH of 1 liter of buffer solution by one pH unit.
- 4-The theory which refers the change of the color of the indicator just to dissociation, where the color of the dissociated form differs than that of the undissociated one.

- 5- The weight of the analyte that is chemically equivalent to 1 ml of the titrant.
- 6- The difference between equivalence point and end point.
- 7- The solution which contains one gram equivalent weight of substance per one liter.
- 8- The theory which define a base as a substance containing an atom with unshared pair of electron, while an acid as a substance which accepts to share this electronic pair.
- 9- The pH units over which indicator changes its color.
- 10- Mixture of an indicator and inert dye.

**VII- Calculate the pH of solution obtained by mixing equal volumes of strong acid solution of pH = 3 with strong base solution of pH = 13. (Mark = 3.5)**



### **III precipitometry:**

(17 marks)

1- Multiple Choice Questions:

( 9 marks)

1-  $\text{Ag}^+$  could be determined using the following indicator:

- a- fluorescein
- b- Eosin
- c- Rhodamine 6G
- d- none of the above

2-  $\text{AgBr}$  has to be filtered off before titration using:

- a- Volhard's Method
- b- Mohr's Method
- c- Fajan's Method
- d- none of the above

3- In precipitometric titration curve, high inflection is obtained when:

- a-  $K_{sp}$  is small
- b-  $K_{sp}$  is high
- c- Concentration is low
- d- none of the above

4- If we titrate 100 ml (0.1M)  $\text{NaCl}$  with 0.11M  $\text{AgNO}_3$ , then pCl at equivalence point: ( $K_{sp}$  of  $\text{AgCl} = 1.2 \times 10^{-10}$ )

- a- 3.3
- b- 4.96
- c- 7.6
- d- none of the above

5- In the above problem pCl after addition of 120  $\text{AgNO}_3$  is:

- a- 7.08
- b- 7.6
- c- 4.96
- d- none of the above

6-  $\text{AgS}$  is soluble in:

- a-  $\text{CN}^-$
- b-  $\text{NH}_3$
- b- both a & b
- d- none of the above

7-  $\text{AgCl}$  is slightly soluble in:

- a- 0.01M  $\text{HCl}$
- b- Conc.  $\text{HCl}$
- c-  $\text{NH}_3$
- d-  $\text{CN}^-$

8-  $\text{Ca oxalate}$  is more soluble in:

- a-  $\text{NH}_3$
- b-  $\text{HCl}$
- c-  $\text{H}_2\text{O}$
- d- Acetic acid

9- In Mohr's Method the pH must be:

- a- Acidic or slightly alkaline
- b- Alkaline
- c- Neutral or slightly alkaline
- d- none of the above

2- How can you analyze the following ions? Mention the titrant, the indicator and the equations: (8 marks)

a- Chloride and cyanide mixture.

b-  $\text{Zn}^{2+}$  in  $\text{ZnSO}_4$

c-  $\text{Ba}^{2+}$  in  $\text{BaSO}_4$

#### **IV. Gravimetry**

**(5x4=20 marks)**

WRITE SHORTLY ON ONLY FIVE OF THE FOLLOWING:

[Using **Chemical Equations** Whenever possible]:

- 1- How can  $\text{Fe}^{3+}$  be determined gravimetrically  
(a) in the presence of  $\text{Al}^{3+}$ ? (b) In the presence of  $\text{Cr}^{3+}$  ?
- 2- How can  $\text{SO}_4^{2-}$  be determined gravimetrically by three different methods?
- 3- What are the different sources of interference in the gravimetric determination of  $\text{Cl}^-$  by  $\text{Ag}^+$ ?
- 4- What are the types of 'inclusion'? Show by examples.
- 5- Draw the "thermogravimetric curve" of calcium oxalate precipitate and mark the most satisfactory form to be weighed.
- 6- What are the forms of water that may be contained by the precipitate?

ملحوظة: يعقد الامتحان الشفوي عقب التحريرى (2008-1-23) من 7-4 مساء  
المجموعة من 400-1 ومن 7-9 مساء من 401 - الآخر

Assiut University  
Faculty of Medicine



Department of  
Medical Physiology

Mid- Term Examination  
In

"Medical Physiology"

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Time Allowed: one hour    1<sup>st</sup> Year students of Pharmacy    7 April 2008

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Name: .....

**Answer the following questions:-**

1-Stimulus, site of secretion and function of secretin hormone. (2 marks)

2- Conditioned reflex in salivary secretion. (2 marks)

3- Write notes on strength-duration curve. (4 marks)

4- Give an account on respiratory centers and their functions. (4 marks)

5- Mention functions of thyroxin hormone. (3 marks)

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*Good Luck*  
*Professor Mamdouh Anwar & the committee*



Final Examination  
In  
Medical Physiology

First Year  
Pharmacy students

12 June 2008  
Time Allowed: 3 hour

**Answer The Following:-**

- 1- Site of synthesis and functions of blood platelets.....(5).
- 2- Discuss briefly the factors affecting spermatogenesis .....(10).
- 3- What is pulmonary surfactant and mention its functions .....(5).
- 4- Mention types and causes of hypoxia .....(10).
- 5- Mention types, sites and activation of cholinergic receptors .....(5).
- 6- Define excitability and mention its phases in skeletal muscle .....(5).
- 7- Mention functions of gastric HCl .....(10).
- 8- Write notes on the functions of bile salts .....(5).
- 9- Discuss the factors affecting contractility of cardiac muscle .....(5).
- 10- Briefly discuss the factors affecting venous return .....(10).
- 11- Functions and control of secretion of parathormone hormone .....(10).
- 12- Mention functions of oxytocin hormone in female .....(5).
- 13- Physiological factors regulate basal metabolic rate .....(5).
- 14- Enumerate the functions of the kidney .....(5).
- 15- Mention the functions of cerebral cortex .....(5).

Good Luck

Professor Mamdouh M. Anwar

&

The Committee

الامتحان الشفهي بقسم الفسيولوجيا الطبية - كلية الطب - الساعة الثامنة صباحا  
لجميع الطلاب.

Date: 31/5/2008  
Time allowed: 3 hours

Assiut University  
Department of Pharmaceutics  
Faculty of Pharmacy

Physical Pharmacy I  
أولى حديث First year

**All questions are to be attempted**

**(70 marks)**

**I- (24 marks, 4 marks for each point)**

- 1- What is the importance of using a substance in a colloidal form?
- 2- Write briefly about the important methods used in colloidal purification and mention pharmaceutical applications.
- 3- "Most surfaces acquire a surface electric charge when brought into contact with aqueous medium." Explain this statement briefly, giving an account on the source of charge.
- 4- What are the physical properties of a well formulated suspension?
- 5- Mention briefly the wetting agents used in suspension giving an idea about the mechanism by which they exert their action.
- 6- Mention the type of flow of each of the following systems and the viscometer used in the measurement of the viscosity of each one:
  - 1- Simple liquids.
  - 2- Solution of polymers.
  - 3- Low concentrated suspension.
  - 4- High concentrated suspension.

**II- Write short notes on each of the following:**

**(23 marks)**

- 1- Liquefaction of gases and the important application. (3.5 marks)
- 2- Melting point of solids and intermolecular forces. (3.5 marks)
- 3- Some drugs that can be used as buffer, how? (4 Marks)
- 4- The in-vivo biologic buffer systems. (4 Marks)
- 5- The role of cosolvency in the solubility of Phenobarbital (with drawing diagram). (4 Marks)
- 6- Elevation of boiling point as a colligative property (with equations and diagram). (4 Marks)

أنظر خلف الورقة



**III- (23 marks)**

**A- Write briefly on each of the following, illustrate your answer with diagram and equations whenever possible: (7 marks)**

- 1- Influence of temperature on solubility of solid in liquid. (3.5 marks)
- 2- Distillation of binary mixtures. (3.5 marks)

**B- Write briefly on each or the following: (16 marks, 2 marks for each point)**

- 1- Assumptions and limitations of langmuir equation.
- 2- Eutectic systems (Give pharmaceutical examples).
- 3- Spreading coefficient.
- 4- Adsorption in not always a desired process.
- 5- Escaping tendency.
- 6- The effect pf pressure on the solubility of gases in liquids.
- 7- Van't Hoff and Morse equations for osmotic pressure.
- 8- Mention the applications of distribution law and discuss briefly only two.

يعقد امتحان الشفوى لجميع الطلاب بعد النظرى مباشرة بقسم الصيدلانيات

والله ولى التوفيق



*All questions to be answered and whenever possible, illustrate your answers with drawing*

لاحظ أن الأسئلة في صفتين

**I-A-Complete the following: (20 marks)**

- 1-Cinnamon bark is ...(1)....Family: ...(2)....., it is used as ...(3)... drug for its content of ...(4)..
- 2- Calcium oxalate crystals of cascara present in the form of .....(5)....., where in cinchona in the form of ...(6)...
- 3- Cascara bark must be stored for ...(7).... Before its use as ...(8)..... because .....(9)....
- 4- Witch-hazel bark is belonging to family ...(10)....while wild cherry is belonging to family....(11).....
- 5- Epiphytes can be used to differentiate between ...(12)...and ...(13)... bark
- 6- Canella bark contains ...(14)... which is used as ...(15)...
- 7- Quinine is used as ...(16)... and gives a blue fluorescence with ...(17)....
- 8- Callus formation is ..(18).. which formed by ...(19)... leading to ..(20)... its function

**II-A-Write short notes on the following: (10 marks)**

- 1- Galls, its types, active constituents and uses
- 2- Bark used as anthelmintic, its active constituents and how to test
- 3- Laticiferous secretory structures and its content

**B-Mention the diagnostic elements of the following powdered drugs (10 marks)**

Cascara, Cinnamon, Quillaia, Cinchona (2.5x4 marks)

من فضلك اقلب الصفحة

**III-A) Write (✓) or (x) for the following and correct the false: (5 marks)**

- 1- Saffron is used as non-carcinogenic natural colouring agent ..... ( )
- 2- When the male organ only is present, the flower is hermaphrodite ..... ( )
- 3- Tetradynamous means the presence of two long and two short stamens..... ( )
- 4- Scorpioid is one of the cymose inflorescence..... ( )
- 5- Dioecious means that male and female flowers on separate plants..... ( )

**B) For each of the following write the name, origin and active constituents:**

(12 marks=4x3)

- 1- Antihypertensive flower
- 2- A wood used in perfume industry
- 3- Anthelmintic flower
- 4- Insecticidal wood

**C) Write on the following:(10 marks, 1,2 each 3 marks, 3,4 each 3 marks)**

- 1- German chamomile and Roman chamomile (Differences between them)
- 2- Insecticidal flower (Draw the key elements)
- 3- Sapwood and Heartwood
- 4- Chemical test for pyrethrum and santonica (one test only for each)

**D) Define the following:**

(3 marks=3x1)

- 1- Epigynous flower
- 2- Tyloses
- 3- Substitute fibers

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رقم الجلوس:		اسم الطالب:
I	II	Total

**I- Redox Titration:**

**(10 Marks)**

**A-Mark (✓) for the correct statement and (X) for the wrong one**

**(Each item 1/2 Mark)**

The oxidation potential of  $I_2/I^-$  system decreases in presence of mercuric 1- salts.

2-Ferriin is used as redox indicator using  $Ce^{+4}$  as titrant.

3- $KMnO_4$  is reduced to  $K_2MnO_4$  in strong alkaline medium.

4- $H_2O_2$  behaves as oxidant and reductant.

5-The more the powerful the oxidant the stronger its conjugate reductant.

6-Equivalent weight of oxalic acid equals its molecular weight.

7-The following order is correct regarding the oxidation power  $IO_3^- > I^+ > I_2$ .

8-Picric acid can be determined bromometrically.

9-Bleaching powder can liberate  $I_2$  from  $KI$  in acid medium.

10- $H_2S$  is considered as pre-reductant.

من فضلك اقلب الصفحة

**B-Write, between brackets, the correct name or the scientific term**

**for each of the following:**

**(Each item 1/2 Mark)**

1- The reaction in which the iodate ( $\text{IO}_3^-$ ) is reduced to iodine cation.

{ }

2-The potential observed experimentally in a solution containing equal number of moles of the oxidized and reduced substances together with other specified substances at specified concentrations.

{ }

3-A plot which shows the change in electrode potential during the progress of a redox titration.

{ }

4-Determinations in which oxidants can be determined by liberating iodine from **KI**.

{ }

5-The mole of substance is divided by the number of electrons which one mole of this substance donates in the reaction.

{ }

6-A solution which contains  **$\text{MnSO}_4$ ,  $\text{H}_3\text{PO}_4$  and  $\text{H}_2\text{SO}_4$**

{ }

7-Internal indicators, highly colored compounds that undergo irreversible oxidation or reduction.

{ }

8- A quantitative relation of the potential of half cell to the concentration of ions in solution.

{ }

9- Reducing agent which can be used for the reduction of ions before their determination in the reduced form.

{ }

10- The oxidation product of thiosulphate by reaction with iodine.

{ }

**Complexometry**

**(5 marks)**

**I-Define the following:**

**1- Co-ordination number.**

**2-Masking agents.**

**II-Complete the following:**

**1-Back titration is useful when .....**

**2-Ammonia are rarely used as titrating in complexometric titration because .....**

**3-Titration of zinc ion versus EDTA at pH5 using ..... indicator.**

■ من فضلك اقرأ التعليمات الآتية جيدا قبل البدء فى الإجابة:

- 1- الأسئلة جميعها اجبارية.
- 2- الأسئلة على ثمان (8) صفحات فى أربع ورقات.
- 3- أسئلة الجزء الأول (Redox) على أربع صفحات.
- 4- أسئلة الجزء الثانى (Compeximetry) على صفحتين.
- 5- أسئلة الجزء الثالث (Statistics) على صفحتين.

■ الإمتحان الشفوى سيبدأ بإذن الله عقب الامتحان النظرى كالأتى:

من 1-345 الساعة 11.30 – 2.30 ظهرا

من 346 – الآخر الساعة 5.00 - 8.00 مساءا

■ أسماء الممتحنين:

- 1- أ.د./ حرية عبد المجيد محمد
- 2- أ.د./ سميحة عبد الرحمن حسين
- 3- أ.د./ ابراهيم حسن رفعت

■ أطيب التمنيات بالتوفيق.

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**All Questions are to be attempted**

**1- Redox Titration Prof.Dr.Horria A. Mohammed (35 Marks)**

**Question 1:**

**A- Write the balanced equation of the reaction between potassium permanganate and ferrous sulfate in acid medium. (2 Marks)**

**B- Calculate the equilibrium constant ( $K_{eq}$ ) of the above reaction  
( $E^0_{Fe^{+3}/Fe^{+2}} = 0.77\text{ V}$ ,  $E^0_{MnO_4^-/Mn^{+2}} = 1.52\text{ V}$ ) (2 Marks)**

**B- If chloride ions present in the above solution, what is the Problem?  
Mention How it can be overcome? (2 Marks)**

**Question 2:**

**Mark ( ✓ ) for the correct statement and ( X ) for the wrong one and correct the wrong** (Each item one Mark)

- 1- Starch is the specific indicator in all titrations involving iodine. ( )
- 2-  $M^0/M^{n+}$  system of positive potential can oxidize and displace those of negative potential. ( )
- 3- Titrations with ceric sulfate can be applied in alkaline medium. ( )
- 4- The sign of the standard electrode potential is similar to charge on the electrode. ( )
- 5- Diphenylamine is a redox indicator ( $E^0=0.76$ ,  $n=2$ ), accordingly, its  $E^0$  range from 0.75 – 0.78. ( )
- 6- The lower the pH, the weaker the oxidation potential of  $AsO_4^{3-}/AsO_3^{3-}$  system. ( )
- 7-  $H_2O_2$  behaves as oxidant and reductant. ( )
- 8- Standard bromine solution can be prepared by dissolving bromine in water. ( )
- 9-  $K_2Cr_2O_7$  has more than equivalent weight at different pH. ( )
- 10- Equivalent weight of  $Na_2S_2O_3$  equals its half molecular weight. ( )
- 11- When titrating 100 ml 0.1 N ferrous solution ( $E_{Fe^{+3}/Fe^{+2}}^0 = 0.77$  V)



- with 100 ml 0.1N ceric solution ( $E_{\text{Ce}^{4+}/\text{Ce}^{3+}}^0 = 1.44 \text{ V}$ ) in dil.  $\text{H}_2\text{SO}_4$ , the potential at equivalence point equals 1.33 V. ( )
- 12- Iodimetric determination of  $\text{SO}_3^{2-}$  is possible under anhydrous condition. ( )
- 13-  $\text{KMnO}_4$  can oxidize  $\text{Cl}^-$ ,  $\text{Br}^-$  and  $\text{I}^-$  at pH 5. ( )
- 14- Metallic iron can displace  $\text{Cu}^{2+}$  in its salts. ( )
- 15- Methyl red is used as redox indicator when titrating  $\text{AsO}_3^{3-}$  with  $\text{BrO}_3^-$  in acid medium. ( )
- 16- The oxidation product of thiosulfate, by reaction with oxidants stronger than iodine, is tetrathionate. ( )
- 17- In weakly alkaline medium glycerol is oxidized by  $\text{KMnO}_4$  into oxalate and  $\text{CO}_2$ . ( )
- 18- Chloroform is the specific indicator in Andrew's method. ( )
- 19- Isonicotinic acid hydrazide can be determined bromometrically and its reaction product is the bromoderivative. ( )
- 20- In determination of copper salts by treatment with excess of KI thiocyanate must be added at the beginning of titration to prevent adsorption of  $\text{I}_2$  on  $\text{Cu}_2\text{I}_2$ . ( )

**Question 3:**

**Explain, by equations only, How you can analyze the following:**

**a) Iodine solution. (3 Marks)**

**b) Mixture of acetic and formic acids. (4 Marks)**

**c) Vitamin C (ascorbic acid). (2 Marks)**

## II-Compleximetry

(20 marks)

1-Mention in one word or two words the scientific name or expression for the following : (7x1 points)

a-A compound whose color changes when it binds to metal ion.

( )

b-Chelating agent, non toxic, serves as an effective antidote for the treatment of lead poisoning.

( )

c-Complex species containing two metal ions or more than two metal ions.

( )

d-The value which give the ratio of the total uncombined EDTA (in all forms ) to the fully ionized form.

e-A substance added in complexation titration that prevents the formation of insoluble metal hydroxide but does not prevent the reaction of metal with EDTA.

( )

f-A type of EDTA titration in which the librated hydrogen ions are neutralized with standard alkali.

( )

g-Substance refers to the release of a metal ions from a complex.

( )

2-Explain (only be equations) how can you analyze the following:  
(2x2points)

a-Determination of iodide by mercuric chloride.

b- Determination of copper by cyanometric method.

**3-Write the most suitable indicator for each of the following titrations: (6x0.5 points)**

- a-Lead ions with EDTA at pH 10**
- b-Calcium ions with EDTA at pH 12.**
- c-Bismuth ions with thiosulphate at pH 1-3.**
- d-Mercuric ions with thiocyanate.**
- e-Halide ions with mercuric nitrate.**
- f-Zinc ion with EDTA at pH 10.**

**4-Mark the following with right (  $\checkmark$  ) or wrong ( x ) and correct the wrong one. (6x1 points)**

**a-Magnesium ions form stable complex with cyanide ions. ( )**

**b-Aluminium ions block Erio T indicator. ( )**

**c-Silver ions can be analyzed by direct titration with EDTA. ( )**

**d-The stability of EDTA complexes is affected only by pH. ( )**

**e-Direct titration of calcium ions with EDTA, Eriochrome Black T gives a poor end point. ( )**

**f-Ca-chelate is too weak to be titrated in acid solution, while mercury-chelate is strong enough to be titrated in that medium. ( )**

### III. STATISTICS

(15 marks)

#### Ques. I

(6 marks)

In a titrimetric method, the following volumes were obtained:

10.0, 9.9, 9.0, 9.9 & 9.7 ml.

-Should we reject or retain the outlier?

-Calculate the standard deviation, the coefficient of variation, and the standard error of the mean for the five measurements.

Rejection quotient, Q

n	Confidence level		
	Q <sub>90</sub>	Q <sub>95</sub>	Q <sub>99</sub>
3	0.941	0.970	0.994
4	0.765	0.829	0.926
5	0.642	0.710	0.821
6	0.560	0.625	0.740
7	0.507	0.568	0.680
8	0.468	0.526	0.634
9	0.437	0.493	0.598
10	0.412	0.466	0.568

#### Ques. II

(3 marks)

Mention the validation parameters (performance criteria) for an analytical method.

1		6	
2		7	
3		8	
4		9	
5		10	

**Ques. III****(3 marks)**Group A:Suggested methods for minimization of determinable errors:

- 1- Blank experiments.
- 2- Standard addition method.
- 3- Internal standard method.
- 4- Running a control determination.
- 5- Calibration of apparatus.
- 6- Use of independent method of analysis.

Group B:Some examples of determinable errors:

- Interference from excipients or additives of pharmaceutical formulations.
- Errors due to variation in analytical techniques.
- Impurities from some reagents or samples.
- Errors due to experimental procedures or steps like boiling and cooling.
- Errors due to equipments.
- Variations in experimental chromatographic conditions (e.g. in HPLC).

Put the proper number from group A into each of the items of group B.

**Ques. IV****(3 marks)**

Differentiate by definitions between (a) &amp; (b):

(a)	(b)
Accuracy:	Precision:
Ruggedness:	Robustness:
Limit of detection:	Limit of quantitation:
<i>With my best wishes, Prof. Dr. Ibrahim Hassan Refaat</i>	

أجب عن سؤالين فقط مما يلي:- (25 درجة لكل سؤال)

**السؤال الأول:-**

اكتب فى مجلس حقوق الانسان من حيث ( المبادئ التى تحكم عمله \_ تشكيله \_  
تعليق العضوية فيه \_ جلساته \_ نظام العمل الداخلى به)؟ (25 درجة)

**السؤال الثانى:-**

اشرح القواعد التى تحكم اللجنة المعنية بالحقوق الإقتصادية والإجتماعية والثقافية  
من حيث (انشائها \_ تشكيلها \_ اجتماعاتها \_ اختصاصاتها)؟ (25 درجة)

**السؤال الثالث:-**

اشرح تفصيلا ضمانات حق الفرد فى محاكمة عادلة؟ (25 درجة)

مع أطيب الأمنيات بالتوفيق والنجاح

لجنة الممتحنين

أ.د./ ثروت عيد العال أحمد  
د./ ناصر عثمان محمد

Name:.....Academic no.....

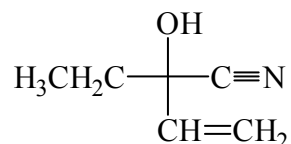
**Section A (8 points)**

**I) Mark the following statements by (✓) or (x) OR complete whenever required:**

**(5 points)**

- 1) 1,3-Dichloroallene is optically inactive. ( )
- 2) Meso compound is optically.....
- 3) Racemic mixture is optically active
- 4) The boat conformer of cyclohexane is less stable than the chair one because.....
- 5) Process of separation of racemic mixture is called.....
- 6) The above process depends upon the formation of.....
- 7) Enantiomers are two isomers which are .....
- 8) Enantiomers have different physical properties. ( )
- 9)  $S_N^1$  reactions of chiral substrates proceed by inversion of configuration ( )
- 10)  $S_Ni$  reactions proceed by racemization of configuration ( )

**II- Assign the "R" or "S" configuration to the following structure: (1.5 points)**



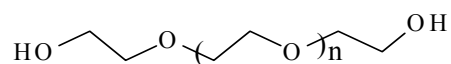


III- Calculate the  $[\alpha]_D^{20}$  of a sample of 25% aqueous solution of D-glucose, if it is measured in a tube of 150 mm path length and the observed angle of rotation of ppL was  $12^\circ$ . (1.5 points)

.....  
**Section B (4 points)**

**Encircle the correct answer:**

1) The following structure belongs to:



- a) Polyacetals  
b) PVC  
c) PEG  
d) PVA

2) What type of reaction was used to synthesize poly (glycolic acid)?

- a) Condensation  
b) Elimination  
c) Addition  
d)  $SN^1$

3) Nylon belongs to which of the following groups?

- a) amines  
b) amides  
c) alcohols  
d) ketones

4) Di-tert-Butyldicarbonate is used for:

- a) Protection of amine group  
b) Activation of carboxyl group  
c) Protection of carboxyl group  
d) peptide bond formation

5) The peptide alanylglutamylglycylalanylleucine has:

- a) a disulfide bridge.  
b) five peptide bonds.  
c) four peptide bonds.  
d) no free carboxyl group.  
e) Two free amino groups

**6) Two of the standard 20 amino acids contain sulfur atoms. They are**

- a) cysteine and serine.
- b) cysteine and threonine.
- c) methionine and cysteine
- d) methionine and serine.
- e) threonine and serine

**7) For amino acids with neutral R groups, at any pH below the p1 of the amino acid, the population of amino acids in solution will have:**

- a) a net negative charge.
- b) a net positive charge.
- c) positive and negative charges in equal concentration.
- d) no net charge
- e) no charged groups

**8) DCC reagent is:**

- a) pot. Dichlorochromate
- b) Strong dehydrating agent
- c) N,N'-Dicyclohexylcarbodiimide
- d) used in peptide synthesis
- e) b + c +d
- f) a + d

.....  
**Section C (3 points)**

**Draw the chemical structures of the followings:**

**a) 1-Bromo-6-hydroxyspiro[4.5]decane**

**b) 6-Chlor-2-ethyl-1,8-dimethylbicyclo[4.2.1]octane**

**c) The reaction product(s) resulting from reaction of diethyl adipate and sodium ethoxide.**

Assiut University  
Faculty of Pharmacy  
Dept. of Pharm. Organic Chem.  
Pharm. Organic Chemistry-2

نظام حديث

1<sup>st</sup> Year Pharmacy  
Final Semester Exam.  
May 25, 2008

Time allowed: 3h

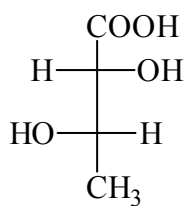
**Illustrate your answers with chemical equations whenever possible**

الامتحانات الشفهية عقب الامتحان النظرى مباشرة لجميع الطلبة

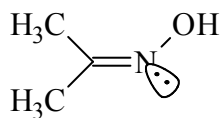
**This booklet is composed of 10 pages  
Answers should be in the specified places**

Section A (63 min, 25 points)

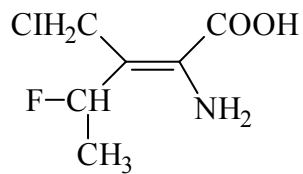
1) Assign the following structures as (R), (S), (E), or (Z): (7 points)



(a)



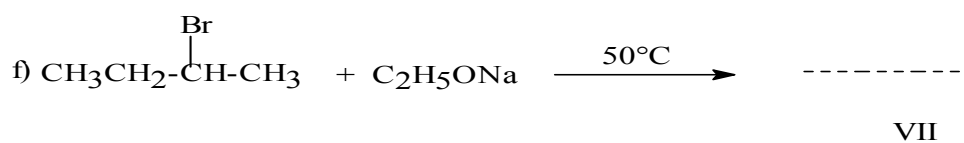
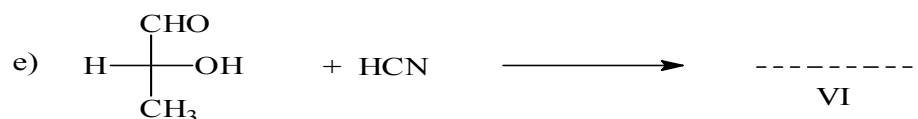
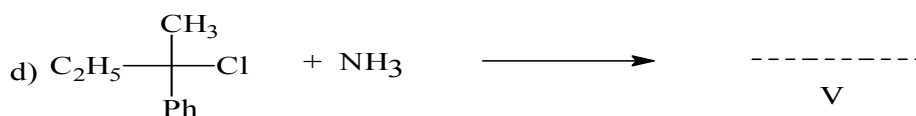
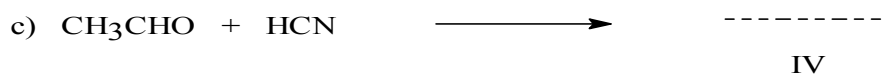
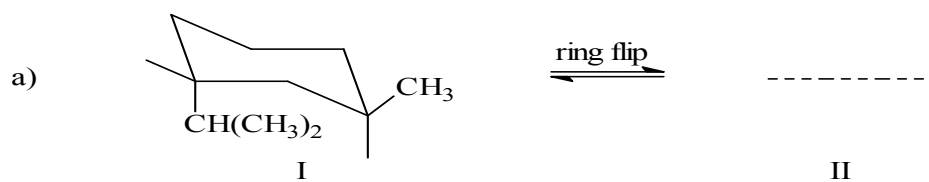
(b)



(c)

*See next page*

2) Complete the following equations using Fischer projections whenever required: (9 points)



*See next page*

**3) Refer to question 2, (a-f) answer the following (9 points):**

a) Comment on the stability of conformers **(I)** and **(II)**:

b) Illustrate the mechanism of reaction **(b)** and comment on the stereochemical nature of the product **(III)**.

c) What is the stereochemical nature of compound **IV**?

d) Which of the above reactions (question 2, a-f) are:

i) Stereospecific

*See next page*

ii) Stereoselective

iii) Regioselective

**Section B (45 min, 17.5 points)**

**1- Complete the following table giving a polymer example for each of the following applications and draw the structural unit for it: (3 points)**

<b>Applications</b>	<b>Polymer example</b>	<b>Structure unit</b>
<b>surgical sutures</b>		
<b>disinfectant</b>		
<b>contact lenses</b>		

**II- Give reason(s) for the following: (2.5 points)**

1- linear polymers are somewhat flexible than branched one:

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

2- poly(vinyl alcohol) is synthesized from addition polymerization of vinyl acetate not vinyl alcohol.

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

3- Isotactic polypropylene is harder and more rigid than the atactic one.

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

..... See next page

4- The use of Ziegler Natta catalyst in polymerization reactions.

.....  
.....

5- High water solubility for polyols and polyethers

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

**III-The following is the synthetic pathway for PEG polymer. Complete the equation and answer the following questions: (2.5 points)**



- 1) What is the type of the above polymerization reaction?.....
- 2) Which type of initiators is used in the reaction?.....

**IV- Complete with the correct answer for only NINE of the following: (9 points)**

1- All 20 amino acids have one stereocenter except ..... and ..... have two stereocenters, and ..... has no stereocenter.

2- Polar amino acids are those having ..... sites in their side chains for example ..... and .....

3- Amino acids react with Ninhydrin and gives ..... colour which has the following structure.....

4- Aspartame is a synthetic dipeptide (Asp. Phe) and has the following structure:

.....

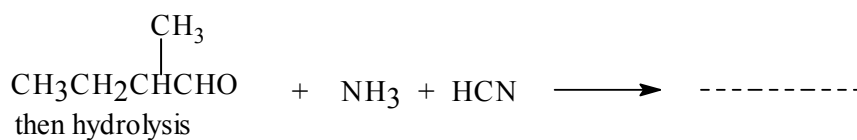
5- Essential amino acids are those which ..... for example ..... and .....

Sanger method is used for determination of ..... terminal amino acid in Polypeptides, using ..... as a reagent. *See next page*



- 6- The product for the reaction of glycine with  $\text{NaNO}_2 + \text{HCl}$  ( $\text{HNO}_2$ ) is .....and it is known as ..... method for quantitative determination of nitrogen in amino acids.
- 7- ..... enzyme is used for resolution of DL-amino acids. It catalyzes hydrolysis of only N-acylamino acids of the ..... configuration.
- 8- Peptide bonds are planer and have partial ..... character, since bond length is .....  $\text{\AA}$ .
- 9- To minimize steric hindrance, all peptide bonds in protein are in ..... configuration.
- 10- Z-protection of amino group is carried out by treating an amino acid with .....

**V- Complete the following equation, mention the reaction name and the name of the amino acid produced. (1 point)**



Amino acid: .....

Reaction name: .....

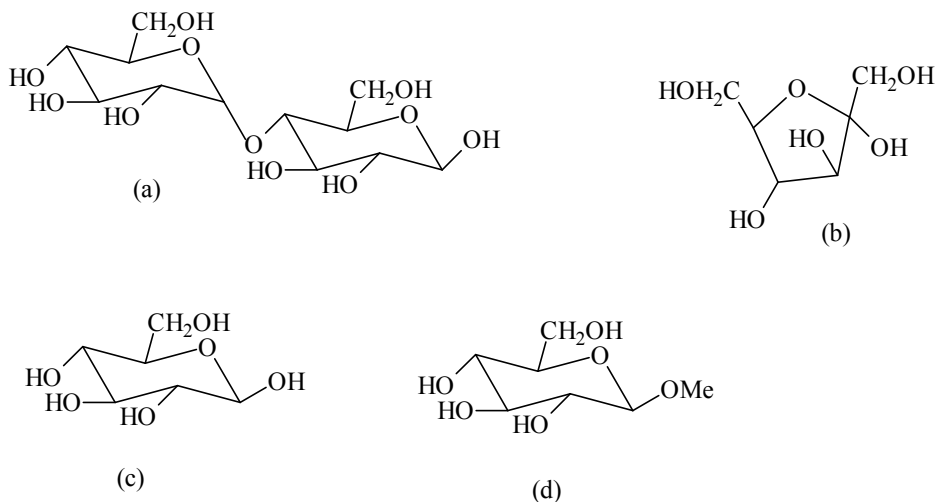
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**Section C (45 min, 17 points)**

**1- Assign the following statements by true (T) or false (F) or complete whenever needed (5 points):**

- 1)  $\text{Br}_2/\text{H}_2\text{O}$  could be used for differentiation of D-fructose and D-glucose ( ).
- 2) Nitric acid oxidation of D-galactose gives optically active aldaric acid ( ).
- 3) Ring size determination of monosaccharides could be carried out by reduction reactions ( ).
- 4) Formation of ether derivatives from D-glucose could be carried out by reaction with DMS/NaOH directly ( ).
- 5) End group interchange of D-(+)-glucose gives a new aldohexose ( ).
- 6) Sucrose is an example of a naturally occurring reducing disaccharide ( ).
- 7) (+)- Maltose gives a positive test with Benedict's reagent ( ).
- 8) Amylopectin is the water soluble part of starch ( ).
- 9)  $\alpha$ -D-(-)-Fructofuranose presents mainly in the six membered ring ( ).
- 10) Periodic acid oxidation of glycerol gives -----

**II- Using the following chemical structures, answer the given questions (8 points):**



- 1) Compound ..... could be affected by  $\alpha$ -glucosidase enzyme.
- 2) Compound ..... is stable in basic medium because it is an .....

*See next page*

- 3) Partial hydrolysis of starch gives compound ..... while its complete hydrolysis gives compound .....
- 4) Acid hydrolysis of sucrose gives compounds ..... and .....
- 5) Compounds (c) and (d) could be differentiated using .....
- 6) Mutarotation of compound (c) gives ..... anomer.
- 7)  $\text{Br}_2/\text{H}_2\text{O}$  oxidation of compound (a) gives .....
- 8) Periodic acid oxidation of compound (d) gives .....

9) The chemical structure of phenylosazone of compound (c) is .....

10) Evidences for ring structure of compound (b) are:

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

**III- How could you carry out the conversion of D-(+)-Glucose into D-(-)-arabinose. Give the structure of the product of reaction of nitric acid with D-(-) arabinose (by chemical equations) (4 Points):**

*See next page*

**Section D (27 min, 10.5 points)**

**I-Using chemical equations, how could you prepare the following compounds utilizing one of the suitable starting materials (alkyl dihalides, dicarboxylic acid esters): (10.5 points)**

1- Cyclohexane-1,4-dione

2- Cyclohexyl methyl ketone

3- Propyl cyclopentane

**Good luck**

**Introduction to pharmaceutical dosage forms**

**All questions should be attempted: (70 marks)**

**1- Write short notes on each of the following: (20 marks, 4 marks for each)**

- 1- Porosity and flow properties of powder.
- 2- Compound (complex) prescription.
- 3- Elutriation method for particle size analysis.
- 4- Therapeutic intentional incompatibilities (with examples).
- 5- Vehicle and degree of subdivision of a solid drug in a dosage form which affects the safety and therapeutic efficacy of the prescription.

**11- Write briefly about: (14 marks)**

(A)- Determine the type of incompatibility in the following prescription, discuss the problem in each prescription and how to correct it (9 marks, 3 marks for each)

1- R/

Atropine sulphate	0.006 gm
Phenobarbital	0.360 gm
Ft. Caps I mitte XII	
Sig: Caps i t d .s	

2-R/

Phenol	2%
Sod. Sulphate	5%
Distilled water to	120 ml
Ft. solution	
Sig: m.d.s.	

3- R/

Mag. Carb.	3.75 gm
Sod. Bicarb.	7.50 gm
Citric Acid	7.50 gm
Distilled water to	250 ml

(B)- Solve the following problems: (5 marks, 2.5 marks for each)

- 1- How many milliliters of a 1 % stock solution of a certified red dye should be used in preparing 4000 ml of a mouth wash to contain 1:20,000 (w/v) of the certified red dye as a coloring agent?

— **انظر الخلف**

2- How many milliliters of a 1: 16 solution of sodium hypochlorite should be used in preparing 5000 ml of a 0.5 % solution of sodium hypochlorite for irrigation?

**III- Write short notes on each of the following: (20 marks, 4 marks for each)**

- 1- Surfactants based on sorbitan.
- 2- Denaturation of proteins.
- 3- Importance of micellar solubilization, giving examples.
- 4- Disadvantages of soaps as emulsifying agents.
- 5- Three methods used to avoid creaming of emulsion.

**IV- Explain briefly each of the following: (16 marks, 4 marks for each)**

- 1- Factors affecting the selection of flavoring agent for a dosage form.
- 2- Gargles and washes.
- 3- Some properties of good preservatives.
- 4- Properties of appropriate ointment base.

د.د. فوزية حبيب  
د.د. امال السايح

يعقد الامتحان بقسم الصيدلانيات عقب الامتحان التحريري مباشرة

والله ولي التوفيق



Assiut university  
Faculty of Medicine

Time: one hour  
Date:21/1/2009

**Anatomy Examination For  
First year Pharmaceutical students  
January 2009**

---

**Answer The Following Questions:-**

- 1- Illustrate with diagram anatomy of female genital system.  
(7 Marks)
- 2- Illustrate with diagram anatomy of male urinary system.  
(7 Marks)
- 3- Give an account on anatomy of cranial nerves .  
(6 Marks)

**Good Luck**



Assiut university  
Faculty of Medicine

Time: one hour  
Date:16/2/2009

**Anatomy Examination For  
First Year Pharmaceutical students  
January 2009**

---

**Answer The Following Questions:-**

- 1- Give an account on anatomy of cranial nerves.  
(6 Marks)
  
- 2- Illustrate with diagram types of joints with an example of each type.  
(7 Marks)
  
- 3- Illustrate with diagram anatomy of heart and blood vessels attached to it.  
(7 Marks)

Good Luck



**Whenever possible, illustrate your answers with drawing**

**1- Mention why the following drugs could be prescribed as: (8x2=16 marks)**

- 1- Senna leaves as laxative
- 2- Hammamelis leaves as astringent
- 3- Jaborandi leaves for treatment of glaucoma
- 4- Digitalis leaves for treatment of heart failure
- 5- Boldo leaves as cholagogue and liver stimulant
- 6- Mentha leaves as carminative
- 7- Henna leaves as colouring matter
- 8- Solanaceous drugs in ophthalmic practice

**B- Draw the diagnostic elements and mention the active constituents of drug No. 1 (4 marks)**

**11- Write short notes on the following:**

- 1- Differences between black and green tea (3 marks)
- 2- Characteristic stomata in plant drugs (6 marks)
- 3- Characteristic glandular hairs in plant drugs (6 marks)

**111- Complete the following sentences with the suitable word(s); giving your answers in a Table according to their sequences: (12 marks)**

- The advantage of collection from wild plants is that it is ... (1), while .... (2) is one of the advantages of collection from cultivated plants.
- Ignorance of plant collectors may lead to ..... (3) and ... (4)
- .... (5) and .(6) are disadvantages of collection from cultivated plants
- Removing of outer layers after collection is called ... (7).
- ... (8), .. (9) and ... (10) are physico-chemical factors, while ... (11), ... (12) and ... (13) are biological factors affecting storage of the plants
- The removal of water from the plant material is called .... (14).
- The drying in vacuum from frozen state is called .... (15).
- Addition of an inferior material to any drug with intention is called ... (16) while addition of one article to another through accident is called ... (17).
- Adulteration can be detected by ... (18), ... (19) and ... (20).
- Drugs can be freed from insects by .... (21) and .....(22).
- Natural drying include .... (23) and .....(24).

الممتحنون:

د. / عفاف محمد عبد الباقي  
د. / عز الدين قاسم  
د. / سامية عباس  
د. / ياسر غلاب

**IV - a- Match column (A) with column (b) (20 marks)**

column (A)	column (b)
a- A powder used in manufacturing of poultice	1- Diosmin
b- The drug which absorb toxins in stomach	2- Flavonoids
c- The drug used in manufacturing of fire-works	3- Arbutin
d- Proteineaceous organic catalyst produced by the living cells	4- Enzymes
e- Antibiotic glycoside	5- Glycosides
f- A test for unsaturated lactone ring	6- Vincablastin
g- Used in Addison's disease	7- Saponins
h- A flavolignan having a coniferyl alcohol	8- Pelletierine
i- A glycoside reduces capillary permeability	9-Thioglycosides
j- Must be stored for at least one year	10- Anthraquinones
k- Gives violet colour with Froed's reagent	11- Ephedrine
l- On hydrolysis, give a sugar and aglycone	12- Lycopodium
m- Anticancer indole alkaloid	13- Atropine
n- A taenifuge alkaloid	14- Anthranoles
o- The nasal decongestant phenyl alkylamine	15- Codeine
p- Diacetyl morphine	16- Legal's
q- Marqui's reagent	17- Heroin
r- Antidotes for alkaloids and heavy metal poisoning	18- Chalk
s- Mixture of oxygenated compounds and hydrocarbons	19- HCHO/ H <sub>2</sub> SO <sub>4</sub>
t- Used in treatment of rickets	20- Sulfomolybdc acid
	21- Kaolin
	22- Salicin
	23- Kedd's test
	24- Silymarin
	25- Streptomycin
	26- Tannins
	27- Proteins
	28- Inulin
	29- Fixed oils
	30- V. o.

**b- Give in a table the natural products identified by the given reagent: (three only)**

- 1- Ruthenium red                      2- Millon's reagent                      3- FeCl<sub>3</sub>  
 4- Wagner's reagent                      5- Mayer's reagent

الممتحنون:

د.د. / عفاف محمد عبد الباقي                      د. / عز الدين قاسم  
 د. / سامية عباس                      د. / ياسر غلاب

**Illustrate your answers with drawing**

**I- Write the name, botanical origin, active constituents of the following drugs:  
(15 marks)**

- 1- Drug used as laxative
- 2- Drug used as astringent and haemostatic
- 3- Drug used in treatment of heart failure
- 4- Drug used as colouring agent
- 5- Drug used as carminative

**II- Draw the diagnostic elements of the following drugs and how to test their active constituents:  
(15 marks)**

- 1- Senna leaf
- 2- Buchu leaf
- 3- Egyptian henbane leaf

**III- Write short note on the following:  
(10 marks)**

- 1- Types of leaves
- 2- Phyllotaxis and its types
- 3 - Water pores
- 4- Laticiferous secretory structures

**IV- Complete the following sentences giving the missing parts in a TABLE  
according to their sequence:  
(30 marks)**

- The Italian cannabis is characterized by .... ( 1) and .... (2); while the Indian type is characterized by ..... (3) and .... ( 4).
- The natural products are classified into .....e.g ....(5), ....e.g..... (6) and .....eg ..... (7).
- .....(8) are the sources of readily digestible carbohydrates for infants, these are prepared from ....(9) by .....(10).
- The natural compounds having glucose as a central core esterified by several phenolic acid molecules are termed .....(11), can be tested by .....(12) and are used as antidote for .....(13) poisoning.
- To antagonise the mydriatic action of atropine .....(14) is used whose nucleus is ..... (15) and to reduce the intra-ocular pressure of the eye .... (16) which has .....( 17) nucleus is used.
- The organic biocatalysts produced by the living cells in the plant kingdom are

- known as ..... ( 18), these are useful for hydrolysing .....(19) e.g ..... (20) which is us
- The active constituents having nitrogen in their molecules are .....(22) and ..... (23), while the reserved food materials having nitrogen are.....(24) and ..... (25)
  - The powder of natural occurrence used as a standard references in quantitative microscopy is .... (26), it is used also in manufacturing of fire works to its ..... (27).
  - The glycosides used for treatment of Addison's disease are .... (28), as antioxidants are .... (29) and that for treatment of urethritis is ..... (30).

**V- Write (✓)or (X) and correct the false for the following: (7 marks)**

- 1- Sun drying is used for drugs sensitive to high temp .....( .... )
- 2- Perfect drying prevents the growth of micro-organisms ..... ( .... )
- 3- In lyophilization, the frozen water is sublimed at very low temp ..... (.....)
- 4- Direct fire can be used for drying plants ..... ( .... )
- 5- Insects are one from physico-chemical factors affecting storage .....( .... )
- 6- Inferiority is the addition of any substandard drug ..... ( .... )
- 7- Addition of inferior material with intention is called sophistication .....( .... )

**VI- Write on the following: (8 marks)**

- 1- Advantages of lyophilization
- 2- Natural drying
- 3- Advantages of collection from cultivated plants (three only)
- 4- Detection of adulteration

Time allowed 3 h

Illustrate your answers with chemical equations whenever possible

## Section A (1 h, 40 points)

**1- How could you carry out the following conversions:**

- 2-Chlorobutane into 1-butene
- 2-Methyl-2-butanol into 3-methyl-2-butanol
- Propyl alcohol into isopentyl alcohol

11- Write shortly using equations on Gabriel synthesis of primary amines

**III- Draw the chemical structure of the reaction product(s) resulting from reaction of  $\beta$ -D-galactopyranose with:**

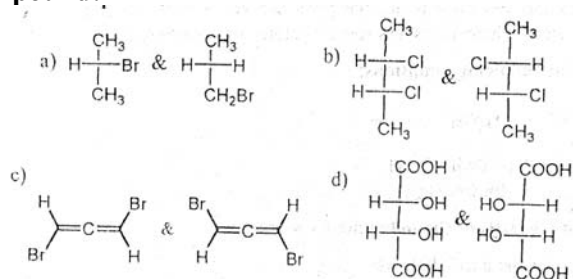
- $\text{CH}_3\text{OH} / \text{HCl}$
- Nitric acid
- Bromine water
- Periodic acid oxidation of the product of (a)
- $\text{NaOH}$  (write mechanism)

IV- Using bromination and other reactions, write how you could prove that maltose has a glucosidic linkage between C1 and C4 of two pyranose molecules

## Section B (1 h, 40 points)

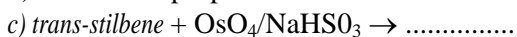
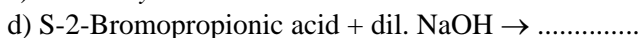
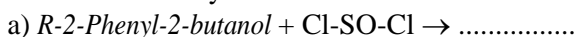
**1- Answer only FOUR of the following:**

1) Consider the following pairs of structures, identify the relationship between them as enantiomers, diastereomers, constitutional isomers, or two molecules of the same compound:



2) In the above question, translate one of the pair of (d) into sawhorse and Newman projections.

3) Write the structural formulas for all possible conformers of trans-1,2-dimethylcyclohexane and comment on their stability.

4) Calculate the specific angle of rotation of sucrose sample of 25% concentration, if the observed angle of rotation is  $18^\circ$  using a tube of 20 cm length.5) Complete only TWO of the following chemical reactions and comment on their stereochemistry:

See page 2

11- Using one of the following substrates ( $\text{CH}_3\text{CHO}$ ,  $\text{CH}_3\text{COCH}_3$ ,  $\text{CS}_2$ , and  $\text{BrCH}_2\text{COOC}_5\text{H}_5$ ), and the suitable organometallic reagents, how could you prepare

only **THREE** of the following:

2- Butanol, 2-methyl-2-butanol, dithiopropionic acid, and ethyl 3-hydroxy-3-methyl propionate

**III- Draw the structure of only THREE of the following compounds:**

- a) Bicyclo(2.2.1] heptane      b) 3-Ethylcyclopentene  
c) Cyclopentylcyclohexane      c) Spiro [3.4]octane

**IV- Give an example discussing only TWO. of the following name reactions:**

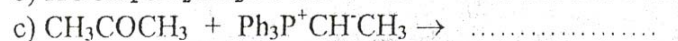
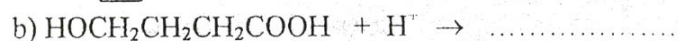
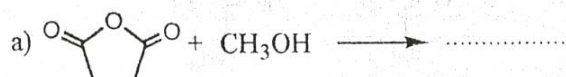
- a) Ziegler- Thorpe nitrile reaction      b) Dieckmann condensation  
c) Gustavson reaction

### Section C (1 h, 40 points)

**I- Mark (✓) or (X):**

- a) The enol form of 2,4-pentanedione is less stable than the keto form.  
b) On hydration of higher terminal alkynes with  $\text{HgSO}_4/\text{H}^+$ , ketones are the product while with hydroboration oxidation sequences, aldehydes are the main products.  
c) Esters are more reactive towards hydrolysis than amides.  
d) Formaldehyde reacts by Cannizzaro reaction to give formic acid and ethanol.  
e) Wolff-Kischner reduction of acetone gives hydrazone then propane.  
f) Trichloroacetaldehyde gives less stable hydrates than acetaldehyde

**II- Complete the following equations**



**III-Outline only FOUR of the following conversions:**

- a) 1-Bromopropane into 2-butanone  
b) Ethyl acetoacetate into 2-heptanone  
c) Acetaldehyde into alanine (2-aminopropanoic acid)  
d) Mixed Claisen condensation (mechanism)  
e) Fischer esterification (mechanism)

**III-Write on only THREE of the following**

- a) Strecker synthesis of phenylalanine amino acid.  
b) Differentiate between Nylon 66 and PEG polymers (preparation and type of polymerization reaction)  
c) Synthesis of dipeptide alanyl glycine  
d) Stereochemical forms of polypropylene polymers.

**Good luck**

Faculty of Pharmacy  
Anal. Pharm. Chem. Dept.

Date: 24/11/2008  
Mark: 15

Student name : -----

**I-Acid-base: Dr: Hanaa Mohammed Abdel-Wadood (Mark = 10)**

**1- Put the sign right (✓) or wrong (X) on the front of the following sentences and correct the wrong one (6 marks):**

a- Mixture of HCl and NaCl is used as a buffer solution.

b-HgO can be determined by direct titration with HCl.

c- The solvent which behave as an acid in one solvent must be acidic in all other solvents.

d- Methyl orange is a suitable indicator for the determination of  $\text{NH}_4\text{Cl}$  by formol method.

e- The effective range of any single indicator,  $\text{pH} = \text{pK}_{\text{ind}} \pm 1$ .

f-  $\text{HCO}_3^-$  can be considered as an acid and a base according to Lewis theory.

**2- Give the scientific terms for the following: ( 2 marks)**

a- A substance that its presence in water increases its electrical conductivity. ( )

b- The effect of protophilic solvent on different acids. ( )

c- Method used for determination of organic nitrogen. ( )

d- A Scientist who put the equations for calculation of the pH of buffer solutions. ( )

**3- Calculate the pH of solution obtained by mixing 10 ml of 0.1N  $\text{NH}_4\text{Cl}$  with 30 ml of 0.04N HCl (2 marks)**

**II-Precipitometry:(Prof.Dr.Fardous A. Mohamed)----- (5 Marks)**

1- Multiple Choice Questions:

1-NH<sub>3</sub> dissolves the following ppt completely:

a-AgCl                      b-AgBr                      c-AgI

2-If we add AgNO<sub>3</sub> to AgBr, The solubility of the ppt will:

a-Increase                      b-Decrease                      c-Not changed

3-Which statement is incorrect:

a-K<sub>sp</sub> of AgCl is more than Ag<sub>2</sub>CrO<sub>4</sub>

b- K<sub>sp</sub> of AgCl is less than Ag<sub>2</sub>CrO<sub>4</sub>

c- K<sub>sp</sub> of AgCl is equal that of Ag<sub>2</sub>CrO<sub>4</sub>

4-The solubility of Ca oxalate increases in:

a-CaCl<sub>2</sub> solution    b-sod. Oxalate solution

c-HCl solution

5-As the K<sub>sp</sub> decreases, the inflection of the titration curve:

a-increases                      b-decreases

c- not affected

---

2-Calculate the solubility of AgCl (  $k_{sp}= 1.1 \times 10^{-10}$ ) in 0.01 NaCl.

(Ag = 108 , Cl = 35.5)



**I- Acid-base Dr: Hanaa Mohammed Abdel-Wadood (Mark = 33)****1- Give the reason(s) for the following: ( Mark = 6)**

- a- Back, not direct titration, is a suitable method for the determination of ZnO.
  
- b- Use of glacial acetic acid, as a solvent, in the determination of aniline with standard perchloric acid.
  
- c- Addition of alcohol in the determination of CaO using sucrose.
  
- d- NaOH is not a primary standard.
  
- e- Use of phenolphthalein, not methyl orange. in the determination of water in acetone using acetyl chloride.
  
- f- Boiling with conc  $H_2SO_4$  in the determination of the nitrogen content in protein.

**2- Give the scientific terms for the following: ( Mark = 3)**

- a- The solution which contains the gram molecular weight of the substance in one liter of the solution.
  
- b- A type of solvent, which required for the determination of very weak bases.
  
- c- A theory which explains the change of indicator color according to some tautomeric change within the molecule in addition to ionization.
  
- d- The mixture of more than two indicators.
  
- e- A method of titration used for the determination of salts which is water soluble, but the acid of which is not soluble
  
- f- The ratio between the number of ionized molecules to the total number of molecules.

**3- Choose the correct statement from the following: (Mark = 5)**

a- The following compounds are secondary standard except:

- i- NaOH      ii- KH phthalate      iii- CaCl<sub>2</sub>      iv- NH<sub>4</sub>OH.

b- Methyl isobutyl ketone is:

- i- protophillic solvent      ii- protogenic solvent  
iii- aprotic solvent      iv- amphiprotic solvent

c-NH<sub>4</sub>Cl can be determined by:

- i- direct method      ii- residual method  
iii- formol method      iv- all the above methods.

d- Non-aqueous titration method be used for:

- i- water soluble substances      ii- water insoluble substances  
iii- very weak acids or bases      iv- both ii and iii.

e- The following compound can be determined by direct acid base titration:

- i- CH<sub>3</sub>COOH      ii- CaCO<sub>3</sub>      iii- HCHO      iv-BaCl<sub>2</sub>.

f- Na<sub>2</sub>CO<sub>3</sub> is a base according to:

- i- Arrhenius      ii- Bronsted& Lowry      iii- Lewis      iv- Ostwald

g- A buffer solution is a solution which resists the change in pH upon:

- i- addition of small amount of weak base  
ii- addition of small amount of weak acid  
iii- addition of small amount of salts  
iv- dilution.

h- The most suitable indicator for titration is:

- i- simple      ii- mixed      iii-screened      iv-universal

i- The pH of solution of NH<sub>4</sub>OH is equals to:

- i-  $pH = pK_w - pK_b - \log [\text{salt}]/[\text{base}]$ .  
ii-  $pH = pK_w - pOH$   
iii-  $pH = pK_w - 1/2pK_b - 1/2 pC_b$   
iv-  $pH = 1/2 pK_w - 1/2pK_b - 1/2 pC_s$

J- The following compound can be determined by non aqueous method using standard lithium methoxide as a titrant in DMF as a solvent:

- i- benzoic acid      ii- aniline      iii- aniline HCl      iv- KH phthalate.

**4- Complete the following table (Mark=10)**

Sample	Method	Standard(s)	Indicator(s)	Color	Conditions
--------	--------	-------------	--------------	-------	------------

				change	
1- Aspirin				pink→ colorless	
2-		HCl	Bromophenol blue		
3-		Na <sub>2</sub> CO <sub>3</sub> then HCl		pink→ colorless	
4-K <sub>2</sub> S <sub>2</sub> O <sub>8</sub>	Indirect				
5-			Crystal violet		Addition of Hg(CH <sub>3</sub> COO) <sub>2</sub>
6-	Direct				Addition of neutral glycerol
7-CaCO <sub>3</sub>				Colorless → pink	
8-Mixture of Na <sub>2</sub> CO <sub>3</sub> & NaHCO <sub>3</sub>		HCl			
9-			Ph.ph.		Addition of KI
10- HCHO	Indirect				

**5- By equations illustrate how you can analyze the following: (Mark =6 )**

**(Mention the method, standard, indicators, Solvent and any percussion required for the determination)**

a- Mixture of borax and NaOH

b- Potassium hydrogen phthalate (non aqueous)

**6- Calculate the pH of the solution obtained by mixing equal volumes of a strong acid of pH 1 with a strong base of pH 11. (Mark = 3)**

**II-Precipitometry:**

**(Prof. Dr. Fardous A. Mohamed) ----- (17 marks)**

**I- Calculate the  $K_{sp}$  of  $\text{Cu}(\text{OH})_2$ , if you know that its solubility in water is  $3.59 \times 10^{-5} \text{ g/L}$ . (Cu=63.55, O=16, H=1) ----- (3 marks).**

**2-Mention one example for the following: ----- (5 marks)**

a- Effect of common ion on solubility.

b- An adsorption indicator used for determination of silver ion

c- An adsorption indicator used for determination of iodide

d- A redox indicator used for determination of  $\text{Zn}^{2+}$ .

e- Effect of diverse ion on solubility

**3-Give scientific term or scientific expression: ----- (4 marks)**

a- A precipitometric method that could be used for determination of all halides.

b- A reagent that could dissolve all silver halides

c- A reagent that could be used for determination of barium

d- A precipitometric method that could be used for determination of cyanide only

**4-Multiple Choice Questions: ----- (5 marks)**

1-K<sub>sp</sub> of PbI<sub>2</sub> equals:

a- $[Pb^{2+}][2I^-]$

b-  $[Pb^{2+}][I^{2-}]$

c-  $[Pb^{2+}][I^-]$

d-  $[Pb^{2+}][2I^-]^2$

2-On titrating 100 ml of 0.1 N KBr with 0.1 N AgNO<sub>3</sub>, then pBr after addition of 50 ml Ag<sup>+</sup> equals :( K<sub>sp</sub>= 5.25x10<sup>-13</sup> )

a- 0.033

b-1.48

c- 4.96

d-6.14

3-In the above titration, pBr after addition of 100 ml Ag<sup>+</sup> equals:

a- 0.033

b-0.05

c-1.30

d-6.14

4- If we add 0.01M AgNO<sub>3</sub> solution to a mixture containing 10<sup>-3</sup>M of each of NaCl, KBr and KI (K<sub>sp</sub> of the produced salts are: 1.1 x 10<sup>-10</sup>, 5.25 x 10<sup>-13</sup>, 1.7x10<sup>-16</sup>, respectively.), then the precipitate formed will be:

a- AgCl only

b-AgBr and AgCl

c- The three salts

d-Non of the above

5-the most suitable pH in Mohr's method is

a -8-10

b-3.3-4.4

c -6.5-9

d- Non of the above

## GRAVIMETRY

( 20 Points )

By : Prof. Dr. NAWAL ALY EL-RABBAT:

I- Write SHORT NOTES on the following: ( 1 5 Points)

1-Ashless filter paper, how it is prepared and when it is used

2-Types of washing solutions

3-Requirements for a successful gravimetric analysis.

4-Gravimetric analysis of a mixture of calcium and magnesium

5-Advantages of precipitation from homogenous solution giving two examples:

II-Calculate the gravimetric factor for the process of precipitating KCl and weighing it, after drying, in the form of  $\text{PbCl}_2$  (at wt of; K= 39, Cl = 35.5, Pb = 207 )

( 5 Points)





Assiut University  
Faculty of Medicine

Department of  
Medical Physiology

Final examination  
In physiology

First year  
Pharmacy students

21/1/2009  
Total: 60 marks  
Time allowed: 1 hour

Answer the following:

**1- Discuss:**

- a) Functions of the spleen. (10 marks)  
b) Factors that maintain normal arterial blood pressure. (10 marks)  
c) Hypoxic and anemic hypoxia. (10 marks)

**2- Write on:**

- a) Functions of testosterone hormone. (10 marks)  
b) Functions of hypothalamus. (10 marks)  
c) Regulation of pancreatic secretions. (10 marks)

\*\*\*\*\*

*Good luck*

Pr. Mustafa Gaber &

Dr. Omyma Galal

الامتحان الشفوي بقسم الفسيولوجى الطبية – كلية الطب – الساعة العاشرة صباحا 2009/1/22



Assiut University

Faculty of Medicine

Date: 28/1/2009

Medical Physiology Department

Time allowed: 3 hours

Final Exam. of Physiology For 1<sup>st</sup> Year Pharmacy Students  
First Semester, 2008-2009

Answer the following questions:-	Marks
<b><i>I- The First Question:-</i></b>	
1- Describe the metabolic changes during skeletal muscle contraction.	(4)
2- Define and mention the types and causes of hypoxia.	(5)
3- Discuss the chemical control of respiration.	(4)
4- Define resting membrane potential and mention its causes.	(4)
<b><i>II- The Second Question:-</i></b>	
1- Discuss briefly proliferative phase of the menstrual cycle.	(4)
2- Describe the mechanism of salivary secretion,	(7)
3- Discuss the gastric phase of gastric juice secretion.	(6)
4- Mention four factors affecting spermatogenesis.	(4)
<b><i>III- The Third Question:-</i></b>	
1- Discuss briefly the functions of the hypothalamus.	(4)
2- Describe the functions of pelvic nerve.	(9)
3- Mention the functions of thyroid hormones (T3 and T4).	(9)
<b><i>IV- The Fourth Question:-</i></b>	
1- Mention the types, site of synthesis and functions of plasma proteins.	(9)
2- Discuss the causes of edema.	(4)
3- Define contractility of cardiac muscle and discuss the intrinsic factor affecting it.(4)	
4- Discuss the forces affecting the glomerular filtration rate.	(8)
<b><i>V- The Fifth Question:-</i></b>	
1- Discuss the effect of sympathetic stimulation on the heart.	(5)
2- Define basal metabolic rate and mention the physiological factors affecting it. (3)	
3- Mention the functions of antidiuretic hormone (ADH).	(7)

**Good Luck**

Professor Mamdouh M. Anwar and the committee.

الامتحان الشفهي يوم الخميس 2009/1/29 الساعة 8½ صباحا بقسم الفسيولوجيا الطبية بكلية الطب لجميع الطلاب.



Assiut University  
Faculty of Medicine

Department of  
Medical Physiology

Final examination  
In physiology

-----  
Second and third year  
Pharmacy students

16/2/2009  
Total: 60 marks  
Time allowed: 1 hour  
-----

Answer the following:

**1- Discuss:**

- a) Types and physiological functions of plasma proteins. (10 marks)  
b) Factors that affecting venous return. (10 marks)  
c) Regulation of acid base balance by the kidney. (10 marks)

**2- Write on:**

- a) Functions of glucocorticoid hormone. (10 marks)  
b) Vagus nerve. (10 marks)  
c) Bile salts and their physiological roles. (10 marks)

\*\*\*\*\*

*Good luck*

Pr. Mustafa Gaber &

Dr. Omyma Galal

الامتحان الشفوى بقسم الفسيولوجى الطبية – كلية الطب – عقب الامتحان التحريرى مباشرة 2009/2/16

Physical Pharmacy I

-----  
**All questions should be attempted (70 marks)**

**Question I (18 marks, 3 marks for each point):**

- 1- Explain the important factors for achieving stability of colloidal systems.
- 2- Light scattering is a property of colloidal preparation, explain this and mention the uses of this property.
- 3- Define Zeta potential, its application, effect of electrolytes.
- 4- In a table, mention different types of disperse systems and compare briefly between them.
- 5- Give reasons, flocculated suspension is preferred over deflocculated suspension.
- 6- Write Stoke's law, give reason that gravitational force can not affect small size of suspended particles.

**Question 11 (17 marks):**

A. Sketch (draw) the following diagrams with all the necessary information. Provide your comment with very short answer:

**(8 marks, 2 marks for each point)**

- 1- The rheogram you expect for a 60% solid in suspension.
- 2- The rheogram you expect for a deflocculated system.
- 3- The rheogram you expect for a depot injection of procain penicillin G.
- 4- The relationship between viscosity and the rate of shear of Newtonian material.

**B. Explain briefly each of the following (9 marks, 3 marks for each point):**

- 1- In-vivo biologic buffer systems.
- 2- Effect of pH on drug absorption.
- 3- How can pH affects the relationship between stability and optimum therapeutic response?

**Question III (18 marks, 3 marks for each point):**

Write briefly on each of the following; illustrate your answer with diagrams and equations whenever possible:

- 1- Vapor pressure lowering as a colligative property

أنظر خلفه →

- 2- Langmuir adsorption, isotherm (with assumption and limitation).
- 3- Capillary rise method for measurement of surface and interfacial tension.
- 4- Factors affecting the solubility of gas in liquids.
- 5- Distillation of Binary mixtures in the case of non-ideal (real) behavior.
- 6- Phase diagram and rule for one component system,

**Question IV (17marks):**

**A. What do you know about each of the following (12 marks, 3 marks for each point):**

- 1-The effect of added substances on critical solution temperature.
- 2- Polymorphism.
- 3- Application of partition coefficient.
- 4- Aersols.

**B. Differentiate between each two of the following (5 marks, 2.5 marks for each point):**

- 1- Positive and negative deviation from Raoult's law.
- 2- Polar and non polar solvent.

الأستاذة الدكتوراه: فوزية حبيب  
الدكتوراه: دينا فتح الله محمد

يعقد الامتحان الشفوي لجميع الطلاب بعد النظرى مباشرة بقسم الصيدلانيات  
والله ولى التوفيق

**All questions to be answered**

**I-A- Complete the following: (15 marks)**

- 1- Cinchona bark contains..... , ..... and .....
- 2- Quillaia bark related to family ..... and known as ..... bark
- 3- Cascara bark must be stored for .....because .....
- 4- Cinnamon bark contains ..... which gives needles crystals with ..... while cassia bark is free from it
- 5- Callus formation is .....
- 6- Idioblast is .....
- 7 - Sclereides are differ from fibers in .....
- 8- The anthelmintic principle in pomegranate bark is .....
- 9- The sclereids of cinnamon contain which gives .....colour with .....
- 10- Phellogen is .....

**B- Draw the diagnostic elements of:**

**(10 marks)**

Cascara, cinchona and quillaia barks

**II-A- Mark (✓) for the right and (x) for the false: (15x1=15 marks)**

- 1-Elongation of the receptacle between Androecium & Gynaecium is carpophore .....(.....)
- 2- Elongation of the receptacle between the carpels is gynophore .....( ..... )
- 3- Gynaecium with united carpels is apocarpous type .....( .....)
- 4- The white colour of some flowers is attributed to flavonoids .....( ..... )
- 5- The gamosypalous flower is usually polysepalous .....( .....)
- 6- Androecium with 4 stamens is tetradelphous .....( .....)
- 7- The zygomorphic flower is often regular flower .....( .....)
- 8- The germinal furrows are pits through them the pollen tube protrude .....( .....)
- 9- The flower whose outer non-essential floral parts are present is the achlamydeous type .....( .....)
- 10- In the apical inflorescence the ovules are attached to the central axis formed by the edges of carpels .....(.....)
- 11- Inflorescence with elongated axis and sessile flowers is spike .....(.....)

- 12- Inflorescence similar to raceme but with shorter axis and pedicels of different lengths is corymb ..... (.....)
- 13- Ovary of one carpel or the carpels joint together as in compound ovary in unilocular type .....(.....)
- 14- Corolla situated over the ovary is epigenous type .....(.....)
- 15- The flowers have an equal number of segments in each whorl are isomerous .....(.....)

**B- Define the following:**

(5x1 =5 marks)

- |                           |                          |
|---------------------------|--------------------------|
| 1- Hemicyclic flower      | 2- Estivation            |
| 3- Tetrandrous androecium | 4- Campelotropous ovules |
| 5- Gynandrous androecium  |                          |

**111- Give only one drug and its uses for each of the following:** (10 marks)

- 1- A compositae flower used as unexpanded flower head
- 2- A compositae flower used as expanded flower head
- 3- A drug used as unexpanded flower bud
- 4- Draw the diagnostic elements for drugs 2 and 3

**IV- Write (✓) or (X) and correct the false for the following:** (9x1 =9 marks)

- 1- Tracheids are elongated cells with no sharply pointed end .....(.....)
- 2- Tyloses are special ingrowths block the fibers lumen .....(.....)
- 3- Sapwood consists of non-living cells containing reserve food materials(.. ..)
- 4- Spring wood has fewer vessels and more fibers .....(.....)
- 5 - Quassia wood is used as insecticide and bitter tonic .....(.....)
- 6- Sappan wood contains brasilin and used as colouring agent.....(.....)
- 7 - Blue galls are formed by *Adleria gal/aetinctoria* insect.....(.....)
- 8- Sassafras obtained from *Sassafras variifolium*, family legminosae..(.....)
- 9- White galls are heavier than blue galls.....(.....)

**Complete the following sentences**

(6x1 =6 marks)

- The main constituent of the blue galls is...(1) which can be used for ..... (2).
- .....(3) wood which obtained from .....( 4) can be used as astringent.
- .....(5) wood is used as insecticide while .....(6) wood in perfume industry.

GOOD LUCK

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All question are to be attempted.

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### تنبيهات

على الطالب مراعاة الآتى:

- 1- الصفحات مطبوعة على الوجهين.
- 2- الامتحان مكون من رقم 1 الى 8
- 3- يتكون الامتحان من ثلاثة اسئلة اجبارية.
- 4- الاجابة بالقلم الجاف الأزرق أو الأسود.
- 5- المتحان الشفوى عقب التحريرى.

مع تمنياتنا بالتوفيق والنجاح

أ.د. سميحة عبد الرحمن حسين

أ.د. حرية عبد المجيد محمد  
د. نيفين عبد اللطيف محمد







- c) Oxidizing agent                      d) Both a & c

6-  $\text{HgCl}_2$  is used to remove:

- a) Thiosulphate                      b) stannous chloride  
c) Copper sulphate                      d) All mentioned

7- In iodometric titration the suitable indicator is:

- a) Diphenylamine                      b) Ferroin  
c) Methyl orange                      d) None of the mentioned

8- Lang's reaction needs:

- a)  $\text{CN}^-$                       b) Low acidity  
c) High acidity                      d) a & b

9- At pH 5  $\text{KMnO}_4$  can oxidize:

- a)  $\text{Cl}^-$ ,  $\text{Br}^-$  &  $\text{I}^-$                       b) Only  $\text{I}^-$   
c) Only  $\text{Br}^-$                       d) Both  $\text{Br}^-$  &  $\text{I}^-$

10- Acetylsalicylic acid can be determined bromometrically:

- a) without hydrolysis                      b) after hydrolysis  
c) The reaction product is the bromoderivative                      d) b & c

11- Standard bromine solution is prepared by:

- a) Dissolving bromine in water                      b) Dissolving bromine in chloroform  
c) Acidifying mixture of  $\text{BrO}_3^-$  &  $\text{Br}^-$                       d) All mentioned

12- The change of potential near the equivalence point during the titration of oxidant and reductant is dependent upon:

- a) The standard potential of the two systems                      b) The concentration  
c) The equilibrium constant of the reaction                      d) a & c together

13- In titration of 100 ml of 0.1 N  $\text{FeSO}_4$  with 0.1 N ceric sulphate

( $E^\circ_{\text{Fe}^{3+}/\text{Fe}^{2+}} = 0.77\text{V}$ ,  $E^\circ_{\text{Ce}^{4+}/\text{Ce}^{3+}} = 1.44\text{V}$ )

i- The potential at equivalent point equals:

- a) 1.27 V                      b) 1.11 V                      c) 2.21 V                      d) 0.78 V

ii- The potential after adding 50 ml  $\text{Ce}^{4+}$ :

- a) 0.77 V                      b) 1.44 V                      c) 0.71 V                      d) 1.10 V

iii- The potential after adding 110 ml  $\text{Ce}^{4+}$  :

- a) 1.44 V                      b) 1.35V                      c) 1.33 V                      d) 1.39

iv- The most suitable indicator is:

- a) starch                      b)  $\text{CCl}_4$                       c) ferroin                      d) diphenylamine

14- The potential of redox system can be affected by:

- a) pH of the solution                      b) Molar concentration of redox ions  
c) Presence of complexing or precipitating agent                      d) All mentioned

15- Zimmermann's reagent consists of:

- a)  $\text{MnSO}_4$                       b)  $\text{CuSO}_4$                       c) Mixture of  $\text{H}_2\text{SO}_4$  &  $\text{H}_3\text{PO}_4$   
d) All mentioned except b

**E- Represent by equations only:**

**[5 Marks]**

1- Determination of phenol

(2 marks)

2- Determination of oxalic and sulphuric acid in mixture

(3 marks)

**Question II**  
**Compleximetry**

**Prof.Dr.Samiha Abdel Rahman**  
**(20 marks)**

A-Mention in one word or two words the scientific name or expression for each of the following: (8 marks)

1- The value which gives the ratio of total uncombined EDT A ( all forms) to the fully ionized form and calculated from the dissociation constant of EDTA.

2-A substance added in complex titration that prevents the formation of insoluble metal hydroxide but does not prevents the reaction of metal with EDTA.

3-Chelating agent, non toxic, serves as an effective antidote for the treatment of lead poisoning.

4-Molecule or ion has two atoms each contains lone pair of electrons.

5- The maximum number of monodentate ligands that can bound to the metal and surrounded to it.

6-Powerful complexing agent, it reacts with metals form strong complexes but the reaction is slow.

7-Process in which some component of analyte is protected from reaction with EDT A without being physically separated from medium.

8- Type of EDT A titration used for metal not complexes easily with EDTA ,and also for metal that have no suitable indicator.

B-Mark the following with right ( $\checkmark$ ) on the correct answer and the mark (X) on the wrong one ,then correct the wrong one .( 4.5 marks)

1- Titration of ferric ion; with EDT A is carried at alkaline medium.

2- Titration curve of calcium verscus EDT A gives sudden inflection ,and sharp equivalence point at pH 10 . ' .'

3-Ammonia is a suitable complexing agent for titration of metal ions.

4- The indicator to be useful, it must bind metal more strongly than EDTA does.

5-Calcium cation is masked with cyanide ion and form stable complex.

6-Murexide indicator is used for direct titration of calcium with EDTA.

7- The greater the stability constant, the sharper is the end point at constant pH.

8-In cyanometric titration ,copper-amine complex is more stable than copper -- cyano complex.

9-Mercury - chelate is strong enough to be titrated in acid medium.

D-Complete: ( 4 marks)

1-Bismuth ions can be titrated with stander sodium thiosulphate using ..... indicator.

2-Antitubercular agent ( thiacetazone )chelate with .....in beta cell of pancrease.

3- ..... is a type of EDTA titration which used for anions.

4-At pH ..... all  $K_H$  values are equal to  $K_F$  values.

D-Explain briefly how can you analyze :- ( 3.5 marks)  
Mixture of zinc, copper and magnesium .

### **III Statistics and Methods Validation , 15 marks**

1- Enumerate three of the systematic errors? (without explanation)

2- Write the scientific term for each of the following:

a- An assay that measures the active ingredients, without interference from degradation products called .....

b- Official monographs, which includes, USP, (British Pharmacopoeia), and European Pharmacopoeia is defined as .....

c- ..... is the measure of the degree of reproducibility of test results obtained by the analysis of the same samples under a variety of conditions.

d- Precision may be a measure of either .....  
or .....

e- Minimization of determinate error by duplicate or triplicate determination is defined as .....

f- Reliability means both ..... and .....

g- You can estimate the best straight line by two ways:

1- .....

2- .....

3- Apply the Q test to the following data sets to determine whether the outlying result should be retained or rejected at the 95% confidence level. 7.295, 7.284, 7.388, 7.292. ( Q tabulated = 0.829). Determine the type of error?

4- Calculate the formula weight of  $\text{LiNO}_3$  to the correct number of significant figures. ( atomic weights of Li = 69.11, N = 14.000674, O = 15.9994)



**أجب عن سؤالين فقط مما يلي:- (25 درجة لكل سؤال)**

**السؤال الأول:**

يعتبر الإعلان العالمي لحقوق الإنسان من أهم الوثائق الصادرة عن الأمم المتحدة والمتعلقة بحقوق الإنسان. اكتب تفصيلاً في (إصداره - شكله ومضمونه - الحقوق المدنية والسياسية الواردة فيه - الحقوق الاقتصادية والاجتماعية والثقافية الواردة فيه - القيمة القانونية له)؟

**السؤال الثاني:**

اكتب في اللجنة المعنية بحقوق الإنسان من حيث (تشكيلها - اختصاصاتها - اجتماعاتها - أهداف التعليقات العامة)؟

**السؤال الثالث:**

اشرح تفصيلاً مظاهر الإسلام في مخارج الرق؟

مع أطيب الأمنيات بالتوفيق والنجاح  
لجنة الممتحنين  
د/ ناصر عثمان  
د/ الحسن محمد

<p>المادة: المحاسبة وإدارة الأعمال الصيدلانية الفرقة: الثانية/ الثالثة/ الرابعة تخلفات الفرقة الأولى (حديث) والثانية (قديم) الزمن: ساعتان</p>	<p>الامتحان صفحة واحدة الأربعاء 2009/2/18</p>	<p>جامعة أسبوط كلية التجارة قسم المحاسبة والمراجعة</p>
<p><b>أجب عن جميع الأسئلة الآتية:</b></p> <p><b>السؤال الأول:</b> (الزمن المقرر 20 دقيقة – الدرجة المقررة 20 درجة): اكتب باختصار غير مخل في كل مما يأتي ( فيما لا يزيد عن خمسة سطور لكل مفردة): (1) الشخصية المستقلة للمشروع ومفهوم المشروع المستمر. (2) مفهوم القيد المزوج وتعريف المحاسبة. (3) مفاهيم كل من التكاليف المتغيرة ، والتكاليف الثابتة ، والتكاليف المباشرة.</p> <p><b>السؤال الثاني:</b> (الزمن المقرر 60 دقيقة – الدرجة المقررة 50 درجة): فيما يلي ميزان المراجعة المستخرج من دفاتر صيدلية الشفاء في 2008/12/31: <b>أرصدة مدينه (مجموعها 353180 جنيهه) :</b> 12290 ادوية ومستلزمات طبية في 2008/1/1 – 132200 مشتريات ادوية ومستلزمات طبية – 14500 مردودات ومسموحات مبيعات – 16000 أثاث وتجهيزات الصيدلية – 70000 سيارات توزيع – 16500 أجور ومرتبات ومهايا – 12500 أوراق قبض – 8000 اجارات وعوائد – 7500 مصروفات تليفون ومياه وانارة – 16800 عملاء ومدينون – 5140 خزينة – 14900 بنك (جاري) 11600 مصروفات عمومية – 4600 مصروفات نقل مشتريات ادوية للصيدلية – 1100 خصم مسموح به – 950 اكراميات – 2600 مصروفات دعاية واعلان – 2900 أدوات مكتبية مستهلكة – 3100 مصروفات متنوعة مختلفة. <b>أرصدة دائنة (مجموعها 353180 جنيهه):</b> 80000 رأس المال – 10500 مردودات مشتريات – 210000 مبيعات – 14900 موردون متنوعون – 12700 أوراق دفع – 20000 فرض البنك التجارى الدولى – 1700 خصم مكتسب – 3380 فوائد قرض مستحقة. فإذا علمت أن بضاعة آخر المدة تقدر بنحو 19500 جنيه فالمطلوب: - اعداد حسابى المتاجرة والأرباح والخسائر لبيان مجمل وصافى نتيجة أعمال الصيدلية عن الفترة من 2008/1/1 حتى 2008/12/31. - تصوير قائمة المركز المالى فى 2008/12/31.</p> <p><b>السؤال الثالث:</b> (الزمن المقرر 40 دقيقة – الدرجة المقررة 30 درجة): تقوم شركة فارما للأدوية بانتاج أحد مستحضرات التجميل حيث يتم بيع الوحدة بسعر 30 جنيه ، وتبلغ التكلفة المتغيرة للوحدة 18 جنيه ، واجمالى التكاليف الثمانية للمنتج بنحو 240000 جنيه سنويا ، والمطلوب: - تحديد كمية وقيمة مبيعات التعادل. - تحديد كمية وقيمة المبيعات اللازمة لتحقيق أرباح قدرها 90000 جنيه قبل الضرائب. - بفرض أن سعر البيع قد انخفض الى 26 جنيه للوحدة وفى نفس الوقت انخفضت التكلفة المتغيرة للوحدة الى 16 جنيه بينما انخفضت التكاليف الثابتة الخاصة بالمنتج الى 210000 جنيه فما هى نقطة التعادل الجديدة بالكمية والقيمة.</p> <p>مع خالص الأمنيات بالتوفيق ،، د. يوسف عوض د. أشرف عبد البديع</p>		

د. شريف شفيق يني د. يوسف محمد عوض الزمن: ساعتان	امتحان المحاسبة وإدارة الأعمال الصيدلية الفرقة الأولى – كلية الصيدلة الامتحان صفحتان	جامعة أسيوط كلية الصيدلة دور مايو 2009
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أجب عن جميع الأسئلة التالية:

السؤال الأول: (40 درجة)

فيما يلي ملخص العمليات التي تمت بإحدى الصيدليات عن السنة المنتهية في 2008/12/31:

مخزون 1/1 : 8000 جنيه (أدوية)

المشتریات : 138000 (أدوية) – 27000 مستحضرات تجميل

المبيعات : 215000 منها 175000 أدوية

مردودات المبيعات: 1000 مستحضرات تجميل

م. نقل للداخل: 100 م. نقل مستحضرات تجميل

المصروفات: 1560 جنيه ايجار الصيدلية – 480 ايجار المخازن – 1800 م. تليفون – 4300

مرتبات – 1100 م. كهرباء – 1000 تأمينات اجتماعية – 300 م. لف وحزم – 100 م.

بنكية.

المسحوبات: 3000 نقدا ، 500 جنيه مستحضرات تجميل بسعر البيع.

فاذا علمت أن:

1- تم جرد الصيدلية في 2008/12/31 وتبين بها أدوية تكلفتها 18000 جنيه منها أدوية تكلفتها

2000 جنيه معروضة لحساب إحدى شركات الأدوية مقابل عمولة توزيع 25% ، أما

مستحضرات التجميل تكلفتها 2500 جنيه منها عبوات ناقصة التعبئة تكلفتها 500 جنيه ويمكن

بيعها بمبلغ 300 جنيه.

2- ايجار الصيدلية يتضمن ايجار شهر تأمين.

3- المرتبات الشهرية 400 جنيه.

4- دفعت الصيدلية التأمينات الاجتماعية عن شهر يناير 2009 وقيمتها 80 جنيه في ديسمبر

2008.

5- عقدت الصيدلية وثيقة تأمين ضد السطو والحريق عن سنة كاملة تبدأ أول نوفمبر 2008 بمبلغ

1200 جنيه ودفعتها في يناير 2009.

6- تمتلك الصيدلية أثاث تكلفته 8000 جنيه ، وحاسب آلي بمبلغ 4500 جنيه ، ومعدلات الإهلاك

6% ،  $33 \frac{1}{3}$  على الترتيب.

المطلوب:

1- إعداد قائمة تكلفة المبيعات عن السنة المنتهية في 2008./12/31

2- إعداد قائمة الدخل عن السنة المنتهية في 2008./12/31

3- حساب معدلات مجمل وصافي الربح.

(أنظر الصفحة الثانية)

السؤال الثاني: (40 درجة)

فيما يلي ملخص العمليات التي تمت بصيدلية ممتاز خلال السنة المنتهية في

2008/12/31:

- مشتريات أدوية 150000 جنيه.
  - لانتعامل الصيدلية فى الأدوات الرياضية ولعب الأطفال.
  - الإيجار الشهرى 350 جنيه ، المرتبات الشهرية 700 جنيه ، والمصروفات الأخرى السنوية 5800 جنيه.
  - مصروفات التأمين 18000 جنيه بموجب فواتير.
  - تبرعت الصيدلية بمبلغ 800 جنيه منها 300 جنيه لصندوق الخدمة بالمحافظة ، والباقى لسداد رسوم تعليم بعض الطلبة بالمدارس.
  - المبالغ المخصومة من الصيدلية تحت حساب الضريبة نتيجة تعاملاتها مع إحدى المستشفيات 300 جنيه.
- المطلوب:  
حساب كل من وعاء الضريبة والضريبة المستحقة فى ضوء الاتفاقية رقم 58 لسنة 2005 .

### السؤال الثالث: (20 درجة)

ترغب إحدى شركات الأدوية فى تحقيق أرباح بنسبة 20% من المبيعات عن الربع الأول من عام 2009 ، حيث تنتج وتبيع منتجا وحيدا بسعر 100 جنيه للوحده بتكلفة متغيرة 80 جنيه للوحده وتبلغ التكاليف الثابتة 1200000 جنيه . فما هو رقم المبيعات المستهدف كما وقيمة.

أنتهت الأسئلة ، مع التمنيات بالتوفيق ،

***Whenever possible, illustrate your answers with drawing***

***I- Complete the following:***

***(20x0.5= 10 marks)***

- a- Crystal sheath are usually seen in ... (1) ...
- b- Buchu contains .....(2) ... in the upper epidermis, which give .... (3) ... colour with ... (4) .....
- c- Squill contains ... (5) ... and used as ... (6) .....
- d- Diagnostic elements of Digitalis leaf are .....(7) ....., ... (8) .....and ... (9) ...
- e- Jaborandi leaf contains ... (10) .., which used as ..... (11) ....., while Henna leaf contains ... (12) ... and used as .....(13) ...
- f- Tea leaf contains ... (14) ... , ' ' (15) ....., ... (16) ... and ... (17) ... which gives ... (18) ... colour with FeCh.
- g - Buchu leaf is used as ... (19) ... because it contains ... (20) ...

***II- Draw the characteristic elements of the following powdered drugs:***

***(4x2.5= 10 marks)***

- 1- Stramonium
- 2- Senna
- 3- Buchu
- 4- Belladonna

***III- Write short notes on the following:***

***(5x3= 15 marks)***

- 1- Bomtrager's test
- 2- Preparation of the black tea
- 3- Differences between *Hyoscyamus muticus* and *Hyoscyamus niger*
- 4- Drug used as astringent, its active constituents and **one** chemical test.
- 5- Chemical test for Digitoxose

**IV- Explain the causes of the following:** (5x2= 10 marks)

- 1- Rhubarb containing anthranols
- 2- Cholchicum devoid of cholchicine
- 3- Santonica flower containing less than 30/0 of santonin
- 4- Vanilla pods with no odour
- 5- Digitalis leaves containing traces of cardiac glycosides

**V- Write short notes on the following:** (3x3= 9 marks)

- 1- Mutation
- 2- Deterioration
- 3- Cyanogenetic glycosides

**VI-In a tabular form, mention the differences between the followings:**

(4x4= 16 marks)

- 1- Amylose and Amylopectin
- 2- Maize and Potato starch
- 3- Bufadienolides and Cardinolides
- 4- Hydrolysable tannins and Condensed tannins

**Good Luck**

Assiut University  
Faculty of Pharmacy  
Dept. Pharm. Organic Chemistry  
Pharm. Organic Chemistry Exam

1<sup>st</sup> Year Pharmacy  
Final Semester Exam.  
Jan. 20,2010

Time Allowed 3h

Illustrate your answer by chemical equations and reaction  
mechanisms whenever possible

الامتحانات الشفهية عقب الامتحان النظرى مباشرة لجميع الطلاب

This booklet is composed of 8 pages  
Answers should be in the specified places

لجنة الامتحان

Prof. Dr. Abdel Alim M. Abdel Alim  
Dr. Mostafa A. Hussein  
Dr. Samia G. Abdel Moety  
Dr. Alaa A. Khalifa  
Dr. Ola I. Abdel Razek  
Dr. Hajjaj H. Mohammed

**Section A (90 min, 35 points)****1- Draw the chemical structure of the following compounds: (3 point)**

1) 2-Hexanol	2) 2- pentanethiol
3) 12-Crown-4 ether	4) 3- Aminopropanoic acid
	5) 1-Bromo-2,2-dimethylpropane
6) Ethyl isopropyl ether	

**II. Assign which of the following statements is true or false (10 marks)**

1	2	3	4	5	6	7	8	9	10

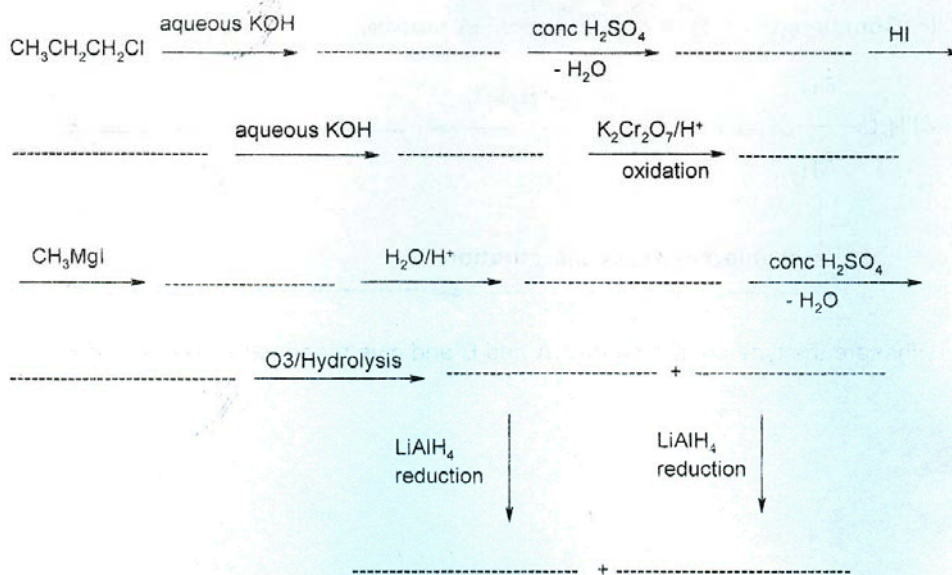
- 1) Polar protic solvents favor the rate of both SN1 & SN2 reactions. ( )
- 2) Amines have boiling points lower than those of alkanes and alcohols of comparable molecular weight. ( )
- 3) The acidic character of various alcohols is in the order: primary > tertiary > secondary. ( )
- 4) The carbocation stability plays an important role in SN2 reactions. ( )
- 5) In reactions involving cleavage of O-H bond the tertiary alcohols are the most reactive type. ( )
- 6) The bond dissociation energy of alcohols O-H bond is much more than of thiols S-H bond. ( )
- 7) Increasing the reaction temperature favors substitutions (SN1 & SN2) over eliminations. ( )
- 8) Aliphatic amines react with nitrous acid and yield stable diazonium salts. ( )
- 9) Ethanethiol is less acidic than ethanol. ( )
- 10) Ethoxide ion is stronger nucleophile than the corresponding ethanethiolate one. ( )

*See the next page*





IV. Complete the following reactions: (6 points)



V. Illustrate the mechanism of the following reactions (equations are essential): (10 points)

a) Preparation of 2-butanol through oxymercuration-demercuration of 1-butene: (3 points)

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B) E<sub>2</sub> reaction of isopropyl bromide when heated with C<sub>2</sub>H<sub>5</sub>ONa: (4 points)

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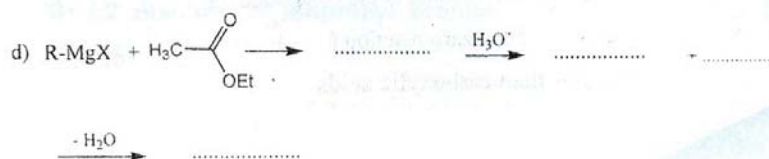
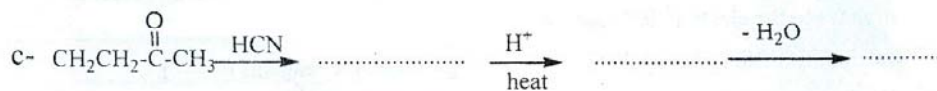
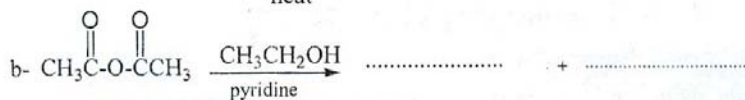
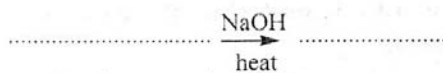
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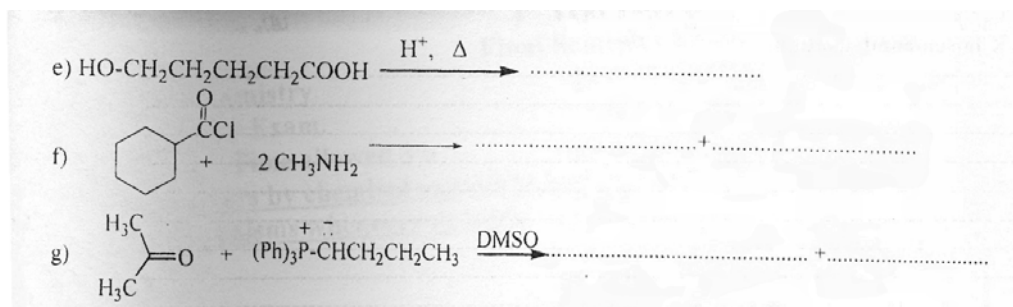
**11- Complete the following statements: (7 points)**

- 1) Esters are more stable than other carboxylic acid derivatives such as-----  
-----.
- 2) Amides are planar and the C-N has partial \_\_\_\_\_ character, since C-N bond length is -----than C-N in amine and there is ----- for rotation.
- 3) When benzoic acid reacts with methanol labeled with  $^{18}\text{O}_2$  in presence of conc.  $\text{H}_2\text{SO}_4$ , the labeled  $^{18}\text{O}_2$  appears in the -----.
- 4) Organic carboxylic acids are weaker acids than----- but are more acidic than -----.
- 5) Grignard reagent cannot be prepared from alkyl halides containing groups which it is known to react like: -----.
- 6)  $\text{EtMgBr}$  reacts with active hydrogen compounds to give.....while reaction with ethyl bromide gives .....
- 8)  $\text{LiAl}[\text{OC}(\text{CH}_3)_3]_3\text{H}$  reagent is preferred for the preparation of aldehydes from -----.
- 9) The reaction between  $\alpha$ -bromoester ( $\text{Br-CH}_2\text{COOEt}$ ) and a carbonyl compound in the presence of Zinc is known as.....and the product is.....

**111- Complete the following equations (10 points)**



See the next page



IV- Discuss the mechanisms of the following reactions: (6 points)

a) Crossed Cannizzaro reaction.

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b) Base promoted hydrolysis (saponification).

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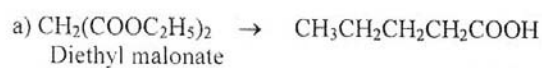
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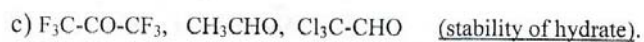
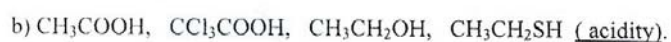
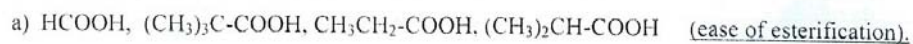
c) Claisen condensation.

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V- How could you carry out the following conversions: (4 points)



VI- Arrange the following sets of compounds in order of their increasing underlined property (without comment): (4.5 points)



*Good luck*

1- Acid-base (28Marks)

By Dr. Hanaa Mohammed Abdel-Wadood

I-Give the reason(s) for the following: (10 Marks)

a- The two protons of  $H_2SO_4$  give one inflection when titrated with standard NaOH.

b- CaCh is a secondary standard.

c- Mixed indicator is the most suitable for titration.

d- Addition of glycerol for the determination of boric acid by direct titration with standard NaOH.

e- The third proton of  $H_3PO_4$  can't be determined by direct titration with standard alkali.

f- Addition of ether in the determination of sodium benzoate by standard HCl.

g- In the determination of  $NH_2HgCl$  by reaction with KI, methyl orange, not phenolphthalein is the suitable indicator.

h- pH of solution of  $HN03$  equals to  $= -\log [H^+]$ .

i- Addition of alcohol in the determination of CaO by reaction with sucrose.

j- Mixture of HCl and NaCl is not a buffer.

2- Complete the following: ( 4 Marks)

a- Kjeldahl's method is used for determination of -----  
and depends on boiling of the compound with----- in the presence  
of-----that increases the boiling point and ----- as a  
catalyst.

b- For determination of  $K_2S_2O_8$ , its first ----- in water in the presence  
of----- as catalyst, after cooling, titrate with standard -----  
using -----as indicator.

3- Choose the correct statement (6 Marks)

a- The scientist who put the equations for buffer solution is

- 1- Lewis    2-Henderson    3-Ostwald    4- Arrhenius.

b- pH of solution of  $CH_3COONH_4$  equals to

1-  $pH = \frac{1}{2}pK_w + \frac{1}{2}pK_a - \frac{1}{2}pC_s$

2-  $pH = \frac{1}{2} pK_w - \frac{1}{2} pK_b + \frac{1}{2}pC_s$

3-  $pH = \frac{1}{2} pK_w + \frac{1}{2}pK_a - \frac{1}{2}pK_b$

4-  $pH = \frac{1}{2}pK_w - \frac{1}{2}pK_b - \log [salt]/[base]$ .

c- Mixture of methyl orange and indigocarmine is used as:

- 1- Screened indicator    2- mixed indicator  
3- simple indicator    4- universal indicator.

d- For determination of sodium salicylate by biphasic method, the suitable  
indicator is

- 1- Phenolphthalein    2-bromophenol blue    3- thymol blue    4- cresol red.

e-  $NH_4Cl$  can be determined by:

- 1- Direct titration    2- back titration    3-formol method    4-all of the above.

f- The following compounds can be determined by direct titration except:

- 1-  $CH_3COOH$     2-aminophyiline    3-aspirin    4-aspartic acid.

g- The following compound is a primary standard:

- 1-KHphthalate    2- NaOH    3- HCl    4- $NH_4OH$ .

h- Among the methods for expressing the concentration:

- 1- Normal sol.    2- molar sol.    3- weight percent    4- all of the above.



i-NH<sub>3</sub> is a base according to:

- 1- Bronsted& Lowry 2- Lewis 3- both 1,2 4- Ostwald.

j-The pH of solution of 0.001M NaOH equals to:

- 1-11 2- 12 3- 13 4-14

k- Borax is

- 1- salt of strong acid& strong base 2-salt of weak acid & strong base  
3- salt of very weak acid& strong base 4- non of the above

m- BaCl<sub>2</sub> can be determined by:

- 1- direct method 2- back method  
3- biphasic method 4-displacement method

4- Select from column B the suitable sentence for that in A  
(5 Marks)

A	B
i - Soreson is ii-m.o. is suitable for iii-Lewis is iv- Normal solution is v-NaOH is a vi-pH of solution of KOH= vii- Molar solution is viii- ph.ph. is suitable for ix-Na <sub>2</sub> CO <sub>3</sub> is a x-a is a symbol for	a-gram equivalent weight /L b- primary standard. c-titration of CH <sub>3</sub> COOH with NaOH. d- The scientist who put the expression of pH. e- gram molecular weight/L. f- $pH = pK_w - 1/2pK_b - 1/2pC_b$ g- titration of NH <sub>4</sub> OH with HCl. h- The scientist who put the electronic theory. i- The scientist who put the indicator theory. j- $pH - pK_w - pOH$ . k - secondary standard. l- $pH = pK_w - pK_b - \log [salt ]/[base ]$ . m- weak electrolyte. n-degree of dissociation. o- inflection of the titration curve.

5- Calculate the pH of solution obtained by mixing 50 ml of 0.1M HA with 20 ml of 0.2M NaOH ( $k_a$  of HA =  $1.8 \times 10^{-4}$ )  
(3 Marks)

**11 Non-Aqueous Titrations      Dr/Noha Nahedj (Marks = 5)**

1- What is the difference between

(a) Levelling and differentiating effects (give examples)

(b) Protogenic and protophilic solvents (give examples)

2-By equations illustrate how to determine the following compounds

(a) Aniline hydrochloride

(b) Ephedrine sulphate

(c) Phenobarbitone



2-Mark (✓) in front of correct statement or ( x) in front of wrong one and correct it : ( 8 marks)

a\_ Fluorescein is used for determination of iodide.

b- The solubility of AgCl increases in presence of AgNO<sub>3</sub>

c-Using Volhard's method a red ppt is formed at end point.

d- As the K<sub>sp</sub> decreases, the inflection of the titration curve decreases too.

e- The solubility of BaSO<sub>4</sub> increases in presence of NaNO<sub>3</sub>

f- Rhodamine 6 G is an acid dye.

3-Solve the following problem: ----- (2 marks)

Calculate the required concentration of K<sub>2</sub>CrO<sub>4</sub> indicator to be precipitated at end point.

(K<sub>sp</sub> of AgCl=  $1.1 \times 10^{-10}$  and K<sub>sp</sub> of Ag<sub>2</sub>CrO<sub>4</sub>=  $1.1 \times 10^{-12}$ )

If we titrate NaCl with AgNO<sub>3</sub> using Mohr's method



B. Illustrate by drawing only the following:  
marks)

(2x2.5=5

1- There is a relationship between compound weight (or form) and the temperature of ignition. Illustrate one example by drawing	2- BaSO <sub>4</sub> crystals; on precipitation, it suffers from many types of impurities. Illustrate examples by drawing.
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C. Answer shortly each of the following: (2x2.5=5 marks)

- What are the main sources of interference that may be occurred on precipitation of Cl<sup>-</sup> by Ag<sup>+</sup>?
- There is an equation which determines the optimum conditions for precipitation. What is the equation and what are these conditions?

مع خالص دعائنا بالتوفيق والتفوق  
امتحان الشفهي عقب التحريرى فى المواعيد الآتية مساء اليوم:  
الارقام من 1 الى 428 من الساعة 3.5 الى 6.0 والارقام من 429 الى الآخر من الساعة 6.0 الى 8.5



Assiut University  
Faculty of Medicine  
Medical Physiology Dept.

Date: 2/2/2010  
Time allowed: 3 hours

Final Exam. of Physiology For 1<sup>st</sup> Year Pharmacy Students  
First Semester, 2010.

Answer the following question :- (Total marks: 100)

*First Question:-*

- 1- Mention the functions of glucocorticoids (cortisol). (10)
- 2- Describe the control of parathormone secretion. (6)
- 3- Define and mention the factors affecting spermatogenesis. (8)

*Second Question:-*

- 1- Mention and explain the forces affecting glomerular filtration. (5)
- 2- Define tubular reabsorption, tubular secretion and tubular metabolism. (3)
- 3- Define pulmonary surfactant and mention its significance. (6)
- 4- Define each of the following: (3)  
a- Tidal volume.      b- vital capacity.      c- residual volume.

*Third question:-*

- 1- Mention five functions of bile salts. (5)
- 2- Define and mention causing and mechanism of vomiting. (8)
- 3- Define excitability (of nerve) mention and describe its phases (periods). (7)
- 4- Mention four functions of the hypothalamus. (4)

*Fourth Question:-*

- 1- Mention the functions of reticular endothelial system. (6)
- 2- Describe the role of hypoxia in red blood cell production. (3)
- 3- Mention the three physiological factors affecting basal metabolic rate. (3)

*Fifth question:-*

- 1- Define cardiac out put and mention factors affecting venous return. (7)
- 2- Define arterial blood pressure and mention factors maintain it. (7)
- 3- Discuss the higher control of autonomic N.S. (3)
- 4- Compare the somatic and autonomic reflex arc. (6)

Good luck

*Prof. Mamdouh M. Anwar and the committee.*

الاختبار الشفهي لجميع الطلاب يوم الأربعاء الموافق 2010/2/3 الساعة 8.5 صباحا بقسم الفسيولوجيا كلية الطب.



Assiut University  
Faculty of Medicine  
Medical Physiology Dept.

Date: 22/2/2010  
Time allowed: 3 hours

Final Exam. of Physiology For 1<sup>st</sup> Year Pharmacy Students  
First Semester, 2010. (تخلفات الفرقة الثانية والثالثة حديث)

Answer the following question :- (Total marks: 115)

<i>First question:-</i>	
1- Mention the functions of insulin hormone.	(10)
2- Describe the control of glucocorticoids secretion (cortisol).	(8)
3- Mention the functions of progesterone hormone.	(8)
<i>Second question:-</i>	
1- Describe the process of glomerular filtration in the kidney.	(6)
2- Discuss the endocrine functions of the kidney.	(5)
3- Describe the gastric phase of gastric juice secretion.	(8)
4- Mention the functions of saliva.	
<i>Third question:-</i>	
1- Define both of depolarization and repolarization in the nerve.	(4)
2- Mention the functions of spinal cord.	(6)
3- Mention the functions of spleen.	(4)
Mention types and four functions of plasma proteins.	(7)
<i>Fourth question</i>	
1- Define basal metabolic rate and mention three physiological factors affecting it	(4)
2- Define, tidal volume, vital capacity and residual air	(6)
3- Describe the chemical control of respiration	(6)
<i>Fifth question</i>	
1- Mention the functions of vagus nerve.	(8)
2- Mention drugs that augment (stimulate) sympathetic activities.	(4)
3- Define rhythmicity, contractility of cardiac muscle and cardiac out put	(6)
4- Define venous return and mention the factors affecting it.	(10)

Good luck

Prof. Mamdouh M. Anwar and the committee

الاختبار الشفهي لجميع الطلاب يوم الثلاثاء الموافق 2010/2/23 الساعة 8.5 صباحا بقسم  
الفسولوجيا بكلية الطب.



## Introduction to pharmaceutical dosage forms

**All questions should be attempted (85 marks)**

**1- Write short notes on each of the following: (25 marks)**

- 1- Surfactants are classified according to their functions. What are these functions? Draw the HLB scale.
- 2- Surfactant concentration has greater effect on solution properties. Explain with drawing.
- 3- What is the cloud point? Factors affecting its value.
- 4- Differences between micellar solubilization and emulsification.
- 5- Protein is greatly affected by ionic surfactants. Explain.

**11- Explain briefly each of the following: (25 marks)**

- 1- How can you identify emulsion types?
- 2- Advantages of emulsion.
- 3- Theories of emulsification.
- 4- Ideal emulsifying agents.
- 5- Types of emulsion.

**111- Mention and explain briefly each of the following: (35 marks)**

- 1- Types of incompatibility.
- 2- Therapeutic intentional incompatibility.
- 3- Differences between ointments and pastes.
- 4- Differences between syrups and elixirs.
- 5- Differences between hard and soft gelatin capsules.
- 6- Factors affecting choice of flavoring agents for dosage forms.
- 7- Methods of particle size analysis of powder (Explain one).

الأستاذة الدكتورة: فوزية حبيب

الدكتورة: أمال السايح فضل

يعقد الامتحان الشفوي لجميع الطلاب بعد النظرى مباشرة بقسم الصيدلانيات

والله ولى التوفيق



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

First Year, 2<sup>nd</sup> Term  
Pharm. Anal. Chem.2 Exam  
Date: June 24, 2010  
Time allowed: 2 hours

- .....
- الامتحان مكون من أربعة أسئلة إجبارية في 8 صفحات.
  - الامتحان الشفوي عقب النظرى (من 1 الى 415: الساعة الثالثة ونصف الى السادسة ونصف ومن 416 الى الآخر: الساعة السابعة).

**Question (1):**

**(25 Marks)**

**A-In the provided table, Write the correct name or scientific term for each of the following:**

**(9Marks)**

No	Name of Scientific term	No	Name of Scientific term	No	Name of Scientific term
1		7		13	
2		8		14	
3		9		15	
4		10		16	
5		11		17	
6		12		18	

1. A plot that shows the changes of potential during the progress of redox titration.
2. The molecular weight of a substance is divided by the number of electrons that one mole of the substance losses in the reaction.
3. A quantitative relation of the potential of half cell to concentration of ions in solution.
4. A reagent consists of manganous sulfate, sulfuric acid and phosphoric acid.
5. The reaction in which some reducing agents are titrated with potassium iodate in cone. HCl medium.
6. An intense red colored coordination complex formed by combination of the base orthophenanthroline with ferrous ion in the mole ratio 3 base: 1 ferrous.
7. Observed experimentally in a solution containing equal number of moles of oxidant and reductant substances together with other substances at specified concentration.

8. An example of primary redox standard solution that reacts as oxidant in acid medium only
9. A substance that can accept electrons in the reaction with other substance in solution.
10. The determination of oxidizing substances by reaction with iodide salts and the liberated iodine is titrated with sodium thiosulphate.
11. A group of compounds that are easily oxidized and can help to counteract the influence of reactive oxygen or nitrogen species.
12. A substance that refers to the release of metal ions from a complex.
13. A substance that is employed to prevent the precipitation of metal ion in the absence of EDTA
14. A chelating agent; non toxic, and serves as effective antidote for the treatment of lead poisoning.
15. The value which gives the ratio of the total uncombined EDTA (in all forms) to the fully ionized form.
16. Water - soluble chelating agents ,often are used to remove objectionable metal ions by combining with them to form stable water-soluble chetates.
- 17.A factor defined the ratio of the sum of the concentrations of all forms of the metal ion not complexed with EDTA to the concentration of the simple (hydrated) ion.
- 18.A complex species containing two metal ions or more than two metal ion.

**B· Complete the following: (write the answer in the table)**

**(10 Marks)**

No	Answer	No	Answer
(i)		(ii)	
(iii)		(iv)	
(v)		(vi)	
(vii)		(viii)	
(ix)		(x)	

1. On titrating ferrous chloride (EO  $Fe^{3+}/Fe^{2+} = 0.77 V$ ) with potassium permanganate (EO  $MnO_4^-/Mn^{2+} = 1.52 V$ ) in sulfuric acid medium, the indicator is..... (i) ....., The balanced reaction equation is written as follows: " ...(ii)... , The

equilibrium constant of the reaction can be calculated from the mathematical equation ..... (iii) ..... The interference if present can be eliminated by addition of ... (iv) ..... , the role of added reagent is to: ... (v) ... , .... vi., .. and ... (vii) ....

2. On titrating 100 ml 0.1 N ferrous sulphate by 0.2N ceric sulphate ( $E^{\circ} Ce^{4+}/Ce^{3+} = 1.44 V$ ) in dil. sulfuric acid, then the potential can be calculated as follows :when adding 25 ml ,, (viii) ... , 50 ml ... (ix) ... and 60 ml ceric solution ... (x) .....

**c- Give the reason(s) for the following: (6 Marks)**

1. Ferricyanide ( $E^{\circ}_{ferri/ferro} = 0.36 V$ ) can oxidize iodide ( $E^{\circ}_{I_2/I^-} = 0.54 V$ ) in presence of 1 M HCl and not the reverse.

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2. The addition of KI to iodine for preparation of standard iodine solution.

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3. Starch is a suitable indicator in Lang's method.

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4. Oxidants that are stronger than iodine can not be titrated directly with sodium thiosulfate.

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5. Although potassium dichromate solution is colored orange to yellow but can not be used as self indicator.

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6. On titrating  $Fe^{2+}$  with  $Cr_2O_7^{2-}$ , using diphenylamine as indicator,  $H_3PO_4$  must be added.

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**Question (II):**

**(16 Marks)**

A. Write short notes on each of the following:

1. Bromometric determination of phenol

**(2.5 Marks)**

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2. Determination of antimony oxide ( $\text{Sb}_2\text{O}_3$ ) by potassium bromate

**(2.5 Marks)**

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3. Iodometric determination of ferric salts ( $\text{Fe}^{3+}$ ) or glycerol

**(2.5 Marks)**

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4. Determination of glucose and sucrose in a mixture

**(3.5 Marks)**

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4-Aluminum- EDTA chelate may be abbreviated as :

- a-  $MY^-$                       b-  $My^{3-}$                       c-  $MY^+$                       d-  $My^{3+}$

5-CDTA (cyclohexanediamino teraacetic acid) is:

- a- one of the complexones exactly it is Complexone VI  
b- usually forms stronger metal chelates than does EDT A  
c- usually forms metal chelates more rapidly than does EDTA  
d- all are correct

6-Magnesium ion can be masked by :

- a-  $CN^-$                       b-  $F^-$                       c- chloralhydrate                      d- non of all

7 - One of these conditions is not a reason for using "back" type of EDTA titrations for  $Al^{3+}$ .

- a-  $Al^{3+}$  reacts very slowly with EDTA.  
b-  $Al^{3+}$  forms a precipitate of  $Al(OH)_3$  at reaction pH.  
c-  $Al^{3+}$  needs an auxiliary complexing agent to keep it soluble before titration with EDTA.  
d-  $Al^{3+}$  blocks Erio T

8- $K_H$  (apparent stability constant at specific pH) is :

- a- increased by the increase in the pH of the medium.  
b- increased by the decrease in the pH of the medium.  
c- not affected by the pH of the medium.  
d- a & c are incorrect

No	1	2	3	4	5	6	7	8
Capital letter								

**B- Mark (✓) for the correct statement and ( X ) for the wrong and correct the wrong one:** ( 6 marks)

1.  $Al^{3+}$  reacts with  $F^-$  to form stable complex.
2. Copper cyanide complex is less stable than copper ammine one.
3. Titration of lead ion with EDTA is carried out in alkaline medium.
4. The reaction of  $Cd^{2+}$  with ethylenediamine has a much larger equilibrium constant than its reaction with four molecules of methylamine.
5. Erio - T indicator gives poor end point in titration of calcium ion alone.

6. Calcium-EDTA chelate is strong enough to be titrated in acidic medium.

**C- Write briefly on the following:**

**(8 Marks)**

1-Mercurimetric determination of iodide ion (by equations only)

**(2.5 Marks)**

2-Mixture of bismuth and lead ions

**(3 Marks)**

3- Requirements for a good metal-ion indicator.

**(2.5 Marks)**

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**Question (IV):**

**(11 Marks)**

**A- What is the difference between:**

**(4 Marks)**

1. Accuracy and precision.

2. Specificity and selectivity of analytical method.

3. Correlation coefficient ( $r = 0.999$  and  $r = 0.666$ )



4. 10.0 ml and 10 ml.

**B- The Calibration data for a colorimetric determination of potassium permanganate samples are shown in the following table:** (7 Marks)

Sample concentration ( $X_i$ ) ( $\mu\text{g/ml}$ )	Abrbance ( $Y_i$ )
10	0.178
20	0.312
30	0.477
40	0.618
50	0.769
Unknown concentration	0.567

1. Calculate the mean, standard deviation, and variance for the absorbance readings.

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2. Calculate the correlation coefficient ( $r$ )

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3. Determine by the least square method the equation of the best straight line for the calibration curve

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4. Calculate the sample concentration for the unknown sample

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**Good Luck**

*Examiners: Prof. Dr. Horria A. Mohamed  
Prof. Dr. Samiha A. Hussein  
Dr. Ashraf M. Mahmoud*

*All questions to be answered*

لاحظ أن أسئلة الامتحان في 6 صفحات

**I- Choose the correct answer and put it in the table below:** (10x0.5=5marks)

- 1- A typical bark consists of:  
a- cork, cortex, pericycle, phloem & xylem      b- cork, cortex, pericycle & phloem  
c- Pericycle & phloem      d- phloem, cambium, xylem & pith
  
- 2- Styloid crystal present in:  
a- cascara      b- cinchona  
c- quillaia      d- cinnamon
  
- 3- Eugenol gives needle crystals with:  
a- KOH      b- HCl  
c- FeCl<sub>3</sub>      d- Picric acid
  
- 4- Epiphytes can be differentiate between:  
a- stem and root bark      b- Wood and bark  
c- wood and stem      d- cork and cortex
  
- 5- The oil of cinnamon is secreted by:  
a- oil glands      b- oil cell  
c- glandular hairs      d- laticiferous vessels
  
- 6- Canella bark contains:  
a- alkaloids      b- eugenol  
c- anthraquinone glycosides      d- fixed oils
  
- 7- The sclerieds of cinnamon contains:  
a- starch granules      b- oil droplet  
c- Prisms of calcium oxalate      d- non of them
  
- 8- The antimalarial drug in cinchona is:  
a- quinidine      b- quinovic acid  
c- quinine      d- cinchotannic acid
  
- 9- Cascara bark should be used after one year of collection to:  
a- Increase the % of anthranol      b- decrease the % of anthranol  
b- Increase the % of cascrarosides      d- decrease the % of cascrarosides
  
- 10- Quinine gives blue fluouescence with:  
a- oxygenated acids      b- mineral acids  
c- strong alkali      c- Mayer's reagent

**Answers of question I**

1	2	3	4	5	6	7	8	9	10

**II- In the table below. fill with a suitable word (s):** (20x0.5=10 marks)

- Cascara bark contains .....(1) which gives.....(2) colour with KOH.
- pomegranate bark contains .....(3) which used as .....(4); and contains ..... (5) which used as.....(6) .
- Wild cherry bark used in cough preparation because it contains.....(7) .
- Forked fibers are characters of .....(8) bark, while fusiform fibers are, characters of .....(9) bark .
- ShizogenouS glands present in .....( 10) while latieeferous vessels present in .....(11) .
- Crystal sheath present in .....(12), while idioplast present in.....(13) .
- The activation of the phellogen gives.....(14) and .....(15).
- .....(16) which is used as starling materials in preparation of vanillin is present in ..... (17).
- .....(18) present **in** cascara bark and absent **in** frangula .
- Rytidoma is .....(19) while the lenticel is .....(20)

**Answers of question II**

1		2	
3		4	
5		6	
7		8	
9		10	
11		12	
13		14	
15		16	
17		18	
19			
20			

**III- Draw the key elements of the following:**

(4x2.5=10 marks)

Cascara bark	Cinnamon bark
Quillaia bark	Cinchona bark

**IV- Write (✓) or (x) for the following:**

(15x1= 15 marks)

1- The flower having an equal number of segments in each whorl is isomerous.....	(.....)
2- Inflorescence with elongated axis and sessile flowers is spike .....	(.....)
3- Corolla situated over the ovary is epigynous .....	(.....)
4- Inflorescence similar to raceme but with shorter axis and pedicles of different lengths is corymb .....	(.....)
5- Ovary of one carpel or the carpels join together as in compound ovary is unilocular .....	(.....)
6- The gamosepalous flower is usually polysepalous .....	(.....)
7- The white colour of some flowers is attributed to presence of flavonoids.....	(.....)
8- Gynaccium with united carpels is apocarpous .....	(.....)
9- Elongation of the receptacle between carples is gynophore.....	(.....)
10- When the receptacle is elongated between androecium and gynaecium, it is called carpophore.....	(.....)
11-Androecium with four stamens is tetradelphous .....	(.....)
12- Zygomorphic flowers is often regular.....	(.....)
13- The germinal furrows are pits through them the pollen tube protrude.....	(.....)
14- The flower whose outer non-essential floral parts are present is achlamydeous..	(.....)
15- The ovules in the apical placentation are attached to central axis formed by edges of carpels.....	(.....)

**V- Give the missed parts in the table below:**

(15x1=15 marks)

- The active constituents of insect flowers are .....(1), .....(2), .....(3) and .....(4) and can be detected by .....(5) reagent giving .....(6) colour.
- The volatile oil of german chamomile is blue when extracted with .....(7) but when prepared by .....(8) it is yellowish-green.
- The lactone bitter principle obtained from .....(9) of santonica is .....(10). It is used mainly as .....(11) but this use has been discontinued as it prsuces .....(12).
- Compositae hair can be detected in the powders of .....(13), .....(14) and .....(15) in addition to *Anthemis nobilis* (give the origins).

marks

*Answers of question V*

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

**VI- Write (√) or (x) and correct the false for the following: (5x1=5 marks)**

1- Gall-causers can be called parasites as it destroy the plant.....(.....)

marks

2- Blue galls are formed on the twigs of *Adleria gallaetinctoria* .....(.....)

3- The growth of the gall will stop if the larva dies .....(.....)

4- The taste of the gall is very astringent due to presence of alkaloids .....(.....)

5- Quassia wood is used as insecticide and bitter tonic .....(.....)

**VII- Choose the correct answer and put it in the table below: (10x1=10 marks)**

- 1- The function is support and/or transport for the following:
  - a- vessels
  - b- tracheids
  - c- wood fibers
  - d- All
- 2- Concerning Heartwood, all are false except:
  - a- pale in colour
  - b- consists of living cells
  - c- mostly blocked
  - d- don't possess medicinal effects
- 3- Elongated cells with sharply pointed ends are
  - a-tracheids
  - b- wood fibers
  - c- wood parenchyma
  - d-medullary rays
- 4- Concerning tracheids, they are:
  - a- elongated lignified cell
  - b- with no sharply pointed end
  - c- have pitted walls
  - d- All
- 5- Concerning substitute fibers, they are:
  - a- living cells with lignified walls
  - b- devoid of contents as starch
  - c- intermediate between fibers and vessels
  - d- non of them
- 6- The following drugs can be used as colouring agents:
  - a- sappan wood and yellow sandal wood
  - b- red sandal and saffras wood
- 7- Santalol is a volatile oil present in:
  - a- *Sassafras variifolium*
  - b- *Santalum album*
  - c- *Pterocarpus santalimus*
  - d- *Haematoxylon campechianum*
- 8- Concerning quassia wood
  - a- can be used as insecticide
  - b- contain coumarin: scopoletin
  - c- contain quassin bitter principle
  - d- all
- 9- Santalin present in a drug belongs to family:
  - a- simarubaceae
  - b- lauraceae
  - c- santalaceae
  - d- leguminosae
- 10- Concerning *Santalum album*, all are true except:
  - a- used in perfume industry
  - b- used as diaphoretic
  - c- used as enema to expel thread worms
  - d- contain volatile oil

marks
-------

**Answers of question VII**

1	2	3	4	5	6	7	8	9	10

دور يونيو 2010 الزمن: ساعتان الأحد 6/27 من 1-3	امتحان مقرر ادارة الأعمال الصيدلانية الفرقة الأولى	جامعة أسيوط كلية التجارة قسم المحاسبة
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### أجب عن الأسئلة التالية:

#### السؤال الأول:

- من خلال فحص حساب البنك في دفاتر صيدلية الشفاء بأسيوط ومقارنته بكشف الحساب الوارد من البنك الذي تتعامل معه الصيدلية اتضح أن:
- 1- رصيد حساب البنك في دفاتر الصيدلية 17226.
  - 2- رصيد كشف الحساب الوارد من البنك 12000.
  - 3- قامت الصيدلية بإرسال مبلغ 7500 الى البنك ولكن المبلغ لم يظهر بكشف الحساب.
  - 4- حصل البنك كمبيالة لصالح الصيدلية بمبلغ 1000 ولم تخطر الصيدلية بعد بهذا التحصيل.
  - 5- قامت الصيدلية بتحرير شيك لإحدى شركات الأدوية بمبلغ 4000 ولم تتقدم الشركة لأصرفه بعد.
  - 6- تم سداد مبلغ 1422 كراتب للصيدلي المساعد وقد سجل في دفاتر الصيدلية مبلغ 1224.
  - 7- احتسب البنك عمولة قيمتها 28 جنيه لم تخطر بها الصيدلية بعد.
  - 8- سدد البنك مبلغ 2500 لإحدى شركات الأدوية بناء على اتفاق مسبق بين الصيدلية والبنك ولم تخطر بها الصيدلية بعد.

والمطلوب: إعداد مذكرة تسوية البنك للوصول الى الرصيد الحقيقي.

#### السؤال الثاني:

فيما يلي ملخص تعاملات صيدلية الأمل خلال السنة المنتهية في 2009/12/31:

92000 مشتريات الأدوية والمستلزمات الطبية – 120000 المبيعات – 500 مصروفات نقل  
المشتريات – 800 مردودات مبيعات – 1000 مردودات مشتريات – 1800 ايجار الصيدلية –  
3600 أجور العاملين – 800 تأمينات اجتماعية – 1000 كهرباء – 200 مياه – 1400  
مصروفات بيعية.

#### فاذا علمت أن:

- 1- السنة المالية للصيدلية تبدأ في 1/1 وتنتهي في 12/31 من كل عام.
- 2- تكلفة المخزون من الأدوية في أول يناير 14000 جنيه ، ومخزون المستلزمات الطبية 2000 جنيه ، بينما في آخر السنة كانت تكلفة الأدوية الموجودة بالصيدلية 12000 جنيه والمستلزمات الطبية 3000 وسعر السوق لهذه المستلزمات 2000.

والمطلوب:

- 1- تحديد تكلفة المبيعات.
- 2- إعداد قائمة الدخل عن السنة المنتهية في 2009/12/31.

انظر الصفحة الثانية

#### الصفحة الثانية



### السؤال الثالث:

فيما يلي أهم العمليات التي تمت بإحدى الصيدليات خلال السنة المنتهية في 2009/12/31:

- مشتريات (الأدوية) 250000 جنييه.
  - حجم تعامل الصيدلية في الأدوات الرياضية ولعب الأطفال مبلغ 15000.
  - الإيجار الشهري 3000 جنييه ، المرتبات الشهرية 7000 جنييه ، المصروفات الأخرى السنوية 5200 جنييه.
  - مصروفات تأسيس الصيدلية 20000 جنييه بموجب فواتير أقرتها الضرائب وتستهلك على خمس سنوات.
  - تبرعت الصيدلية بمبلغ 1200 جنييه منها 500 للمحافظة ، 400 جنييه لإحدى المؤسسات الاجتماعية المشهورة ، والباقي سداد رسوم تعليم بعض الطلبة بالمدارس والجامعات.
- والمطلوب: حساب الربح الخاضع للضريبة في ضوء الاتفاقية رقم 58 لسنة 2005 الموقعة بين نقابة الصيادلة ومصلحة الضرائب.

### السؤال الرابع:

- (أ) ماذا يقصد بكل من: التكاليف المتغيرة ، والتكاليف الثابتة ، ونقطة التعادل.
- (ب) تقوم إحدى شركات الأدوية ببيع منتجها بسعر 30 جنييه للوحدة وتبلغ التكاليف الثابتة للشركة 300000 كما أن التكاليف المتغيرة للوحدة 20 جنييه.

### والمطلوب:

تحديد حجم المبيعات اللازمة لتحقيق التعادل.

مع تمنياتي بالتوفيق ،،،،،



Department of Pharmacognosy  
Pharmacognosy 1 exam.



Time allowed: 1hr.	Date: 20/11/2010
Students name:	Students No.:

**All Questions are to be answered:**

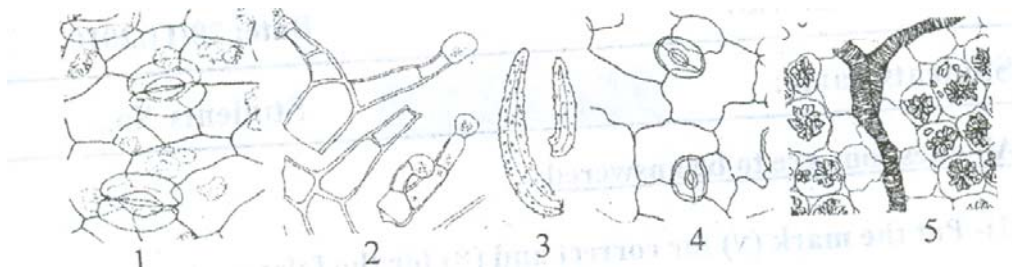
**(1)- Put the mark (√) for correct and (x) for the false sentences:**

(7.5 marks)

- 1- The specific name of *Foeniculum vulgare* means that it is a wild plant ( )
- 2- *Myristica fragrans* is nice in odour ( )
- 3- Alexandrian senna are grown in Sudan but are exported from Alexandria ( )
- 4- Amylose usually makes up 10 to 25 per cent of the whole starch ( )
- 5- Dextrins are used as a source of readily digestible carbohydrate for infants ( )
- 6- Inulin is used in culture media as a fermentative identifying agent for certain bacteria ( )
- 7 - Oxidase enzyme can be traced in gum Arabica. ( )
- 8- Cystolith is seen in the covering trichomes of cannabis ( )

(Turn over the page)

(II) A-Identify the elements below, for each, mention the plant which include. (5 marks)



The element	The plant which include
1-	
2-	
3-	
4-	
5-	

B- Mention the name and the active constituent of drug used as: (2 marks)

1-Antispasmodic drug	2- For treatment of constipation
<u>a- Name</u>	<u>a- Name</u>
<u>b- The active constituents</u>	<u>b- The active constituents</u>

Mention one chemical test for drug NO.2 (0.5 mark)

.....  
 .....

(best wishes)

**(All Questions should be attempted)**

Fill in the spaces:

Part 1:

(4 marks)

- 1- The main components of medicinal syrup are water, .....  
and .....
- 2- For..... patients, ..... and ..... are two  
monoglycogenic materials used in making syrups.
- 3-Among the disadvantages of inverted syrups is ..... and  
.....
- 4- The role of lemon tincture in citric acid syrup is .....
- 5- The range of alcoholic content in spirit is .....
- 6- Elixirs are ..... liquids for ..... use ..
- 7- Drinking water (water USP) should not contain more than .....  
of solid material.
- 8- Water for injection must be ..... and ..... free.
- 9- Hard gelatin capsule shells are manufactured in ..... sections  
while soft is only .....

Part 2:

(4 marks)

- 1- The narcotic prescription must include:
  - a- .....
  - b- .....
- 2- The Type of emulsion (*o/w* or *w/o*) depends on:
  - a- .....
  - b- .....
- 3- The potential uses of multiple emulsions are:
  - a- .....
  - b- .....

4-The inscription:of a typical compound prescription contain four distinct portions

known as:

a- .....c-.....

b- .....d-.....

---

**Part 3:** (4 marks)

1- ..... : is practically useful for mixing solid substances that liquefy or for eutectic mixtures.

2- .....: is used both to comminute and to mix powders.

3- .....: is employed when potent substances are to be mixed with a large amount of diluent.

4- ..... : is the process of mixing powders in a large container rotated by a motorized process.

5- A glass mortar is preferable for .....

6-When ..... is desired, porcelain or a Wedgwood mortar is preferred.

7- ..... melt at a lower temperature than any of their ingredients.

8-Ovoided powders are dispensed in the form of individual doses, generally in .....

---

**Part 4:** (3 marks)

1- In alkaline solution protein molecules have ..... charge, while in acid medium protein molecules acquire ..... charge

2- The lowest concentration at which micelles start to form is called .....

3- Above CMC the surface tension ..... while, solubility .....

4- Benzalkonium chloride is ..... surfactant, while sod. Lauryl sulphate is ..... surfactant.

5- Change of internal structure of proteins is called ..... and is due to interaction of ..... with ..... surfactants.

6- Cationic surfactants have ..... activity beside their surface activity because they cause ..... to the cell.



Assiut University  
Faculty of Medicine  
Medical Physiology Dept.

Date: 22/11/2010 Time  
Time allowed: 1 hour

Mid-term Exam. of Physiology For 1<sup>st</sup> Year Pharmacy Students  
First Semester November, 2010

Name:-

---

Answer The Following Questions:- (Marks)

1- Discuss the functions of neutrophils. (3)

2- Mention the functions of large intestine.

3- Mention the types of cholinergic receptors and mention one drug stimulate and other inhibit each type. (4)

4- Discuss the effects of glucocorticoid hormone on metabolism. (4)

**Section A**

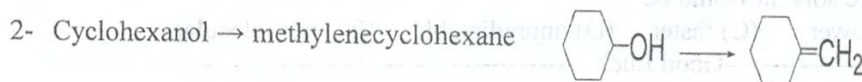
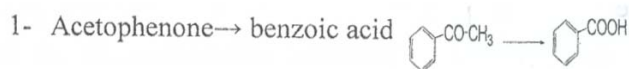
**1- Choose the correct answer for the following sentences: (3.5 points)**

- 1- From which of the following, tertiary butyl alcohol is obtained by the action of MeMgI ?  
(a) HCHO      (b) CH<sub>3</sub>CHO      (c) CH<sub>3</sub>COCH<sub>3</sub>      (d) CO<sub>2</sub>
- 2- The compound that does not undergo Cannizzaro reaction is:  
(a) formaldehyde (b) acetaldehyde (c) benzaldehyde (d) trimethyl acetaldehyde
- 3- Which of the following compounds is oxidised to give ethyl methyl ketone?  
(a) 2-propanol (b) 2-pentanone (c) 1-butanol (d) 2-butanol
- 4- Which of the following is a semicarbazone derivative of an aldehyde (RCHO)?  
(a) RCH=N-NHCONH<sub>2</sub> (b) RCH=N-OH (c) RCH=N-NH<sub>2</sub> (d) RCH=NH
- 5- Which of the following statement is wrong?  
(a) 2-pentanone and 3-pentanone give position iodoform test  
(b) aqueous solution of formaldehyde is known as formalin  
(c) aldehydes and ketones undergo nucleophilic addition  
(d) aldehydes act as reducing agents
- 6- Heating acetone with either: **I** ethyl amine, or **II** diethylamine in presence of an acid catalyst leads to different results. What are the products from these reactions?  
a) **I** gives an imine & **II** fails to react      b) **I** gives an enamine & **II** fails to react  
c) **I** gives an imine & **II** gives an enamine      d) **I** gives an enamine & **II** gives an imine
- 7- Aldol product of acetaldehyde is:  
(a) 2-hydroxybutanol (b) 3-hydroxybutanol (c) 3-hydroxybutanal (d) 2-hydroxybutanal

**II- Assign true or false for the following sentences: (1 point)**

- 1- Hydration of CCl<sub>3</sub>-CO-CH<sub>3</sub> gives more stable product than hydration of CCl<sub>3</sub>-CO-H ( ).
- 2- Reaction of benzaldehyde with acetone in the presence of 10% NaOH is one of the Claisen Schmidt reaction ( ).

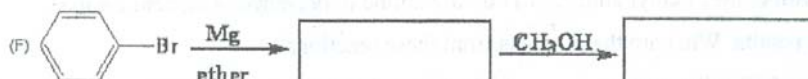
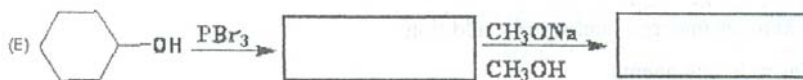
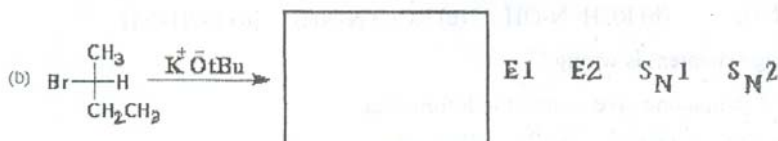
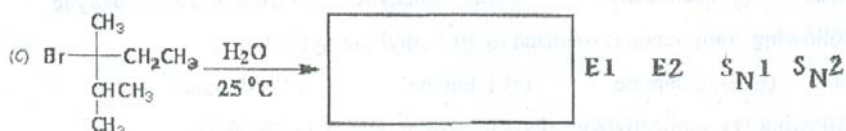
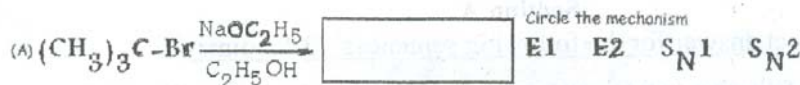
**III- How could you carry out the following conversions: (3 points)**





## Section B

- I. Draw the structure of the major product(s) of each reaction. Circle the mechanism that accounts for the formation of this product (when applicable).



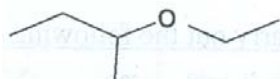
## II. Circle only one choice

- Consider the S<sub>N</sub>1 reaction of tert-butyl chloride with iodide ion: If the concentration of iodide ion is doubled, the rate of forming *tert-butyl* iodide will:
 

(A) double. (B) increase 4 times. (C) remains the same.  
(D) decrease. (E) none of the above.
- Which of the following alkyl halides would undergo S<sub>N</sub>2 reaction most rapidly?
 

(A) CH<sub>3</sub>CH<sub>2</sub>-Br (B) CH<sub>3</sub>CH<sub>2</sub>-Cl (C) C<sup>H</sup><sub>3</sub>CH<sub>2</sub>-I  
(D) CH<sub>3</sub>CH<sub>2</sub>-F (E) they react at the same rate
- Which reagents would be best to use to prepare the target compound shown?
 

(A) 2-butanol and bromoethane  
(B) ethanol and 2-bromobutane  
(C) potassium 2-butoxide and bromoethane  
(D) sodium ethoxide and 2-bromobutane


- The rate of an S<sub>N</sub>2 reaction run in a polar aprotic solvent relative to the same reaction in polar protic solvent would be
 

(A) the same (B) slower (C) faster (D) unpredictable (E) unimolecular

-----Good Luck-----

Name (in Arabic).....

1- Complete the following:

1. The following are routine safety measures in a chemical laboratory:

- 
- 
- 
- 

2. Sulphide ion in the Lassaigne's filtrate can be detected by either

- 
- 

3. Rewrite the following equation with chemical structures and characteristic observation.

Ferric sulfate + sodium ferrocyanide  $\longrightarrow$  -----

4.  $\text{NaCl} + \text{AgNO}_3 \longrightarrow$  -----  $\xrightarrow{\text{NH}_4\text{OH}}$  -----

5. In Liebig test, carbon and hydrogen are oxidized to ----- and -----  
----- which could be detected by-----and -----  
-----, respectively.

II- Assign true or false

- Trace amount of sodium is needed for fusion in Lassaigne's test.
- In test for halogen we should acidify the Lassaigne's filtrate with HCl.
- The formation of green precipitate after addition of ferrous sulfate indicates the presence of sulphide.
- Colored filtrate from sodium fusion indicates incomplete fusion.

III- A volatile hydrocarbon of M. wt. 68 gave the following data on combustion analysis; 3.55 mg gave C % 88.17 and H % 11.88.

What is the weight of both  $\text{CO}_2$  and  $\text{H}_2\text{O}$  that resulted from combustion?

What is the molecular formula of the compound?

(C = 12.011, H = 1.008, N = 14.0067, O = 15.999, Cl = 35.435)



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

First year 2010/2011  
Pharm. Anal. Chem. (1)  
Mid-term exam  
November 25, 2010  
Time allowed: 1 hours  
15 Marks

رقم الطالب:

اسم الطالب:

Question I:

(5 Marks)

A-Give the scientific terms for the following:

(3.5 Marks)

- 1-The substance ,which its presence~ in water, increases the electrical conductivity of water.
  
- 2-Mixture of more than two indicators used for rough determination of pH of solutions.
  
- 3- The point at which  $\text{pH} = \text{pK}_{\text{ind}}$
  
- 4- The degree of agreement between the measured value and the accepted true value.
  
- 5- The relationship between the volume of titrant and the corresponding pH.
  
- 6-The weight of analyte that is chemically equivalent to 1 ml of titrant.
  
- 7- A theory which returns the color change of the indicator only to its ionization.

B- Calculate the pH of solution obtained by mixing 25 ml of 0.2N NaOH with 50 ml of 0.1N  $\text{CH}_3\text{COOH}$  ( $K_a$  of  $\text{CH}_3\text{COOH} = 1.75 \times 10^{-5}$ ). (1.5 Marks)

Question II:

(5 Marks)

**Make (✓) in front of correct statement and (x) in front of wrong one: (Put the answers in the table)**

- 1- Solubility of AgCl decreases in presence of cone. HCl
- 2- Solubility of AgBr increases in presence of NaBr.
- 3- Solubility of Ag<sub>2</sub>S increases in presence of KCN.
- 4- Solubility of BaSO<sub>4</sub> decreases in presence of NaNO<sub>3</sub>.
- 5- Ksp of Ag<sub>2</sub>CrO<sub>4</sub> is more than that of AgCl.
- 6- If AgNO<sub>3</sub> 0.1 M is added to a mixture of 0.1 M NaCl and 0.1 M NaI solution AgCl will precipitate first.
- 7 - AgBr has to be separated before titration using Volhard's method.
- 8- Volhard's method could be used for determination of all halides.
- 9- Mohr's method is carried out in acid medium.
- 10- Ksp of AgSCN is more than that of AgCl.

The answers:

1	2	3	4	5	6	7	8	9	10



- 6- Determination of  $K_2S_2O_8$  by acid-base titration is based on:
- a- direct titration with standard  $AgNO_3$  after hydrolysis to  $KHSO_4$
  - b- direct titration with standard  $HCl$
  - c- direct titration with standard  $NaOH$
  - d- direct titration with standard  $NaOH$  after hydrolysis to  $KHSO_4$
- 7 - An example of non-aqueous amphiprotic solvent is:
- a-  $HCl$
  - b-  $NaOH$
  - c-  $CH_3COOH$
  - d- benzene
- 8- Biphasic titration is applied for determination of:
- a- water soluble salts
  - b- easily hydrolysable salts
  - c- water soluble salts the acid of which is insoluble in water
  - d- non of mentioned
- 9- In kjeldahl's method potassium sulfate is added to:
- a- catalyze the reaction with  $CuSO_4$
  - b- raise the boiling point of solution
  - c- catalyze the reaction with  $H_2SO_4$
  - d- all mentioned
- 10- Acid-base determination of acetylsalicylic acid is based on:
- a- back titration with standard acid.
  - b- direct titration with standard acid.
  - c- direct titration with standard base
  - d- Non of mentioned.

Good luck!

*Examiners: prof. Dr. Fardous A. Mohammed  
prof. Dr. Horria A. Mohammed  
Dr. Hanaa.A. Mohammed*

Assiut University  
Faculty of Pharmacy  
Dept. of Pharm. Organic Chemistry  
Pharm. Organic Chemistry Exam.

1<sup>st</sup> Year Pharmacy  
Final Semester Exam.  
January 11,2011

Time allowed: 3 h

Illustrate your answers by chemical equations and reaction mechanisms  
whenever possible

الامتحانات الشفهية يوم 2011/1/12 الساعة التاسعة صباحا لجميع الطلبة

This booklet is composed of 8 pages

Answers should be in specified places

لجنة الامتحان النظرى

Prof. Dr. Abdel Alim M. Abdel Alim

Dr. Mostafa M. Hussein

Dr. Samia G. Abdel Moety

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Dr. Hajaj H. Mohammed

**Section A (90 minutes, 35 points)**

**Mark (✓) or (X) for the following sentences: (2.5 points)**

- 1) Tollen's test can be used to determine whether a carbonyl compound is an aldehyde or a ketone ( ).
- 2) Similar to amines, amides are also basic ( ).
- 3) In Baeyer-Villiger oxidation; methyl ketones usually give acetate esters ( )
- 4) I-Propanol is one of the reactants used for making ethyl propanoate. ( )
- 5) The more electropositive the metal the more ionic is the C-M bond ( )

**II- Choose the correct answer for the following sentences: (4 points)**

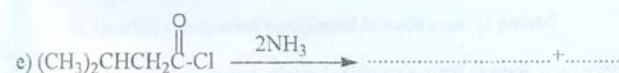
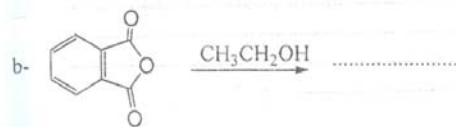
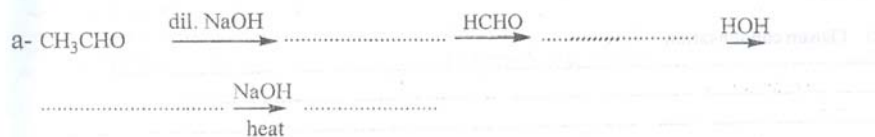
- 1- All of the following statements are true except:
  - A) The boiling point of a carboxylic acid is higher than that of its methyl ester.
  - B) Methyl esters are more reactive acylating agents than their amide counterparts.
  - C) Ester hydrolysis may be carried out with either acid or base catalysis.
  - D) Fischer esterification of acids with alcohols requires a strong base catalyst.
- 2- In the formation of N-ethylacetamide, the reactants are:
  - A) Acetic acid and ethylamine
  - B) Acetic acid and dimethylamine
  - C) Acetamide and ethanol
  - D) Ethanol and ethylamine
- 3- Compounds that provide the fragrance of fruits such as banana, oranges, and pineapples are
  - A) Alcohols
  - B) Esters.
  - C) Carboxylic acids
  - D) Amines
- 4- The reaction of a sodium hydroxide and ethyl acetate is called
  - A) Saponification,
  - B) Esterification,
  - C) Hydration,
  - D) Acid hydrolysis
- 5- The reaction of ethyl formate with two moles of  $C_2H_5MgBr$  would give?
  - A) 2-butanol
  - B) 3-pentanol
  - C) 2-methylisopropanol
  - D) Pentanol
- 6- Which of the following statements about organometallic compounds is FALSE?
  - A) Grignard reagents (RMgBr) add to the carbonyl group of aldehydes and ketones
  - B) An organosodium compound is not very reactive compared to a Grignard reagent
  - C) A Grignard reagent reacts as if it was a negatively charged carbanion
  - D) Grignard reagents are decomposed by water and alcohol
- 7-  $CH_3CH_2CH_2CH_2OH$  is the product (after workup) of ethyl magnesium bromide and
  - A) Ethanol
  - B) Diethyl ether'
  - C) Acetaldehyde
  - D) Ethylene oxide
- 8- Which of the following cannot be prepared in one step from acetic anhydride,  $(CH_3CO)_2O$ , by a nucleophilic acyl substitution reaction?
  - A) Acetic acid
  - B) Acetamide
  - C) Acetyl chloride
  - D) Ethyl acetate

**III- Complete the following: (2.5 points)**

- 1- Imines are the product of reacting an aldehyde or ketone with \_\_\_\_\_ while acetals are the product of reaction with \_\_\_\_\_
- 2- Aldehyde such as \_\_\_\_\_ and ketone such as \_\_\_\_\_ do not undergo haloform reaction, due to the absence of \_\_\_\_\_ functional group in their chemical structures
- 3- Compounds that have two acyl groups bonded to a single nitrogen are known as \_\_\_\_\_
- 4- Esters that can't undergo Claisen condensation such as \_\_\_\_\_
- 5-  $LiAl[OC(CH_3)_3]_3H$  reagent is used for preparation of \_\_\_\_\_ from acyl chloride



IV- Complete the following equations (10 points)



IV- Discuss the mechanisms of the following reactions: ( 6 points)

a) Hell-Volhard Zelinsky Reaction:

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b) Wittig reaction.

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## Section B (90 minutes, 35 points)

### I- Nomenclature (3.5 points)

A- Write structural formulas for each of the following:

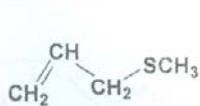
(a) 2-Ethoxyethanol

(b) Benzylisopropyl ether

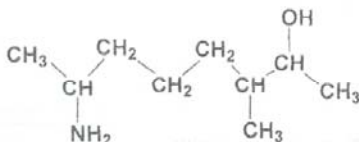
(c) 2,4-Dichloro-3-methylpentane

(d) 15-Crown-5 ether

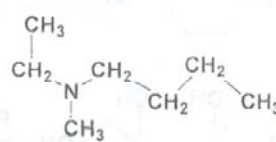
B- Give the IUBAC names for each of the following:



(a)



(b)



(c)

II. Identify the correct compound in each case: (2 points)

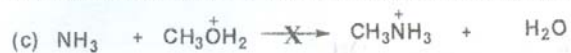
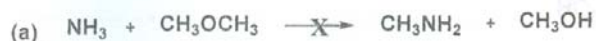
(a) Which compound, diethyl ether or propyl alcohol, is miscible with water?

(b) Which compound, 3-methoxycyclohexene or cyclohexanol, decolorize a solution of  $\text{Br}_2$  in  $\text{CCl}_4$ ?

(c) Which compound, ethanethiol or ethanol, has a higher boiling point?

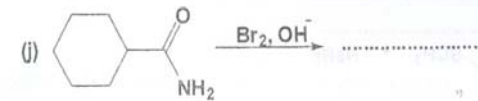
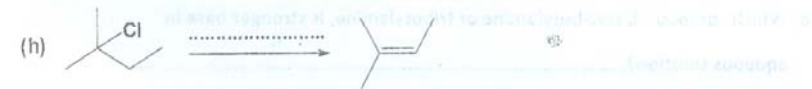
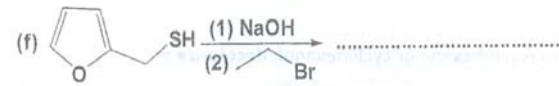
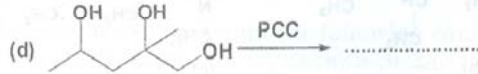
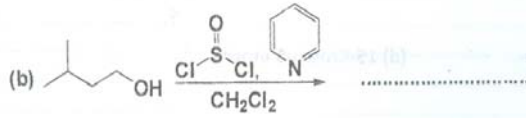
(d) Which compound, *tert*-butylamine or tributylamine, is stronger base in aqueous solution?

III. Briefly explain why the following reactions do not occur? (3 points)



See next page

IV. Provide the missing reagent or product for the following reactions (10 points)



See next page

V- How would you carry out the following transformations? (8.5 points)



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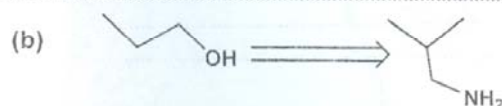
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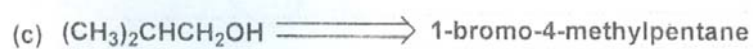
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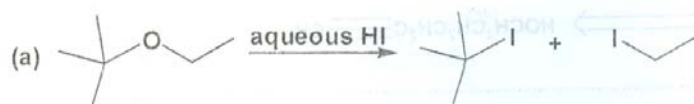
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VI. Provide detailed mechanisms for the following reactions: (8 points)



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(b) Acid catalyzed hydration of the alkene 3,3-dimethyl-1-butene.

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(c) Gabriel synthesis of amines

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..... Good Luck .....

**(All Questions should be attempted)**

**Question 1** (18 marks)

I. Give reason(s) for each of the following: (10x1=8marks)

1- In making syrup for diabetic patients methylcellulose and hydroxyl ethyl cellulose are used instead of sucrose.

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2-The selection of vehicle in the extraction of crude drug is important.

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3- Solid dosage forms are preferred than liquid dosage form

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4- In preparing elixirs a mixture of water and alcohol is used as vehicle.

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5- In preparing aromatic water "alternative solution method" in which tale is used.

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6- Drying the crude drugs before extraction process.

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7- Lozenges are harder than ordinary tablets.

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8- Administration of a drug in suppositories as rectal route instead of oral route.

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9- Pastes contain large amount of solid material.

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.....

10- The use of mixed organic solvents (alcohol and ether) in making collodions.

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.....

II. Mention the difference (s) between each two of the following: (2x2 = 4 marks)

a- Ointments	Pastes
..... ..... ..... .....	..... ..... ..... .....
b- soft gelatin capsules	Hard gelatin capsules
..... ..... ..... .....	..... ..... ..... .....

III- Cosolvency is a phenomena used in preparing some dosage forms. (4 marks)

a-What is it means?

.....  
.....

b- Mention three preparations and the solvents used in each preparation

1-....., solvents used are ..... and .....

2-....., solvents used are ..... and .....

3-....., solvents used are ..... and .....



Question 2 (17 marks)

I-Complete the following statements:

(4x2=8marks)

1- The factors that must be taken in consideration when adjusting the safety of a given dose are:

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2-For overcoming the rate of creaming of emulsion used:

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3-Emulsion formulation possesses a number of advantages over other liquid forms are:

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4- The container for prescription medications should have:

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II-Give reason(s) for the following statements: (6x1= 6 marks)

1-Emulsions should not be stored at high temperature.

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2-Synthetic emulsifiers are superior to natural gum and proteins.

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3-Propylene glycol, glycerol or sorbitol is added to emulsion formulation.

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4-Creaming is reversible while cracking is not.

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5-Using moisturizing creams.

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6-Preparation containing acacia required the presence of a preservative and thickening agent.

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III-Define each the following: (6x0.5= 3 marks)

1-Legibility of the prescription:

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2-Inscription:

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3-True and auxiliary emulsifying agent:

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.....

4-Pharmagel A:

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5-Coalescence:

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6-Humectants:

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.....  
.....

Question 3 (18 Marks)

I-Complete the following statements:

(8x0.5=4 marks)

- 1-Pycnometer is a device used to determine the ..... of a liquid.
- 2- A body immersed in a liquid suffers an apparent loss in weight equal to .....
- 3- The substance that is heavier than water will have a ..... specific volume.
- 4-..... are dilutions of potent medicinal substances.
- 5- ..... are strong solutions from which weaker ones may be conveniently made.
- 6- ..... is a ratio, of the weight of a substance to the weight of an equal volume of a substance chosen as a standard at the same temp.
- 7- .....: the ratio, the first figure of which is 1.
- 8- ..... is a method by which we may calculate the number of parts of two or more components of a given strength when they are to be mixed to prepare a mixture of desired strength.

II-Solve the following problems:

(2x1.5=3 Marks)

- 1-How should you prepare 100 ml of a 2% (w/w) solution of a drug substance in a solvent having s specific gravity of 1.25?

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2-In what proportion should Tween 80 and Span 80 will be blended to obtain a "required HLB of 12?

HLB of Tween 80= 15

HLB of Span 80= 4.3

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III-Justify the following:

(4x1=4 marks)

a- Drug manufactures prepare a single medicinal agent into many dosage forms.

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b- Pharmaceuticals such as elixirs, spirits, and of tinctures are self-sterilizing

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c- Dextrose injection given in amounts of 500 to 1000 ml. may not contain antibacterial preservatives.

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d- The use of coloring agents in some pharmaceutical products.

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IV-Explain how the proper selection of appropriate flavoring agent depends up on the taste of the drug substance itself? (2 marks)

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V-Give short accounts about the following: (5 marks)

a- Advantages of powdered products: (2 marks)

1 .....  
.....  
2 .....  
.....  
3.....  
.....

b- Special problems arise on formulation of powders and their solutions: (3 marks)

1.....  
.....  
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2.....  
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3.....  
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Question 4 (17 Marks)

I- Complete the following statements:

(14x0.5=7 marks)

- 1- Cloud points are largely independent on the ..... but depend on its .....
- 2- For a given hydrocarbon moiety, the cloud point ..... as the number of ethylene oxide units per molecule .....
- 3-At constant ethylene oxide content, cloud points ..... as the chain length of the hydrocarbon moiety .....
- 4- Micellar solubilization depends on the existence of .....
- 5-Surface activity of a compound requires ..... between ..... part and ..... part of the molecule.
- 6- Ionic surfactants can react with compounds possessing oppositely charged ions resulting in ..... this phenomena is called .....
- 7-Examples of nonionic surfactants are ..... and .....

II-Define each the following:

(2x1=2 marks)

1- Critical micelle concentration:

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

2- Therapeutic incompatibility:

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

III-Determine the type of incompatibility in the following prescription; discuss the problem in each prescription and how to correct it (5x1= 5marks)

1-Rx

Atropine Sulphate	0.006 g.
Phenobarbital	0.360 g
Ft. Caps i mitte	XII
Sig. caps i t.d.s	

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2-Rx

Mag Carb	3.75 gm
Sod Bicarb.	7.50 g
Citric acid	7.50 g
Distilled Water to	250.00 gm

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3- Rx

Benemid	500 g
Aspirin	300 mgrn
Ft Caps, mitt XX	
Sig. Caps per a day for gout	





IV- Mention Three differences between micellar solubilization and emulsification: (1.5 marks)

- 1.....  
.....  
.....
- 2.....  
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- 3.....  
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.....

V- Which of the following have surface activity? (1.5 marks)

- 1- Phenol (.....)
- 2- Sodium benzene sulfonate (.....)
- 3- Butyl alcohol and butyric acid (.....)
- 4- Sodium butyrate (.....)
- 5- Lauryl alcohol and lauric acid (.....)

\*\*\*\*\*

الامتحان الشفوي سوف يعقد بمشيئة الله تعالى بقسم الصيدلانيات على النحو التالي:

\* السبت الموافق 2011/1/15: الطلاب من رقم (1) الى رقم (534) بعد الامتحان مباشرة

\* الأحد الموافق 2011/1/16 : الطلاب من رقم (851) الى رقم (937) ابتداء من الساعة الثامنة صباحا.

\* الأحد الموافق 2011/1/16 : الطلاب من رقم (535) الى رقم (850) ابتداء من الساعة التاسعة صباحا

**\* مع تمنياتنا للجميع بالتوفيق \***

أ.د. فوزيه سيد أحمد حبيب

أ.د. سهير مصطفى الشنواني

أ.د. محمد فتحى ابراهيم

د. دينا فتح الله محمد



3- Foaming agents promote the formation of foams in

a- Steam boiler

b-Toothpastes.

4- Surfactants while soluble in a given liquid tend to:

a- Accumulate at its interface with air, liquid or solid.

b- Positively adsorbed at its interface with air, liquids or solid.

c- Either one of them.

5- In surfactant molecule the hydrophilic portion usually consists of:

a- Hydrocarbon part

b- Ionic groups

c- Organic groups.

**III- Choose the correct answer by circulating T (true) or F (false):**

(6x1=6 mark)

T	F	1- Non-ionic surfactants are compounds in which addition of ethylene oxide take place.
T	F	2- Hydration of ether linkage is not as efficient in achieving water solubility of surfactant as the presence of ionic groups.
T	F	3- Micelles are permanent aggregates.
T	F	4- CMC value of ionic surfactant is generally lower than those of non-ionic ones.
T	F	5- Methylcellulose has considerable surface activity while sodium carboxymethyl cellulose has none.
T	F	6- Micellar solubilization is nonspecific, any drug which soluble in oils and lipids can be solubilized.

**Second Question (20 Marks)**

**I- What are the most important changes that may take place to give an indication of the incompatibility?**

- 1-.....
- 2-.....
- 3-.....
- 4-.....

**II- What are the Classes of Incompatibility:** (3 Marks)

- 1-.....
- .....
- 2-.....
- .....
- 3-.....
- .....
- 4-.....
- .....

**III-The preservatives should have the following properties:** (3 Marks)

- 1-.....
- .....
- 2-.....
- .....
- 3-.....
- .....
- 4-.....
- .....

**IV-Give the reason for the following:** (3x1=3 marks)

- 1-Sulphonamides are contraindicated with urinary acidifiers such as ammonium chloride.
- .....
- .....

2- Santonin is more dangerous when administered with castor oil.

.....  
.....

3- The administration of tetracyclines with drugs containing calcium ions is prohibited.

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.....

**V-Detect the incompatibility and its correction in the following prescription:**

(2x2=4 marks)

A-

RX

Sodium Bicarbonate	10 gm	
Sodium citrate		5 gm
Peppermint water to	60 gm	
Ft. solution		
Sig. It.d.s		

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B-

RX

Sodium citrate		3IV
Calcium Bromide	3iii	
Syrup		fl i
Peppermint water to	fl iii	
Ft solution		

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.....

**VI-Complete the following statements:**

(5x1=5 marks)

1-Examples of the preservatives commonly employed in pharmaceutical preparations are ..... and .....

2-The ..... tablets of type generally contain both sweetening and flavoring agents.

3-Cocoa-flavored vehicles are considered effective for masking the taste of .....drugs.

4-The ..... added to foods and medicine to improve the quality of taste.

5-The design of pharmaceutical preparations requires the consideration of a number of factors such as ..... and .....

**Third Question (25 marks)**

**I. Define the following terms:**

(8x1=8 marks)

a- Specific gravity

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.....

b- Stock solutions

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.....

c- Titrations

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d- Multiple emulsions

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e- Microemulsion

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.....

f- Auxiliary emulsifying agent

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g- Creaming of emulsions

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.....

h- Cracking of emulsions

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.....

**II. Answer the following questions:**

(12 marks)

1. Discuss the factors affecting the emulsion type w/o or o/w

(2 marks)

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2. Describe only one test to differentiate between emulsion types.

(2 marks)

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3. Mention only four advantages of emulsions. (2 marks)

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4. Discuss the advantages of acacia as an emulsifying agent. (2 marks)

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5. Discuss how to avoid emulsion creaming.

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III. Solve the following problems:

1. How many grams of dextrose are required to prepare 4000 mL of a 5% solution? (1 mark)

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2. If 500 mL of a 15% (v/v) solution of methyl salicylate in alcohol are diluted to 1500 mL, what will be the percentage strength (v/v) (2 marks)

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3. What is the percent of zinc oxide in an ointment prepared by mixing 200 g of 10% ointment, 50 g of 20% ointment and 100 g of 5% ointment? (2 marks)

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**Fourth Question (25 marks)**

**I- Mention the following:** (6x1=6 marks)

1-Subscription

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2- Capsules

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3- Collodions

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4- Suppositories

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5- Prescription

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6- Syrup

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II- Fill in the spaces: (24x0.5=12 marks)

- 1- ..... is the sugar most frequently employed in the syrup.
- 2- For ..... patients, ..... and ..... are two monoglycogenic materials used in making syrups.
- 3- The role of lemon tincture in citric acid syrup is .....
- 4- Elixirs are ..... liquids for ..... use.
- 5- Drinking water (water USP) should not contain more than ..... of solid material.
- 6- Water for injection must be ..... and ..... free.
- 7- Extracts are made into three forms:  
.....  
.....  
.....
- 8- ..... Promote the break up of the tablets after administration to smaller particles for ready drug absorption.
- 9- The purpose of ..... is to provide the necessary bulk of tablet.
- 10- The most common lubricants used are ..... and .....

- 11- The role of castor oil in flexible collodion .....while thw role of camphor to make .....
- 12- Elutriation method is the ..... of sedimentation method.
- 13- ..... is the reciprocal of bulk density.
- 14- Dr. Fried's rule is ..... while, Dr. Cowling's rule is .....
- 15- ..... enhance the flow of tableting material into the tablet dies and prevent, the sticking of this material to the die and punches.

**III- Mention the following:**

(4x1=4 marks)

- 1- Mention methods of syrup preparation

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.....

- 2- Advantages of solid dosage forms:

.....

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.....

- 3- Selection of the appropriate ointment base:

.....

.....

.....

.....

- 4- Mention Methods of Measurement Particle size:

.....

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.....

**IV- Give reason(s) for the following:**

(3x1=3 marks)

1- Glycerites are not nearly as popular today as they were before.

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2- The use of polyethylene glycol as the base for an ointment containing benzoic and salicylic acid, the concentration of the acids should be only half what they would be if a hydrocarbon ointment base were employed.

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3- Dextrose is employed in hydroiodic acid syrup.

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الامتحان الشفوى سوف يعقد بمشيئة الله بقسم الصيدلانيات بعد الامتحان مباشرة

أ.د. فوزية سيد أحمد حبيب

أ.د. محمد فتحى ابراهيم

د. إكرامى عبد الرحيم خليل

د. دينا فتح الله محمد

**\* مع تمنياتنا للجميع بالتوفيق \***



**Question 1:**

(17 Marks)

A- Put the sign ( $\checkmark$ ) for the correct statement and the sign (X) for the incorrect one and then correct it. (5 Marks)

- 1- The molar solution contains gram equivalent weight in one liter.
- 2- Sodium hydroxide is a secondary standard substance because it can be oxidized by atmospheric oxygen.
- 3- The rate of the chemical reaction is directly proportional with the concentration of the reactants.
- 4- Mixture of HCl and  $\text{NH}_4\text{Cl}$  is a buffer solution.
- 5- The catalyst is a substance that its presence increases the rate of the reaction and included in the reaction.
- 6- The term micro-analysis is used for determination of quantities 10- 00mg.
- 7- Ostwald is a scientist who put the equations for calculation of the pH of buffer solutions.
- 8- Mixture of thymol blue and cresol red is used as screened indicator.
- 9- Phenolphthalein is a suitable indicator for titration of  $\text{NH}_4\text{OH}$  with HCl.
- 10- Maximum buffer is obtained when  $[\text{acid}] = [\text{salt}]$  or  $[\text{base}] = [\text{salt}]$ .

B- Give the reason(s) for the following:

(5 Marks)

- 1-  $\text{NaHCO}_3$  acts as an acid and as base according to Bronsted & Lowry.
- 2- One Molar solution of  $\text{H}_2\text{SO}_4$  equals to 2 Normal of it.
- 3- Phenolphthalein is colorless above pH 12.

4- Addition of indigo carmine dye to methyl orange indicator.

5- The pH of solution of  $\text{NH}_4\text{Cl}$  is less than 7.

C- Select from list (II) the correct statement for each in list (I)

List I

- ( ) The theory which render the acidity or alkalinity of a substance to gain or loss of electron pair.
- ( ) An example of primary standard substance.
- ( ) 1 N solution of  $\text{H}_3\text{PO}_4$  equals to.
- ( ) A most suitable indicator for titration is.
- ( ) A scientist who put the expression of pH.
- ( ) Trace constituent is one which represent.
- ( ) The equation which is used for calculation of the pH of  $\text{CH}_3\text{COONH}_4$  solution.
- ( ) The color of methyl orange in solution of NaCl is.
- ( ) The pH of solution of  $\text{CH}_3\text{COONa}$  is.
- ( ) An example of buffer solution.

List II

- |  |  |
|--|--|
| 1- yellow  | 14- Bronsted & Lowry                                   |
| 2- $\text{HCOOH}$ & $\text{HCOONa}$                                  | 15- less than 7  |
| 3-1/3 M  | 16- p- universal indicator                             |
| 4-KH phthalate   | 17- 3M   |
| 5-Ostwald  | 18- orange   |
| 6-mixed indicator  | 19- NaOH   |
| 7 - $\text{pH} = 1/2\text{pK}_w - 1/2 \text{pK}_b + 1/2\text{pK}_s$  | 20- less than 0.01%                                    |
| 8-more than 7  | 21- Arrhenius  |
| 9-HCl & NaCl.  | 22- more than 1%                                       |
| 10- $\text{pH} = 1/2\text{pK}_w - 1/2\text{pK}_a + 1/2\text{pK}_s$   | 23- 1/2 M  |
| 11-red   | 24- Lewis  |
| 12-Sorenson  | 25- $\text{H}_2\text{SO}_4$ & $\text{Na}_2\text{SO}_4$ |
| 13-m- $\text{pH} = 1/2\text{pK}_w + 1/2\text{pK}_a + 1/2\text{pK}_b$ | 26-7.  |

D· A standard solution of  $\text{Ba}(\text{OH})_2$  contains 5.44 g/L, what is its titer in terms of gram of HCl. (Atomic weights: Ba = 137, O = 16, H = 1, Cl = 35.5). (2 Marks)

Question No (II)

(17 marks)

A- Mention: principle(equation/s), type of titration, suitable titrant and indicator for the following determinations. Write your answer in the provided table. (10 marks)

- 1- Sodium salicylate                      2- ammonium chloride  
3- Potassium persulphate ( $K_2S_2O_8$ )    4- phenobarbitone.

No	principle(equation/s)	type of titration	titrant	indicator
1	..... ..... ..... .....	..... ..... ..... .....	..... ..... ..... .....	..... ..... ..... .....
2	..... ..... ..... .....	..... ..... ..... .....	..... ..... ..... .....	..... ..... ..... .....
3	..... ..... ..... .....	..... ..... ..... .....	..... ..... ..... .....	..... ..... ..... .....
4	..... ..... ..... .....	..... ..... ..... .....	..... ..... ..... .....	..... ..... ..... .....



B· Give reason/s for the following: (4 marks)

1- Addition of mercuric acetate before non-aqueous titration. of a halogen acid salt of weak base .

.....  
.....

2- On titration of  $\text{Na}_2\text{CO}_3$  by standard HCl using phenolphthalein indicator, the volume of HCl is equivalent to only %  $\text{Na}_2\text{CO}_3$  .

.....  
.....

3- On determination of  $\text{BaCl}_2$  by back titration using standard  $\text{Na}_2\text{CO}_3$ , phenolphthalein is used as indicator but not methyl orange.

.....  
.....

4- On titration of mixture of HCl &  $\text{CH}_3\text{COOH}$  by standard NaOH, methyl orange end point is corresponding to HCl only.

.....  
.....

C-On the form of table compare between: (3 marks)

1- Levelling effect and differentiating effect.

2- Protophilic and amphiprotic solvents.

1- Multiple Choice Questions: (12 marks)

1-Ksp of  $\text{Bi}_2\text{S}_3$  equals:



2-The turbidity in Leibeg's method is due to formation of:



3-The following metals could be determined indirectly using Leibeg's method except:



4-Zinc ions could be determined by titration using ferrocyanide and the following internal indicator: .



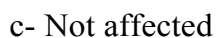
5- Sodium rhodizonate forms a complex with  $\text{Ba}^{2+}$  has the following color:



6- The solubility of Ca oxalate increases in:



7- As the Ksp decreases, the inflection of the titration curve:





## Question No (IV)

(19 marks)

1. In the following answer sheet, select one letter only indicating the most correct answer for each of the following statements: (8 marks)

Statement No.	1	2	3	4	5	6	7	8
Answer letter								
Statement No.	9	10	11	12	13	14	15	16
Answer letter								

1- Gravimetry is:

- A. Determination of the specific gravity of the analyte.  
 B. One of the volumetric methods of analysis.  
 C. One of the instrumental methods of analysis.  
 D. A determination method based on weighing.

2- Gravimetry has the following advantages:

- A. Sensitivity and selectivity.      B. Occlusion and inclusion.  
 C. Simplicity and time saving.      O. Accuracy and precision.

3- Peptization is:

- A. The coagulation of the precipitate.  
 B. The transformation of the precipitate into a colloid.  
 C. The precipitation from homogenous solution.  
 D. The digestion of the precipitate.

4- According to Von Wiemarn equation the reactants for optimal precipitate formation should be:

- A. Hot and concentrated.      B. Hot and dilute.  
 C. Cold and concentrated.      D. Cold and dilute.

5-Thermogravimetry is:

- A. The formation of the precipitate on hot.  
 B. The removal of water of crystallization by heating.  
 C. A relation between weight loss of the precipitate and temperature of ignition.  
 D. Deposition of metal on an electrode after electrochemical analysis.

6- On the gravimetric determination of  $\text{Ca}^{2+}$ , the most satisfactory form (being nonhygroscopic) to be weighed is:

- A.  $\text{CaCO}_3$       B.  $\text{CaO}$       C.  $\text{CaC}_2\text{O}_4 \cdot \text{H}_2\text{O}$       D.  $\text{CaC}_2\text{O}_4$

7. The following is not a form of "co-precipitation":

- A. Occlusion.      B. Inclusion.      C. Post precipitation.      D. Surface adsorption.

8- For optimal precipitation process, requirements are:

- A. High "relative super saturation".      B. High rate of "nucleation".  
 C. Formation of large number of fine crystals.      D. Formation of small number of large crystals.

9- During the formation of  $\text{BaSO}_4$  crystals, "non-isomorphic inclusion" may be caused by:

- A.  $\text{PbSO}_4$       B.  $\text{K}_2\text{SO}_4$       C.  $\text{Ba}(\text{NO}_3)_2$       D.  $\text{BaCl}_2$

10- On precipitation of Ag<sup>+</sup> by NaCl, a slight excess of NaCl is added to:

- A- Increase precipitation by common ion effect.
- B- Increase solubility of AgCl by common ion effect.
- C- Increase precipitation by diverse ion effect.
- D- Increase precipitation by complex formation.

11- The most efficient method for treatment of occlusion is:

- A. Washing.
- B. Digestion.
- C. Reprecipitation.
- D. All are equivalent.

12- On the gravimetric determination of Cl<sup>-</sup>, if the weight of AgCl ppt. was 1.433 g.; the weight of Cl<sup>-</sup> in the sample will equal to: .....

(AgCl molecular weight = 143.3 and Cl<sup>-</sup> = 35.5)

- A. 0.355 g.
- B. 3.55 g.
- C. 0.1433 g.
- D. 143.3/35.5 g.

13- Piperazine as a pharmaceutical compound can be gravimetrically determined after precipitation as:

- A. Adepate.
- B. Picrate.
- C. Sulphate.
- D. Nitrate.

14- One of the following is not an oxidant for the pretreatment of Fe<sup>2+</sup> before its determination as Fe<sup>3+</sup>.

- A. HNO<sub>3</sub>
- B. H<sub>2</sub>O<sub>2</sub>
- C. Br<sub>2</sub>
- D. NH<sub>4</sub>OH.

15- AgCl crystals may be washed by dilute.....:to prevent peptization:

- A. NH<sub>4</sub>NO<sub>3</sub>
- B. HNO<sub>3</sub>
- C. A&B are correct.
- D. A&B are not correct.

16- If the degree of supersaturation is (Q) and the solubility of precipitate is (S); then, according to VonWiemarn equation, the relative supersaturation equals to:

- A. (Q-S)/S
- B. (S-Q)/Q
- C. (S-Q)/S
- D. (Q-S)/Q

II. Write shortly on:

(6 marks)

1- Sources of interference on the gravimetric precipitation of Fe<sup>3+</sup> as Fe(OH)<sub>3</sub>

2- Sources of interference on the gravimetric precipitation of Cl<sup>-</sup> as AgCl.

3- Advantages of "organic precipitants".

III. Complete the following table by giving the name and chemical structure of the precipitating agent: (5 marks)

Analyte (ion)	precipitating agent for		
	Direct precipitating	Homogenous precipitating	Organic precipitating
$\text{SO}_4^{2-}$			
$\text{Fe}^{3+}$			
$\text{Ni}^{2+}$			
$\text{Ba}^{2+}$			

Examiners:

Prof. Dr. Fardous A. Mohammed  
Prof. Dr. Horria A. Mohammed  
Prof. Dr. Ibrahim H. Refaat  
Dr. Hanaa A. Mohammed

مع خالص دعائنا بالتوفيق والتفوق  
امتحان الشفهي عقب التحريرى فى المواعيد الآتية مساء اليوم:  
الارقام من 1 الى 450 من الساعة 3.00 الى 5.30  
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Assiut University  
Faculty of Pharmacy  
Pharm. Anal. Chem. Dept.

PHC-222  
1<sup>st</sup> Semester Exam  
Final Exam  
February 16, 2011  
Time allowed: 2 hours  
85 Marks

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**Question I:**

**(36 Marks)**

A- Complete the following:

**(9 Marks)**

1- The main sources of error in titration are

- a-
- b-
- c-

2- Among the requirement of substance to be a primary standard

- a-
- b-
- c-

3- The main drawbacks of Arrhenius theory are

- a-
- b-
- c-

B· By chemical balanced equations, illustrate how can you analyze the following, mention the method, standard(s), indicator(s), conditions and any percussions) **(9 Marks)**

a- Mixture of NaOH & Na<sub>2</sub>B<sub>4</sub>O<sub>7</sub>

b- NH<sub>4</sub>Cl by formol method.

c-Sodium salicylate

C- Choose the correct statement

(5 Marks)

1-  $\text{AlCl}_3$  is an acid according to

- a- Arrhenious
- c- Lewis

- b- Bronsted & Lowry
- d- Ostwald.

2- An example of a primary standard substance is

- a-  $\text{FeSO}_4$
- c-  $\text{NH}_4\text{OH}$

- b-  $\text{Na}_2\text{CO}_3$
- d-  $\text{NaOH}$ .

3- In the titration of weak acid with strong base, the shape of the curve, the pH at the equivalence point and the suitable indicator depend on

- a- concentration of weak acid
- c-  $K_a$  of weak acid

- b- concentration of strong base
- d- all of the above.

4- Sodium benzoate can be determined by

- a- back titration
- c- displacement titration

- b- biphasic titration
- d- non aqueous titration.

5- In the determination of aspirin by indirect method, the suitable indicator is

- a- phenolphthalein
- c- methyl red

- b- methyl orange
- d- bromophenol blue.

6- A normal solution is one which contains

- a- gram molecular weight/L
- c- gram formula weight/L

- b- gram equivalence weight/L
- d- gram molecular weight/Kg.

7- The scientist who put the equations for buffer solutions

- a- Henderson
- c- Sorenson

- b- Ostwald
- d- Lewis.

8- In the determination of  $\text{K}_2\text{S}_2\text{O}_8$ ,  $\text{Ag}^+$  is used as

- a- standard
- c- catalyst

- b- indicator
- d- solvent.

9- Mixture of methyl orange and indigo carmine is used as

- a- screened indicator
- c- universal indicator

- b- mixed indicator
- d- turbidity indicator.

10- The following are buffer solutions except

- a-  $\text{CH}_3\text{COOH}$  &  $\text{CH}_3\text{COONa}$
- c-  $\text{NH}_4\text{OH}$  &  $\text{NH}_4\text{Cl}$

- b-  $\text{HCOOH}$  &  $\text{HCOONa}$
- d-  $\text{HCl}$  &  $\text{NH}_4\text{Cl}$ .



D- Define the following

(5 Marks)

1- Precision

2- Titration error

3- Buffer capacity

4-Titer

5- Ionization

F- Put the sign ( $\checkmark$ ) for the correct statement and the sign (X) for the incorrect one and then correct it.

(5 Marks)

1-  $\text{FeSO}_4$  is a primary standard substance. ( )

2- In the determination of CaO by dissolving in sucrose and then titrated with standard HCl, alcohol is added to prevent the formation of lumps. ( )

3- Kjeldahl's method is used for determination of inorganic nitrogen. ( )

4- The pH of solution of  $\text{CH}_3\text{COONa}$  is more than 7. ( )

5- Aspirin can be determined by direct titration with standard NaOH. ( )

G- Calculate the pH of solution obtained by mixing 50 ml 0.1 N HCCOH with 20 ml of 0.15N NaOH (  $K_a$  of HCOOH =  $1.76 \times 10^{-5}$ ) (3 Marks)

## Question II

(7 Marks)

1- Mark the following statements with True (✓) or False (X) (4 Marks)

(1) Protogenic solvents have levelling effects on weak bases. ( )

(2) Amphoteric solvents are basic and readily donate protons" ( )

(3) Potassium hydrogen phthalate acts as an acid in aqueous solutions and as a base in non-aqueous solvents. ( )

(4) Ephedrine sulphate can be determined by direct titration with sodium methoxide using methyl red as an indicator. ( )

2- By equations illustrate the following determinations (3 Marks)

(a) Aniline hydrochloride

(b) Ephedrinesulphate

(c) Phenobarbitone

Question No.III: (21 marks)

1-Multiple Choice Questions: (14 marks)

1- Ksp of  $\text{Ag}_3\text{PO}_4$  equals:

- a-  $[3\text{Ag}^+]^3 [\text{PO}_4^{3-}]$                       b-  $[\text{Ag}^+]^3 [\text{PO}_4^{3-}]$   
c-  $[\text{Ag}^+] [\text{PO}_4^{3-}]^3$                       d-  $[3\text{Ag}^+] [\text{PO}_4^{3-}]$

2-The turbidity in Leibeg's method is due to formation of:

- a-  $\text{Ag}(\text{CN})$                                       b-  $\text{Ag}(\text{CN})_2^-$   
c-  $\text{Ag}[\text{Ag}(\text{CN})_2]$                               d-  $\text{AgNO}_3$

3- If we titrate 100 ml, 0.1 M NaCl solution by 0.1 M  $\text{AgNO}_3$  then pCl at equivalence point equals: ( $K_{sp} = 1.2 \times 10^{-10}$ ):

- a- 3.3                      b- 4.96                      c- 7.6                      d- 7.08

4-In the above problem pCl after addition of 120  $\text{AgNO}_3$ :

- a- 7.08                      b- 7.88                      c- 4.96                      d- 3.30

5- Zinc ions could be determined by titration using ferrocyanide and the following external indicator:

- a- Eosin    b- Rosebengal  
c- Diphenylamine                                      d- urinal nitrate

6-  $\text{AgS}$  is soluble in:

- a-  $\text{NH}_3$  solution                                      b-  $\text{CN}^-$   
c- Both a & b    d- None of the above

7-The solubility of Ca oxalate increases in:

- a-  $\text{CaCl}_2$  solution                                      b- Sod. oxalate solution  
c- HCl solution

8-As the  $K_{sp}$  decreases, the inflection of the titration curve

- a- Increases    b- Decreases  
c- Not affected

9- If we add a solution of  $\text{AgNO}_3$  to a solution of NaI, 0.001 M ( $K_{sp} = 1.7 \times 10^{-16}$ ), precipitation of AgI will start when  $\text{Ag}^+$  concentration equals:

- a-  $1.7 \times 10^{-16}$  M                                      b-  $1.7 \times 10^{-13}$  M  
c-  $1.7 \times 10^{-1}$  M                                      d- less than  $1.7 \times 10^{-16}$  M

10- Sodium rhodizonate forms a complex with  $\text{Ba}^{2+}$  has the following color:

- a- Yellow
- b- Red
- c- Blue
- d- Colourless

11-  $\text{AgCl}$  has to be filtered off before titration using:

- a- Volhard's method
- b- Mohr's method
- c- Fajan's method
- d- None of the above

12- If we add  $\text{AgNO}_3$  solution to  $\text{AgBr}$ , the solubility of the ppt will:

- a- Increase
- b- Decrease
- c- Not changed

13- The adsorption indicator in Fajan's method has to be:

- a- Of the same charge as titrant
- b- Of the opposite charge as titrant
- c- Has no charge.

14- Which statement is correct:

- a-  $K_{sp}$  of  $\text{AgCl}$  is more than  $\text{Ag}_2\text{CrO}_4$
- b-  $K_{sp}$  of  $\text{AgCl}$  is less than  $\text{Ag}_2\text{CrO}_4$
- c-  $K_{sp}$  of  $\text{AgCl}$  is equal that of  $\text{Ag}_2\text{CrO}_4$

2- Complete the following: (7 marks)

- 1- The most suitable pH in Mohr's method is-----
- 2-  $\text{AgCl}$  is soluble in----- and -----
- 3-  $K_{sp}$  of  $\text{Bi}_2\text{S}_3$  equals-----
- 4- For determination of mixture of  $\text{NaCl}$  and  $\text{NaCN}$  a combination of----- and ----- methods is used.
- 5- The most suitable adsorption indicator for  $\text{Ag}^+$  is-----



11- On precipitation of Ag<sup>+</sup> by NaCl, a slight excess of NaCl is added to:

- A- Increase precipitation by common ion effect.
- B- Increase solubility of AgCl by common ion effect.
- C- Increase precipitation by diverse ion effect.
- D- Increase precipitation by complex formation.

12- On the gravimetric determination of Cl<sup>-</sup> if the weight of AgCl ppt. was 1.433 g. the weight of Cl<sup>-</sup> in the sample will equals to: .....

(AgCl molecular weight = 143.3 and Cl<sup>-</sup> = 35.5)

- A. 0.355 g.
- B. 3.55 g.
- C. 0.1433 g.
- D. 143.3/35.5 g.

13- Piperazine as a pharmaceutical compound can be gravimetrically determined after precipitation as:

- A. Adepate.
- B. Picrate.
- C. Sulphate.
- D. Nitrate.

14- One of the following is not an oxidant for the pretreatment of Fe<sup>2+</sup> before its determination as Fe<sup>3+</sup>.

- A. HNO<sub>3</sub>•
- B. H<sub>2</sub>O<sub>2</sub>.
- C. NH<sub>4</sub>OH.
- D. Br<sub>2</sub>.

15- AgCl crystals may be washed by dilute \_\_\_\_\_ to prevent peetization:

- A. NH<sub>4</sub>NO<sub>3</sub>•
- B. HNO<sub>3</sub>•
- C. A&B are correct
- D. A&B are not correct.

16- If the degree of supersaturation is (Q) and the solubility of precipitate is (S); then, according to VonWiemarn equation, the relative supersaturation equals to:

- A. (Q-S)/S
- B. (S-Q)/Q
- C. (S-Q)/S
- D. (Q-S)/Q

III. Complete the following table by giving the name and chemical structure of the precipitating agent: (9 marks)

Analyte (ion)	precipitating agent for		
	Direct precipitating	Homogenous precipitating	Organic precipitating
SO <sub>4</sub> <sup>2-</sup>			
Fe <sup>3+</sup>			
Ni <sup>2+</sup>			
Ba <sup>2+</sup>			

مع خالص دعائنا بالتوفيق والتفوق

**Examiners: Prof. Dr. Fardous A. Mohammed, Prof. Dr. Ibrahim H. Refaat Dr. Hanaa A. Mohammed, Dr. Noha N. Attia**



Final Exam. of Physiology For 1<sup>st</sup> Year Pharmacy Students  
First Semester

---

Answer the following question:-	(Total Marks: 100 )
<b>I- First Question</b>	
a- Discuss the events that occur during neuromuscular transmission in neuromuscular junction.	(7)
b- Mention the functions of the kidney.	(7)
<b>II- Second Question</b>	
a- Discuss control of anterior pituitary gland secretion.	(8)
b- Compare actions of calcitonin and parathormone hormones on different organs.	(8)
<b>III- Third Question</b>	
a- Discuss mechanism of heat gain by the body.	(3)
b- Mention the functions of pelvic nerve.	(3)
<b>IV-Fourth Question</b>	
a- Mention the types of adrenergic receptors and one drug stimulate and other inhibit these types.	(6)
b- Mention the functions of the liver.	(6)
<b>V-Fifth Question</b>	
a- Mention the causes of vomiting.	(4)
b- Define spermatogenesis and mention factors affecting it.	(7)
<b>VI- Sixth Question</b>	
a- Mention the effects of stimulation of baroreceptors on heart rate?	(3)
b- Mention three characters occur after severe hemorrhage	(3)
<b>VII- Seventh Question</b>	
a- Mention effects of dilation of arteries, capillaries and veins on venous return.	(3)
b- Discuss three factors promoting erythropoiesis.	(3)
<b>VIII- Eighth Question</b>	
a-Discuss the functions of blood platelets.	(6)
b-Describe Hering-Breuer reflexes.	(7)
<b>IX- Ninth Question</b>	
a- Define each of inspiratory capacity and vital capacity.	(2)
b- Write short notes on four functions of hypo thalamus.	(4)

باقى الأسئلة بالخلف

### X- Tenth Question

Choose the correct answer:- (mention only the number of question and the letter of correct answer in the answer paper) (10)

**1- Which one of the following factors does not control glomerular filtration rate:**

- a- The size of the capillary bed.                      b- The osmolarity of the urine.  
c- The permeability of the filtering membrane.  
d- The hydrostatic pressure gradient.              e- The osmotic pressure gradient.

**2- The neurotransmitter that stimulates skeletal muscle is adrenaline**

- a- True.    b- False.

**3- Secretin hormone is released by:**

- a- liver cells    b- acid in stomach  
c- acid in duodenum.

**4- Hormone responsible for ovulation:**

- a- Progesterone    b- testosterone  
c-LH    d- estrogen

**5- Gastrin hormone secretion is increased by:**

- a- vagotomy      b- acids in stomach      c- distension of the stomach

**6- Stroke volume is increased by**

- a. Increase in venous return.              b. A decrease in contractility of the heart.  
d. An increase in heart rate.              e. Increase in arterial blood pressure

**7- The average diastolic blood pressure in normal person equals**

- a. 0 mmHg.    b. 5 mmHg.  
c. 80 mmHg.    d. 120 mmHg.

**8- Stimulation of the carotid sinus baroreceptor resulted in**

- a. Increase in heart rate.                                      b. Increase in vagal tone.  
c. Increase in ventricular contractility.              d. Increase in cardiac output.

**9- In a resting, average healthy man, the stroke volume is approximately**

- a. 50 ml blood.    b. 70 ml blood.  
c. 150 ml blood.    d. 5000 ml blood.

**10- Which of the following has the height pH:**

- a- Gastric juice    b- Pancreatic juice.  
c- Saliva.

*GOOD LUCK*

الاختبار الشفهي يوم الأحد الموافق 2010/1/23 الساعة الثامنة والنصف صباحا بقسم الفسيولوجيا  
بكلية الطب لجميع الطلاب.

*Prof. Mamdouh M. Anwar and the Committee*





Assiut University  
Faculty of Medicine  
Medical Physiology Dept.

Date: 28/2/2011 Time  
Time allowed: 3 hour

Final Exam. of Physiology For 1<sup>st</sup> Year Pharmacy Students  
First Semester (تخلفات ثانية وثالثة)

Answer the following question:-

(Total Marks: 100 )

**I- First Question**

- 1- Mention the functions of plasma proteins. (8)
- 2- Mention the functions of pelvic nerve. (8)
- 3- Discuss the functions of gastric HCL. (10)

**II- Second Question.**

- 1- Describe the functions of bile salts. (9)
- 2- Define, tidal volume - vital capacity - residual volume. (6)
- 3- Discuss the Hering- Breuer reflexes. (8)

**III- Third Question**

- 1- Mention the general functions of the kidney. (8)
- 2- Mention the factors affecting venous return. (8)
- 3- Describe the endocrine changes in compensatory reaction in hemorrhage. (10)
- 4- Discuss the physiological factors affecting basal metabolic rate. (6)

**IV- Fourth Question**

- 1- Describe the functions of calcitonin hormone. (9)
- 2- Discuss the control of glucocorticoid hormone (cortisol). (10)
- 3- Mention the functions of testosterone hormone. (10)
- 4- Mention the functions of cerebral cortex. (5)

الاختبار الشفهي بعد النظرى مباشرة بقسم الفسيولوجيا لجميع الطلاب

دور يونيو 2011 الزمن: ساعتان	امتحان مقرر ادارة الأعمال الصيدلانية تخلفات	جامعة أسيوط كلية التجارة قسم المحاسبة
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### أجب عن الأسئلة التالية:

#### السؤال الأول:

- من خلال فحص حساب البنك في دفاتر صيدلية الشفاء بأسيوط ومقارنته بكشف الحساب الوارد من البنك الذي تتعامل معه الصيدلية اتضح أن:
- 1- رصيد حساب البنك في دفاتر الصيدلية 17226.
  - 2- رصيد كشف الحساب الوارد من البنك 12000.
  - 3- قامت الصيدلية بإرسال مبلغ 7500 الى البنك ولكن المبلغ لم يظهر بكشف الحساب.
  - 4- حصل البنك كمبيالة لصالح الصيدلية بمبلغ 1000 ولم تخطر الصيدلية بعد بهذا التحصيل.
  - 5- قامت الصيدلية بتحرير شيك لإحدى شركات الأدوية بمبلغ 4000 ولم تتقدم الشركة لأصرفه بعد.
  - 6- تم سداد مبلغ 1422 كراتب للصيدلي المساعد وقد سجل في دفاتر الصيدلية مبلغ 1224.
  - 7- احتسب البنك عمولة قيمتها 28 جنيه لم تخطر بها الصيدلية بعد.
  - 8- سدد البنك مبلغ 2500 لإحدى شركات الأدوية بناء على اتفاق مسبق بين الصيدلية والبنك ولم تخطر بها الصيدلية بعد.

**والمطلوب:** إعداد مذكرة تسوية البنك للوصول الى الرصيد الحقيقي.

#### السؤال الثاني:

- فيما يلي ملخص تعاملات صيدلية الأمل خلال السنة المنتهية في 2009/12/31
- 92000 مشتريات الأدوية والمستلزمات الطبية – 120000 المبيعات – 500 مصروفات نقل  
المشتريات – 800 مردودات مبيعات – 1000 مردودات مشتريات – 1800 ايجار الصيدلية –  
3600 أجور العاملين – 800 تأمينات اجتماعية – 1000 كهرباء – 200 مياه – 1400  
مصروفات بيعية.

#### فاذا علمت أن:

- 1- السنة المالية للصيدلية تبدأ في 1/1 وتنتهي في 12/31 من كل عام.
- 2- تكلفة المخزون من الأدوية في أول يناير 14000 جنيه ، ومخزون المستلزمات الطبية 2000 جنيه ، بينما في آخر السنة كانت تكلفة الأدوية الموجودة بالصيدلية 12000 جنيه والمستلزمات الطبية 3000 وسعر السوق لهذه المستلزمات 2000.

**والمطلوب:**

- 1- تحديد تكلفة المبيعات.
- 2- إعداد قائمة الدخل عن السنة المنتهية في 2009/12/31.

انظر الصفحة الثانية

#### الصفحة الثانية

### السؤال الثالث:

فيما يلي أهم العمليات التي تمت بإحدى الصيدليات خلال السنة المنتهية في 2009/12/31:

- مشتريات (الأدوية) 250000 جنييه.
  - حجم تعامل الصيدلية في الأدوات الرياضية ولعب الأطفال مبلغ 15000.
  - الإيجار الشهري 3000 جنييه ، المرتبات الشهرية 7000 جنييه ، المصروفات الأخرى السنوية 5200 جنييه.
  - مصروفات تأسيس الصيدلية 20000 جنييه بموجب فواتير أقرتها الضرائب وتستهلك على خمس سنوات.
  - تبرعت الصيدلية بمبلغ 1200 جنييه منها 500 للمحافظة ، 400 جنييه لإحدى المؤسسات الاجتماعية المشهورة ، والباقي سداد رسوم تعليم بعض الطلبة بالمدارس والجامعات.
- والمطلوب: حساب الربح الخاضع للضريبة في ضوء الاتفاقية رقم 58 لسنة 2005 الموقعة بين نقابة الصيادلة ومصلحة الضرائب.

### السؤال الرابع:

- (أ) ماذا يقصد بكل من: التكاليف المتغيرة ، والتكاليف الثابتة ، ونقطة التعادل.
- (ب) تقوم إحدى شركات الأدوية ببيع منتجها بسعر 30 جنييه للوحدة وتبلغ التكاليف الثابتة للشركة 300000 كما أن التكاليف المتغيرة للوحدة 20 جنييه.

### والمطلوب:

تحديد حجم المبيعات اللازمة لتحقيق التعادل.

مع تمنياتي بالتوفيق ،،،،،



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

Pharm. Anal. Chem.-2  
2<sup>nd</sup> Semester 2010/2011  
Periodical Exam  
May 04, 2011  
Time allowed: one hours

**Question I (REDOX)**

**(7.5 Marks)**

A-Write the correct name or scientific term for each of the following: (6 marks)

- 1- A substance that can accept electrons in its reaction with other substance in the solution [-----].
- 2- The tendency of the metal to dissolve in a solution of its salt. [-----]
- 3- Quantitative relation of the half-cell potential to concentration of ions in solution [-----]
- 4- Is used as irreversible redox indicator [-----]
- 5- salt is added to increase the oxidation potential of ferri - ferrocyanide system to oxidize iodide [-----]
- 6- A substance cannot be used in Andrew's procedure as indicator [-----]
- 7- A reagent used to prevent oxidation of chloride ions during titration of ferrous ions with  $\text{KMnO}_4$  [-----]
- 8- A reagent can be used to oxidize glucose into gluconic acid [-----]
- 9- An example of primary redox standard oxidant in acid medium [-----]
- 10- Determination of oxidizing substances by reaction with iodide and titrating the liberated iodine with sodium thiosulphate [-----]
- 11- Substances that can help to counteract the effect of reactive oxygen or nitrogen species [-----]
- 12- The potential difference between the metal rod electrode and the solution [-----]

B- Complete and balance the following equations

(1.5 marks)



**Question 11 (COMPLEXOMETRY)****(7.5 Marks)****A. Write the correct expression for each of the following:-**

1. The maximum number of monodentate ligands that can bind to metal ion.  
[ -----]
2. A type of complex that contains more than one atom.  
[ -----]
1. A process in which certain component (s) of the analyte is protected from the reaction with EDTA without being physically separated from medium.  
[ -----]
4. A factor gives the ratio of the sum of the concentration of all forms of the metal ions not complexed with EDTA to the concentration of the simple hydrated ions,  
[ -----]
5. Ligand molecule or ions has two atoms, each of which has a lone pair of electrons.  
[ -----]
6. A type of EDTA titration in which the liberated hydrogen ions are neutralized with standard alkali.  
[ -----]

**B- Choose the correct answer from (A), (B), (C), and (D) (2.5 marks)**

1. Aluminum - EDTA chelate may be abbreviated as :  
a-  $MY^-$                       b-  $MY^{3-}$                       c-  $MY^+$                        $MY^{3+}$
2. Complexes are compounds characterized by involving:  
a- ionic bond                      b- coordinate bond                      c- covalent bond                      d- hydrogen bond
3. Cyanide ion is used as a masking agent for:  
a- Magnesium ion                      b- zinc ion                      c- lead ion                      d- calcium ion
4. The metal ion indicator that is usually applied in acid medium is:  
a- Murexide                      b- Erio-T                      c- Xylenol Orange
5. Increase selectivity of EDTA titration is carried out by:  
a- control of solution pH                      b- adjustment of oxidation state  
b- using masking agent                      d- all of the above

**C- Complete the following sentences with missing word(s): (2 marks)**

1. The ..... stability constant, the sharper is the end point, provided the pH maintained constant.
2. Erio- T indicator gives poor end point in titration of calcium ions alone, Thus, we add small amount of ..... to give good results
3. Copper ammine complex is ..... than copper cyano complex.
4. In displacement EDTA titration stability of added M-EDTA must be ..... than the metal to be determined as EDTA complex.

---

Prepared by: Dr. Sameha Abdel-Rahman & Dr. Ashraf Mohamed Mohamed



**111- Complete the following:**

(4 Marks)

- 1- The temp, above which it is impossible to liquefy a gas, irrespective of the pressure applied is known as the -----  
-----
- 2- Solids can pass directly from the solid to the gaseous state 'without melting. This process is known as -----
- 3- Zero degree on the centigrade scale is equal to ----- °K.
- 4- The relationship between the vapor pressure and the absolute temp of a liquid is expressed by the m -----  
----- equation.
- 5- The temp at which the vapor pressure of the liquid equals the external or atmospheric pressure is known as the -----
- 6- At a pressure of 700 mm Hg., water boils at temperature -----  
----- than 100°C.
- 7 - The phenomena of presence of some substances in more than one crystalline form is known as -----
- 8- The forces of attraction between the molecules of the ideal gas are -----  
-----

**IV-Complete the following:**

(3 Marks)

- 1- Colligative properties depend mainly on -----  
and it includes -----
- 2- The partial vapor pressure of the constituent is greater than that expected from Raoult law and the system exhibits-----  
example-----.
- 3- Henry's law applies to -----while, Raoult law applies to the -----

**السؤال الأول: 25%**

فيما يلي بعض العمليات التي تمت في صيدلية 25 يناير خلال شهر فبراير 2011:

- 1- بدأت الصيدلية نشاطها برأس مال قدره 50000 جنيه أودعت خزينة الصيدلية.
- 2- تم شراء اثاث وأجهزة للصيدلية بمبلغ 1500 جنيه دفعت نقدا.
- 3- سداد اجار الصيدلية عن شهر فبراير وقدره 2000 جنيه نقدا.
- 4- شراء أدوية بمبلغ 10000 جنيه نقدا وبمبلغ 5000 جنيه من شركة أمون على الحساب.
- 5- مبيعات أدوية على الحساب بمبلغ 3000 جنيه.
- 6- مصروفات متنوعة دفعت نقدا قدرها 1500 جنيه.

**والمطلوب:** تحليل العمليات الى أطرافها المدينة والدائنة.

**السؤال الثاني: 25%**

استخرجت أرصدة الحسابات التالية من دفاتر إحدى الصيدليات في 2010/12/31م:

البنك	200	رأس المال	؟؟؟
مشتريات أدوية	200	600	مشتريات أدوية
مردودات أدوية	200	300	مردودات أدوية
مبيعات أدوية	400	8000	مبيعات أدوية
مصروفات نقل مشتريات أدوية	7000	1500	مصروفات إدارية وعمومية
مدنيون	6000	1000	اثاث
دائنون			

وفي آخر العام تبين أن مخزون آخر المدة حسب التكلفة بمبلغ 1000 جنيه.

- 1- إعداد ميزان المراجعة.
- 2- إعداد حساب المتاجرة ، وحساب الأرباح والخسائر عن السنة المنتهية في 2010/12/31م.
- 3- إعداد الميزانية في 2010/12/31

**السؤال الثالث: 25%**

ورد اليك كشف حساب البنك برصيد لصيدلية 11 فبراير بمبلغ 1500 جنيه، فإذا توافرت لديك المعلومات التالية:

- 1- شيكات سحب ولم تصرف بمبلغ 2000 جنيه.
- 2- شيكات تحت التحصيل ولم يتم تحصيلها بمبلغ 3000 جنيه.
- 3- مصروفات البنك طبقا لكشف الحساب 200 جنيه.

**المطلوب:** تحديد رصيد البنك طبقا لدفاتر الصيدلية.

**السؤال الرابع: 25%**

توفرت لديك المعلومات التالية عن صيدلية شباب التحرير في 2010/12/31م:

أصول ثابتة.	25000	ج	مخزون أول المدة.	4000	ج
مبيعات أدوية.	20000	ج	نقدية	3000	ج
مشتريات أدوية.	10000	ج	قروض.	7000	ج
العملاء.	9000	ج	رأس المال.	؟؟؟	ج
الموردون.	8000	ج	اجمالي المصروفات.	6000	ج
مخزون آخر المدة.	5000	ج			

**والمطلوب:** استخراج المعلومات التالية:

- 1- رأس المال.
- 2- معدل مجمل الربح.
- 3- معدل دوران المخزون.
- 4- فترة التخزين.
- 5- نسبة المصادر الداخلية لإجمالي مصادر التمويل.
- 6- صافي رأس المال العامل.

مع تمنياتي بالنجاح ودوام التوفيق،،،،

جامعة أسيوط	امتحان مقرر إدارة أعمال صيدلية	تخلفات 2011 الزمن: ساعتان
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2011/6/30	كلية التجارة قسم المحاسبة
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**أجب عن الأسئلة التالية:**

**السؤال الأول:**

من خلال فحص حساب البنك في دفاتر صيدلية الشفاء بأسبوط ومقارنته بكشف الحساب الوارد من البنك الذي تتعامل معه الصيدلية اتضح أن:

- 1- رصيد حساب البنك في دفاتر الصيدلية 17226.
- 2- رصيد كشف الحساب الوارد من البنك 12000.
- 3- قامت الصيدلية بإرسال مبلغ 7500 الى البنك ولكن المبلغ لم يظهر بكشف الحساب.
- 4- حصل البنك كمبيالة لصالح الصيدلية بمبلغ 1000 ولم تخطر الصيدلية بعد بهذا التحصيل.
- 5- قامت الصيدلية بتحرير شيك لإحدى شركات الأدوية بمبلغ 4000 ولم تتقدم الشركة لصرافة بعد.
- 6- تم سداد مبلغ 1422 كراتب للصيدلي المساعد وقد سجل في دفاتر الصيدلية مبلغ 1224.
- 7- احتسب البنك عمولة قيمتها 28 جنيه لم تخطر بها الصيدلية بعد.
- 8- سدد البنك مبلغ 2500 لإحدى شركات الأدوية بناء على اتفاق مسبق بين الصيدلية والبنك ولم تخطر بها الصيدلية بعد.

والمطلوب: إعداد مذكرة تسوية البنك للوصول الى الرصيد الحقيقي.

**السؤال الثاني:**

فيما يلي ملخص تعاملات صيدلية الأمل خلال السنة المنتهية في 2009/12/31:

- 92000 مشتريات الأدوية والمستلزمات الطبية – 120000 المبيعات – 500 مصروفات نقل المشتريات –
- 800 مردودات مبيعات – 1000 مردودات مشتريات – 1800 ايجار الصيدلية – 3600 أجور العاملين –
- 800 تأمينات اجتماعية – 1000 كهرباء – 200 مياه – 1400 مصروفات بيعيه.

فإذا علمت أن:

- 1- السنة المالية للصيدلية تبدأ في 1/1 وتنتهي في 12/31 من كل عام.
- 2- تكلفة المخزون من الأدوية في أول يناير 14000 جنيه ، ومخزون المستلزمات الطبية 2000 جنيه ، بينما في اخر السنة كانت تكلفة الأدوية الموجودة بالصيدلية 12000 جنيه والمستلزمات الطبية 3000 وسعر السوق لهذه المستلزمات 2000.

**والمطلوب:**

- 1- تحديد تكلفة المبيعات.
- 2- اعداد قائمة الدخل عن السنة المنتهية في 2009/12/31.

انظر الصفحة الثانية

**الصفحة الثانية**

**السؤال الثالث:**

فيما يلي لأهم العمليات التي تمت بإحدى الصيدليات خلال السنة المنتهية في 2009/12/31:

- مشتريات (الأدوية) 250000 جنيه.
  - حجم تعامل الصيدلية في الأدوات الرياضية ولعب الأطفال مبلغ 15000.
  - الإيجار الشهري 3000 جنيه ، المرتبات الشهرية 7000 جنيه ، المصروفات الأخرى السنوية 5200 جنيه.
  - مصروفات تأثيث الصيدلية 20000 جنيه بموجب فواتير أقرتها الضرائب وتستهلك على خمس سنوات.
  - تبرعت الصيدلية بمبلغ 1200 جنيه منها 500 للمحافظة ، 400 جنيه لإحدى المؤسسات الاجتماعية المشهورة ، والباقي سداد رسوم تعليم بعض الطلبة بالمدارس والجامعات.
- والمطلوب:** حساب الربح الخاضع للضريبة في ضوء الاتفاقية رقم 58 لسنة 2005 الموقعة بين نقابة الصيادلة ومصحة الضرائب.

#### **السؤال الرابع:**

- (أ) ماذا يقصد بكل من: التكاليف المتغيرة ، والتكاليف الثابتة ، ونقطة التعادل.
- (ب) تقوم إحدى شركات الأدوية ببيع منتجها بسعر 30 جنيه للوحدة وتبلغ التكاليف الثابتة للشركة 300000 كما أن التكاليف المتغيرة للوحدة 20 جنيه.

#### **والمطلوب:**

تحديد حجم المبيعات اللازمة لتحقيق التعادل.

مع تمنياتي بالتوفيق ،،،

مادة: حقوق الانسان  
الزمن: ساعتان

جامعة أسيوط  
كلية الصيدلة  
امتحان الفصل الدراسي الثاني 2011/6/22م

أجب عن سؤالين فقط مما يأتي:

السؤال الأول: تكلم عن: (25 درجة)

(أ)- أقسام حقوق الانسان.

(ب)- مدى حق الدولة غى الحد أو التقييد من حقوق الانسان؟

(ج)- القيمة القانونية للإعلان العالمى لحقوق الانسان.

السؤال الثانى: (25 درجة)

تكلم عن الحق فى الحرية الدينية ، ثم بيم هل تشريع الجهاد فى الإسلام ينافى مبدأ حرية العقيدة؟

السؤال الثالث: (25 درجة)

أذكر إجمالاً ضمانات نزاهة العملية الانتخابية ، ثم اشرح بالتفصيل المناسب ثلاثة منها؟

والله ولى التوفيق،،،

لجنة الممتحنين  
أ.د/ عبد الرحمن محمد عبد القادر  
د/ عادل عبد الرحمن العيسوى

مادة: حقوق الانسان

الزمن: ساعتان

امتحان الفصل الدراسى الثانى 2011/7/3م

الفرقة الأولى (تخلفات)

جامعة أسيوط

كلية الصيدلة

أجب عن سؤالين فقط مما يأتي:

السؤال الأول: (25 درجة)

تكلم عن الإعلان العالمي لحقوق الإنسان مبينا تاريخ صدوره ، وشكله ومضمونه ،  
والقيمة القانونية له؟

السؤال الثاني: (25 درجة)

من خلال دراستك للحق فة المساواة فى الاسلام ، اشرح مؤيدا بالدليل ما يلى :  
أولا: المساواه بين الناس فى القيمة الإنسانية.  
ثانيا: المساواه بين الناس أمام الأحكام الشرعية.  
ثالثا: التفريق بين الرجل والمرأة فى الميراث.

السؤال الثالث: (25 درجة)

اشرح بالتفصيل المناسب شروط الترشيح لعضوية مجلس الشعب؟

والله ولى التوفيق،،،

لجنة الممتحنين  
أ.د/ عبد الرحمن محمد عبد القادر  
د/ عادل عبد الرحمن العيسوى

Assiut University  
Faculty of pharmacy  
Department of pharmaceutics

First Year Pharmacy Students  
Physical Pharmacy I  
20/6/2011

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Total Pages = 12 pages - Total Marks = 70 marks - Time Allowed 3 hours

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**(All questions should be attempted)**

**Question 1** (18 marks)

**I. Choose the most appropriate answer:**

(1x18=18 marks)

1. All the following are characteristics of lyophobic colloids **except**:
  - a- Of high viscosity
  - b- Do not disperse spontaneously
  - c- Sensitive to salts
  - d- Their stability is due mainly to charged surface.
  
2. Blood is considered colloidal system since:
  - a- Its particulates are less than 1  $\mu\text{m}$  in diameter.
  - b- It is Newtonian system.
  - c- It is heterogenous system
  
3. All of the following are kinetic properties of colloids **except**:
  - a- Osmotic pressure
  - b- Diffusion
  - c- Brownian motion
  - d- Tyndall effect
  
4. A foam is a dispersion of:
  - a- Liquid in gas
  - b- Solid in gas
  - c- Gas in liquid
  
5. Disperse colloidal systems are characterized by:
  - a- Being thermodynamically stable.
  - b- Small surface area
  - c- Large surface area
  
6. Which is true for zeta potential (Z.P.):
  - a- increasing electrolyte concentration, leading to increasing z. p.
  - b- is also called electrokinetic potential.
  - c- doesn't affect the stability of systems containing dispersed particles.
  
7. The movement of charged colloidal particles through a liquid under the influence of an applied electric field is termed:
  - a- Electroosmosis
  - b- Electrodialysis
  - c- Electrophoresis
  
8. Controlled flocculation of dispersed particles can be achieved by:
  - a- Hydrophilic polymer
  - b- Increasing surface charge
  - c- Surface active agent
  - d- All of the above
  
9. Velocity of sedimentation of particles is affected by:
  - a- Viscosity of dispersion medium
  - b- Radius of dispersed particles
  - c- Relative densities between dispersed particles and dispersion medium
  - d- All of the above
  
10. Viscosity and particle size are significant factors in:
  - a- Injectables preparations.
  - b- Externally applied lotion
  - c- Oral suspension
  
11. When the viscosity of a suspension increases, the Brownian movement:
  - a- increases
  - b- decrease
  - c- stay constant
  
12. In deflocculated suspension the final volume of sediment is:

- a- very small                      b-large                      c- no sediment at all.

**13.** Concentrated parenteral suspensions of procain penicillin G in water have the following properties **except:**

- a- Shear thinning    b- Shear thickening  
c- Thixotropic properties                      d- Formation of depot of the drug the at site of injection

**14.** The overload and damage of motor mixers is a common problem during processing of:

- a- Newtonian system    b- Plastic system  
c- Pseudoplastic system    d- Dilatant system.

**15.** In pseudoplastic flow, the following are correct **except:**

- a- The system does not flow until a yield value is exceeded  
b- The flow is exhibited by aqueous dispersion of hydro colloids.  
c- The viscosity decrease with shearing stress.

**16.** For measuring the viscosity of water or ethyl alcohol, the most suitable viscometer used is:

- a- Ostwald viscometer    b- Falling sphere viscometer  
c- Cup and bob viscometer    d- Cone and plate viscometer  
e- Any of the above.

**17.** The type of flow of a liquid in which its rheogram is straight line passing through the origin is:

- a- Newtonian    b- Plastic    c- Pseudoplastic

**18.** Which is **true** for thixotropic suspension:

- a- their rheogram shows hysteresis loop.  
b- give uniform dose on shaking  
c- a and b.

**Question 2** (18 marks)

**I. Give reason(s) for each of the following:**                      (8x1=8 marks)

1- A 2% solution of boric acid is not isotonic with blood but is isotonic with lachrymal fluid.

-----  
-----

-----  
-----  
-----  
2- Parenteral solutions for injection into the blood are usually not buffered or are buffered to a low capacity.

-----  
-----  
-----  
-----  
-----  
3- Tertiary butyl alcohol is more miscible than n- butyl alcohol.

-----  
-----  
-----  
-----  
-----  
4- Mandelic acid and benzoic acid have pronounced antibacterial activity in acid environment.

-----  
-----  
-----  
-----  
-----  
5- Blood is maintained at pH about 7.4

6- Gases are liberated from solution in which they are dissolved by the introduction of an electrolyte or non-electrolyte.

-----  
-----  
-----  
-----  
-----

7- Solubility of sodium chloride is not altered much by a change of temperature.

-----  
-----  
-----  
-----  
-----

8- It is desirable to adjust the pH of the preparations are intended to be applied to organs tissues to a level that is close to physiological pH of the tissues

-----  
-----  
-----  
-----  
-----

**II. State the following:**

(5x1=5 marks)

1- The application of distribution law.

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

2- polar solvent such as water act as good solvents according to:

- (a)-----
- (b)-----
- (c)-----

3- Factors influence the pH of buffer system.



- (a)-----
- (b)-----
- (c)-----

4- Tissue irritation resulting from the solution administered will be minimal if:

- (a)-----
- (b)-----
- (c)-----

5- The buffer capacity depends on:

- (a)-----
- (b)-----

**III. Solve the following problems:**

(5x1= 5 marks)

1- Mention tonic equivalent of a drug (E)

-----  
-----  
-----  
-----

2- Mention  $L_{iso}$ :

-----  
-----  
-----  
-----

3- Calculated the amount of sodium chloride needed to prepare 100 ml isotonic solution containing 2% drug A ( $E_A = 0.2$ ) and 1% drug B ( $E_B=0.1$ )

-----  
-----  
-----  
-----



9. Interfacial phenomena are important in emulsion formation and stability.  
 10. A high HLB value indicates water solubility or dispersibility.

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

**11. Select the Most appropriate answer:** (4 Marks)

1- ..... quantitatively expressed the adsorption at an interface:

- A-Ideal gas law                  B-Gibbs equation                  C-van der waals equation

2- A solid on which adsorption takes place is known as:

- A- Adsorbent                  B- Adsorbate.                  C-Adsorption

3- Surfactants are added to topical products to:

- A-Improve spreading    B- Increase viscosity    C-Increase interfacial tension

4-..... is used for measuring surface and interfacial tension.

- A- Capillary rise method.                  B- Stalagmometer.                  C- DuNouy tensiometer

5- ..... crystals are soft and have low melting points.

- A-Molecular                  B-Ionic                  C-Atomic.

6- The equation describes multimolecular adsorption.

- A- Freundlich equation                  B- BET equation                  C-Langmuir equation

7- The temperature at which the pure liquid and solid exist in equilibrium is called:

- A-Freezing point.                  B-Boiling point                  C- Critical pressure.

8-Sublimation, is the reverse process of

- A-Deposition                  B-Condensation                  C- Precipitation

Q No	1	2	3	4	5	6	7	8
Answer								

**III. Give the reason for:** (3 Marks)

1- The interfacial tension between two liquids is always less than the surface tension of the liquid with the greater surface tension.

-----  
 -----  
 -----

2- In general, the alcohols boil at a much higher temp than saturated hydrocarbons of the same molecular weight.

-----  
-----  
-----

3- Adsorption is not always a desired process:

-----  
-----  
-----  
-----  
-----

**IV. Write about the following:**

(4x1.5=6 marks)

A- Freundlich isotherm

-----  
-----  
-----  
-----  
-----  
-----  
-----  
-----  
-----

B- Differences between: Amorphous and crystalline solids:

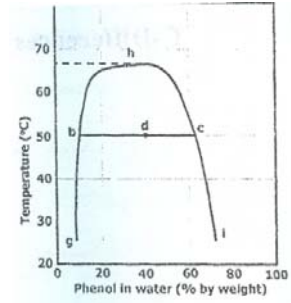
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- C. The curve (OC) is called-----  
 D. The curve (OA) is called -----

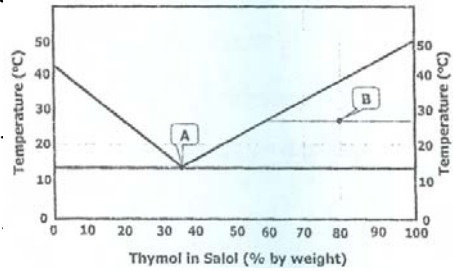
2. Regarding the temperature-composition diagram for the system consisting of water and phenol:

- A. All systems prepared at the tie line (bc) will separate into-----  
 -----  
 B. The point (h) is called -----  
 and equal to -----



3. Regarding the phase diagram for the thymol-salol system:

- A. Point (A) is called ..... and at Temperature .....
- B. At point (B), the system is composed of two phases; the first phase is ..... while the second phase will be .....



II. Define the following: (1x2=2 marks)

a- Cryoscopic constant:

-----  
 -----  
 -----

b- Raoult's Law:

-----  
 -----

**III. Fill in the spaces:**

(12x0.5 = 6 marks)

1. The osmotic pressure that is set up as a result of the passage of solvent molecules may be determined either by:

- a- -----  
 b- -----

2. The triple point of air free water at which solid, liquid and vapor are in equilibrium

lies at a pressure of -----  
 and a temperature -----

3. Mention two pharmaceutical examples of eutectic formation:

a. ----- b. -----

4. As the number of component C is increased, the ----- is increased.

5. The vapor pressure of the solution is less than that expected from Raoult ideal solution law and the system exhibit -----  
 example -----.

6. Van 't Hoff equation for osmotic pressure is ----- and Morse equation is -----.

7. The condensed system is defined as -----  
 -----.

**IV. Denote True (✓) or False (F) for each of the following:** (4x0.5 = 2 marks)

1. solubility of additive in each component resulted in increased CST and decreased the miscibility	
2. The greater the no. of phases in equilibrium, the fewer the degrees of freedom	
3. The more concentrated the solution, the greater is the freezing point depression.	
4. If the vapor pressure curves show a minimum, then the azeotrope has the lowest boiling point of all the mixtures possible.	

V. Write short notes on the distillation of binary mixtures in case of Non-ideal (real) behavior: (2 marks)

-----  
 -----  
 -----  
 -----

\*\*\*\*\*  
الامتحان الشفوى سوف يعقد بمشيئة الله تعالى بقسم الصيدلانيات بعد الامتحان النظرى مباشرة  
\*مع تمنياتنا للجميع بالتوفيق\*  
أ.د. فوزية سيد أحمد حبيب      أ.د. سهير مصطفى الشنوانى  
أ.د. محمد فتحى ابراهيم      د. دينا فتح الله محمد

Assiut University  
Faculty of pharmacy  
Pharmacognosy 2

(تخلفات)

First Year Final Exam  
Time allowed: 2 hour  
Date: 30/6/2011

**All question to be answered**

لاحظ ان اسئلة الامتحان فى 4 صفحات

**I- Choose the correct answer and put it in the table below: (10x1=10 marks)**

1- A typical bark consists of:

a-cork, cortex, pericycle, phloem & xylem      b- cork, cortex, pericycle & phloem



- c- Pericycle & phloem  
 2- Crystal sheath present in:  
 a-cascara  
 c- quillaia  
 3- Anthraquinone gives rose red colour with:  
 a- KOH  
 c- FeCl<sub>3</sub>  
 4- Epiphytes can be differentiate between:  
 a- stem and root bark  
 c- wood and stem  
 5- The oil of clove is secreted by:  
 a- oil glands  
 c- glandular hairs  
 6- Cinnamon bark contains:  
 a- cyanogenic glycoside  
 c- anthraquinone glycosides  
 7 - The sclerieds of cinnamon contains:  
 a- cluster of calcium oxalate  
 c- prisms of calcium oxalate  
 8- The antimalarial drug in cinchona is:  
 a- quinidine  
 c- quinine  
 9- Cascara bark should be identified by:  
 a- crystal sheath  
 c- forked fiber  
 10-Quinine gives blue fluorescence with:  
 a- H<sub>2</sub>SO<sub>4</sub>  
 c-KOH
- d- phloem, cambium, xylem & pith  
 b- cinchona  
 d- cinnamon  
 b- HCl  
 d- Picric acid  
 b- wood and bark  
 d- cork and cortex  
 b- oil cells  
 d- laticiferous vessels  
 b- eugenol  
 d- fixed oils  
 b- oil droplets  
 d- non of them  
 b- quinovic acid  
 d- cinchotannic acid  
 b- oil galnds  
 d- non of them  
 b- HCl  
 d- Mayer's reagent

marks
-------

**Answers of question I**

1	2	3	4	5	6	7	8	9	10

**II- In the table below, fill with a suitable word (s):** (20x1=20 marks)

- Cinnamon bark contains .....(1) which gives .....(2) with KOH.

- Wild cherry bark contains .....(3) which used as .....(4)
- Cinchona bark used in .....(5) due to the presence of .....(6) and used in .....(7) due to the presence of .....(8)
- Forked fibers are characters of .....(9).
- Oil cells present in .....(10) while laticiferous vessels present in .....(11).
- Crystal sheath present in .....(12), while idioplast present in .....(13).
- The activation of the cork cambium gives .....(14) and .....(15).
- Eugenol which is used in preparation of .....(16) is present in .....(17).
- .....(18) present in cinnamon bark and absent in cassia.
- Rytidoma is .....(19) while the lenticel is .....(20).

marks
-------

**Answers of question II**

1		2	
3		4	
5		6	
7		8	
9		10	
11		12	
13		14	
15		16	
17		18	
19			
20			

**III- Draw the key elements of the following:**

(4x5= 20 marks)

Cascara bark	Cinnamon bark	marks

Quillaia bark	Cinchona bark

**IV- A- Write (✓) or (x) and correct the false for the following:** (10x1=10 marks)

1- Gall-causers can be called parasites as it doesn't destroy the plant .....(....).....

.....

2- Blue galls are formed on the twigs of *Adleria gallaetinctoria* .....(....).....

.....

3- The growth of the gall will continue if the larva dies .....(....).....

marks
-------

- .....
- 4- The taste of the gall is very pungent due 'to presence of tannins ..... (.....).....
- .....
- 5- Quassia wood is used as insecticide and laxative ..... (.....).....
- .....
- 6-Saffron is used as non-carcinogenic natural colouring agent ..... (.....).....
- .....
- 7- When the male organ only is present, the flower is called pistillate . ..... (.....)....
- .....
- 8- Spike is one of the cymose inflorescence..... (.....).....
- .....
- 9- Zygomorphic flowers can be divided into equal halves ..... (.....).....
- .....
- 10- Syngenesious stamens have free filaments and united anthers ..... (.....)....
- .....

**B) For each of the following write the name, origin and active constituents**

- |  |                                  |
|--|----------------------------------|
| 1- A wood used as colouring agent            | 2- Emmenagogue flower            |
| 3- A wood used as urinary tract disinfectant | 4- A flower used as anthelmintic |
- (Each 4 marks)

**C) Write on the following:**

- |  |                                    |
|--|------------------------------------|
| 1- Galls formation                             | 2- One chemical test for pyrethrum |
| 3-Corymb inflorescence (draw also)             | 4- One chemical test for hibiscus  |
| 5- Insecticidal flower (Draw the key elements) |                                    |

**D) Define the following**

- |                      |                  |
|----------------------|------------------|
| 1- Blown clove       | 2- Xylem vessels |
| 3- Substitute fibers | 4- Heart wood    |



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

First year 2011-2012  
Pharm. Anal. Chem. (1)  
Mid-term exam  
December, 6, 2011  
Time allowed: 1 hours  
15 Marks

Student Name: \_\_\_\_\_

ID: \_\_\_\_\_

**All Questions Are to Be Attempted:**

**Question 1:**

**A- Identify, which the following statements is true ( T ) and which is false ( F):**

(3 Marks)

- ( )- Standard solution is solution of exactly known concentration.
- ( )- Molar standard solution contains gram equivalent weight of substance / liter
- ( )- ph.ph. posses pink color in strong acid medium.
- ( )- Degree of dissociation of weak electrolyte is more than one.
- ( )- Constant B.P. HCl is primary standard acid.
- ( )- Normal solution is solution containing gram equivalent weight of substance / liter
- ( )- Screened indicator is a mixture of two indicators of similar pH range.
- ( )- The primary standard substance should have high molecular weight.
- ( )- Universal indicator is used for detection of end point in acid-base titration.
- ( )- In titration of strong base versus strong acid M.O. or ph.ph. can be used as indicator.
- ( )- The pH of  $\text{CH}_3\text{COONa}$  solution is higher than 7 .
- ( )- Arrhenius Theory defined an acid is a substance which donates a proton while a base accepts a proton.

**B- Draw the structural formula of M.O. at pH 3 and pH 7. (1 Mark)**

(mention its color)

**C- Calculate the pH of a 0.25 M solution of ammonium chloride? (1 Mark)**

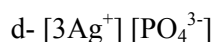
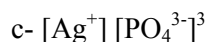
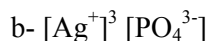
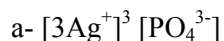
[ $\text{pK}_b = 4.7$ ]

**QuestionII:****(5 Marks)***Dr: Hanaa Mohammed Abdel-Wadood***a- Put the sign (✓) for the correct statement and the sign (X) for the incorrect one and then correct it. (3 Marks)**

- 1- Direct titration is a suitable method for determination of organic nitrogenous compounds.
  
- 2- Methyl orange is a suitable indicator for determination of  $\text{NH}_4\text{Cl}$  by formol method.
  
- 3- Aniline can be determined by titration with standard  $\text{HClO}_4$  using ammonia as a solvent.
  
- 4- Biphasic titration is a suitable method for determination of sodium salicylate by standard  $\text{HCl}$ .
  
- 5- Aspirin can be determined by direct titration with standard  $\text{NaOH}$ .
  
- 6- Determination of  $\text{CaO}$  is done by dissolving in sucrose solution and then titration with standard  $\text{HCl}$ , alcohol is added to prevent the formation of lumps.

**b- Complete the following****(2 Marks)**

- 1- Boric acid can't be determined by direct method because it is so \_\_\_\_\_ was added, then titrate with standard \_\_\_\_\_ using \_\_\_\_\_ as indicator.
  
- 2- Protophilic solvents have \_\_\_\_\_ effect on acids and effect on bases, while protogenic solvents have \_\_\_\_\_ effect on acids and \_\_\_\_\_ effect on bases.

**Question III****(5 marks)****1-Multiple Choice Questions:****(3.5 marks)**1- Ksp of  $\text{Ag}_3\text{PO}_4$  equals:2-If we titrate 100 ml, 0.1 M NaCl solution by 0.1 M  $\text{AgNO}_3$  then pCl at equivalence point equals: ( $K_{sp} = 1.2 \times 10^{-10}$ ):

a- 3.3

b- 4.96

c- 7.6

d- 7.08

3-In the above problem pCl after addition of 120  $\text{AgNO}_3$ 

a- 7.08

b- 7.88

c- 4.96

d- 3.30

4-The solubility of Ca oxalate increases in:

a-  $\text{CaCl}_2$  solution

b- Sod. oxalate solution

c- HCl solution

5- As the  $K_{sp}$  decreases, the inflection of the titration curve:

a- Increases

b- Decreases

c- Not affected

6-  $\text{AgCl}$  has to be filtered off before titration using:

a- Volhard's method

b- Mohr's method

c- Fajan's method

d- None of the above

7- If we add  $\text{AgNO}_3$  solution to  $\text{AgBr}$ , the solubility of the ppt will:

a- Increase

b- Decrease

c- Not changed

**2- Complete the following****(1.5 marks)**

1- The most suitable pH in Mohr's method is-----

2-  $\text{AgCl}$  is soluble in----- and -----3-  $K_{sp}$  of  $\text{Bi}_2\text{S}_3$  equals-----**Good Luck**

Prof.Dr.Fardous A.Mohamed

Prof.Dr.Samia El-Gezawy

Dr. Hanaa Abdel-Wadood



**All questions should be attempted**

**(Total marks 70)**

**1- Compare and contrast between each of the followings: (with example) (6 Marks)**

Bronsted-Lowry theory of acid & base	Lewis theory of acid & base
Screened indicator	Mixed indicator
Titration curve of strong acid vs. strong alkali [mention the type of indicator can be used]	Titration curve of weak acid vs. weak alkali [mention the type of indicator can be used]

**II- Draw the structural formula of ph.ph. at pH 8 and above 12. (3 marks)  
(mention its colour)**

**III- When you titrate 100 ml of 0.1 M NaOH what will be the pH at the beginning of titration and at end point. [pKa = 4.75]. (2.5 marks)**



**IV- Match each of the following substances to the proper statement:**

(3 Marks)

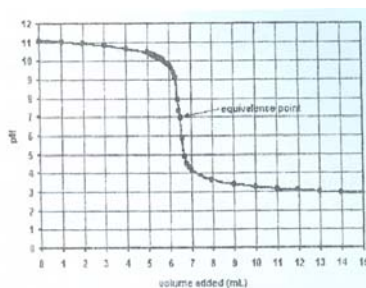
- |                             |                           |
|-----------------------------|---------------------------|
| 1- $\text{NH}_4\text{OH}$   | 6- Benzoic acid           |
| 2- ph.ph.                   | 7- $\text{NH}_4\text{Cl}$ |
| 3- $\text{Na}_2\text{CO}_3$ | 8-KCN                     |
| 4- NaOH                     | 9- Alcoholic NaOH         |
| 5-M.O.                      | 10-Universal indicator.   |

- ( ) Used to indicate the end point of acetic acid during titration with standard NaOH  
( ) A primary standard acid.  
( ) It's solution is acidic to M.O.  
( ) Used for rough determination of **pH** of solution.  
( ) As primary standard base.  
( ) Form basic buffer in combination with  $\text{NH}_4\text{Cl}$

**V-Encircle the correct answer:**

(2.5 Marks)

1- This titration curve is



- a- strong acid (beaker) with a strong base (buret).  
b- a weak acid (beaker) with a strong base (buret).  
c- a strong base (beaker) with a strong acid (buret).  
d- a weak base (beaker) with a strong acid (buret).

2- The ionic product constant of water ( $K_w$ ) equal:

- a-  $1 \times 10^{-7}$       b-  $1 \times 10^{14}$       c-  $1 \times 10^{-14}$

3-In alkaline solution the ( $\text{H}^+$ ) is:

- a- more than ( $\text{OH}^-$ ) and pH is more than 7  
b- more than ( $\text{OH}^-$ ) and pH is less than 7  
c- less than ( $\text{OH}^-$ ) and pH is more than 7  
d- less than 14

4-To prepare 0.1M  $\text{Na}_2\text{CO}_3$  weight: [Na=23, C= 12, O=16]

- a- 10.6 g/L      b-5.3 g/L      c-106 mg/L      d- 53 g/L

5- Which of the following mixtures would make the best buffer?

- a-  $\text{CH}_3\text{CO}_2\text{H}$  and  $\text{NH}_4\text{Cl}$   
b-  $\text{CH}_3\text{CO}_2\text{Na}$  and  $\text{NH}_3$   
c-  $\text{CH}_3\text{CO}_2\text{Na}$  and  $\text{NH}_4\text{Cl}$   
d-  $\text{NH}_3$  and  $\text{NH}_4\text{Cl}$

**Question II (Acid-base):****(17Marks)****1-Select from column A the suitable word for that in column B****(5 Marks)****A**

a- KI	j- Ag <sup>+</sup>
b- Phenolphthalein	k- aniline
c- KCN	l- ammonia
d- Amino acids	m- glacial acetic acid
e- H <sub>2</sub> O <sub>2</sub>	n - crystal violet
f- Methyl isobutyl ketone	o- methyl orange
g- CaO	p - sucrose
h- Thymol blue	q- bromophenol blue
i- NH <sub>4</sub> Cl	r- alcohol.

**B**

- ( ) is a suitable indicator for determination of sodium salicylate by standard HCl.
- ( ) is added to dissolve NH<sub>2</sub>HgCl and the liberated KOH and NH<sub>4</sub>OH can be titrated With standard HCl.
- ( ) Can be determined by displacement titration method.
- ( ) is a suitable indicator for determination of BaCl<sub>2</sub> by back titration method.
- ( ) can be determined by Kjeldahl's method.
- ( ) is added for indirect determination of HCHO.
- ( ) is a very weak base in water.
- ( ) can be used as a catalyst for hydrolysis of K<sub>2</sub>S<sub>2</sub>O<sub>8</sub>.
- ( ) is an example of aprotic solvent.
- ( ) is a suitable indicator for determination of aniline HCl by standard HClO<sub>4</sub> in glacial acetic acid.

**2-Give the reason(s) for the following:****(5 Marks)**

a- Use of back titration method for determination of CaO.

b- Addition of Hg(CH<sub>3</sub>COO)<sub>2</sub> in the determination of aniline HCl by standard acetous HClO<sub>4</sub>.c- Addition of H<sub>2</sub>SO<sub>4</sub> and boiling for determination of protein by Kjeldahl's method.

d- Determination of aniline by non aqueous method.

e- For determination of aspirin by indirect method, boil with known excess of standard NaOH.

**3- Complete the following table:****(5 marks)**

Sample	Method	Standard (s)	Indicator (s)	Conditions
1-CaCO <sub>3</sub>		HCl, NaOH		Boil
2-	Formol		Ph.ph.	Addition of HCHO
3- Mixture of HCl&CH <sub>3</sub> COOH		NaOH		Titration on the same sample
4-	Non aqueous titration		Thymol blue	Dimethyl formamide, pyridine solvent
5-	Biphasic titration	HCl		Using ether
1- H <sub>3</sub> BO <sub>3</sub>		NaOH	Ph.ph.	
6-	Indirect titration		m.o.	Add hydroxylamine HCl
7- HgO		HCl		Add KI
8- KH phthalate	Non aqueous			Glacial acetic acid
9- HCOOH		NaOH		The sample soluble in H <sub>2</sub> O
10- H <sub>2</sub> O in acetone	Indirect	NaOH		

**4- By chemical balanced equations, illustrate how you analyze the following mixture ( mention the method, standard (s), indicator(s) and conditions) (2 marks)**Mixture of Na<sub>2</sub>CO<sub>3</sub> and NaHCO<sub>3</sub>.

**Question III:****(17 Marks)****I-Mark (✓) for correct statement and (x) in for wrong one:****Put the answers in the table.**

- 1-Solubility of AgCl decreases in presence of cone. HCl.
- 2-Solubility of AgBr increases in presence of NaBr.
- 3-Solubility of Ag<sub>2</sub>S increases in presence of KCN.
- 4-Solubility of BaSO<sub>4</sub> decreases in presence of NaNO<sub>3</sub>.
- 5-Ksp of Ag<sub>2</sub>CrO<sub>4</sub> is more than that of AgCl.
- 6-If AgNO<sub>3</sub> 0.1 M is added to a mixture of 0.1 M NaCl and 0.1 M NaI solution AgCl will precipitate first.
- 7-AgI has to be separated before titration using Volhard's method.
- 8-Volhard's method is carried out in alkaline medium.
- 9-Volhard's method could be used for determination of all halides.
- 10- Mohr's method could be used for determination of iodide.
- 11-The adsorption indicator in Fajan's method has to be of opposite charge as the precipitating agent.
- 12- Ksp of AgSCN is more than that of AgCl.
- 13- Fajan's method is used for determination of silver ion.
- 14- Leibeg's method could be used for determination of Ni<sup>2+</sup>.
- 15- Eosin could be used for determination of iodide.

**The answers:**

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

**2-Solve the following problem:**

If the solubility of  $Pb_3(PO_4)_2 = 0.00014 \text{ g/L}$ ,

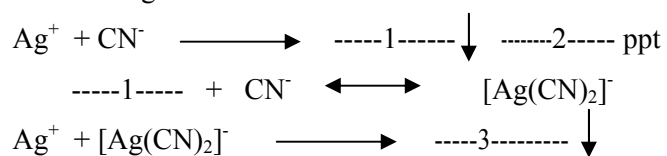
Calculate the solubility product ( 811.6 is M.W.).

(3 marks)

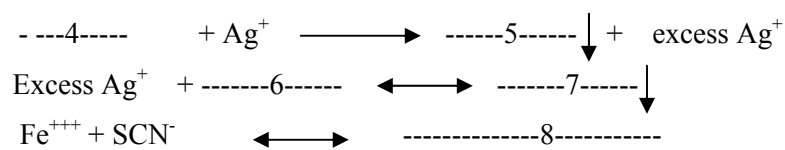
**3- Complete the following equations:**

(4 marks)

a- In Leibeg's method:



b- In Volhard's method:



**4-Draw the structure of two adsorption indicators, mention their use. (2.5 marks)**

**Question IV (gravimetry) .....(19marks)**

**Write 'shortly on e'ach of the following:**

(1).  $\text{BaSO}_4$  crystals; on precipitation, may be attacked by  $\text{PbSO}_4$ ,  $\text{K}_2\text{SO}_4$ ,  $\text{Na}_2\text{SO}_4$  or  $\text{Ba}(\text{NO}_3)_2$  as impurities. Mention type of impurity for each and represent by drawing.

(2). Selectivity, in gravimetry, may be increased through; oxidation, reduction, pH control or masking. Illustrate by an example for each.

(3) There is a relationship between compound weight (or form) and the temperature of ignition. Illustrate one example by drawing; and mark the best form to be weighed.

(4)  $\text{SO}_4^{2-}$  anion; can be gravimetrically determined by three different methods. Mention the type of method and write the chemical structure of the reagent used for each.

(5). On the gravimetric determination of  $\text{Fe}^{3+}$  as its anhydrous oxide, interference may be caused by the following; (*Mention examples*).

Cations, -----

Anions, -----

Organic anions, -----

(6). What are the advantages of using "organic precipitants" in gravimetry? Draw the chemical structure of those used for  $\text{Ni}^{2+}$  and  $\text{Al}^{3+}$ .

(7). Write Von Wiemern Equation. Show how it can be applied for optimal precipitation in gravimetry.

مع دعائنا بالتوفيق والسداد:  
أ.د./ فردوس عبد الفتاح محمد      أ.د./ ساميه محمود الجيزاوى أ.د./ ابراهيم حسن رفعت      د./ هناء محمد عبد الودود  
لجان الشفوى بالقسم عقب التحريرى مباشرة لكل الطلاب

**(All Questions should be attempted)**

**Question 1** (18 marks)

I. Give reason(s) for each of the following: (6 marks)

1- The selection of vehicle in the extraction of crude drug is important.

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

2- Using talc in "alternative solution method" in preparing aromatic water.

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

3- Drying the crude drugs before extraction process.

.....  
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.....

4- Lozenges are harder than ordinary tablets.

.....  
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.....

5- Administration of a drug in suppositories as rectal route instead of oral route.

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

6- Pastes contain large amount of solid material.

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



**II. Mention the difference (s) between each two of the following:** (6 marks)

a- Syrups	Elixirs
.....	.....
.....	.....
.....	.....
.....	.....
.....	.....
b- Ointments	Pastes
.....	.....
.....	.....
.....	.....
.....	.....
.....	.....

**III- Cosolvency is a phenomena used in preparing some dosage forms.** (6 marks)

Mention three preparations and the solvents used in each one

- 1- ....., solvent used are ..... and .....
- 2- ....., solvent used are ..... and .....
- 3- ....., solvent used are ..... and .....

**Question 2** (17 marks)

I- Complete the following statements: (7 marks)

1- The narcotic prescription must include:

- a- .....
- b- .....
- c- .....
- d- .....

2- Cracking of emulsion may result from:

- a- .....
- b- .....
- c- .....
- d- .....

3- Factors which have been recommended for the danger or the safety of a dose of medicine are:

- a- .....
- b- .....
- c- .....
- d- .....

4- Incompatibilities of acacia are:

- a- .....
- b- .....
- c- .....
- d- .....

5- The ultimate accuracy of any prescription will depend on the following factors:

- a- .....
- b- .....
- c- .....
- d- .....

6-Desirable properties of a preservative for emulsion are:

- a- .....
- b- .....
- c- .....
- d- .....

7- Potential use of multiple emulsions:

- a- .....
- b- .....
- c- .....
- d- .....

II- Give reason (s) for the following statements: (7 Marks)

1- Preparations containing acacia required the presence of thickening agents.

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

2- Humectants are added to an emulsion formulation.

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.....

3- Synthetic emulsifiers are superior to natural gums and proteins.

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4- Frequency of drug administration is often determined by the type of drug action.

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.....

5- Emulsions should not be stored at temperature

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

6- Although not so serious, creaming of emulsion is undesirable.

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.....

7- Soap stabilized emulsions are usually formulated an alkaline pH.

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

III- Define each the following:

(3 marks)

1- Complex prescription:

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

2- Dr. Fried rule:

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

3- The corrective is:

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

4- Self emulsifying Monostearate is:

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

5- Creaming of emulsions are:

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

6- Finely divided solids as emulsifying agent are:

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

**Question 3** (18 marks)

I- Write about the following: (6 marks)

1- Advantages of powdered and granulated products:

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

2- Pulverization by intervention:

.....  
.....  
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3- Limitation of spatulation as a mixing process:

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

4- Incorporation of liquids into divided powders:

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

**II-Fill in the space:**

(6 Marks)

- 1-Most biological products are available in ..... forms.
- 2-The color of a pharmaceuticals must have a ..... with the taste.
- 3-Citrus flavors are frequently used to combat ..... tasting drugs
- 4-Examples of the preservatives that are commonly employed in pharmaceutical preparations are ..... and .....
- 5-Injections that ..... may not contain antibacterial preservatives.
- 6-Design of pharmaceutical preparations requires the consideration of a number of factors as ..... and .....
- 7- The proper selection of appropriate flavoring agent depends upon several factors namely ..... and.....
- 8-Flavoring materials play only a minor role in solid dosage forms, which .....
- 9-Examples of coloring agent that could be used in pharmaceutical preparations is .....

**III- A-Solve the following problems**

(3 marks)

a- A specific gravity bottle weighs 23.66 g when filled with water it weighs 72.95 g; when filled with another liquid it weigh 73.56. What is the specific gravity of the liquid?



**Question 3** (17 marks)

A- Define each of the following:

(3 marks)

1- Surfactants

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

2- Critical micelle concentration

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

3- Chemical incompatibility:

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

B- Mention THREE types of incompatibilities exerted by surfactants.(3 marks)

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

C- Complete the following statements:

(6 marks)

1- Cloud points are largely independent on the ..... but depend on its .....

2- Cationic surfactants have ..... activity beside their surface activity because they cause ..... to the cell.

3- In alkaline solution protein molecules have ..... charge, while in acid medium protein molecules acquire ..... charge.



4- Benzalkonium chloride is ..... surfactant, while sod. Lauryl sulphate is .....surfactant.

5- Change of internal structure of proteins is called ..... and is due to interaction of .....with ..... surfactants.

6- Because of their ability to form aggregates of colloidal size, surfactants are also called .....

D- Determine the type of incompatibility in the following prescription; discuss the problem in each prescription and how to correct it (3 marks)

A- Rx

Aminopyrine	gr.v
Codeine sulphate	gr. 1/4
Belladonna extract	gr. 1/6
Acetyl salicylic acid	gr. iii

Ft caps, i mitt XII

Sig.: Cap. i m.d.u.

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

2- Rx

Atropine Sulphate	0.006 g
Phenobarbital	0.360 g.
Ft. Caps i mitte	XII

Sig. caps i t.d.s

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

3 Rx

Ammonium chloride	Zi
Codeine sulphate	gr iv
Syrup of wild cherry to	fl Z iv
Ft solution	

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IV- Mention Three differences between micellar solubilization and emulsification: (2 marks)

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\*\*\*\*\*

الامتحان الشفوى سوف يعقد بمشيئة الله تعالى بقسم الصيدلانيات بعد الامتحان النظرى مباشرة

\* مع تمنياتنا للجميع بالتوفيق \*

أ.د. فوزية سيد أحمد حبيب	أ.د. سهير مصطفى الشنوانى
أ.د. محمد فتحى ابراهيم	د. دينا فتح الله محمد



5. Anne became such a different person after her last promotion. I think the new position has  
**a- tore her head apart**                      **b- twisted her neck**  
**c- turned her head**                              **d- affected her head**
6. We the seashore on our vacation.  
**a- are going**                                      **b- are not going to**  
**c- are not going**                                **d- are going not to**
7. Egypt is famous for ..... great civilization  
**a- its**    **b- it**  
**c- it's**    **d- his**
8. It seems to be getting worse. You had better ..... a specialist.  
**a- consult**                                        **b- consult with**  
**c- consult to**                                      **d- consult by**
9. Don't leave your books near the fire. They might easily .....  
**a- catch to fire**                                **b- catch on fire**  
**c- catch the fire**                                **d- catch with fire**
10. I have trouble .....  
**a- remembering my password**              **b- remember my password**  
**c- to remember my password**              **d- to remembering my password**

**V. Choose ONLY ONE of the following passages to translate into Arabic:**  
**(10 Marks)**

- a. Dolphins are very interesting animals. They look like fish, but they are not. Fish have cold blood but dolphins have warm blood like other animals. Fish can live under water but dolphins cannot. They can stay under water for a long time but then they have to come up because they breathe air. Fish lay eggs but dolphins have living babies. These drink their mother's milk like other animals.
- b. Pharmacology is the study of the effects drugs have on living things. It deals with how drugs modify tissue and organ functions. Pharmacology is linked with both biology and chemistry. It is a recent science, but it is closely connected with one of the oldest, the giving of remedies to relieve diseases. The branch of pharmacology relating to poison is toxicology. Nearly all chemical agents are harmful to living tissue if enough of them are taken. When a doctor knows how the chemicals act, he may use them for many different purposes.

**Good Luck**  
**Dr. Walaa A. Hassan**



Assiut University  
Faculty of Medicine  
Department of Medical Physiology

Date:22/1/2012  
Time: 3 hours  
Total degree: 100 marks

**Final Exam in Medical Physiology  
First Year Pharmacy Student**

---

**I. First question: (10 marks)**

1. **Name** hormones secreted by the thyroid gland and **mention** control of their secretion. (5 marks)
2. **Mention** functions of the following hormones **on metabolism**:  
a. Cortisol,                      b. insulin                      c. growth hormone. (5 marks)

**II. Second question: (15 marks)**

1. **Mention** cardiovascular compensatory reaction after severe hemorrhage. (2 marks)
2. **Define** rhythmicity of cardiac muscle and discuss factors affecting it. (4 marks)
3. **Mention** effects of noradrenalin on heart rate in intact and isolated heart. (2 marks)
4. **What** is the effect of inspiration on heart rate, **Explain why?** (2 marks)
5. **Mention** functions of spinal cord. (2 marks)
6. **Put true or false in front of each statement:** (3 marks)
  - a) Arterial blood pressure doesn't change after moderate loss of blood. ( )
  - b) Intravenous injection of excess calcium ion rapidly stops heart during diastole. ( )
  - c) Stroke volume increased by decrease venous return. ( )

**III. Third question: (16 marks)**

1. **Discuss** mechanism of formation of platelets plug. (4 marks)
2. **Enumerate** functions of the spleen. (4 marks)
3. **Discuss** saltatory conduction. (3 marks)
4. **Define**: rheobase, chronaxie. (2 marks)
5. **Define** BMR and **mention four** pathological factors increasing it. (3 marks)

**IV. Fourth question: (21 marks)**

1. **Discuss** different modes of blockage of cholinergic receptors. (5 marks)
2. **Compare** actions of sympathetic & parasympathetic nervous system actions on head. (6 marks)
3. **Which** gas is the driver for the respiration, **Explain why?** (5 marks)
4. **Enumerate** the factors that affecting diffusion through the respiratory membrane. (5 marks)

**V. Fifth question: (21 marks)**

1. **Enumerate** functions of testosterone hormone. (3 marks)
2. **Discuss** changes in uterus during secretory phase of menstrual cycle. (3 marks)
3. **Define** glomerular filtration rate and mention different forces affecting it. (5 marks)
4. **Define** vomiting and **discuss** its mechanism. (5 marks)
5. **Mention** factors affecting gall bladder evacuation. (5 marks)

**VI. Choose the most correct answer: (17 marks, one mark each)**

**1. Parathyroid hormone:**

- a. Is released when the serum calcium is too high.
- b. Inactivated vitamin D.
- c. Is secreted if serum calcium is too low.
- d. Works in the same direction as thyrocalcitonin.

**2. The action of Parathormone on the kidney tends to:**

- a. Effectively increase the deposition of bone mineral.
- b. Increase calcium phosphate precipitation in the kidney.
- c. Elevate serum phosphate.
- d. Diminish the possibility of hyperphosphatemia.

**3. Removal of anterior pituitary gland from the influence of any of the hypothalamic hormones will results in n increased:**

- a. Basal metabolic rate.
- b. Rate of prolactin production.
- c. Rate of lipolysis.
- d. Uptake of amino acids by muscles.

**4. Cellular immunity is due to:**

- a. B-Lymphocytes.
- b. T-Lymphocytes.
- c. Neutrophils.
- d. Eosinophils.

**5. The number of oxygen molecules carried by one Hb molecule:**

- a. One.
- b. Two.
- c. Four
- d. Eight.

**6. Eosinophil leucocytes:**

- a. Increase by adrenal corticosteroids.
- b. Increase in allergic conditions,
- c. Decrease with parasitic infestation,
- d. Lead to cellular immunity.

**7. 70% of all the preganglionic parasympathetic fibers are found in the:**

- a. Facial nerve.
- b. Glossopharyngeal nerve..
- c. Oculomotor nerve.
- d. Vagus nerves,

**8. The sympathetic nervous system handles \_\_\_\_\_ responses, while the parasympathetic nervous system governs \_\_\_\_\_ responses.**

- a. Voluntary; involuntary.
- b. Involuntary; voluntary.
- c. Excitatory, relaxing.
- d. Sensory; motor.

**9. Which of the following parts of the CNS do NOT give rise the autonomic fibers?**

- a. The lumbar spinal cord.
- b. The thoracic spinal cord.
- c. The cervical spinal cord.
- d. The brain.

**10. Central chemoreceptors may contribute to the increased ventilation that occurs as a result of:**

- a. An increase in arterial oxygen tension.
- b. An increase in arterial carbon dioxide tension,
- c. An increase in arterial pH,
- d. A decrease in arterial oxygen tension.

- 11. Deficiency of pulmonary surfactant would:**
- Decrease surface tension in the alveoli.
  - Cause collapse of alveoli and make lung expansion very difficult.
  - Decrease the work of breathing.
  - Increase functional residual capacity (FRC).
- 12. The cyanosis is caused by:**
- An increase in the affinity of hemoglobin for oxygen.
  - A decrease in the percent of red blood cells (hematocrit).
  - An increase in the concentration of deoxygenated hemoglobin in arterial blood.
  - An increase in the concentration of carbon monoxide in the venous blood.
- 13. Which of the following statements is NOT CORRECT about salivary secretion?**
- It is mediated by nervous and hormonal mechanisms.
  - 80th sympathetic and parasympathetic nervous systems stimulate salivary secretion
  - Parasympathetic nervous system is the 1 ry controller.
  - It leads to incomplete digestion of carbohydrate.
- 14. Which of the following statements is NOT CORRECT about pancreatic secretion:**
- Secretin increases the release of pancreatic secretion rich in bicarbonate.
  - Cholecystokinin increase release of pancreatic secretion rich in bicarbonate.
  - Pancreatic secretion is controlled by nervous and hormonal mechanisms.
  - Vagal nerve stimulation leads to pancreatic secretion rich in enzymes,
- 15. Which of the following statements is NOT CORRECT about bile secretion:**
- Neutralizes stomach secretion,
  - Bile salts emulsify fats.
  - Fresh bile is formed in liver,
  - Bile salts help protein absorption.
- 16. Which of the following statements is NOT CORRECT about the testis:**
- The testis has both hormonal and reproductive functions.
  - Testosterone synthesis occurs in the interstitial cell of Leydig.
  - Sperm formation takes place in the prostate.
  - For its proper function, it must be present outside abdominal cavity.
- 17. Which of the following statements is NOT CORRECT about spermatogenesis:**
- It takes an average of 74 days to form a mature sperm.
  - Thyroxin stimulates spermatogenesis.
  - FSH stimulates the secretion of testosterone which maintains the gametogenic function of the testis.
  - Protein deficiency and vitamin E deficiency arrest spermatogenes.

---

**Prof. Dr. Enas A Hamed**  
and Exam. Committee

الامتحان الشفهي باذن الله يوم الأحد 2012/2/23 الساعة 8½ صباحا بقسم الفسيولوجيا الطبية بكلية  
الطب لجميع الطلاب.

All question are to be answered

لاحظ ان اسئلة الامتحان فى ست صفحات

I- A) Complete the following sentences with suitable words (write your answers in table below): (5 marks)

- \*Uva- ursi leaf contains .....1..... which used as .....2.....
- \*Jaaborandi leaf contains .....3..... which gives .....4..... with Mayers reagent
- \*Henna used as .....5.... due to its content of .....6.....
- \**Hyoscyamus muticus* contains .....7.....crystal of ca-ox while *Datura stramonium* contains .....8.....
- \*Squill contains .....9..... and tested by ....10.....

1	6
2	7
3	8
4	9
5	10

I- B) For each of the following characteristic elements and or active constituents give only the name of one drug

Element of constituent	Name of the drug
Crystal layer	
Schizo-lysogenous oil gland	
Isobilateral leaf	
Absence of ca-ox	
Branched glandular hail	
Bundles of raphides of ca-ox	
Anisocytic stomata	
Volatile oil	
Caffeine alkaloid	
Atropine	



II- A) Complete the following table:

(8 marks)

The leaf Name	Active constituents	Uses
1-		Mydriatic effect on eye
2- Senna		
3-	Purpurea A and B	
4-	Diosphenol	

II- B) Mention the origin and chemical test for plant No. (3)

(2 marks)

The origin

-----  
-----

The chemical test

-----  
-----  
-----  
-----  
-----

**III- Draw the characteristic elements for the following powdered drugs (10 marks)**

Laxative drug

Cardiotonic drug

Antispasmodic drug

Diuretic and antiseptic drug

**IV- A) Choose the correct answer and put it in the table below (10 marks)**

1- Disadvantages of collection of medicinal plants from wild plants

- A- High cost
- B- Continuous collection may lead to serious deficiency in supplies
- C- Change the morphological and anatomical characters of the plants and produce many varieties
- D- All of them

2- Rhubarb rhizome should be collected

- A- In the winter
- B- at the afternoon
- C- In the morning
- D- In the summer

3- Solanaceous leaves should be collected

- A- In the winter
- B- at the afternoon
- C- In the morning
- D- In the summer

4- Many drugs are covered with thin layer of CaCO<sub>3</sub> as

- A- Colchicom
- B- Santonica
- C- Ginger
- D- Calumba

5- One of the objectives of drying is:

- A- To aid their preservation
- B- To facilitate their packing, storage and transportation
- C- To prevent the growth of micro-organisms
- D- All of them

6- The drying method that used for very delicate drugs and those drugs containing thermo labile constituents

- A- Lyophilization
- B- Shade drying
- C- Sun drying
- D- All of them

7- The ideal temperature for storage of medicinal plants is

- A- 10-15 °C
- B- 15-20 °c
- C- 20-25 °C
- D- 25-30 °C

8- Almond oil deteriorates due to

- A- Moisture
- B- Oxygen in air
- C- Temperature
- D- Light

9- Cascara cause gripping effect due to

- A- Alkaloids
- B- Anthraquinones
- C- Anthranols
- D- Flavonoids

10- Adulteration of a drug by the addition of a material to it with intention called

- A- Sophistication
- B- Substitution
- C- Admixture
- D- All of them

1	2	3	4	5	6	7	8	9	10

**V- From column B choose the suitable number in order to match the facts in column A** (15 marks)

<b>column A</b>	No.	<b>column B</b>
A-Mixture of oxygenated compounds and hydrocarbons		1- Arbutin
B- Antidotes for alkaloids and heavy metals poisoning		2- Atropine
C- Marqui's reagent		3- Codeine
D- Diacetyl morphine		4-Chalk
E-Nasal decongestant phenyl alkylamine		5-Diosmin
F-A taenefuge alkaloid		6- Enzymes
G-Anticancer indole alkaloid		7-Ephedrine
H-On hydrolysis give a sugar and an aglycone		8-Glycoside
I- Gives a violet colour with Froed's reagent		9-Heroin
J- A glycoside reduces capillary permeability		10-HCHO/H <sub>2</sub> SO <sub>4</sub>
K- Antibiotic glycoside		11-Inulin
L-Protienaceous organic catalysts produced by the living cells		12-Kaolin
M- The drug used in manufacture of fire-works		13-Lycopodium
N- The drug which absorbs toxins in stomach		14- Proteins
O-A powder used in manufacture of poultice		15-Streptomycin
		16-Tannins
		17- V.O.
		18- Vincablastine
		19-Salicin
		20-Sulphomolybdic acid
		21-Thioglycosides
		22- Pelletierine
		23-Fixed oils
		24-Saponins

**VI- Comment the following briefly:**

(10 marks)

Statement	Comment
1- Pilocarpine is prescribed in glaucoma	
2- Atropine is added to some laxatives	
3- Caustic alkalies are avoided in cardiac glycosides hydrolysis	
4- Dextrin is used as infant food	
5- KOH is used to extract glycogen	

ملحوظة:

امتحان الشفهي عقب امتحان النظرى مباشرة  
مع اطيب التمنيات بالنجاح

أ.د./ عفاف محمد عبد الباقي

د./ عز الدين قاسم

د./ سعاد عبد اللطيف حسن

(All Questions should be attempted)

**Question 1 (22 marks)**

**1- Write (T) for the correct statement and (F) for the false one:**

1. The soft gelatin capsules contain sugar as plasticizer.
2. Hard gelatin capsule shells are manufactured in two sections while soft is only one part.
3. Direct compression is useful for tablets manufacture of drugs prescribed in large doses.
4. Disintegrating agent is an essential component for capsule.
5. Lubricating the mold is essential in making suppositories.
6. Lozengens are usually prepared with sugar flavoring agent and acacia.
7. Suppositories prepared by polyethylene glycol base melt in the rectum.
8. In liquid dosage form the vehicle has no therapeutic effect.
9. In concentrated syrup the high concentration of sucrose makes the syrup self preserving.
10. Syrup may be prepared by using heat when we have thermolabile substance.

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

**II- choose the correct answer:**

(12 marks)

**1. The alcohol is used in the preparation of elixir as:**

- a- Co-solvent with water                      b- Solubilizing agent  
c- Preservative                                      d- All of the above

**2. Talc is used in preparing aromatic water because it acts as:**

- a- Filter aid    b- Distributing agent  
c- Solubilizing agent                                      d- Both a and b

**3- Methylcellulose and hydroxyethyl cellulose are non glycogenic substance because**

- a- They are rapidly absorbed from the GIT  
b- Does not support mold growth                      c- They are not converted into glucose in the blood.

**4- Water for injection must be:**

- a- Sterile
- b- Pyrogen free
- c- Both a and b

**5- Pastes like ointments intended for external application but differ in:**

- a- Thicker
- b- Stiffer
- c- Absorptive
- d- Less greasy
- e- All of the above

**6. Glycerites are viscous (like gelly) owing to:**

- a- High concentration of glycerin (50%)
- b- High concentration of water
- c- The presence of large amount of solids
- d- Both a and c

Q. No.	1	2	3	4	5	6
Answer						

**Question 2 (21 marks)**

**I- Complete the following statements:** (8 marks)

1- For overcoming the rate of creaming of emulsion used:

- a- .....
- b- .....
- c- .....
- d- .....

2- The factors that must be taken in consideration when adjusting the safety of a given dose are:

- a- .....
- b- .....
- c- .....
- d- .....

3- Test for identification of emulsion type:

- a- .....
- b- .....
- c- .....
- d- .....

4- Narcotic prescription must include:

a- .....

b- .....

c- .....

d- .....

**II- Give reason (s) for the following statements:**

1- Emulsions should not be stored at high temperature.

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

2- Soap stabilized emulsions are usually formulated an alkaline pH.

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

3- Synthetic emulsifiers are superior to natural gum and proteins.

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.....

4- Frequency of drug administration is often determined by the type of drug action.

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

5- Although not so serious, creaming of emulsion is undesirable.

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



6- Preservative are required in formation of emulsion.

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

**III- Define each the following:**

(7 marks)

1- Dr Cowling's rule is:

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

2- Legibility of the prescription:

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

3-The corrective is:

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

4- Auxiliary emulsifying agent:

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

5- Coalescence:

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.....  
.....

6- Humectants:

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

7- Young's rule:

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

**Question 3 (22 marks)**

**I- Write about the following:**

(8 Mark)

1- Disadvantages of powdered and granulaed products:

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

2- Levigation:

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3- Geometric dilution:

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.....

4- Eutectic mixtures

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

**II-Denote (T) for true statement or (F) for false one:**

(7 Marks)

- 1-Patient's age can affect dosage form design.
- 2-A single medicinal agent can be prepared into many dosage forms.
- 3-Many nitrogen containing compounds are extremely sweet especially the plant alkaloids.
- 4- The preservative should be incompatible with the ingredients in the preparation.
- 5- Tablets of the chewable type generally contain both sweetening and flavoring agents.
- 6-The proper selection of appropriate flavoring agent depends upon the taste of the drug substance itself.
- 7-Cocoa-flavored vehicles are considered effective for masking the taste of bitter drugs.
- 8- Today the use of color additives is regulated by the Food and Drug Administration.
- 9-Ophthalmic and injectable preparations do not require presence of a preservative to maintain their aseptic condition.
- 10-Most of alcoholic preparations are considered self-sterilizing.
- 11-The ionized forms of the preservatives are more effective than non-ionized forms.
- 12-Chlorobutanol is one of soluble dyes used in pharmacy.
- 13-Most of vaccines, toxins and antitoxins are available in injectable forms.
- 14- The coloring principles employed in pharmacy generally possess therapeutic effect.

Q. No.	1	2	3	4	5	6	7
Answer							
Q. No.	8	9	10	11	12	13	14
Answer							

**III-Answer the following:**

(7 Marks)

A- Compare between density and specific gravity.

(2 Marks)

.....

.....

.....

.....

.....

B- solve the following problems: (5 marks)

1- If a liquid has a specific volume of 1.396, what is its specific gravity?

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

2- Peppermint spirit contains 10% (v/v) of Peppermint oil. What volume of the spirit will contain 75 mL of Peppermint oil?

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

3- How many grams of 10% (w/w) ammonia can be made from 1800 g of 28% (w/w) ammonia water?

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

**Question 4 (20 marks)**

A- Mention SIX function of surface active agents. (3 marks)

- (1) .....
- (2) .....
- (3) .....
- (4) .....
- (5) .....
- (6) .....

B- Define each of the following: (2 marks)

1- Cloud point

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

2- Critical micelle concentration:

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

C- Complete the following statements: (4 Marks)

1- At constant ethylene oxide content, cloud points ..... as the chain length of the hydrocarbon moiety .....

2- Change of internal structure of proteins is called ..... and is due to interaction of ..... with ..... surfactants.

3- Because of their ability to form aggregates of colloidal size, surfactants are also called .....

4- Benzalkonium chloride is ....., surfactant, while sod. Lauryl sulphate is ..... surfactant.

D- Give the reason for the following: (2 Marks)

1- Sulphonamides are contraindicated with urinary acidifiers such as ammonium chloride .

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

2- Santonin is more dangerous when administered with castor oil.

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

E- What are the most important changes that may take place to give an indication of the incompatibility? (1 mark)

1- .....

2- .....

3- .....

4- .....

F- What are the Classes of Incompatibility: (3 marks)

1- .....

.....

2- .....

.....

3- .....

.....

G- Importance of micellar solubilization, giving examples. (2 marks)

1- .....

.....

2- .....

.....

3- .....

.....

III- Determine the type of incompatibility in the following prescription; discuss the problem in each prescription and how to correct it (3 marks)

1- Rx

Atropine Sulphate                      0.006 g.

Phenobarbital                            0.360 g.

Ft. Caps i mitte                        XII

Sif. Caps I t.d.s

.....

.....

.....

.....

.....

.....

3- Rx

Benemid                                  500 mgm

Aspirin                                    300 mgm

Ft. Caps i mitte XX

Sig. Caps per a day for gout

4- Rx

Phenol 2%  
Sod. Sulphate 5%  
Distilled water to 120  
Ft. Solution  
Sig. m.d.s.

\*\*\*\*\*

الامتحان الشفوى سوف يعقد بمشيئه الله تعالى بقسم الصيدلانيات بعد الامتحان مباشرة

**\* مع تمنياتنا للجميع بالتوفيق \***

أ.د. سهير مصطفى الشنواني

أ.د. فوزيه سيد أحمد حبيب

د. دينا فتح الله محمد

أ.د. محمد فتحى ابراهيم



Assiut University  
Faculty of Medicine  
Department of Medical Physiology

Date:22/1/2012  
Time: 3 hours  
Total degree: 100 marks

**Reset Final Exam in Medical Physiology  
First Year Pharmacy Student**

**I. First question: (17 marks)**

1. **Mention** functions of growth hormone and **control** of its secretion. (5 marks)
2. **Mention** functions and **mechanism** of action of the following hormones **on electrolytes:** (12 marks)
  - a. Parathormone
  - b. aldosterone
  - c. Calcintonin.

**II. Second question: (19 marks)**

1. **Define** cardiac output, **mention** its normal value and **factors** affecting venous return. (7 marks)
2. **Define** Bainbridge reflex and **Explain** its mechanisms. (4 marks)
3. Discuss delayed compensatory reaction after severe haemorrhage. (6 marks)
4. **Mention** four functions of hypothalamus. (2 marks)

**III. Third question: (23 marks)**

1. **Discuss** functions of plasma proteins. (5 marks)
2. **Enumerate** factors affecting erythropoiesis. (4 marks)
3. **Compare** between heparin and dicumarol. (4 marks)
4. **Discuss** metabolic changes in nerve. (3 marks)
5. **Discuss** mechanism of skeletal muscle contraction. (4 marks)
6. **Define** BMR and mention four pathological factors decreasing it. (3 marks)

**IV. Fourth question: (27 marks)**

1. **Discuss** types cholinergic receptors. (8 marks)
2. **Compare** actions of sympathetic & parasympathetic nervous system actions on thorax. (6 marks)
3. **Define** intra-pleural pressure, its **normal values**, **Mention** its importance?(7 marks)
4. **Mention** functions of pneumotaxis and apneustic respiratory centers. (6 marks)

**V. Fifth question: (29 marks)**

1. **Enumerate** factors affecting spermatogenesis. (4 marks)
2. **Discuss** functions of progesterone. (4 marks)
3. **Ennumerate** functions of the kidney. (8 marks)
4. **Ennumerate** functions of saliva (5 marks)
5. **Mention** functions of the following gastrointestinal tract hormones:
  - a. Secretin.
  - b. Cholecystokinin
  - c. Gastrin. (6 marks)
6. **Define and give examples of:**
  - a. Cholaretic.
  - b. Cholagogue (2 marks)

-----  
**Prof. Dr. Enas A Hamed**  
and Exam. Committee

الامتحان الشفهي باذن الله يوم الأربعاء 2012/2/23 الساعة 8½ صباحا بقسم الفسيولوجيا الطبية بكلية الطب لجميع الطلاب.







**All question are to be answered (total marks=70)**

لاحظ ان اسئلة الامتحان في 7 صفحات

**1- (live one word for each of the following and put your answers in the table below: ( 10 Marks)**

- 1- A bark drug used for the treatment of malaria.
- 2- A type of calcium oxalate crystals that can aid in the identification or Quillaia Bark
- 3- A bark drug used as haemostatic for rectal and nasal bleeding.
- 4- An official bark used as a hypotensive agent.
- 5- A bark drug which must be stored for at least one year before its using medicinally. 6-  
A powdered bark drug used for the treatment of peptic ulcers and stomatitis.
- 7- An official bark drug used as anthelmentic for tape-worms infections.
- 8- A bark drug used as a liver stimulant and cholagogue.
- 9- An internal secretory tissue found in some barks for the secretion of volatile oils.
- 10- A bark drug used for the treatment of fungal infections and cytotoxic agent.

10

Answers

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

**II- From the above mentioned drugs that are involved in answers table, answer the following:**

- 1- Draw and label T. S. diagram for the drug mentioned on (4). (2.5 Marks)

13

- 2- Draw the main diagnostic elements for the drug mentioned on (5). (2.5 Marks)

3- Mention the origin and the constituents for the drug mentioned on (7). (4 Marks)

Origin:

.....

.....Family:.....

Main Constituents:

.....

.....

4-Mention one chemical test for the identification of the constituents of drugs mentioned on (1) and (5). (4 Marks)

Chemical test for drug (1):

.....

.....

Chemical test for drug (5):

.....

.....

**III- Comment briefly on the following: (6x2=12 marks)**

1- The use of *Wild Cherry* bark in cough preparations.

.....

.....

2- The use of bast fibers for the differentiating of some bark drugs.

.....

.....

3- Two main differences between *Cinnamon* and *Cassia* barks.

.....

.....

4- The preferable use of *Frangula* bark as a laxative drug.

.....

.....

.....

5- The use of *Cinnamon* bark as a powerful germicidal agent.

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

6- The use of *Quillaia* bark in increasing the immune response to vaccines.

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

**IV- A- Give the appropriate scientific term in the table below:**

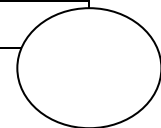
15
----

- 1- When bracts are present in crowded form in one or more whorls.
- 2- Flower can be divided only in one plane into equal halves.
- 3- When filaments are free but anthers are united.
- 4- One, two or more pores, through one of which the pollen tube protrude.
- 5- The arrangement of placentae in the ovary.
- 6- Elongated and fleshy axis carrying sessile florets, the inflorescence is ...
- 7- When some floral leaves as sepals or petals are absent it is called.
- 8- Flower with united sepals.
- 9- Androecium consists of two stamens.
- 10- Inflorescence characterized by sympodial branching

Answers

(10x0.5=5 marks)

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



**IV- B- Complete the following:**

(2.5x4=10 marks)

1- A flower used to expel round worms

Name [0.5 M]: .....

Origin [1 M]: .....

.....Family: .....

A. C. [1 M]: .....

.....

.....

2- A flower contain eugenol as a main constituents

Name [0.5 M]: .....

Origin [1 M]: .....

.....Family: .....

Uses (only two) [1 M]:

.....

.....

3- A flower used as healing agent for ulcers

Name [0.5 M]: .....

Origin [1 M]: .....

.....Family: .....

A. C. [1 M]: .....

.....

.....

4- A flower contain bisabolol as a main constituents

Name [0.5 M]: .....

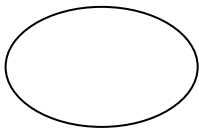
Origin [1 M]: .....

.....Family: .....

Uses [1 M]: .....

.....

.....



**V-A- How can you test for the active constituents of the following?: (5x 1 =5 marks)**

1- Insectidal flower

.....  
.....

2- Flavonoids of Roman Chamomile flower

.....  
.....

3- Hibiscus flower

.....  
.....

4- Saffron flower

.....  
.....

5- Santonica flower

.....  
.....

**V-B-Choose the correct answer and put it in the table below: (10x0.5=5 marks)**

1- Concerning Lavander. all are true except:

- a- It is *Lavandula officinalis*
- b- belongs to Labiatae family
- c- Used for rheumatic pain
- d- Contain V.O mainly eugenol

2- Concerning *Calendula officinalis*, all are true except:

- a- It is called Chinese Safflower
- b- belongs to Labiatae family
- c- Used as carminative
- d- contain bitter principle

3- Concerning *Crocus sativus*. all are true except:

- a- belongs to Iridaceae family
- b- Contain protocroscin glycoside
- c- Used as natural colouring agent
- d- Consists of expanded heads

4- Sclerides containing prisms of ca. ox. are present in:

- a- German chamomile
- b- Roman chamomile
- c- Clove
- d- None of them

5- Concerning Hibiscus. all are true except:

- a- calyx and corolla are used
- b- used as antihypertensive
- c- contain hibiscetin flavonoid
- d- belongs to Malvaceae

6- Mother clove is:

a- ripe fruit of clove

b- exhausted clove flower

c- calyx and corolla of clove

d- Expanded clove flowers

7- Concerning Cinerin I and II

a- obtained from chamomile

b- obtained from pyrethrum

c- they are glycosides

d- none of them

8- The following drugs contain blue coloured volatile oil:

a- German and Roman chamomile

b- arnica and lavender

c- Roman chamomile and clove

d- none of them

9- The following drugs can be used as emmenagogue:

a- German chamomile and clove

b- saffron and arnica

c- German chamomile and saffron

d- none of them

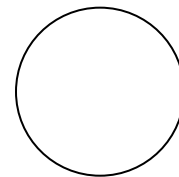
10- Roman chamomile, it is: (all are true except)

a- double capitulum

b- cultivated plant

c- has hollow receptacle

d- has Palaea



Answers

1	2	3	4	5	6	7	8	9	10

VI- A- Define the following:

(3x1=3 marks)

1- Substitute fibers

.....  
.....

2- Tyloses

.....  
.....

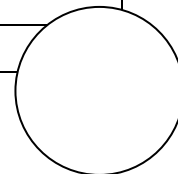
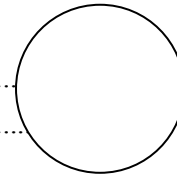
3- Septate fibers

.....  
.....

B- Differentiate between sapwood and heartwood (only two) (2 marks)

Sapwood	Heartwood

10





C- Complete the following:

(2.5x2=5 marks)

1- A wood used as, insecticide

Name [0.5 M]: .....

Origin [1 M]: .....

.....Family: .....

A. C. [1 M]: .....

.....

.....

2- A wood contain santalin and desoxysantalin

Name [0.5 M]: .....

Origin [1 M]: .....

.....Family: .....

Uses [1 M]: .....

.....

.....

مع أطيب التمنيات بالنجاح

أ.د./ محمود حافظ عساف د./ ساميه عباس ود./ ياسر غلاب جوده

دور مايو 2012 الزمن: ساعتان	امتحان مادة المحاسبة وإدارة الأعمال الصيدلانية الفرقة الأولى	جامعة أسيوط كلية الصيدلة
	الامتحان صفحتان	

### أجب عن الأسئلة الآتية:

#### السؤال الأول: (45 درجة)

- (أ) أكتب في أحد الموضوعين التاليين:  
 - مبدأ مقابلة الإيرادات والمصروفات.  
 - الحساب الجاري بالبنك.
- (ب) فيما يلي ملخص البيانات المستخرجة من سجلات صيدلية الشفاء عن السنة المنتهية في 2011/12/31م.
- مخزون أو السنة (أدوية) 85000 جنيه
  - المشتريات: 143500 أدوية ، 29300 مستحضرات تجميل
  - المبيعات: 190200 أدوية ، 27800 مستحضرات تجميل
  - مردودات المشتريات: 1300 مستحضرات تجميل
  - مردودات مبيعات: 800 مستحضرات تجميل
  - المصروفات: 1600 إيجار ، 3900 مرتبات ، 800 تأمينات اجتماعية ، 990 كهرباء وماء ، 300 أكياس للتعبئة ، 400 قسط تأمين ضد الحريق والسرققة ، 90 م. بنكية.
  - المسحوبات: 1200 إيجار سكن صاحب الصيدلية.
- فإذا علمت أن:

- 1- مخزون آخر السنة من الأدوية بلغت تكلفته 84800 جنيه منه أدوية قاربت صلاحيتها علي الإنتهاء تكلفتها 800 جنيه ، وبلغ مخزون مستحضرات التجميل 7500 (بالتكلفة) ، 9000 (بسر البيع).
- 2- الإيجار الشهري للصيدلية 150 جنيه ، والمرتببات السنوية 3900 جنيه.
- 3- فاتورة الكهرباء عن شهر ديسمبر 2011 بلغ 110 جنيه دفعت في 15 يناير 2012.
- 4- تبلغ تكلفة أثاث الصيدلية 10000 جنيه ، وتكلفة الحاسب الآلي 5000 جنيه (تم شراؤه في 2011/4/1) ، ومعدل الإهلاك 6% سنوياً للأثاث ، 33 1/1% للحاسب الآلي.

#### المطلوب:

- 1- إعداد قائمة تكلفة المبيعات التحليلية علي مستوي المنتجات والصيدلية عن السنة المنتهية في 2011./12/31
  - 2- إعداد قائمة الدخل علي مستوي المنتجات والصيدلية ككل عن السنة المنتهية في 2011./12/31
  - 3- حساب معدلات مجمل الربح ومعدل صافي الربح والتعليق عليها.
- (انظر الصفحة الثانية)

#### السؤال الثاني: (30 درجة)

فيما يلي ملخص العمليات التي تمت بإحدي الصيدليات خلال السنة المنتهية في  
2011/12/31:

- مخزون أدوية 2011/1/1 33500 جنيه
- مشتريات أدوية 150000 جنيه
- لا تتعامل الصيدلية في لعب الأطفال.
- الإيجار الشهري 350 جنيه ، والمرتببات الشهرية 750 جنيه ، والمصروفات السنوية 4800 جنيه.
- مصروفات التأسيس 18000 جنيه منها 15000 جنيه بموجب فواتير ضريبية.

#### المطلوب:

- 1- حساب وعاء الضريبة العامة علي الدخل في ضوء الإتفاقية رقم 58 لسنة 2005.
- 2- حساب الضريبة المستحقة.
- 3- حساب الضريبة المسددة إذا كانت المبالغ المخصومة من الصيدلية تحت حساب الضريبة عام 2011 بلغت 151 جنيه.

#### (25 درجة)

#### السؤال الثالث:

تبلغ التكاليف الثابتة في أحد مصانع الأدوية مليون جنيه ، ويبلغ سعر بيع الوحدة المنتجة 20 جنيه وتكلفتها المتغيرة 18 جنيه.

#### المطلوب:

- 1- حساب نقطة التعادل بالكمية والقيمة.
- 2- إذا فرض أن المبيعات المتوقعة كانت 800000 وحدة ، فما هو هامش الأمان ؟
- 3- إذا رغبت الشركة في تحقيق أرباح 300000 جنيه بعد الضرائب والتي تبلغ 20% من الربح. فما هو رقم المبيعات اللازم لتحقيق الربح المستهدف ؟

## مع التمنيات بالتوفيق

**(All questions should be attempted)****Question 1** (18 marks)**I- Encircle the correct answer:**

(7 marks)

T	F	1- Lyophobic dispersions are thermodynamically unstable.
T	F	2- Macromolecular materials such as proteins, tragacanth, methylcellulose are hydrophobic sol
T	F	3- Surfactant molecules that form micelles are considered as hydrophilic colloidal dispersion.
T	F	4- The efficiency of certain substances used in pharmaceutical preparations may be decreased if colloidal forms are used.
T	F	5- Blood plasma substitutes such as dextran, PVP, and gelatin are used to maintain blood volume.
T	F	6- In the preparation of lyophobic colloid a change in solvent may lead to the production of colloidal particles by condensation.
T	F	7- Colloidal particles in solution can diffuse through the pores of cellophane or collodion membrane.

**II- Choose the correct answer:** (6 marks)

**A.** The overload and damage of mixers is a common problem during processing of:

- i- plastic
- ii- pseudoplastic
- iii- dilatant system

**B.** Which is **true** for zeta potential (Z.P):

- i- is also called electrokinetic potential
  - ii- doesn't affect the stability systems containing dispersed particles.
- C-** Controlled flocculation of dispersed particles can be achieved by:

- i- hydrophilic polymer      ii- increasing surface charge  
iii- surface active agent      iv- all of the above.

D- Viscosity and particle size are important factors in:

- i- injectable suspensions      ii- externally applied lotions  
iii- oral suspension.

E- In deflocculated suspension the final volume of sediment is:

- i-very small      ii- large  
iii- no sediment at all.

F- When the viscosity of a suspension increases, the Brownian movements:

- i-increases      ii - decreases      iii- stay constant

**III- Mention types of flow and draw the rheograms representing each type with its corresponding equation: (5 marks)**

Types of flow:

A.

B.

C.

D.

**Question 2** (18 marks)

**I- Give reason(s) for each of the following:** (8x1-8 marks)

1- Gases are often liberated from solution in which they are dissolved by the introduction of an electrolytes and non-electrolyte.

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

2- 2% boric acid solution serves as isotonic ophthalmic preparation

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

3- Buffer solutions are not ordinarily prepared from weak bases and their salts.

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

4- Blood is maintained at a pH of about 7.4

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

5- Drugs that are weak acids require an acid environment to function effectively as antibacterial

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

6- Tertiary butyl alcohol is miscible in all proportions with water than n-butyl alcohol.

.....

.....  
.....  
.....  
7- Sorensen's buffer produced irritation in the eyes of a number of subjects, whereas a boric acid buffer solution produced no discomfort in the eyes of the same subjects.

.....  
.....  
.....  
8- Some substances used in an injection dosage form can cause hemolysis of red blood cells even when their concentration are such as to iso-osmotic with the cells for ex. 2% solution of urea.

**II- State the following:**

(5x1=5 marks)

1- Rates of absorption of a variety of drugs are depended on:

- a. ....
- b. ....
- c. ....

2- The application of distribution's law are:

- a. ....
- b. ....
- c. ....
- d. ....

3- Factors influence the pH of buffer system:

- a. ....

- b. ....
- c. ....

4- Polar solvent such as water act as good solvents according to:

- a. ....
- b. ....
- c. ....

5- Tissue irritation will be minimal if:

- a. ....
- b. ....
- c. ....

**III- Complete of the following:**

(5x1=5 marks)

1- Von Slyk's equation for buffer capacity is:

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

2- Universal buffers are:

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

3- Tonic equivalent of a drug (E) is:

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

4-  $L_{iso}$  is:

.....



.....  
.....  
.....  
5- Measurement of tonicity by:

- a. ....  
.....  
.....  
b. ....  
.....  
.....

**Question 3** (18 marks)

**A- Complete:** (12x0.5=6 marks)

- 1- ..... is the boundary between two immiscible phases when they come in contact.
- 2- The ..... of a substance is the temperature at and above which vapor of the substance cannot be liquefied, no matter how much pressure is applied.
- 3- The temp at which the vapor pressure of the liquid equals the atmospheric pressure is known as .....
- 4- ..... is a material that is liquid under the pressure conditions existing inside the aerosol container but that forms a gas under normal atmospheric conditions.
- 5- The relationship between ..... and the absolute temp of a liquid is expressed by the Clausius Clapeyron equation
- 6- As the melting point Increases, the solubility .....
- 7- Some substances exist in more than one crystalline form, this phenomena is known as .....
- 8- Surface active agent with a low HLB are ..... soluble.
9. The method used in determination of the surface tension not interfacial

tension is .....

10- Type IV adsorption isotherm produces when gases undergo physical adsorption on ..... solids.

11- Multimolecular adsorption is best described by ..... equation.

12- Type I adsorption isotherm is described by ..... equation.

**B-Explain:**

(6 x1 =6 marks)

1-The effect of pressure on melting point of ice is taken as an advantage in ice skating.

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

2- The boiling points of normal hydrocarbons increase with molecular weight.

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

3- Low interfacial tension is important for emulsion stability.

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

4- Graphite is very soft and slippery.

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

5- The melting points of normal carboxylic acids with an even number of carbon atoms are higher than those with an odd number of carbon atoms.

.....  
.....  
.....  
.....  
6- Benzene is non polar but spreads on water,  
.....  
.....  
.....  
.....  
.....

**C- Underline the most appropriate answer: (12X 0.5= 6 marks)**

- 1-Solids with high vapor pressures can pass directly from the solid to the gaseous state without melting, that is called (condensation, deposition, sublimation).
- 2- The interfacial tension between two liquids is always (less than, greater than, equal to) the surface tension of the liquid with the greater surface tension.
- 3- The forces of attraction between the molecules of the ideal gas are (uniform, negligible, non uniform).
- 4-Surface tension can be defined as the surface free energy change per unit (length, area, volume) increases.
- 5-A liquid is said to wet a solid if the angle between the liquid droplet and the surface over which it spreads  $< 90$ ,  $= 90$ ,  $> 90$ ).
- 6-A solid on which adsorption takes place is known as (adsorbate, adsorbent, absorbent).
- 7-The molecule that has certain affinity for both polar and non-polar solvents is (amphiphile, hydrophile, lipophile)
- 8-Chemisorption is (associated with van der Waals forces, monomolecular layer, reversible).
- 9-Real gas behaves ideally at (high pressure, high temperature, low temperature).
- 10- At 17.5 mmHg, water boils at (120°C, 100°C, 20°C).

11-Crystalline solids (have indefinite shapes, have an orderly arrangement of units, easily compressed)

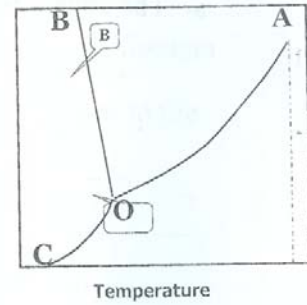
12- (Gibbs, Freundlich, van der Waals) equation quantitatively expressed the adsorption at an interface.

**Question 4** (16 marks)

**A- Complete the following statements:**

(8x0.5=4 marks)

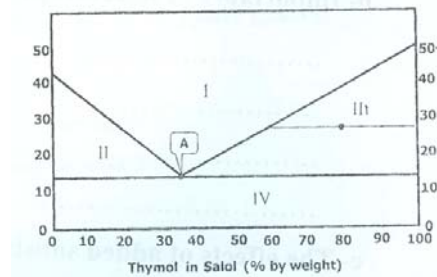
1. Regarding the phase diagram of water shown to the right



- A. Point (O) is called .....
- B. The curve (OC) is called .....
- C. The curve (OA) is called .....
- D. the curve (OB) is called .....

2. Regarding the phase diagram for the thymol-salol system:

- A. Point (A) is called .....
- and at temperature .....
- B. Notice that there are four regions:  
Region II is .....
- Region IV is .....



(4x1=4 marks)

**II. Define the following:**

a- Cryoscopic constant:

.....  
 .....

b- Condensed system:

.....  
 .....

c- The no. of degree of freedom F:

.....

.....  
d- The critical solution or upper consolute temperature:  
.....  
.....

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

a- The advantages of solid dispersion: (1.5 marks)

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

b- Importance of Azeotrope mixture: (1 mark)

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

c- The effects of added substances on critical solution temperature (Table) (1.5 marks)

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

**IV. Fill in the spaces:** (8x0.5 = 4 marks)

1. The triple point of air free water at which solid, liquid and vapor are in

- equilibrium lies at pressure of----- and a temperature -----
2. Write the degree of freedom F for a system comprise from a liquid (water) in equilibrium with its vapor-----  
-----
3. The lowest temperature at which a liquid phase can exist in the **Salol-camphor** is equal to -----.
4. The greater the -----, in equilibrium, the fewer the degrees of freedom.
5. Henry's law applies to ----- while, Raoult law applies to the -----
6. Colligative properties depend mainly on -----

\*\*\*\*\*

الامتحان الشفوى سوف يعقد بمشيئة الله تعالى بقسم الصيدلانيات بعد الامتحان النظرى مباشرة

\* مع تمنياتنا للجميع بالتوفيق \*

أ.د. سمير مصطفى الشنواوى

أ.د. فوزية سيد احمد حبيب

د. دينا فتح الله محمد

أ.د. محمد فتحى ابراهيم



الامتحان مكون من 10 صفحات (5 ورقات)

Q. No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Answer														

**I- Redox Theory:****(20 Marks)****A) Chose the correct answer:****(7 Marks)****1- Arsenate ion reacts with iodide in the presence of:**

- (a)  $\text{H}_2\text{SO}_4$  (b)  $\text{NaOH}$  (c)  $\text{Na}_2\text{CO}_3$  (d)  $\text{NaHCO}_3$

**2- End point of  $\text{I}_2$  in strong acid medium can only be detected by:**

- (a) Its colour (b) starch (c)  $\text{CHCl}_3$  (d) all of these

**3- Stabilization of  $\text{I}^+$  in Lang's modification by:**

- (a)  $\text{HCl}$  (b)  $\text{KCN}$  (c) both a&b (d) none of these

**4- Bromination of phenol is carried out by:**

- (a)  $\text{BrO}_3^-/\text{Br}^+/\text{H}^+$  (b)  $\text{BrO}_3^-/\text{H}^+$  (c)  $\text{Br}^+/\text{H}^+$  (d) none of these

**5- In Nernst equation,  $E=E^\circ$  when:**

- (a)  $[\text{ox}] = [\text{red}]$  (b)  $[\text{ox}] > [\text{red}]$  (c)  $[\text{ox}] < [\text{red}]$  (d) none of these

**6- Number of bromine molecules that react with phenol:**

- (A) one (b) three (c) Two (d) four

**7-  $\text{KMnO}_4^-$ , in strong alkaline medium is reduced to:**

- (a)  $\text{Mn}^{+4}$  (b)  $\text{MnO}_4^{2-}$  (c)  $\text{Mn}^{+3}$  (d)  $\text{Mn}^{+2}$

**8- In Andrew's reaction,  $\text{KIO}_3$  standard solution is prepared as:**

- (a) molal (b) normal (c) formal (d) molar

**9- Iodometry is used for the determination of:**

- (a) oxidizing agents (b) reducing agents  
(c) both a and b (d) none of these

**10- In  $\text{Zn}/\text{Zn}^+$  system:**

- (a) ionic pressure > solution pressure (b) solution pressure > ionic pressure  
(c) solution pressure = ionic pressure (d) none of these

**11- Zimmerman's reagent is necessary when using  $\text{KMnO}_4$  titrant for determination of:**

- (a)  $\text{FeCl}_3$  (b)  $\text{FeSO}_4$  (c)  $\text{FeCl}_2$  (d) none of these

**12- Arsenite ion reacts with iodine in the presence of:**

- (a)  $\text{NaOH}$  (b)  $\text{Na}_2\text{CO}_3$  (c)  $\text{NaHCO}_3$  (d) none of these

**13- Hypoiodite ion is formed from  $\text{I}_2$  in the presence of:**

- (a)  $\text{H}_2\text{SO}_4$  (b)  $\text{HCl}$  (c)  $\text{CH}_3\text{COOH}$  (d) none of these

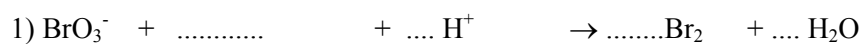
**14- All of the following are not primary standards Except:**

- (a)  $\text{KIO}_3^-$  (b)  $\text{KMnO}_4$  (c)  $\text{CeSO}_4$  (d) iodine

**B) Choose the appropriate word (s) (in column B) which is matched with the****sentence (in column A). Write the number only (from B to A) (4 Marks)**

No.	Sentence (Column A)	No.	Word(s)(Column B)
[ ]	Loss of electrons	[ 1]	Iodide
[ ]	Gain of electrons	[ 2]	Hypoiodite
[ ]	Standard electrode potential	[ 3]	Starch
[ ]	Is added to allow titration of FeCl <sub>2</sub> with KMnO <sub>4</sub>	[ 4]	Arsenite
[ ]	Lowers the oxid. Potential of MnO <sub>4</sub> <sup>-</sup> / Mn <sup>+2</sup> system	[ 5]	Iodine
[ ]	Increase oxid. Potential of ferri/ferro system	[ 6]	An acid
[ ]	An excellent indicator for Ce <sub>4</sub> <sup>+</sup> ions	[ 7]	K <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub> <sup>2-</sup>
[ ]	Self indicator oxidant	[ 8]	KMnO <sub>4</sub> <sup>-</sup>
[ ]	Primary standard oxidant	[ 9]	Ferroun
[ ]	Prevent precipitation of CeO <sub>2</sub> .xH <sub>2</sub> O	[10]	Zinc
[ ]	An oxidant, its aqueous solution is volatile	[11]	H <sub>3</sub> PO <sub>4</sub> <sup>-</sup>
[ ]	Lowers the oxid. Potential of Fe <sup>3+</sup> /Fe <sup>2+</sup> system	[12]	MnSO <sub>4</sub>
[ ]	Can be titrated with I <sub>2</sub> in only NaHCO <sub>3</sub> medium	[13]	Zimmermann's R.
[ ]	Easily oxidized by atmospheric oxygen to I <sub>2</sub>	[14]	Io
[ ]	Strong oxidant used for determination of aldoses	[15]	Reduction
[ ]	Not used as indicator for I <sub>2</sub> in strong acids	[16]	Oxidation
		[17]	Arsenate
		[18]	KIO <sub>3</sub> <sup>-</sup>
		[19]	An alkaline
		[20]	Diphenylamine

**C) Complete and balance the following redox equations: (5 marks)**





- 2)  $I_2 + \dots OH^- \rightarrow \dots + \dots I^- + \dots H_2O$
- 3)  $IO_3^- + \dots I_2 + \dots H^+ \rightarrow \dots + \dots H_2O$
- 4)  $BrO_3^- + AsO_3^{3-} + \dots \rightarrow \dots + \dots AsO_4^{3-}$
- 5)  $MnO_4^- + \dots C_2O_4^{2-} + \dots H^+ \rightarrow \dots CO_2 + \dots Mn^{2+} + \dots H_2O$
- 6)  $Br_2 + \dots I^- \rightarrow \dots I_2 + \dots$
- 7)  $Cr_2O_7^{2-} + \dots Fe^{2+} + \dots H^+ \rightarrow \dots Cr^{3+} + \dots + \dots H_2O$
- 8)  $Cr_2O_7^{2-} + \dots C_3H_8O_3 + \dots H^+ \rightarrow \dots + \dots + \dots H_2O$

**D) Give reason(s) illustrated with equations for:**

**(4 Marks)**

(a)  $Cu^{2+}$  oxidizes  $I^-$  although  $E^\circ Cu^{2+}/Cu^+ = +0.16 V$  while  $E^\circ I_2/2I^- = +0.54 V$ .  $\pm 0.36 V$  and  $E^\circ I_2/2I^- = +0.54 V$ .

(b) Ferricyanide oxidizes iodide in the presence of  $Zn^{2+}$  although  $E^\circ ferri/ferro = \pm 0.36 V$  and  $E^\circ I_2/2I^- = +0.54 V$ .

(c) Iodine can oxidize  $\text{Fe}^{2+}$  in presence of phosphate although  $E^\circ \text{I}_2/2\text{I}^- = + 0.54 \text{ V}$  and  $E^\circ \text{Fe}^{3+}/\text{Fe}^{2+} = + 0.77 \text{ V}$ .

(d) Ceric sulphate is used as an oxidant only in acid medium.

## **II- Redox Applications:**

**(20 Marks)**

With complete and balanced equations, Discuss the theoretical basis for the application of redox titration in the assay of the followings:

1- Zinc in presence of zinc oxide

2- Ferrous chloride by permanganate

3- Ascorbic acid

4- Potassium nitrate using potassium iodide

5- Moisture content determination

6- Aqueous iodine solution

7- Sodium sulphate

### **III- COMPLEXOMETRY**

**(19 Marks)**

**A) Mention in one or two words the scientific name or expression for each of the following: (7 Marks)**

1- Process in which some components of analyte is protected from reaction with EDT

- A without being physically separated from medium.  
[.....]
- 2- The value which gives the ratio of total uncombined EDT A ( all forms) to the fully ionized form.  
[.....]
- 3- The maximum number of monodentate ligands that can bound to metal cation and surrounded to it .  
[.....]
- 4- A complex molecule has two atoms each of which has a lone pair of electrons.  
[.....]
- 5- A complexone finds analytical application in the determination of calcium and magnesium water hardness titration.  
[.....]
- 6- Ch elating agent, non toxic, serves as an effective antidote for treatment of lead poisoning.  
[.....]
- 8- A complex contains two metal ions.  
[.....]

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

**B) Choose the correct answer and write the indicative letter only in the above table. (4.5 Marks)**

**1- Aluminum chloride can be determined by:**

- (a) indirect titration (b) direct titration (c) back titration (d) non of all

**2- Magnesium ions can be masked by:**

- (a)  $\text{CN}^-$  (b) F (c) ammonia solution (d) non of all

**3- Triethanolamine masks these ions except:**

- (a)  $\text{Al}^{3+}$  (b)  $\text{Fe}^{3+}$  (c)  $\text{Mn}^{2+}$  (d)  $\text{Mg}^{2+}$

**4- Anions that form precipitates with certain metal ions may be analyzed with EDTA by:**

- (a) back titration (b) direct titration (c) indirect titration (d) displacement titration

**5- Complexes with ions of trivalent or tervalent metals need:**

- (a) acidic pH (b) neutral pH (c) alkaline pH (d) non of all

**6- Factors affect efficiency of complex formation ( $K_f$ ):**

- (a) pH (b) complexing agents (c) a & b (d) non of all

**7- Formation of complex ions by:**

- (a) ionic bond (b) coordinate bond (c) covalent bond. (d) non of all

**8- Increasing the selectivity of EDTA titration by:**

(a) pH control (b) masking agent (c) adjusting oxidation state (d) all of these

**9- Bismuth-EDTA chelate may be appreciated as:**

(a)  $MY^-$  (b)  $My^{3-}$  (c)  $MY^+$  (d)  $My^{3+}$

**C) Mention the reason(s) for the following: (4 Marks)**

1- Erio-T gives poor end point in the titration of calcium ions with EDTA

2- Titration of lead ions using auxiliary complexing agent.

**ID How can you analyze the following mixtures: (3.5 marks)**

1- Calcium & magnesium ions.

2- Bismuth & lead ions.

**IV-Statistics and Methods Validation (11 Marks)**

1- Enumerate three of the systemic error? (without explanation)

(1.5 Mark)

2- Compare between specificity and selectivity (1 Mark)

3- Write the scientific term for each of the following: (1.5 Mark)

- a- An assay that measures the active ingredients, without interference from degradation products called .....
- b- Official monographs, which includes, USP, (British Pharmacopoeia), and European Pharmacopoeia is defined as .....
- c- ..... is the measure of the degree of reproducibility of test results obtained by the analysis of the same samples under a variety of conditions.

4- Tick ( $\checkmark$ ) or (x) for the following Statements, underline the wrong words and then correct over it. (4 Marks)

- a- The analytical method is claimed to be precise if the RSD % of the response exceed 2.5 %. ( )
- b- A value of the correlation coefficient r of near +1 or -1 confirms a linear relationship. ( )
- c- The detection limit is the lowest amount of analyte in a sample that can be determined. ( )
- d- One of the sampling methods is casual sampling which has a plan. ( )

5- In an experiment the following replicate set of volume measurements was recorded (25.35, 25.80, 25.28, 25.50, 25.45, 25.43 cm<sup>3</sup>), using the rejection quotient (Q-test) reject any questionable results. (Q tabulated = 0.625). (2 Marks)

6- What is the number of significant figures in these digits: (1 Mark)  
a- 0.00000027 ( )      b- 2.00095 ( )      c- 7.87600 ( )

إنتهت الأسئلة مع تمنياتنا بالتوفيق  
سوف تعقد الامتحانات الشفهية عقب الامتحان التحريري مباشرة

لجنة الامتحان: أ.د. جمال أحمد صالح  
أ.د. حسن فرغلى عزقل  
أ.د. سميحة عبد الرحمن حسين  
أ.د. نيفين عبد اللطيف محمد

بسم الله الرحمن الرحيم



## امتحان الفصل الدراسي الثاني لسنة 2012

### مادة حقوق الانسان

أجب عن سؤالين فقط من الأسئلة الآتية

لكل سؤال 10 درجات

#### السؤال الأول

اكتب من خلال دراستك والكتاب المقرر عليك عن مظاهر توسع الاسلام فى مخارج  
الرق

#### السؤال الثانى

اكتب من خلال دراستك والكتاب المقرر عليك عن الحرية الدينية فى الاسلام

#### السؤال الثالث

بين من خلال دراستك والكتاب المقرر عليك كيف قضى الاسلام على الوساطة  
والمحسوبية

لجنة الامتحان

أ.د./ سعد جبالى عبد الرحيم

أ.د./ جابر على مهران







Assiut University  
Faculty of Medicine  
Department of Medical Physiology

Date:19/11/2012  
Time: 1 hours  
Total degree: 15 marks  
Number of pages:2 pages

**Mid-Year Exam in Medical Physiology  
First Year Pharmacy Student**

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**Answer the following questions:**

1- **Describe** mechanism by which hypoxia stimulates erythropoiesis ..... (3 marks)

2- **Mention** functions of sympathetic nervous system on abdomen ..... (3 marks)

3- **Define** vagal tone and **mention** its mechanism.....(3 marks)

4- **Enumerate** functions of salutatory conduction ..... (3 marks)

1.

2.

5- **Enumerate** three causes of hypoxic hypoxia ..... (3 marks)

1.

2.

3.



ASSIUT UNIVERSITY  
FACULTY OF PHARMACY  
PHARM. ANAL. CHEM. DEPT.

FIRST YEAR  
PERIODICAL EXAM  
NOVEMBER 22, 2012  
TIME ALLOWED: ONE HOUR  
TOTAL MARKS=15

---

Question I (Acid-base): (5 Marks)

Prof. Dr. Hanaa Mohammed Abdel-Wadood

a- Give the scientific terms for the following: (2 Marks)

- 1- The weight of analyte that is chemically equivalent to one milliliter of standard.
- 2- A substance which alters the rate of reaction without itself undergoing any net change,
- 3- The process of splitting of a molecules into ions,
- 4- A mixture of more than two indicators, the color change of which extend over a wide pH range and not suitable for quantitative titration.

b- Complete the following: (2 Marks)

- 1- For titration of weak acid with a strong base, the shape of the curve, the pH at the equivalence point and the suitable indicator depends on -----,-----  
----- a n d-----.
  - 2- Among the sources of errors in titrimetric methods-----,-----  
-----a n d-----.
  - 3- Mixed indicator consists of -----and used for-----  
-----,
- C- Calculate the pH of solution obtained by mixing 25 rnl of 0.03N NaOH with 15011 of 0.05M CH<sub>3</sub>COOH, (K<sub>a</sub> of CH<sub>3</sub>COOH= 1.75 Xx 10.<sup>5</sup>).

**Question II (Acid-Base): (5 marks) Prof. Dr. Niveen A. Mohamed**

**1-Complete the following sentences:- (3.5 marks)**

a- .....is a suitable indicator for determination of sodium salicylate by standard HCL.

b- Amino acids can be determined by ..... using ....., .....and .....

c- ..... is added for indirect determination of HCHO.

d- ..... is used as titrant for determination of water hardness in presence of .....indicator.

e- Codeine is considered as ..... while codeine sulphate considered as ..... and both of them can be determined using .....as titrant.

f- Upon analysis of mixture of  $\text{Na}_2\text{CO}_3$  and NaOH using standard HCl and ph,ph. indicator, the volume of HCl equals to .....

**2- Write the scientific term: (1.5 marks)**

a- Can be titrated against standard NaOH after decomposition of its aqueous solution and boiling in presence of  $\text{Ag}^+$  as catalyst.

b- The effect of solvent which make all acids or bases have the similar strength.

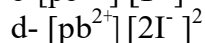
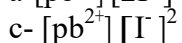
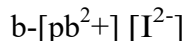
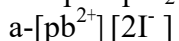
c- A separate detemination in which all conditions ( vessels, amount of reagents and volumes of solution, temperature, etc) are virtually identical with those employed in the analysis except that the sample is omitted.

### III-Precipitometry:

(Prof. Dr. Fardous A. Mohamed) ----- (5 marks)

#### 1--Multiple Choice Questions:

1-K<sub>sp</sub> of PbI<sub>2</sub> equals:



2-On titrating 100 ml of 0.1 N KBr with 0.1 N AgNO<sub>3</sub>, then pBr after addition of 50 ml Ag<sup>+</sup> equals :( K<sub>sp</sub>= 5.25x10<sup>-13</sup>)

a- 0.033

b-1.48

c- 4.96

d-6.14

3-In the above titration, pBr after addition of 100 ml Ag<sup>+</sup> equals:

a- 0.033

b-0.05

c- 1.30

d-6.14

4-If we add 0.01M AgNO<sub>3</sub> solution to a mixture containing 10<sup>-3</sup>M of each of NaCl, KBr and KI ( K<sub>sp</sub> of the produced salts are: 1.1x10<sup>-10</sup>, 5.25x10<sup>-13</sup>, 1.7x10<sup>-16</sup>, respectively.), then the precipitate formed will be

a- AgCl only

b-AgBr and AgCl

c- The three salts

d-Non of the above

5-the most suitable pH in Mohr's method is

a- 8-10

b-3.3-4.4

c- 6.5-9

d-Non of the above

2-Calculate the solubility of Mg(OH)<sub>2</sub> if you know that its K<sub>sp</sub> is 3.4x10<sup>-11</sup> (Mg=24, O=16, H=1)





ASSIUT UNIVERSITY  
FACULTY OF PHARMACY  
PHARM. ANAL. CHEM. DEPT.

FIRST YEAR  
FINAL EXAM  
DECEMBER 30, 2012  
TIME ALLOWED: TWO HOURS  
TOTAL MARKS=70

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**Question I (Acid-base theory): (17 Marks)**

**1- Put the sign right (✓) for the correct statement and the sign wrong (X) for the incorrect one and then correct it. (8 Marks)**

a-  $\text{NH}_3$  is a base according to Arrhenius's theory.

b- Mixture of methyl orange and indigo carmine is a mixed indicator.

c- Ostwald is a scientist who put the expression of pH.

d- Stoichiometric reaction means the reaction can be expressed by a chemical balanced equation.

e- Mixture of  $\text{H}_2\text{SO}_4$  and  $\text{Na}_2\text{SO}_4$  is a buffer solution.

f- NaOH is a secondary standard because it is volatile.

g- The pH of solution of  $\text{NH}_4\text{Cl}$  is more than 7.

h- Precision is defined as a degree of agreement between the measured value and the accepted true value.

**2- Choose the correct statement (4 Marks)**

i- Maximum buffer capacity is obtained when the ratio  $[\text{salt}]/[\text{acid}]$  or  $[\text{salt}]/[\text{base}]$  equals to

a- 10      b- 1      c- 100      d- 0.1.

ii- Among the requirements for substance to be primary standard

a- High stability      b- high purity  
c- High equivalence weight      d- all of the above.

- iii- One molar solution of  $\text{H}_2\text{SO}_4$  equals to  
 a- 1N                      b- 2N                      c-  $\frac{1}{2}$ N                      d- non of the above.
- iv- The scientist who put the equations for calculation the pH of buffer solutions is  
 a- Henderson              b- Lewis              c- Bronsted              d- Sorenson.
- v- An example of a primary standard substance is  
 a-  $\text{NH}_4\text{OH}$               b-  $\text{Na}_2\text{CO}_3$               c-  $\text{NaOH}$               d-  $\text{FeSO}_4$
- vi- Micro analysis is a measure of quantities of  
 a- 100 mg or more                      b- 10- 100 mg  
 b- Not exceeding 1.0 mg                      d- 10- 100 g.
- vii- The color of phenolphthalein at pH 8 is  
 a- Red                      b- orange                      c- pink                      d- colorless.
- viii- For titration of  $\text{H}_3\text{PO}_4$  with standard  $\text{NaOH}$ , there are  
 a- One inflection                      b- two inflections  
 b- Three inflections                      d- four inflections.

**3- Define the following: (3 marks)**

a- Middle tint of the indicator

b- Buffer capacity

c- Normal solution.

4- Calculate the pH of solution obtained by adding the following volumes of 0.2N HCl

(0, 2.5, and 10 ml) to 20 ml of 0.1N  $\text{NH}_4\text{OH}$  ( $K_b \text{ NH}_4\text{OH} = 1.75 \times 10^{-5}$ ).

(2 Marks).

## Question II (Acid-Base Applications)

17 marks :

I-Give the reason(s) for the following: ( 4 marks)

- 1- Addition of sucrose in the determination of CaO.
- 2- In the titration of  $\text{H}_2\text{SO}_4$  with NaOH, only one inflection appears.
- 3- Addition of mercuric acetate in the determination of aniline HCl in non aqueous.
- 4- Boric acid can't be determined by direct method.

II- Complete and balance the following equations (4 marks)

- 1-  $\text{HgO} + \text{KI} + \quad \rightarrow \quad + \quad .$
- 2-  $\text{CaCO}_3 + \text{HCl} \rightarrow + + .$
- 3-  $\text{NH}_4\text{Cl} + \text{HCHO} \rightarrow + + .$
- 4-  $\text{RCOR} + \text{H}_2\text{NOH.HCl} \rightarrow + .$

III- By equations illustrate how you can analyze the following:  
(Mention the method , standard , indicator, solvent and any percussions  
required for the determination) ( 4 marks)

1- Borax

2- Aspirin

3- Water in acetone

4- Benzoic acid

**IV- Choose the correct statement:- (5 Marks)**

- 1- In the determination of sodium benzoate by biphasic method, the most suitable indicator is
- a- methyl orange
  - b- ph. ph
  - c- thymol blue
  - d- bromophenol blue
- 2- Non aqueous solvents used for
- a- water insoluble substance
  - b- very weak acids and bases
  - c- both a and b
  - d- weak acids and bases
- 3- Antacids tablets can be determined by
- a- HCl and M. O.
  - b- excess St. HCl and back tit. with NaOH using ph.ph.
  - c- excess St. HCl and back tit. with NaOH using M.O.
  - d- Both a and b
- 4- In the determination of CaO by using sucrose solution and standard HCl as titrant, alcohol is added to
- a- prevent lumps
  - b- catalyst
  - c- solvent
  - d- Indicator
- 5- In the titration of mixture of  $\text{Na}_2\text{CO}_3$  &  $\text{NaHCO}_3$  by titration with standard HCl using ph.ph. indicator, the volume of standard HCl equivalence to
- a-  $\frac{1}{2} \text{Na}_2\text{CO}_3$
  - b- all  $\text{Na}_2\text{CO}_3 + \text{NaHCO}_3$
  - c-  $\text{Na}_2\text{CO}_3$
  - d-  $\frac{1}{2} \text{Na}_2\text{CO}_3$  &  $\text{NaHCO}_3$

**III - Precipitometry:** -----(17 marks)

I-Mention one example for the following: ----- (4 marks)

a- Effect of common ion on solubility.

b-An adsorption indicator used for determination of silver ion.

c-An adsorption indicator used for determination of iodide only.

d-A redox indicator used for determination of  $Zn^{2+}$ .

2-Give scientific term or scientific expression: ----- (4 marks)

a-A precipitometric method that could be used for determination of all halides.

b- A reagent that could dissolve all silver halides.

c- A reagent that could be used for determination of barium.

d-A precipitometric method that could be used for the determination of cyanide only.

3- Calculate the solubility of AgCl in 0.001 M KCl ( $K_{sp} = 1.1 \times 10^{-10}$ ).  
Is the solubility decreases or increases? (2marks)

4- Mark (✓) in front of correct statement and (x) in front of wrong one and put the answers in the table: (7 marks)

a- Eosin is used for determination of chloride.

b- The solubility of  $Ag_2S$  increases in presence of  $AgNO_3$ .

c- Using Volhard's method a red ppt is formed at end point.

d- As the  $K_{sp}$  increases, the inflection of the titration curve increases.

e- The solubility of  $BaSO_4$  increases in presence of  $NaNO_3$ .

f- The solubility of AgCl increases in presence of cone. HCl.

g- AgCl is soluble in  $NH_3$ .

The answers:

Letter	a	b	c	d	e	f	g
Mark							

**IV Gravimetry**

**(19 marks)**

A-Complete the following statements

(10 marks)

- (1) On the precipitation of BaSO<sub>4</sub> occlusion may be caused by .....  
while surface adsorption may be caused by .....
- (2) According to Von Wiemarn equation it is preferred to precipitate from hot  
and dilute solutions to allow .....
- (3) Digestion of the precipitate will insure .....  
and .....
- (4) On the precipitation of Ag<sup>+</sup> by NaCl a slight excess of NaCl is added  
to .....
- (5) The formation of as MgKPO<sub>4</sub> during the precipitation of MgNH<sub>4</sub>PO<sub>4</sub> is  
considered .....
- (6) Advantages of organic precipitants are
  - a- .....
  - b- .....
- (7) Supersaturation is can be achieved by .....
- (8) In the gravimetric determination of Ca<sup>+2</sup> the precipitate have to be filtered  
rapidly to prevent .....  
and it can be weighed in three different forms which are  
.....
- (9) For successful analytical precipitation the precipitate must be
  - a- .....
  - b- .....
  - c- .....
- (10) The selectivity of the precipitating agents can be achieved by
  - a- .....
  - b- .....

B- Mention the scientific term for each of the following statements (put your answer in the table) (5 marks)

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

- 1- The water traces which may be trapped inside the crystal cavities.
- 2- The technique in which the precipitating reagent is generated insitu by a chemical reaction
- 3- The most common Source of error in gravimetry
- 4- Testing the filtrate for the presence of the precipitating reagent.
- 5- The ratio between the Mwt of substance sought and the Mwt of the substance weight
- 6- A type of colloid that has a strong affinity for water
- 7- A process in which the precipitate is lost as a colloid
- 8- A change in the weight of a substance is recorded as a function of temperature or time.
- 9- An organic precipitant produces a red chelate with nickel
- 10- Heating the precipitate to very high temperatures to convert it to a more suitable form for weighing



C- Illustrate the followings with equations

(4 marks)

1- How to determine a mixture of iron and chromium

2- Two different methods for determination of magnesium

تنبيه هام سيتم عقد الامتحان الشفهي بعد الامتحان التحريري مباشرة

من رقم ١ الى ٤٥٠ الساعة ٣م – ٥م

من رقم ٤٥١ الى الآخر الساعة ٥م – ٧م

مع أجمل الأمنيات بالتوفيق والتفوق

أ.د. فردوس عبد الفتاح محمد

أ.د. هناء محمد عبد الودود

أ.د. نيفين عبد اللطيف محمد

د. نهى ناهض عطية



Assiut University  
Faculty of Medicine  
Department of Medical Physiology

Date:17/1/2013  
Time: 3 hours

***Final Exam of Medical Physiology for First Year Pharmacy Students***

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**Answer the following questions: (Total degree 100 marks)**

**I-Blood: (10 marks)**

- 1-Define Hemostasis and describe the mechanism of vascular spasm.** (5)
- 2- Mention five functions of plasma proteins.** (5)

**II-Autonomic Nervous System: (10 marks)**

- 1-Discuss functions of parasympathetic nervous system on head and neck** (5)
- 2-Compare between alpha and beta adrenergic receptors".** (5)

**III-Cardiovascular System: (10 marks)**

- 1-Define cardiac output and mention four factors affecting venous return** (5)
- 2-Discuss Mary's law (definition and mechanism).** (5)

**IV-Endocrine: (13 marks)**

- 1-Discuss the regulation (control) of glucocorticoids secretion.** (3)
- 2-Mention the physiological effects of glucagon hormone on metabolism.** (5)
- 3- Enumerate functions of calcitonin hormone.** (5)

**V-Digestive System: (13 marks)**

- 1-Discuss the hormonal mechanism of pancreatic secretion.** (6)
- 2-Mention the functions of large intestine.** (7)

**VI- Kidney: (13 marks)**

- 1-Mention factors affecting glomerular filtration rate.** (8)
- 2-Discuss tubular maximum of glucose (Tm G).** (5)

انظر الخلف

**VII-Muscle & Nerve and Metabolism: (11 marks)**

- 1-**Mention two** causes of resting membrane potential (RMP). (2)
- 2-**Discuss** skeletal muscle excitation. (4)
- 3-**Discuss** regulation of body temperature on exposure to cold. (5)

**VIII-Respiration and CNS: (11 marks)**

- 1-**What** is the physiological importance of surfactant? (3)
- 2-**Give an account** the functions of pneumotaxic center. (3)
- 3-**Mention five** functions of hypothalamus. (5)

**IX-Reproduction: (9 marks)**

- 1- **State four** hormones affecting spermatogenesis. (4)
- 2-**Discuss** the proliferate phase of uterine cycle (duration, hormone, endometrial thickness, blood vessels & uterine gland). (5)

-----  
*Dr. Asmaa F. Hassan and Exam Committee*

سيعد الامتحان الشفوي لجميع الطلاب يوم السبت الموافق ٢٠١٣/١/١٩ الساعة الثامنة والنصف صباحا بقسم الفسيولوجيا الطبية - كلية الطب.

**Question (1): (15marks)**

**Choose the correct answer/s and write the answer/s in the table 1**

1. Pharmacognosy involves
  - a) Entire knowledge of drugs
  - b) Knowledge of botany alone
  - c) knowledge of Pharmacology alone
  - d) None of the previous
  
2. Alkaloids are
  - a) Basic nitrogenous compounds
  - b) Mostly bitter in taste
  - c) Compounds with pharmacological activity
  - d) All of the previous
  
3. Lieberman's test
  - a) Is a test for all types of tannins
  - b) For only combined anthraquinones
  - c) For the steroidal ring
  - d) All of the previous
  
4. A non official drug
  - a) Is not present in the pharmacopoeia
  - b) Has no pharmacological activity
  - c) Doesn't give +ve chemical test
  - d) Is all the previous
  
5. Any drug should be collected when
  - a) It contains the highest concentration of active constituents
  - b) it's fully ripened
  - c) it's fully mature
  - d) It's all of the previous
  
6. Cardiac glycosides are identified by
  - a) Kedde's reagent
  - b) Keller Killiani test
  - c) Both a) & b)
  - d) Neither a) or b)
  
7. Rhubarb is collected in spring because
  - a) It contains anthranols
  - b) Anthraquinones are in higher concentration
  - c) It is used as a laxative
  - d) As the previous
  
8. Digitalis is better collected in the afternoon as it contains a higher concentration of
  - a) Cardiac glycosides
  - b) Sugars
  - c) Aglycones
  - d) a & b
  
9. From the objectives of drying
  - a) Stopping enzymatic action
  - b) Reduction of size
  - c) Facilitation of packaging & transport
  - d) All of the previous
  
10. Volatile oils
  - a) Give a permanent stain on filter paper
  - b) Give a blue colour with sudan III
  - c) Consist of terpenes with oxygenated compounds
  - d) Are saponifiable





Question No. (4):

Draw only the characteristic elements of the following powdered Drugs

(10 Marks)

1- Senna leaf

2- Buchu leaf

3- Digitalis leaf

4- Hyoscyamus muticus leaf

Question No.(5).

In the table below put the number of the correct answer(s) .. (10 Marks).

1- Long Buchu contains:

- |                               |                        |
|-------------------------------|------------------------|
| a-large amounts of diosphenol | b-free from diosphenol |
| c-little of diosphenol        | d-non of them          |

2-Diosmin crystals give yellow colour with:

- |                                  |                       |
|----------------------------------|-----------------------|
| a-H <sub>2</sub> SO <sub>4</sub> | b-HCL                 |
| c-KOH t.s.                       | d-FeCL <sub>3</sub> . |

3- Tea leaves used as CNS stimulant due its content of:

- |               |                 |
|---------------|-----------------|
| a-caffine     | b- Theophylline |
| c-Theobromine | d- all of them  |

4-Digitalis leaves contain:

- |                      |                 |
|----------------------|-----------------|
| a-cardiac glycosides | b-volatile oils |
| c-alkaloids          | d-non of them   |

5-Jaborandi leaves contain:

- |                        |               |
|------------------------|---------------|
| a-pilocarpine          | b-atropine    |
| c-sennosides A,B and C | d-non of them |

6-Squill contains:

- |                               |                  |
|-------------------------------|------------------|
| a-raphides of calcium oxalate | b-crystal sheath |
| c-crystal layer               | d-all of them    |

7-Hamamili,ileaves contain tannins which give blue colour with:

- |              |               |
|--------------|---------------|
| a-iodin T.S. | b-FecL3 T.S.  |
| c-KOH T.S.   | d-non of them |

8-Senna leaves used as laxative in small dose and purgative in large doses because of its contents of:

- |                      |                             |
|----------------------|-----------------------------|
| a-alkaloids          | b-anthraq uinone glycosides |
| c-cardiac glycosides | d-non of them.              |



19-Datura stramonium powder containing:

a-paracytic stomata

b-anisocytic stomata

c-anomocytic stomata

d-diacytic stomata

10-Water pores (open stomata) present in:

a-Belladonna leaf

b-Hyoscamus niger

c-Digitalis leaf

d-Coca leaf

Table (4).Answer of question No.(5).

1	2	3	4	5	6	7	8	9	10

*Best wishes*

أعضاء هيئة التدريس المسؤولين عن الامتحان  
السيدة الأستاذة الدكتورة/ عفاف محمد عبد الباقي  
السيد الدكتور/ عز الدين قاسم دسوقي



Assiut University

Faculty of Medicine

Department of Medical Physiology

**Final Exam of Medical Physiology for (ثالثة – ثالثة – رابعة) Pharmacy Students**

Date:14/2/2013

Time: 3 hours

**Answer the following questions:**

**(Total degree 115 marks)**

**I-Blood: (13 marks)**

- 1-**Discuss** the functions of blood platelets (5)
- 2-**Describe** the role of hypoxia in red blood cells production (3)
- 3-**Mention** the functions of reticulo-endothelial system (R E system) (5)

**II-Autonomic Nervous System: (13 marks)**

- 1-**Mention** functions of pelvic nerve (4)
- 2-**Discuss** functions of sympathetic nervous system on the abdomen (5)
- 3-**Compare** between alpha and beta adrenergic receptors. (4)

**III-Cardiovascular System: (13 marks)**

- 1-**Define** rhythmicity of the cardiac muscle and **discuss** factors affecting it (6)
- 2-**Discuss** factors maintaining normal arterial blood pressure. (7)

**IV-Endocrine: (13 marks)**

- 1- **What** are the functions of insulin hormone? (6)
- 2-**Discuss** functions and control of secretion of parathyroid hormone.(7)

**V-Digestive System: (13 marks)**

- 1-**Discuss** functions of the saliva. (7)
- 2- **Mention** the functions of bile salts. (6)

**VI- Kidney: (13 marks)**

- 1-**Describe** the endocrine function of the kidney. (6)
- 2-**Mention** forces affecting glomerular filtration. (4)
- 3-**Define** each of the following: tubular reabsorption, tubular secretion and tubular metabolism (3)

انظر الخلف

**VII-Muscle & Nerve: (9 marks)**

- 1-Mention causes of resting membrane potential (RMP). (4)  
2-Describe the metabolic changes during skeletal muscle contraction.(5)

**VIII-Respiration: (9 marks)**

- 1-Define and mention the types and causes of hypoxia. (5)  
2-Discuss the chemical control of respiration. (4)

**IX-Reproduction: (9 marks)**

- 1- State four hormones affecting spermatogenesis (4)  
2-Discuss functions of progesterone hormone. (5)

**X-CNS and Metabolism: (10 marks)**

- 1-Discuss functions of spinal cord. (5)  
2-Define basal metabolic rate (BMR) and mention four pathological factors increasing it. (5)

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***Dr. Asmaa F. Hassan and Exam Committee***

سيعد الامتحان الشفوي لجميع الطلاب عقب الامتحان النظري مباشرة الساعة الثانية عشر  
والربع بقسم الفسيولوجيا الطبية - كلية الطب.

دور يناير ٢٠١٣ الزمن: ساعتان	امتحان مادة المحاسبة وإدارة الأعمال الصيدلانية تخلفات	جامعة أسيوط كلية التجارة قسم المحاسبة
	الامتحان صفحة واحدة	

**أجب عن الأسئلة تلاتية:**

**السؤال الأول:** (١٥ درجة)

نلقش اهمية المعلومات المحاسبية للصيدلى.

**السؤال الثانى:** (٤٥ درجة)

فيما يلى البيانات المستخرجة من سجلات صيدلية النجاح فى ٢٠١٢/١٢/٣١:  
١٥٠٠٠ مخزون أدوية ١/١ - ١٠٠٠٠٠٠ مشتريات أدوية - ٢٠٠٠٠ مردودات مشتريات أدوية -  
١٤٠٠٠٠ مبيعات أدوية - ٣٠٠٠٠ مردودات مبيعات أدوية - ٣٥٠٠٠ مرتبات - ٤٠٠٠٠ ايجار  
الصيدلية - ٩٠٠ م. كهرباء ومياه - ٦٠٠ تأمينات اجتماعية - ١٠٠٠٠ م. متنوعة - ٥٠٠٠ أثاث.  
فاذا علمت أن:

- ١- تقدر الأدوية فى ١٢/٣١ بمبلغ ١٧٠٠٠٠ يالتكلفة ، ٢٠٠٠٠٠ جنيه بسعر السوق.
- ٢- المرتبات الشهرية ٣٠٠ جنيه.
- ٣- الايجار السنوى للصيدلية ٤٢٠٠ .
- ٤- هناك فاتورة كهرباء مستحقة بمبلغ ١٠٠ جنيه.
- ٥- تم شراء جهاز كمبيوتر لأعمال الصيدلية فى ٢٠١٢/٦/١ بمبلغ ٤٥٠٠ جنيه ويستهلك بمعدل  
٣٣% / كما يستهلك الأثاث بمعدل ٦% .

المطلوب:

- ١- حساب مجمل ربح الصيدلية.
- ٢- حساب صافى ربح الصيدلية.
- ٣- حساب ضريبة الدخل المستحقة.

**السؤال الثالث:** (٤٠ درجة)

تبلغ التكاليف الثابتة لأحد مصانع الأدوية ١٢٠٠٠٠٠ جنيه ، ويبلغ سعر بيع وحدة المنتج ٥٠ جنيه  
والتكلفة المتغيرة للوحدة ٣٥ جنيه.  
المطلوب:

- ١- حساب نقطة التعادل كما وقيمة.
- ٢- حساب معدل هامش الأمان اذا كانت المبيعات المقدرة ١٠٠٠٠٠٠ وحدة.
- ٣- حساب حجم المبيعات المستهدف اذا رغبت الشركة فى تحقيق أرباح مستهدفة ٣٠٠٠٠٠ جنيه.

مع أطيب التمنيات

### السؤال الأول:

- فيما يلي العمليات التي تمت في صيدلية الشفاء خلال شهر يناير ٢٠١٣ .
- في ١ / ١٠ باعت الصيدلية أدوية لشركة أسمنت أسيوط بمبلغ ٦٠٠٠٠ ج بشروط ٢ / ١٠ / ٣٠
  - في ٥ / ١٠ اشترت أدوية من شركة سيد للأدوية بمبلغ ٤٠٠٠٠ ج بشروط ٥ / ١٠ / ٣٠
  - في ١٠ / ١٠ تم تحصيل المستحق على شركة أسمنت أسيوط نقدا
  - في ١٧ / ١٠ تم سداد المستحق لشركة سيد للأدوية نقدا
  - في ٢٥ / ١٠ تم بيع أدوية لهيئة التأمين الصحي بمبلغ ٥٠٠٠٠ ج نصفها نقدا والباقي على الحساب
  - في ٣١ / ١٠ تم سداد المصروفات التالية نقدا :  
٥٠٠٠ ج أجور ومرتببات ، ٥٠٠ ج كهرباء ومياه ، ٢٠٠ ج تليفون

### المطلوب :

- تسجيل العمليات السابقة في دفتر يومية صيدلية الشفاء.

### السؤال الثاني:

فيما يلي ميزان المراجعة بالأرصدة لصيدلية المدينة في ٣١ / ١٢ / ٢٠١٢

اسم الحساب	دائن	مدين
مبيعات	٥١٠٠٠٠	
مشتريات		٢٥٥٠٠٠
مردودات مبيعات		١٠٠٠٠
مردودات مشتريات	٥٠٠٠	
خصم مسموح به		٣٠٠٠
خصم مكتسب	٤٠٠٠	
مصروفات شراء		٧٠٠٠
مخزون أدوية أول الفترة		٤٠٠٠٠
إيراد أوراق مالية	١٠٠٠٠	
مصروفات تسويقية		١٩٠٠٠
مصروفات إدارية وعمومية		٢٥٠٠٠
مباني		١٥٠٠٠٠
قرض طويل الأجل	١٠٠٠٠٠	
أجهزة		٥٠٠٠٠
أثاث		١٦٠٠٠
مدينون		٤٠٠٠٠
أوراق مالية		١٠٠٠٠٠
بنك		٧٥٠٠٠
خزينة		٦٠٠٠٠
دائنون	٢١٠٠٠	
رأس المال	٢٠٠٠٠٠	
مجموع الأرصدة	٨٥٠٠٠٠	٨٥٠٠٠٠

فإذا علمت أن الأدوية المتبقية في ٢٠١٢/١٢/٣١ تبلغ تكلفتها ٦٠٠٠٠ ج

### المطلوب

- إعداد حساب المتاجرة عن الفترة المنتهية في ٢٠١٢/١٢/٣١.
- إعداد حساب الأرباح والخسائر عن الفترة المنتهية في ٢٠١٢/١٢/٣١.
- إعداد قائمة المركز المالي في ٢٠١٢/١٢/٣١.

### السؤال الثالث:

- كان رصيد حساب البنك بدفاتر صيدلية السلام ٦٥٠٠٠ ج، بينما كان الرصيد الوارد يكشف الحساب ٥٥٠٠٠ ج، وبفحص كشف الحساب تبين الآتي:
- أن البنك خصم مبلغ ١٠٠٠ ج مقابل خدمات قدمها للصيدلية (مصروفات البنك)
  - أن البنك حصل إيراد أوراق مالية نيابة عن الصيدلية قيمتها ١٤٠٠٠ ج
  - أن هناك شيك مرفوض مسحوب على أحد العملاء بمبلغ ١٢٠٠٠ ج
  - أن هناك إيداعات نقدية بالطريق لم تصل البنك قدرها ٣٥٠٠٠ ج
  - توجد شيكات مسحوبة على الصيدلية لم يتقدم أصحابها لصرفها بمبلغ ١٥٠٠٠ ج
  - بمراجعة كشف الحساب على سجل النقدية تبين أن هناك شيكا محررا لأحد الموردين بمبلغ ١٢٠٠٠ ج قيد خطأ في دفتر النقدية بمبلغ ٢١٠٠٠ ج
- المطلوب :-** إعداد مذكرة تسوية البنك لتحديد الرصيد الحقيقي للبنك الذي يجب أن يظهر في قائمة المركز المالي .
- إجراء قيود اليومية اللازمة بدفتر يومية الصيدلية .

### السؤال الرابع

استخرجت البيانات التالية من سجلات مصنع أسبوط للأدوية عن إحدى فترات التكاليف .

بيــــــــــــــــان	أرصدة أول الفترة	أرصدة آخر الفترة
تكلفة الإنتاج تحت التشغيل	٦٠٠٠٠	٤٠٠٠٠
تكلفة الإنتاج التام	٨٠٠٠٠	٥٠٠٠٠

فإذا علمت أن :

- المواد الخام المستخدمة خلال الفترة بلغت تكلفتها ٢٠٠٠٠٠ ج
- الأجور المباشرة خلال الفترة ١٥٠٠٠٠ ج
- التكاليف الإضافية خلال الفترة ٨٠٠٠٠ ج

### المطلوب :

- تحديد تكلفة الإنتاج التام خلال الفترة.
- تحديد التكلفة الصناعية للمبيعات خلال الفترة .

بالتوفيق ،،،،،

بسم الله الرحمن الرحيم

جامعة اسيوط

كلية الصيدلة

امتحان الفصل الدراسي الثاني يونيه ٢٠١٣

الفرقة الاولى مستجدون

مادة حقوق الانسان

اجب عن سؤالين فقط من الاسئلة الاتية :-

السؤال الاول

عرف الحق ثم بين المراد بحقوق الله تعالى وحقوق العباد

السؤال الثاني

اكتب من خلال دراستك عن حق المرأة في الميراث عند الاسلام مدعما ذلك من خلال هذه الدراسة بمسالة تراث فيها الانثى اكثر من الذكر

السؤال الثالث

من الحقوق اللتي كفلها الاسلام للطفل الحق في التعليم والمساواه في المعاملة من والديه اذكر من خلال دراستك ما تستدل به علي ذلك

السؤال الرابع

اكتب من خلال دراستك عن الحقوق السياسية للمرأة في الاسلام مدعما ذلك بما عبرت به عن رأيها



Assiut University  
Faculty of Pharmacy  
Deprt. Of Pharm. Anal. Chemistry.

First Year, 2<sup>nd</sup> Term  
Pharm. Anal. Chem. 2  
Period.Exam April 24, 2013  
Time allowed: one hour  
Marks: 15

..... اسم الطالب ..... رقم الجلوس .....

**Question (I)- Redox Theory (8 Marks)**

**A-In the provided table, Write the scientific term or expression for each of the following:**

**(4 Marks)**

No	Answer	No	Answer
1		5	
2		6	
3		7	
4		8	

1. A reagent that consists of manganous sulfate, sulfuric acid and phosphoric acid.
2. The term of the tendency of metal to dissolve when its electrode is immersed in a solution of its salt.
3. An intense red colored coordination complex formed by combination of the base 1,10-phenanthroline with ferrous ion in the mole ratio 3 base : 1 ferrous.
4. The potential that observed experimentally in a solution containing equal number of moles of oxidant and reductant substances together with other substances at specified concentration.
5. Arrangement of elements according to the sign and value of potential.
6. A substance that can give electrons in the reaction with other substance in solution.
7. The determination of oxidizing substances by reaction with iodide salts and the liberated iodine is titrated with sodium thiosulphate.
8. A group of compounds that are easily oxidized and can help to counteract the influence of reactive oxygen or nitrogen species.

*Handwritten signature and notes at the bottom right of the page.*



**B- Mark with (✓) for the correct statement and with (X) for the wrong one**  
**(4 Marks)**

- 1.( ) Potassium dichromate ( $K_2Cr_2O_7$ ) can be used as self indicator.
- 2.( ) Starch is suitable indicator in both Lang's and Andrew's methods.
- 3.( ) Potassium permanganate can oxidize all halides at pH 5.
- 4.( ) The oxidation product of thiosulphate ( $S_2O_3^{2-}$ ) with iodine is sulphate ( $SO_4^{2-}$ ).
- 5.( ) The equivalent weight of  $KMnO_4$  in alkaline medium equals its molecular weight divided by 5.
- 6.( ) Ferric sulphate is strong oxidant in alkaline medium.
- 7.( ) On titrating  $AsO_3^{3-}$  with iodine the pH is adjusted to be slightly alkaline using NaOH.
- 8.( ) Iodine is an example of primary redox standard solution that reacts as oxidant in acid medium only.

**Question II-Complexometry**  
**(7 Marks )**

**A-Mention in one word or two words the scientific name or expression for each of the following :**  
**(5 Marks)**

- 1-The value which gives the ratio of total uncombined EDTA to the fully ionized form.....
- 2-The maximum number of monodentate ligands that can bound to metal cation and surrounded to it .....
- 3-The ligand molecule or ion that has two atoms , each of which has a lone pair of electrons .....
- 4-A complex containing more than two metal ions . .....
- 5-A compound whose color changes when it binds to a metal ion.  
.....

**B--Choose the correct answer:**  
**(2 Marks)**

- 1-Aluminum chloride can be determined by:  
a-indirect titration      b-direct titration      c-back titration
- 2-Titration of Calcium salt solution with EDTA is carried out at pH:  
a- pH 4      b-pH 7      c-pH 11      d-pH 2
- 3-The stability of metal – EDTA complexes may be altered by:  
a- pH      b-complexing agent      c-a&b      d-non of all
- 4-The suitable indicator for titration of zinc at pH 5 is:  
a-Erio T      b-murexide      c-xylenol-orange      d-non of all

-----  
Good Luck  
*Prof.Dr.Horria A. Mohammed*  
*Prof.Dr.Sameha A. Husein*



Assiut University  
 Faculty of Pharmacy  
 Pharm. Anal. Chem. Dept.  
 24/04/2013



Pharm. Anal. Chem. - 2  
 Sheet on statistics (5 marks)

Time allowed 15 minutes

رقم الجلوس

اسم الطالب

**Complete the following**

1- In a titrimetric analysis for determination of ferrous sulphate, complete the missing values in the following table. **(1.5 marks)**

Average volume (ml)	Correct volume (ml)	Absolute error (ml)	Relative error (%)	Accuracy (%)
12.5	12.3	...	...	...

2- The following results were obtained in replicate determinations of lead content in a blood sample; 3.75, 3.76, 3.72, 3.71, 3.76 ppm Pb. **(1.5 marks)**

- a) The average value is .....
- b) The median value is .....
- c) The standard deviation is .....

3- Define the following terms. **(2 marks)**

a) Accuracy can be defined as .....

.....

b) Precision can be defined as .....

.....



Assiut University  
Faculty of Pharmacy  
Dept. Of Pharm. Anal. Chemistry.

First Year, 2<sup>nd</sup> Term  
Pharm. Anal. Chem. 2  
Final Exam., May 30, 2013  
Time allowed: 2 hrs

Total Marks= 70

• عزيزى الطالب تأكد أن الامتحان مكون من أربعة أسئلة في 12 صفحة.  
• الامتحان الشفوى سيكون عقب النظرى بالتوزيع الاتى للأرقام: من 1-450 الساعة الثالثة مساءً.  
من 451- الاخر الساعة الخامسة مساءً.

**Question I- (REDOX THEORY)**

**(18 Marks)**

*(Prof.Dr.Horria A.Mohammed)*

**A- Complete the following:**

**(10 Marks)**

1- In redox titrations involving iodine, the end point can be detected by using ..... and .....

2- On titrating  $\text{FeCl}_2$  ( $E^\circ_{\text{Fe}^{3+}/\text{Fe}^{2+}} = 0.77 \text{ V}$ ) with  $\text{KMnO}_4$  ( $E^\circ_{\text{MnO}_4^-/\text{Mn}^{2+}} = 1.52 \text{ V}$ ), in sulfuric acid medium,

-The balanced reaction equation is written as follows:

.....

-the suitable indicator used is .....

-the equilibrium constant of this reaction can be calculated as follows:

.....  
.....

- the source of interference is .....

.....

-and it can be overcome by addition of.....

- the role of the added reagent is:

i-.....

ii-.....

.....

iii-.....

.....

3- KI is added to iodine for preparation of standard iodine solution in order to:  
.....  
and .....



5- The reduction product of  $MnO_4^-$  in alkaline medium is .....  
and that in strong acid medium is .....

---

**B- Mark (✓) for the correct statment, (X) for the wrong one, underline the incorrect word/s and *correct it/them*: (8 Marks)**

- 1.( ) Equivalent weight of oxidant is its molecular weight divided by the number of electrons that one mole losses in the reaction.  
.....
- 2.( ) The potential of  $I_2/I^-$  system is decreased in presence of  $Hg^{+2}$  due to formation of precipitate with iodide.  
.....
- 3.( ) Redox titration curve is the mathematical relation of the potential of half cell to concentration of ions in solution.  
.....
- 4.( ) Karl-Fisher reagent consists of manganous sulfate, sulfuric acid and phosphoric acid.  
.....
- 5.( ) Andrew's method is that in which some complexing agents are titrated with potassium iodate in conc. HCl medium.  
.....
- 6.( ) Reduction is the process which is accompanied by loss of electrons.  
.....
- 7.( ) Potassium permanganate is an example of primary redox standard solution that reacts as oxidant in acid medium only.  
.....

- 8.( ) The stronger the oxidant the stronger its conjugate reductant.  
.....
- 9.( ) Iodimetry is the determination of reducing substances by reaction with iodide salts and the liberated iodine is titrated with sodium thiosulphate.  
.....
- 10.( ) Prereductants are group of compounds that are easily oxidized and can help to counteract the influence of reactive oxygen or nitrogen species.  
.....
- 11.( ) Cupric ions can oxidize iodide in presence of tartarate or citrate.  
.....
- 12.( ) Ionic pressure is the tendency of metal, in metal electrode, to dissolve when immersed in a solution of its salt.  
.....
- 13.( ) 1,10- phenanthroline forms a pale blue color with  $\text{Fe}^{+2}$  and intense red color with  $\text{Fe}^{+3}$ .  
.....
- 14.( ) In one electron transfer reactions, the potential at equivalence point =  $E^{\circ}_1 + E^{\circ}_2$ .  
.....
- 15.( ) Standard bromine is prepared by dissolving bromine in water.  
.....
- 16.( ) In redox titration an abrupt change of potential around equivalence point is dependent on concentration unless very small and not dependent on equilibrium constant of the reaction.  
.....  
.....  
.....  
.....

**Question II – REDOX APPLICATIONS**

**(22 Marks)**

*(Prof.Dr.Hassan F. Azkal)*

**How you can analyze the following:**

**(2½ Marks for each)**

**(write *equations* and select the *suitable indicator*)**

**1-Acetyl salicylic acid.**

**2- HgS.**

**3-Dimercaprol.**

**4- Lead oxide**

**5-Moisture Content**

**6- Iodine radiopharmaceuticals**

**7- Magnesium chloride.**

**8- Formic acid**

**9- Glycerol**



**Question III- COMPLEXOMETRY**

**(18 Marks)**

**(Prof.Dr.Sameha A.Husein)**

**A- Mark (✓) for the correct statement and ( x ) for the wrong and**

**correct the wrong one**

**(7 Marks )**

- 1.( ) Indirect titration of EDTA is used for the titration of aluminium ions.  
.....
- 2.( ) Lead- tartarate complex is more stable than lead –EDTA complex.  
.....
- 3.( ) Calcium-EDTA chelate is strong enough to be titrated in acidic medium.  
.....
- 4.( ) Mercuric –EDTA complex is more stable than zinc-EDTA complex.  
.....
- 5.( ) EDTA is a bidentate ligand while CDTA is monodentate ligand.  
.....
- 6.( ) Copper ions are demasked from its cyanide complex by formaldehyde and acetic acid.  
.....
- 7.( ) Calcium ions alone ,when titrated with EDTA ,a poor end point is obtained when using murexide as indicator.  
.....
- 8.( ) Chelates are usually non electrolytes and are less stable than simple species complexes.  
.....
- 9.( ) Cyanide ion can form stable complexes with both calcium and magnesium.  
.....
- 10.( ) EDTA is a selective complexing agent.  
.....
- 11.( ) Edathamil forms a water soluble chelate with ferric ions.  
.....
- 12.( ) Triethanolamine masks ferric ions.  
.....

13.( ) Apparent stability constant depends only on pH of solution.

.....

14.( ) The color change of Erio-T during titration of zinc with EDTA from wine –red to purple.

.....

---

**B- Complete the following:**

**(8 Marks)**

- 1- The fraction Beta is calculated from.....
  - 2- The extent of hydrolysis of M-EDTA complex in alkaline medium to form  $M(OH)_n$  depends on .....
  - 3- The sharpness of end point in titration of calcium with EDTA depends on.....
  - 4- Auxillary complexing agents are added to sample of lead ion when titrated with EDTA to.....
  - 5- Unidentate ligands are rarely suitable for the titration of metal ions because.....
  - 6- Displacement titrations is applied for metal ions.....
  - 7- The greater the stability constant , the ..... is the end point provided the pH is maintained constant.
  - 8- Direct titration of the chloride with mercuric nitrate is useful using either ....., or .....as indicators.
-

**C- How can you analyze the following mixtures :**

**(3 Marks )**

---

**1- Zinc & magnesium.**

**2- Ferric & chromium.**

**Question IV- STATISTICS**

**(12 Marks)**

*(Dr. Mohamed Abdel-Galil)*

**A. Select from column (ii) the correct scientific term that matches the definitions in column (i) then *write the matching number only* in the provided space. **(5 Marks)****

Column (I)	Matching number	Column (ii)
a) The lowest amount of analyte in a sample that can be detected under the stated experimental conditions.		1- The range.
b) The agreement between several measurements of the same substance.		2- Absolute error.
c) The interval between the upper and lower concentration levels of analyte to be determined with a suitable level of precision, accuracy, and linearity.		3- Accuracy.
d) The difference between an observed value and the true value.		4- Detection limit.
e) Analytical procedure which accurately measures the active ingredients without interference from degradation products or other potential impurities.		5- Stability-indicating assay.
		6- Quantification limit.
		7- Precision.
		8- Relative error.

**B- Choose the most correct answer and write *the matching letter only* in the provided space. **(5 Marks)****

1- The use of the analytical procedure within a laboratory over a short period of time (intra-day) by the same analyst using the same equipment is called... ( )

- a) Reproducibility.
- c) Selectivity.

- b) Repeatability.
- d) Intermediate precision.

2- The standard addition method... ( )

a) A known amount of the analyte is added to the sample, which is then analyzed for the total amount of the analyte.

b) is used to minimize determinate errors.

c) The difference between the results for samples with and without the added analyte gives the recovery of added amount.

d) All of the above.

3- A separate determination in which the sample is omitted and carried out under exactly the same experimental conditions is called.... ( )

a) Blank determination.

b) Parallel determination.

c) Independent method of analysis.

d) None of the above.

4- The internal standard method... ( )

a) is a blank experiment.

b) is used to test an outlier.

c) is important in chromatographic methods (e.g. HPLC).

d) is a method of random sampling.

5- A correlation coefficient ( $r$ ) = 0.0001 indicates... ( )

a) Positive linear correlation between the variables X and Y.

b) Negative linear correlation between the variables X and Y.

c) No linear correlation between the variables X and Y.

d) None of the above.

**C-- Complete the following:**

**(2 Marks)**

a) In the titrimetric analysis of and iron sample, the following results were obtained; 10.3 , 10.1 , 10.0 , 9.2 , 10.2 , 9.9 , 10.0 mg/g. The value 9.2 appears suspicious. Determine if it should be rejected or not (Tabulated  $Q_{95\%} = 0.568$ ).

1- The value of Q calculated = .....

2- If tabulated  $Q_{95\%} = 0.568$ , then the value 9.2 should be .....

b) Quinine was determined by measuring the fluorescence intensity in  $H_2SO_4$  solution. Standard solutions gave the following fluorescence values:

Concentration of quinine (ng/ml)	10	20	30	40	50
Relative fluorescence intensity (counts)	5.4	9.9	14.9	20.3	25.1

1- In the straight line equation for these variables, the value of b (the slope) = .....

2- The value of a (the intercept) = .....

**Good Luck!**

*Prof.Dr.Hassan F. Azkal  
Prof.Dr.Horria A. Mohammed  
Prof.Dr.Sameha A. Husein  
Dr.Mohammed Abdel-Galil*



**III- Encircle the correct answer:**

(4 marks)

T	F	1- Blood plasma substitutes such as solution of dextran, PVP, and gelatin are used to maintain blood volume.
T	F	2- Lyophobic colloidal dispersions are thermodynamically stable.
T	F	3- Controlled flocculation can be achieved by increasing surface charge.
T	F	4- Velocity of sedimentation of particles is not affected by viscosity of dispersion medium.

**IV- Write the scientific equivalent of each of the following:** (5 marks)

- a- It is the resistance of liquid to flow. (.....)
- b- It is the reciprocal of viscosity. (.....)
- c- It is the absolute viscosity divided by density. (.....)
- d- Shear thinning fluid. (.....)
- e- Shear thickening fluid. (.....)

**Question 2 (18 marks)**

**I. Give reason(s) for each of the following:** (8 marks)

1- Tertiary butyl alcohol is more miscible with water than n- butyl alcohol.

-----  
-----  
-----  
-----

2- Drugs are weak acids require an acid environment to function effectively as antibacterial.

-----  
-----  
-----  
-----



3- Gases are often liberated from solution in which they are dissolved by the introduction of an electrolyte or non-electrolyte.

---

---

---

---

4- It is desirable to adjust the pH of the preparations are intended to be applied to organs tissues to a level that is close to physiological pH of the tissues

---

---

---

---

5- 2% boric acids solution serves as isotonic ophthalmic preparation

---

---

---

---

6- Solubility of sodium chloride is not altered much by a change of temperature.

---

---

---

---

7- Parenteral solutions for injection into the blood are usually not buffered or are buffered to a low capacity.

---

---

---

---

8- Buffer solutions are not ordinarily prepared from weak base at its salts.

-----  
-----  
-----  
-----

**II. State the following:**

(5 marks)

1- Tissue irritation will be minimal if:

- (a) -----
- (b) -----
- (c) -----

2- Factors influence the pH of buffer system.

- (a) -----
- (b) -----
- (c) -----

3-The application of distribution law.

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

4- Rate of absorption of a variety of drugs depends on:

- (a) -----
- (b) -----
- (c) -----

5- Measurement of tonicity by:

- (a) -----
- (b) -----

**III- Complete of the following:**

(5 marks)

**1- Tonic equivalent of a drug (E) is:**

-----  
-----  
-----

**2- The buffer capacity depends on:**

(a) -----

(b) -----

**3- Von Slyk's equation for buffer capacity is:**

-----  
-----  
-----

**4- Universal buffers are:**

-----  
-----  
-----

**5- In-vivo biologic buffer systems are:**

-----  
-----  
-----

**Question 3 (18 Marks)**

**I- Choose the most suitable answer:**

(11 marks)

**1- The aim of solid dispersion is:**

a-to increase drug solubility and its bioavailability.

b-to decrease drug absorption and its bioavailability.

c-to decrease drug dissolution rate

d-to increase drug particles agglomeration.

**2- The tie line of the phase diagram becomes parallel to the base line for condensed system of;**

- a- two –component containing liquids.
- b- two –component containing liquids and solids.
- c- a & b.
- d- Three -component system.

**3- Phase rule relates the effect of the least number of independent variables, upon the various phases that exist in an equilibrium system containing a given number of components.**

- a- True
- b- False.

**4- When  $F = 1 - 1 + 2$  this is the phase rule of :**

- a- area of one component system diagram.
- b- lines of one component system diagram.
- c- area of two- component system diagram.
- d- lines of two component system diagram.

**5- Number of component is defined as homogenous and physically distinct part of a system that is separated from the other parts of the system by definite boundaries.**

- a- True
- b- False.

1				2				3		4				5	
a	b	c	d	a	b	c	d	a	b	a	b	c	d	a	b

**6- In two-component system phase diagram, the point that  $F=0$  is known as:**

- a- triple point
- b- eutectic point.
- c- critical temperature.
- d- critical solution temperature.

**7-The degree of freedom for two-component system and one phase is two.**

- a- True
- b- False

**8- Lyophilization or freeze drying is the application of:**

- a-phase diagram of two- component system containing liquids.
- b-phase diagram of two- component system containing liquids and solids
- c-phase diagram of one- component system containing water.
- d-phase diagram of three- component system containing one pair of partially miscible liquids.

**9- Solid dispersions is the application of :**

- a-phase diagram of two- component system containing liquids.
- b-phase diagram of two- component system containing liquids and solids.
- c-phase diagram of one- component system containing water.
- d-phase diagram of three- component system containing one pair of partially miscible liquids.

**10- Solid dispersion between sparingly water soluble drugs and water soluble carriers leads to:**

- a- increase of drug solubility
- b- increase of drug absorption into circulation.
- c- decrease of drug particle size.
- d- all of the above.

**11- The osmotic pressure of 0.2 molar sucrose solution is equal to that of 0.2 molar urea solution.**

a- True

b- False

6				7		8				9				10				11	
a	b	c	d	a	b	a	b	c	d	a	b	c	d	a	b	c	d	a	b

**II- Complete the following:**

(7 marks)

- 12-..... equation relates osmotic pressure with molal concentration
- 13- In one component system phase diagram, the point that has  $F=0$  is known as.....point.
- 14- The degree of freedom for three-component system and one phases is:.....
- 15- The partial vapor pressure of the constituents is greater than that expected from Raoult's law, and the system is said to exhibit ..... deviation.
- 16- Mixtures of ethanol & water yield azeotropic mixtures with ..... in the boiling point curves.
- 17-..... is defined as the passage of the solvent into a solution through a semipermeable membrane.
- 18- A 0.200 m aqueous solution of a drug gave a boiling point elevation of  $0.103^{\circ}\text{C}$ . The molal elevation constant for the solvent was..... deg Kg/ mole.

**Question 4 (16 marks)**

**I-Complete:**

(3 marks)

- 1- Methods of measurement of surface and interfacial tension are ..... and .....
- 2- Antonoff's rule state that,  
.....  
.....
- 3- Surface free energy defined as.....  
.....  
.....
- 4- Freundlich isotherm equation is  
.....  
.....
- 5- The relationship between the vapor pressure and the absolute temp of a liquid is expressed by the .....equation.

**II. Pick true (T) and false (F):**

(3 marks)

1. The further a gas is cooled below its critical temp, the less pressure is required to liquefy it.
2. Non polar molecules, exhibit high boiling points and high heats of vaporization.
3. Crystalline solids show definite melting points on passing from the solid to the liquid state
4. Water has a larger molar volume in the solid state than in the liquid state.
5. Interfacial phenomena are important in emulsion formation and stability.
6. A high HLB value indicates water solubility or dispersibility.

Q No	1	2	3	4	5	6
Answer						

**III. Select the Most appropriate answer:**

(6 Marks)

1- ..... quantitatively expressed the adsorption at an interface:

- A-Ideal gas law                      B-Gibbs equation                      C-van der waals equation

2- A solid on which adsorption takes place is known as:

- A- Adsorbent                      B- Adsorbate.                      C-Adsorption

3- The equation describes multimolecular adsorption.

- A- Freundlich equation                      B- BET equation                      C-Langmuir equation

4- The temperature at which the pure liquid and solid exist in equilibrium is called:

- A-Freezing point.                      B-Boiling point                      C- Critical pressure.

5-Sublimation, is the reverse process of

- A-Deposition                      B-Condensation                      C- Precipitation

6-The forces of attraction between the molecules of the ideal gas are

- A – uniform                      B- negligible                      C- non uniform

7-Surface tension can be defined as the surface free energy change per unit..... Increase.

- A- length                      B- area                      C-volume

8-A liquid is said to wet a solid if the angle between the liquid droplet and the surface over which it spreads

- A-  $< 90$                       B-  $= 90$                       C-  $> 90$

9- ..... crystals are soft and have low melting points.

- A-Molecular                      B-Ionic                      C-Atomic.

10-Real gas behaves ideally at:

- A- high pressure                      B- high temperature                      C- low temperature

11- At 17.5 mmHg, water boils at :

- A-120°C                      B- 100°C                      C- 20°C

12-Crystalline solids have:

- A- indefinite shapes                      B- have an orderly arrangement of units  
C- easily compressed

Q NO	1	2	3	4	5	6	7	8	9	10	11	12
Answer												

**IV. Give the reason for:**

(2 Marks)

1-In general, the alcohols boil at a much higher temp than saturated hydrocarbons of the same molecular weight.

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2- The melting points of normal carboxylic acids with an even number of carbon atoms are higher than those with an odd number of carbon atoms.

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**V. Write about the following:**

(2 mark)

**A- Assumption of Langmuir adsorption isotherm.**

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**B-Differences between: Physical adsorption and chemisorption:**

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الامتحان الشفوي سوف يعقد بمشيئة الله تعالى بقسم الصيدلانيات بعد الامتحان مباشرة

\*مع تمنياتنا للجميع بالتوفيق\*

أ.د. سهير مصطفى الشنواني

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