

Date: 27/6/2011

Time: 1 hour

Assiut University

Faculty of Medicine

Dept. of Community Medicine

Examination of Public Health

For 3rd Year Students, Faculty of Pharmacy (Old Program)

Answer the following questions: (5 marks for each)

- 1- Mention basic moods of diseases transmission.
- 2- Define carrier and list dangerous groups of carrier.
- 3- Mention disadvantages of chemoprophylaxis.
- 4- Explain preventive measures of diarrhea.
- 5- Mention elements of communication (communication cycle).
- 6- List anti-infective properties of breast milk.

(Good Luck)

Prof. Kawthar A. Fadel

امتحان الشفوى يوم 2011/6/28 الساعة 10 صباحا

- قبل البدء فى الإجابة إقرأ هذه التعليمات جيدا
1. أكتب اسمك ورقم جلوسك باللغة العربية وبخط واضح على غلاف كراسة الاجابة فقط
 2. تأكد أن كراسة الامتحان تتكون من 10 ورقات (عشرون صفحة) وفى حالة تكرار أو نقص أى أوراق أطلب استبدالها فورا.
 3. يتكون الامتحان من خمسة اجزاء ومطلوب الاجابة عليها جميعا.
 4. تكتب الاجابات فى الفراغات المخصصة بها مع مراعاة رسم المركبات فى الفراغ المخصص لها.
 5. فى الأسئلة متعددة الاختيارات يتم وضع علامة حول الاجابة الصحيحة فقط.
 6. المستطيل المبين على يمين الصفحة فى بداية كل جزء يترك فارغا حيث يقوم السيد الأستاذ الدكتور/ عضو هيئة التدريس بتسجيل الدرجة التى حصل عليها الطالب.
 7. ممنوع منعا باتا الكتابة أو الرسم بالقلم الرصاص أو أى ألوان.
 8. عدم كتابة إسمك أو أى علامات داخل الكراسة.
 9. محاولة الاستعانة بالآخرين أو إعانتهم فى إجابة الامتحان يعرضك للمسائلة القانونية من الجامعة وما يترتب عليها.

موعد الامتحان الشفهى

الامتحان الشفهى عقب الامتحان النظرى وسيعلن توزيع الطلاب على لجان الامتحان بلوحة الاملانات بالقسم.

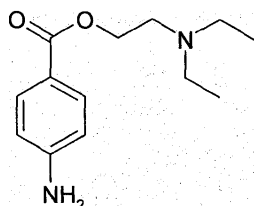
لجنة الامتحان

أ.د./ عاطف عبد المنعم عبد الحافظ
أ.د./ حمدى محمد عبد الرحمن
أ.د./ نوال أبو بكر
د./ هدى يوسف
د/ أحمد صفوت أبو رية

مع أطيب الأمنيات بالتوفيق والنجاح ،،،

PART ONE

Question No. 1 Given the following structure of the medicinally used drug, choose the most correct statement from the followings



1. The above drug is used clinically as
 - a. Antiarrhythmic
 - b. Antidepressant
 - c. Local Anesthetic
 - d. Antiadrenergic ..
 - e. None of the above
2. The given structure is considered as
 - a. Amino ether derivative
 - b. Amino amide derivative
 - c. Amino ester derivative
 - d. Amino ketone
 - e. All of the above
3. You can retain the biological activity of the above drug if you replace the 4-amino group with a
 - a. 4-Nitro group
 - b. 3-Amino group
 - c. 3-Chloro moiety
 - d. 2-Amino group
 - e. None of the above
4. The above drug elicits its action by
 - a. Blockage of sodium channels
 - b. Opening of Potassium channels
 - c. Blockage of Calcium channels
 - d. Inhibition of dihydrofolatereductase
 - e. None of the above
5. To enhance the stability of the given drug, One can replace the ester moiety by
 - a. An amide
 - b. An ether
 - c. A reversed amide
 - d. Both a & c
 - e. None of the above
6. The chemical nomenclature of the given drug is

- a. 2-(dimethyl amino)ethyl 4-aminobenzoate
- b. 2-(diethylamino)methyl 4-aminobenzoate
- c. 2-(diethylamino)ethyl 4-aminobenzoate
- d. 4-(diethylamino)ethyl 3-aminobenzoate
- e. 2-(diethylamino)ethyl 5-aminobenzoate

7. The biological activity of the given drug is influenced by:

- a
- b
- c

8. The above drug can be synthesized as follows:

.....

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.....

9. Which one of the following localanesthetic drugs is considered as amino ketone derivative?

- a. Pramoxine
- b. Chlorbutanol
- c. Eugenol
- d. Dyclonine
- e. None of the above

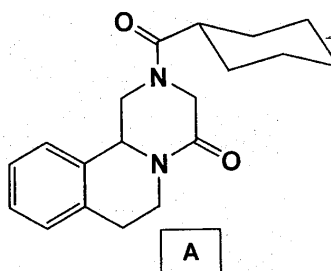
Question No. 2 Choose the most appropriate answer from the followings

1. The chemical classes of anthelmintics are except

- a. Macrocyclic lactones
- b. Substituted phenols
- c. Imidazothiazoles
- d. Ethanol amines
- e. Salicylanilides

2. Which one of the following anthelmintics is considered as imidazothiazole derivative
- a. Praziquantel
 - b. Levamisole
 - c. Niclosamide
 - d. Mebendazole
 - e. Diethylcarbamazepine
- 
- The chemical structure shown is Mebendazole, which is an imidazothiazole derivative. It consists of a benzimidazole ring system attached to a 5-membered thiazole ring via a methylene group. The thiazole ring has a carbonyl group at the 2-position and a methyl group at the 4-position.

3. Drug A is an anthelmintic drug that acts by
 - a. Decrease ATP production in worms
 - b. Inhibiting the reuptake of dopamine
 - c. Mitotic arrest
 - d. Block regeneration of acetylcholine
 - e. Change the cell wall permeability



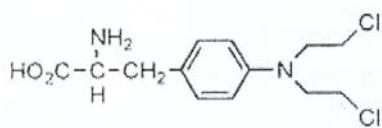
4. The chemical nomenclature of drug A is
 - a. 2-(Cyclohexylcarbonyl)-1,2,3,6,7,11 b-hexahydro-4-H-pyrazino(2,1-a]quinoline-4-one
 - b. 4-(Cyclohexylcarbonyl)-1,2,3,6,7, 11 b-hexahydro-4-H-pyrazino(2, 1-a]isoquinoline-4-one
 - c. 2-(Cyclohexylcarbonyl)-1,2,3,6,7,11 b-hexahydro-4-H-pyrazino(2, 1-b]isoquinoline-4-one
 - d. 2-(Cyclohexylcarbonyl)-1,2,3,6,7,11 b-'hexahydro-4-H-pyrazino(2, 1-a]isoquinoline-5-one
 - e. 2-(Cyclohexylcarbonyl)-1,2,3,6,7,11 b-hexahydroA-H-pyrazino(2, 1-a]isoquinoline-4-one
5. Which one of the following anthelmintics is considered as salicylanilide derivative
 - a. Praziquantel
 - b. Levamisole
 - c. Niclosamide
 - d. Mebendazole
 - e. Diethylcarbamazepine

Question No. 3 Answer the followings:

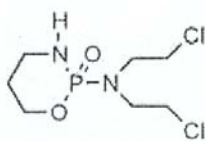
1. Mechlorethamine alkylates nucleophilic sites in DNA to form inter- and intramolecular cross-links. Illustrate one round of alkylation of a hypothetical nucleophile (Nu:) starting with mechlorethamine hydrochloride

[illegible]

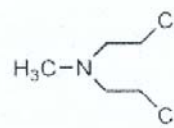
2. Rank the rate of aziridinium ion formation for compounds I - III below if aqueous solutions of each were allowed to stand at room temperature.



1



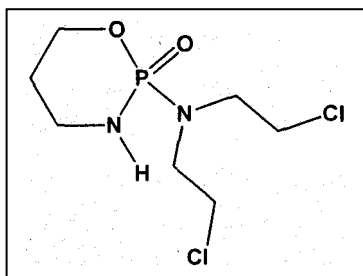
11



111

- $I < II < III$
- $I < III < II$
- $II < I < III$
- $II < III < I$
- $III < I < II$
- $III < II < I$

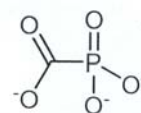
3. Consider cyclophosphamide below. Cyclophosphamide is metabolically activated to cytotoxic products. Show the structures of these cytotoxic metabolites' and indicate which metabolite(s) is/are responsible for cross-linking DNA and which is/are responsible for causing hemorrhagic cystitis .

[illegible]

Question No. 4

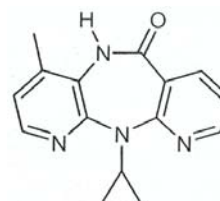
1. The given structure is for an antiviral drug, its acts by

- preventing the attachment of the viral particle to the host cells
- stopping the synthesis and translation of viral m-RNA
- interfering with viral nucleic acids formation
- inhibiting maturation and processing of viral proteins
- none of the above



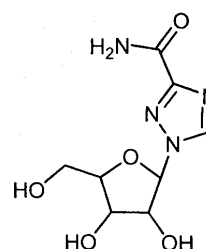
2. The provided drug is a chemotherapeutic agent that can stop viral replication, its considered as

- a nucleoside analog polymerase inhibitor
- a non-nucleoside analog polymerase inhibitor
- a nucleoside analog protease inhibitor
- a non-nucleoside analog protease inhibitor
- none of the above



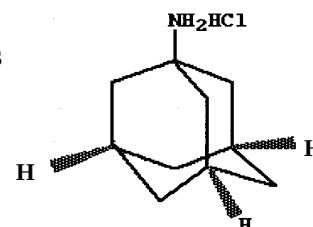
3. One can consider the provided drug as

- a nucleoside analog polymerase inhibitor
- a non-nucleoside analog polymerase inhibitor
- a purine analog polymerase inhibitor
- a pyrimidine analog polymerase inhibitor
- both options a and d are correct

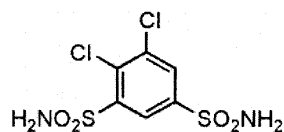


4. The provided antiviral drug elicits its action by

- preventing the attachment of the viral particle to the host cells
- stopping the synthesis and translation of viral m- RNA
- interfering with viral nucleic acids formation
- inhibiting maturation and processing of viral proteins
- none of the above

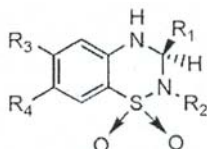


Question No.5: Explain, with the aid of formula(s), why Compound A inhibits carbonic anhydrase to exert its diuretic action.



Compound A

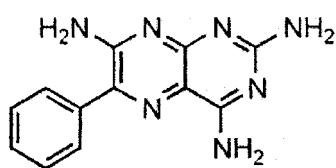
Question No.6: Given the general structure for the "thiazide diuretics," answer the following questions True or False.



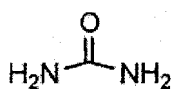
If $R_1 = R_2 = R_3 = R_4 = \text{CH}_3$, this substitution pattern will enhance (i.e. increase) the diuretic activity.

- A. True
- B. False

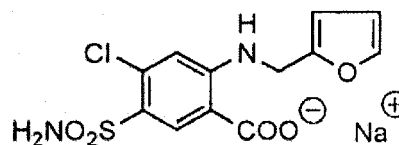
Question No.7: Which of the following statements below is/are True for the structures given?



Triamterene (A)



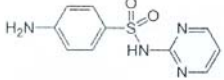
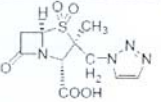
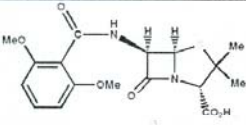
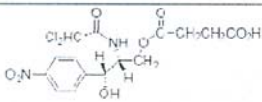
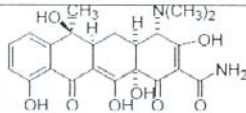
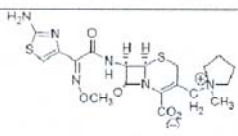
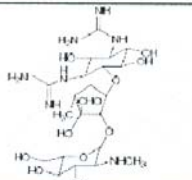
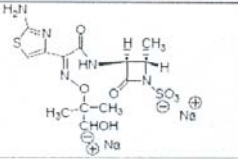
Urea (B)



Furosemide (C)

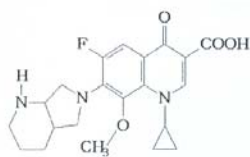
- I. They are all unstable, under in vitro conditions.
 - II. They are all Loop diuretics.
 - III. They are all water-soluble.
 - IV. They are all optically active.
- A. Choice I only
 - B. Choice III only
 - C. Choices II and III only
 - D. Choices III and IV only
 - E. Choices I, II, III and IV are True

PART TWO**Question No. 1 (8 marks)****37.5****Choose the correct answer**

	The illustrated drug is used for 1- ophthalmic infections 2- Urinary tract infections 3- burns 4- Ulcerative colitis
	The illustrated drug 1- is a Penicillin antibiotic 2- is synergistic with ampicillin 3- is a β -lactamase inhibitor 4- is narrow spectrum of activity
	The illustrated drug is 1- broad spectrum antibiotic 2- can be given orally 3- β -lactamase sensitive 4- Acid sensitive
	The illustrated drug is 1- Cell wall synthesis inhibitor 2- Used orally 3- Protein synthesis inhibitor 4- Used as antifungal
	The illustrated drug is 1- bind to 30S ribosomal subunit 2- bind to 50S ribosomal subunit 3- their acid salts are unstable 4- inhibit cell wall synthesis
	The illustrated drug is 2- taken orally 3- β -lactamase sensitive 4- Penicillin derivative 5- Narrow spectrum of activity
	The illustrated drug is 1- Cause nephrotoxicity 2- Oxidation of aldehyde gives active compound 3- Removal of guanidine group abolish activity 5- bind to 50S ribosomal subunit
	The illustrated drug is 1- cephalosporin antibiotics 2- penicillin antibiotics 3- polyene antibiotics 4- β -lactamase resistant

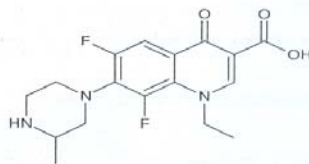
Question No. 2 (11 marks)

A) Examine carefully the following structures and then answer the questions (6 marks)



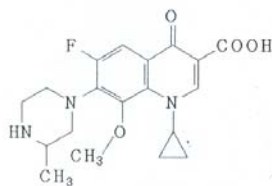
I

Generic name :

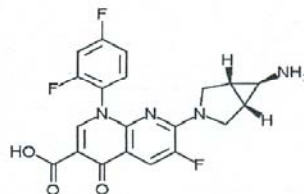


II

Generic name :



III



IV

1- Write generic names of the compounds I and II , which one is third generation?

Compound No.

2- Role of methoxy group in compound No. III ?

3- Encircle azabicyclo group of compound No. IV

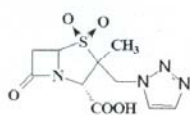
B) Complete the following table then answer the question: (5 marks)

I 	II 	III
IV 	V 	VI

- 1- Use of Compounds No. I and VI
- 2- Compound No. II gives ----- at acidic pH of urine
- 3- SAR of compound No. III (Just one)
- 4- Chemical nomenclature of Compound No. IV
- 5- Compound No. V inhibits bacteria by blocking the conversion of -----

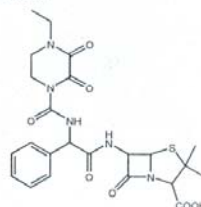
Question No. 3 (6 marks)

- A) Each of the following combinations is preferable than single therapy, mention the clinical use(s) and the advantage(s) of each combination than the single one.



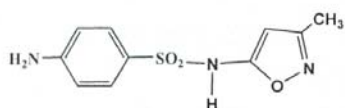
Use(s):

Advantage(s):



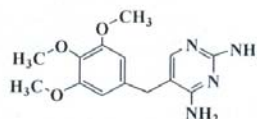
Use(s):

Advantage(s):

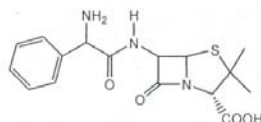


Use(s):

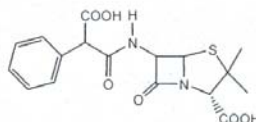
Advantage(s):



- B) Which of the following compounds is used orally and why?



I



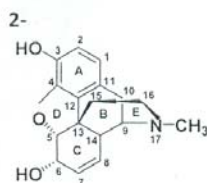
II

Compound No. is used orally because

Question No. 4 (12.5 marks)

- A) Complete the following (9 marks)

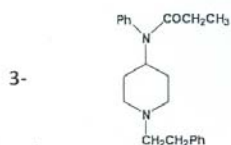
- 1- The 6-OH in morphine is not required for analgesic activity and its removal is beneficial, explain?



Reagent -----

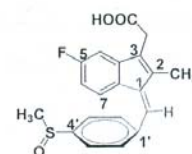
Ethylmorphine

Use:

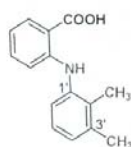


Common structural features of the assigned narcotic analgesics

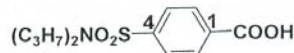
4-Sulindac is metabolized to ----- and -----



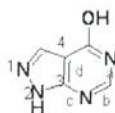
B) Assign the activity to each of the structures (I-IV) given below, then answer the following (3.5 marks)



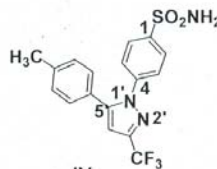
I



II



III



IV

- 1-Inhibits COX-2 enzyme
- 2- Increase excretion of uric acid from renal tubules
- 3-Inhibits hypoxanthine oxidase enzyme
- 4- non steroidal anti-inflammatory drug

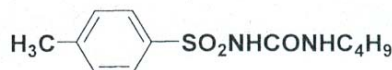
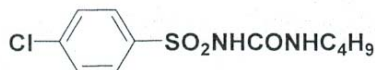
PART THREE (20 marks)

20

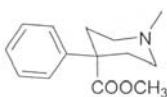
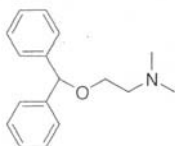
Question 1. Select appropriate answer (1 mark each)

- 1) Metabolic reactions of drugs generally increase the following **EXCEPT**:
- i) Polarity ii) Excretion (iii) lipid solubility, (iv) water solubility
- 2) Phase II reactions include the following reactions:
- i) Oxidation ii) conjugation (iii) hydrolysis iv) Reductions
- 3) The compound that serves as the starting point for drug development is a:
- i) Pharmacophore ii) lead compound (iii) Sentry drug iv) Prod rug
- 4) The main site for drug metabolism is:
- i) Kidney ii) Intestine (iii) Liver iv) Brain
- 5) The compound that serves as the starting point for drug development is a:
- i) Pharmacophore ii) lead compound (iii) Sentry drug (iv) Prod rug
- 6) Prod rugs are -----compounds needs bioactivation.
- i) Ionized ii) potent (iii) active iv) Inactive

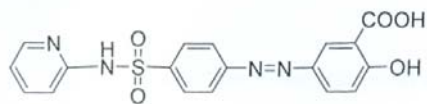
Question 2. Which of the following hypoglycemic drugs have shorter duration of action? why? (2 marks)



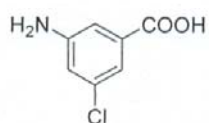
Question 3. Give TWO metabolic pathways for each of the following drugs? (4 marks)



Question 4. Draw the active form of the following prodrug? Give rationale for its design (2 mark)



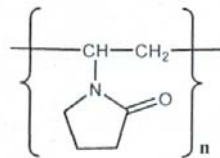
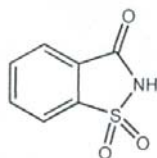
Question 5. Suggest TWO phase II reactions for following molecule? (2 marks)



Question 6. Suggest TWO modifications of the following compound to INCREASE its duration of action? (2 mark)

	Suggestion 1	Suggestion 2

Question 7. Give generic names and uses of the following compounds? (2 mark)



Generic name:-----

Generic name:-----

Use: -----

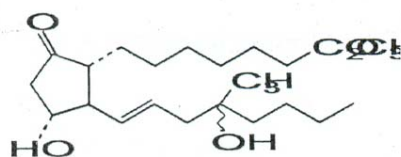
Use: -----

PART FOUR (20 marks)

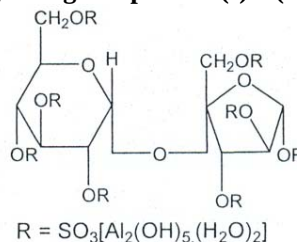
Question No. 1 a- Mark the true statements with (✓) and the false statements with (x) with regard to H₂-antagonists. (2 marks)

- The presence of imidazole ring structure is essential for activity ()
- Polar terminal-containing groups are essential for activity ()
- A Spacer equivalent to 4 carbons chain between the ring and the nitrogen group is essential for activity. ()
- All these drugs inhibit hepatic cytochrome p-450 as a side effect ()

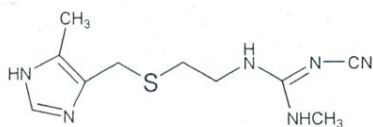
Question No. 2 Answer the following question regarding compounds (I) – (IV)? (3 marks)



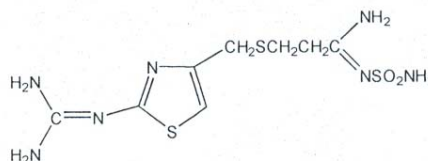
(I) Gen. name:



(II) Gen. name:



(III) Gen. name:



(IV) Gen. name:

- All compounds are used in treatment of
- Compound No. (III and IV) are:
 - Gastrin inhibitor
 - H₂-receptor antagonist
 - proton pump inhibitor

Question No. 3 Mention the main objectives for use of antacid combinations?(1.5 marks)

a)

b)

c)

Question No. 4 The generic name of Structure (v) is: (2 marks)

a- Omeprazole

b- Lansoprazole

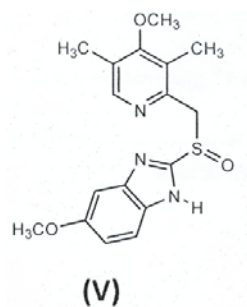
c- Mebendazole

It is a:

a) H₂-receptor antagonist

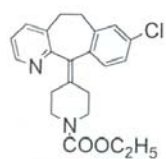
b) Gastrin inhibitor

c) Proton pump inhibitor

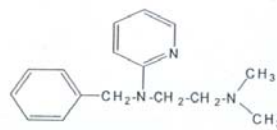


Question No. 5 Draw the general structure of classical antihistamines and discuss their structure- activity relationships: (2 marks)

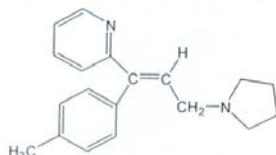
Question No. 6 A-Examine the following antihistaminic drugs and write their generic names? (3.4 Marks)



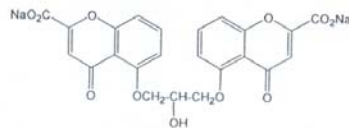
(VI) Gen. Name:



(VII) Gen. Name:



(VIII) Gen. Name:



(IX) Gen. Name:

A- Compound(s) (,) is/are 1st generation antihistamine.

B- Regarding compound (VI) it is a, while its metabolite with the generic name () is a Draw its structure



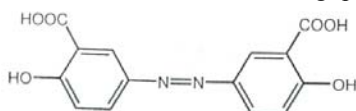
(VI)

Structure of metabolite of (VI)

c- Compound (IX) is a:

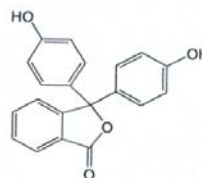
- i) 2nd generation antihistaminic
- ii) Histamine release inhibitor
- iii) H₂-receptor antagonist
- iv) Gastrin inhibitor

Question No. 7 Answer the following question regarding compounds (x-xii)? (6 marks)



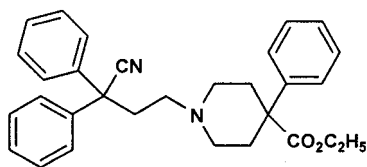
(X) Gen. Name.....

Med. use.....



(XI) Gen. Name.....

Med. use.....



(XII) Gen.Name

Med.use

i- Compound (X) is a that is activated in the intestine by:

a- Methyltransferase

b-N-Acetyltransferase

c-Azoreductase

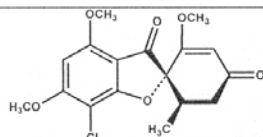
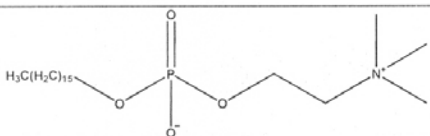
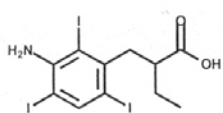
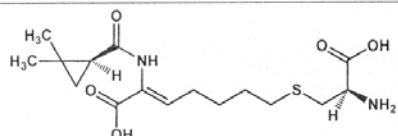
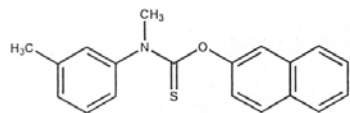
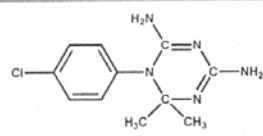
d-UDP-Glucuronyl transferase

ii) Compound (X) can be prepared as follows:

iii) Give the structure of the active metabolite of compound (XII)

PART FIVE (17.5 marks)

Question No. 1 Select the Best and Most Complete answer for each of the following chemically illustrated drugs (*in the provided space indicate your answer with letters only*) (12 marks, 1 mark each)

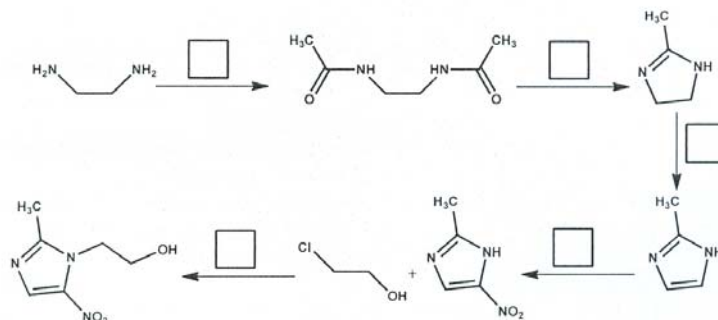
1		I. It is used in the treatment of aspergillosis II. Reversible, noncompetitive inhibitors of squalene epoxidase III. Spiro Antifungal drug		
a. I only b. II only	c. III only d. I & II	e. I & III f. II & III	g. I, II & III h. None of the above	<i>your answer</i>
2		I. Its generic name is Fosfarnet II. An alkylphosphocholine analogue III. Used for the treatment of visceral leishmaniasis		
a. I only b. II only	c. III only d. I & II	e. I & III f. II & III	g. I, II & III h. None of the above	<i>your answer</i>
3		I. It is ratio 3 contrast agent II. It is ratio 1.5 contrast agent III. It can be administered orally		
a. I only b. II only	c. III only d. I & II	e. I & III f. II & III	g. I, II & III h. None of the above	<i>your answer</i>
4		I. Broad spectrum beta-lactam antibiotic II. It has no antibacterial activity III. It has bactericidal effect		
a. I only b. II only	c. III only d. I & II	e. I & III f. II & III	g. I, II & III h. None of the above	<i>your answer</i>
5		I. Thiosemicarbazide derivative II. β -glucan synthase inhibitors III. Its spectrum is restricted primarily to dermatophytes		
a. I only b. II only	c. III only d. I & II	e. I & III f. II & III	g. I, II & III h. None of the above	<i>your answer</i>
6		I. It is the active form of Acyclovir II. It is the active form of Proguanil III. It is the active form of Metronidazole		
a. I only b. II only	c. III only d. I & II	e. I & III f. II & III	g. I, II & III h. None of the above	<i>your answer</i>

Dept of Medicinal Chemistry, Med. Chem. II Final Exam, June, 19th, 2012, Page 18 of 19

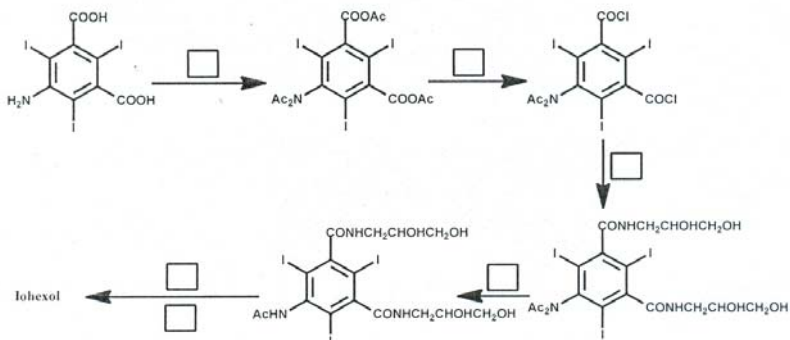
7		I. It is a dimeric contrast agent II. It is a non-ionic contrast agent III. It has high osmolality
a. I only b. II only	c. III only d. I & II	e. I & III f. II & III g. I, II & III h. None of the above
your answer		
8		I. It inhibits arabinosyl transferases involved in cell wall biosynthesis II. The levo isomer is more active than the dextro one as antitubercular drug III. It has 4 optical isomers
a. I only b. II only	c. III only d. I & II	e. I & III f. II & III g. I, II & III h. None of the above
your answer		
9		I. Its generic name is Butenafine II. Used for treatment of superficial dermatophyte infections III. Squalene epoxidase inhibitor
a. I only b. II only	c. III only d. I & II	e. I & III f. II & III g. I, II & III h. None of the above
your answer		
10		I. Hemisuccinate derivative of the active metabolite artemisin II. It is the most frequently used of all the artemisinin-type drugs III. It is particularly well suited for the treatment of severe <i>P. falciparum</i> malaria
a. I only b. II only	c. III only d. I & II	e. I & III f. II & III g. I, II & III h. None of the above
your answer		
11		I. It is a prodrug II. It is used for treatment of the Rhodesian trypanosomiasis III. The most commonly used drug for American trypanosomiasis
a. I only b. II only	c. III only d. I & II	e. I & III f. II & III g. I, II & III h. None of the above
your answer		
12		I. Hexaene macrolide antifungal agent II. It is acidic in nature III. The double bonds are in the trans position
a. I only b. II only	c. III only d. I & II	e. I & III f. II & III g. I, II & III h. None of the above
your answer		

Question No. 2 Complete the following equations by using the suitable reagents from the following table (*in the provided boxes*, indicate your answer with letters only) each reagent could be used once, twice or more or not used at all (5.5 marks, 1/2 mark each)

(A)



(B)



A. NaOH	B. SOCl ₂
C. H ₂ NCH ₂ CHCH ₂ (OH)OH(Et ₃ N in DMF)	D. Ethylene oxide
E. (CH ₃ CO) ₂ O	F. ClSO ₃ H
G. CH ₃ OH/HCl	H. POCl ₃
I. H ₂ /Ni	J. NaOCH ₃
K. CaO	L. NH ₃
M. NH ₂ NH ₂	N. CH ₃ COOH
O. Glyoxal	P. HNO ₃ /H ₂ SO ₄
Q. Epichlorohydrin	R. (NaHCO ₃ /CH ₃ OH:H ₂ O) (refluxing)
S. C ₄ H ₉ Li	T. NH ₂ OH

END OF QUESTIONS, WITH BEST WISHES

Try on all of the following:

I- Illustrate only by figures:

(4 marks each)

- 1- Pyrimidine bases in genetic material.
- 2- Lineweaver-Burk plotting diagram for noncompetitive enzyme inhibitors.
- 3- Reduced form of L-ascorbic acid.
- 4- Eukaryotic ribosomal r-RNA.
- 5- The structure of haem.

II- Explain the following phenomena:

(7.5 marks each)

- 6- Missense mutation in human genome.
- 7 - Enzyme competitive inhibition.
- 8- Hyper calcemia.
- 9- Activation of vitamin D (formation of calcitrol).

III- Briefly describe the following:

(5 marks each))

- 10- Body iron overload.
- 11- Damaging effects of free radicals on lipids.
- 12- Biotin coenzyme in carboxylation reactions.
- 13- Okazaki fragments.

*Pharmacology Examination for
Third Year Pharmacy Students*

Time allowed: 3 hours

Date: 16/1/2010

PART I

For each of the following MCQs, select the most appropriate answer (One mark each)
Place your answers in the table at the end of MCQs

1. Up regulation of receptors, that results from long term exposure of cells to antagonist, frequently leads to:

- a. Hypersusceptability to the receptors.
- b. Supersensitivity to the receptors.
- c. Idiosyncrasy.
- d. None of the above.

2. All of the following drugs are used in the treatment of status epilepticus

EXCEPT:

- a. Carbamazepine.
- b. Clonazepam.
- c. Phenobarbital.
- d. Diphenyl hydantoin.

3. Rey's syndrome is a common side effect of:

- a. Indomethacine.
- b. Declofenac sodium.
- c. Piroxicam.
- d. Acetyl salicylic acid.

4. One of the following is a therapeutic use of loop diuretics:

- a. Acute pulmonary edema.
- b. Diabetes insipidus.
- c. Osteoporosis.
- d. Hypokalemia.

5. One of the following is used in treatment of benzodiazepine over dosage:

- a. Acetylcholine.
- b. Flumazenil.
- c. ropofol.
- d. All of the above.

6. One of the following is a therapeutic use of potassium sparing diuretics:
- Hypotension.
 - Hyperkalemia.
 - Congestive heart failure.
 - Ataxia
7. All the following drugs are used in the treatment of angina pectoris **EXCEPT**:
- Nitroglycerin.
 - Verapamil.
 - Propranolol.
 - Ephedrine.
8. Nitroglycerin increase the level of one of the following substances:
- Ca^{2+} .
 - Inositol triphosphate.
 - Cyclic AMP.
 - Cyclic GMP.
9. One of the following is a therapeutic use of levo dopa:
- Status epilepticus.
 - Gastric atony.
 - Parkinsonism.
 - Urinary retention.
10. Which one of the following opioids IS used for management of morphine addiction
- Nalorphine
 - Fentanyl
 - Naloxone
 - Methadone

1	2	3	4	5	6	7	8	9	10

PART II

Insert (T) for the true answer and (F) for the false one in between brackets.,
Correct the false statements (one marks each):

- Codiene is the drug of choice in treatment of diarrhea ().
.....
- Bile acid binding resins interfere with the absorption of fat soluble vitamins ().
.....
- To prevent the accumulation of cyanide after nitroprusside administration, sodium thiophosphate must be used ().
.....

4. Succinylcholine apnea is due to choline esterase deficiency. ()
.....
5. In the treatment of angina, it is advisable to combine verapamil with β -blocker to avoid severe tachycardia ().
.....
6. Tropicamide is atropine substitutes used in the eye fundus examination ().
.....
7. Buspirone is used in treatment of acute anxiety ().
.....
8. Organic nitrate compounds with antianginal activity increase preload, afterload and the work done by the heart ().
.....
9. α -methyldopa is an adrenergic receptor agonist used in the treatment of hypertension().
.....
10. β -blockers are used in treatment of Prinzmetal's angina ().
.....

PART III

Write the drug of choice in treatment of the following cases (one mark each):

1. Ventricular tachyarrhythmias
2. Dicumarol overdosage
3. Acute morphine poisoning
4. Benign prostatic hypertrophy
5. Hypertension in diabetic patient.
6. Acute gout attack
7. Hypertensive emergency
8. Myasthenia gravis
9. Acute anginal attack
10. Cardiogenic and septic shock

PART IV

Give reason(s) for the following statements (two marks each):

1. Digoxin is used to treat acute heart failure with atrial fibrillation

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.....
.....

2. Epinephrine is used in conjunction with local anesthetics.

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.....

3. Dobutamine in congestive heart failure.

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4. Ritodrine in premature labor.

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.....

5. Thiazides in nephrogenic diabetes insipidus .

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.....
.....

PART V

Complete each of the followings (three marks each):

1. Treatment of organophosphorous poisoning

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.....
.....

2. Different signaling mechanisms

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.....
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3. Differences between atropine and scopolamine

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4. Adverse effects of prazosin

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5- Antiepileptics in treatment of grand mal epilepsy

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6. Genetic polymorphism.

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7. Antianxiety drugs belonging to 5HT_{1A} agonists.

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8.Slow onset and long lasting action of phenoxybenzamine.

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9.Antihypertensive effect of propranolol.

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10.Disturbing dry cough during ACE inhibitors therapy.

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PART VI

Write short notes on each of the following (ten marks each):

1. Main indication and precautions of morphine therapy

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2. K⁺ channel blockers in treatment of cardiac dysrrhythmia

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3. Phase I and phase II metabolic reactions in drug biotransformation

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4. Calcium channel blockers in hypertension

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5.Preanaesthetic medication

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لجان الشفوى:

يبدأ امتحان الشفوى لجميع الطلاب فى تمام الساعة 12 ظهرا ولايسمح لإى طالب أن يمتحن فى غير هذا الميعاد ولا فى أى لجنة غير اللجنة المقرر امتحانه امامها



Department of Pharmacology

Faculty of Medicine .

Assiut University

Pharmacology Exam for third year pharmacy students

Time allowed: 3 hours

22nd February, 2010

N.B. Each question should be answered in a separate page (10 marks for each question)

Write an account on each of the following questions:

- 1- Types of drug antagonism with examples.
- 2- Main symptoms and treatment of organophosphorous poisoning.
- 3- The pharmacological bases underlying **four** therapeutic uses of Beta adrenergic blockers.
- 4- Mechanism of action and side effects of nitroglycerin.
- 5- The pharmacological bases underlying **two** therapeutic uses and **two** contraindications of morphine therapy.
- 6- Mechanism of action, therapeutic uses and main side effects of phenytoin. 7- Regarding angiotensin converting enzyme inhibitors, mention **two** drug examples, mechanism of action and **two** therapeutic uses.
- 8- Therapeutic uses and adverse effects of thiazide diuretics.
- 9- Mention the mechanism of action and therapeutic uses of the following drugs:
 - a) Omeprazole
 - b) Salbutamol
- 10- Mechanism of action and therapeutic uses of paracetamol.

ملحوظة: الامتحان الشفوي والعملي عقب الامتحان النظري

Good Luck

Date: 4/2/2010
Time: two hours
Marks:80

Assiut University
Faculty of Medicine
Dept. of Community Medicine

Exam in Public Health for 3rd Year Pharmacy

Answer the Following Questions:

- (1) Define the following terms: **(10 Mark)**
a- Epidemiology.
b- Reference man.
- (2) Discuss briefly the primary level of prevention. **(10 Mark)**
- (3) Mention the modes of infection transmission. **(12 Mark)**
- (4) Mention the preventive measures of diarrheal diseases. **(12 Mark)**
- (5) Mention the tetanus toxoid vaccination schedule for pregnant women during childbearing period (**illustrate your answer in a table**). **(12Mark)**
- (6) Mention the elements of communication among people. **(12 Mark)**
- (7) Mention the main health hazards of air pollution. **(12 Mark)**

" Good Luck"

Date: 23/6/2010

Assiut University

Time: 1 hour

Faculty of Medicine

Dept. of Community Medicine

Examination of Public Health
For 3rd Year- Faculty of Pharmacy

Answer the following questions:

1- Define:

a) Endemic disease.

2 marks

b) Incubation period.

2 marks

2- Mention links of epidemiologic infectious cycle.

6 marks

3- Write short account on:

a) Chemoprophylaxis.

5 marks

b) Anti-infective properties of breast milk.

5 marks

4- Mention mode of transmission and specific preventive measures of hepatitis B.

10 marks

(Good Luck)

Prof. Dr. Kawthar Fadel

Dr. Eman Mohamed Monazea

ملحوظة: سيعقد امتحان الشفوى يوم الخميس الموافق ٢٤/٦/٢٠١٠م فى تمام الساعة التاسعة صباحاً بقسم الصحة العامة بكلية الطب.

Third Year

1- Write On :-

a- β -oxidation of fatty acids and its bioenergetics .

(5 marks each)

b- Glucouronic acid pathway.

c- Transdeamination reaction.

d- Ketolysis .

e- Pyruvate dehydrogenase reaction.

f- Mechanism of action of group II hormones.

II- Differentiate between:

(3 marks each)

(3 differences only)

a- Liver glycogen and muscle glycogen.

b- Oxidative and non oxidative deamination .

c- Alcoholic fermentation and glycolysis.

d- Mitochondrial and microsomal system of fatty acid elongation .

e- Group I and Group II hormones.

III- Define only the following:

(3 marks each)

a- Gluconeogenesis .

b- Diabetic Ketoacidosis .

c- Reductive deamination .

d- Pasteur effect.

IV- Write down 2 pathways of

(4 marks each)

a- Glycine amino acid.

b- Phenyl alanine amino acid.

c- UDP glucose

d- Palmitic acid

(3 marks)

e- Oxaloacetic acid

(3 marks)

Good Luck

ملحوظة:- الرجاء اجابة كل سؤال على حده

سي عقد الامتحان الشفوي عقب الامتحان التحريري من رقم 30001 الى 30250

سي عقد الامتحان الشفوي يوم الأحد 2010/6/20 من رقم 30251 الى 30586



Pathology Department
Faculty of Medicine
Assiut University

Time allowed: One hour
23/6/2010

Pathology Examination for Third Year Pharmacy Students

1. Give an account on types of emboli and their effects. (10 marks)
2. Compare between carcinoma and sarcoma in a table form. (10 marks)
3. Enumerate the following: (5 marks each)
 - a. Complications of pulmonary tuberculosis
 - b. Complications of urinary bladder bilharziasis (5 only)
 - c. Cardinal signs and symptoms of acute inflammation
 - d. Fate of necrosis

Good Luck

N.B:

ميعاد الامتحان الشفوى:
يوم الخميس 24\6\2010
الساعة الثامنة صباحا للدفعة كلها

Assiut University
Faculty of Pharmacy
Dept. of Pharmaceutics

Biopharmaceutics and Pharmacokinetics Final Exam.

For thirdYear Students, Second semester

Dte: June 23, 2010

Time Allawed: Two hours

Part I (Dr.S. Ismail)

Q1	Q2	Q3	Total
10	8	7	25

10

Answer Sheet for Q1

#	A	B	C
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

#	A	B	C
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

Part I (Dr. saved Ismail)

Q1- Select the most suitable answer (0.5 mark each)

1 - The dissolution of a weak base is favored :

A- in the intestine B- in the stomach C- in the esophagus

2 - The volume of distribution:

A- is a true physiological volume

B- is equal to the physical volume in which the drug distributes

C- is equal to the amount of the drug in the body divided by the concentration measured.

3- The bioavailability of the drug deals with :

A- rate of absorption B- extent of absorption C- both rate and extent of absorption

4- The principal measure of extent of drug absorption is:

A- $T_{\max}$ B- $C_{\max}$ C- AUC

5- The order of dissolution rates for crystal forms could be ranked as :

A- amorphous > metastable > crystalline B- metastable > crystalline > amorphous

C- crystalline > amorphous > metastable

6- When log urinary excretion rate is plotted against time, a straight line will be obtained :

A- the slope of this line = - 0.44 k B- the intercept = log $k_e D_0$

C- both A and B are correct

7- Which of the following characteristics might be linked to poor or variable bioavailability ?

A- a slow dissolution rate B- a poor partition coefficient C- high water solubility

8- the infusion rate of a drug is adjusted at a rate of 0.02 mg and the drug clearance was 0.004 ml , the C_{ss} equals:

A- 2.5 mcg / ml B- 5 mcg / ml C- 7.5 mcg / ml

9- In vitro dissolution rate of a weak acid will be higher if .:

A- the paddle revolution rate is slower B- the particle size of the drug increased

C- the pH of the dissolution medium is raised

10- Which of the following is the least likely to be rate - limiting step for a solubilized liquid form of a drug when given orally? \

A- dissolution B- diffusion C- partition coefficient

11- A drug is given as 40 mg I V bolus injection and the initial concentration of the drug was found to be 2 mcg / ml. The apparent volume of distribution, in liters, for this drug is :

A- 20 ml B- 20000 ml C- 200 ml

12- In the aforementioned question, if the elimination rate constant is 0.001 hr^{-1} , the total body clearance is :

A- 200 ml /hr B- 20 ml / hr C- 2000 ml / hr

13- If the infusion rate is doubled the steady state concentration is:

A- doubled B- lowered C- not affected

14- If the infusion rate is doubled the $t_{\max}$ is:

A- shortened B- increased C- not affected

15- the route of administration the gives the most rapid onset of action is :

A- oral B- I M C- I V

16- A mixture of amorphous and crystalline forms of insulin will provide:

A- a sustained effect followed by fast one B- a fast *effect* followed by sustained one

C- steady state concentration

17- The reduction of the particle size of a hydrophobic drug will :

A- increase the bioavailability B- reduce the bioavailability

C- increase the exposed surface area.

18- The rate of drug bioavailability is most rapid when the drug is formulated as :

A- hard gelatin capsules B- solutions C- suspensions

19- A compartment is not physiologic or anatomic region but is considered as group of tissues that have:

A- similar blood flow B- the same drug affinity C- both A and B *

20- The amount of the unchanged drug excreted in the urine can be expressed by the following equation:

$$\text{A- } Du = \frac{D_o}{K\{AUC\}} D_o$$

$$\text{B- } Du = \frac{KeD_o}{K} (1 - e^{-kt})$$

$$\text{C- } Du = \frac{C_p}{K(AUC)}$$

QII - Complete the Following Statements: (8 marks)

1- The complex formation between a drug and an additive may result in a decrease in the drug bioavailability. Give two examples: (2 marks)

A-

B-

- 2- As the particle size of a hydrophilic drug decreases. The dissolution rate will
 while a decrease in the particle size of a lipophilic drug will result in a
 in the dissolution rate. (2 marks)
- 3- Onset of action is defined as

 (one mark)
- 4- Draw a sketch representing the steps that are considered for a drug that to be absorbed from
 tablets: (3 marks)

QIII- Solve the following problems (7 marks)

- 1- Assuming a one compartment linear pharmacokinetic model, the following equation is used to
 describe the change in blood concentration with time: (2 marks)

$$C = 0.9e^{-0.09t}$$

A- Calculate the half life

B- The drug concentration after 3 hours

.....

Part II (Dr. S. El shanawany)

Q1	Q2	Q3	Q4	Q5	Total
3	2	3	4	3	15

Complete the following:

Q1- Factors that may change the gastric pH are: (3 marks)

- 1-
- 2-
- 3-

Q2- The high viscosity of gastric mucin may result in a retardation of drug absorption due to:

- 1-(2 marks)
- 2-

Q3- Mechanisms of drug transport are: (3 marks)

- 1-
- 2-
- 3-

Q4- Factors affecting the gastric emptying rate are: (4 marks)

- 1-
- 2-
- 3-
- 4-

Q5- The active transport process requires: (3 marks)

- 1-
- 2-
- 3-

Part III (Dr. M. Al Mahdy)

Q1	Q2	Q3	Total
3	4	8	15

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

- a) T_{max} in first-order absorption model is dependent on the dose of the drug and independent on the K_a and K . ()
- b) In plasma profile curve, during the absorption process. The rate of elimination is greater than the rate of absorption. ()
- c) Acidic drugs possess higher volume of distribution than basic drugs. ()
- d) The absorption process from suspension dosage form follows first order kinetics ()
- e) At C_{max} the absorption rate is smaller than the elimination rate ()
- f) renal clearance = metabolic clearance – total clearance ()

Q2: Complete the following sentences: (4 points)

- a) The general oral absorption equation for the drug concentration C_p at any time t is given by:

.....

- 1 The systemic absorption of a drug from GIT or any extravascular site is dependent on:

.....

.....

.....

.....

.....

.....

c) The methods used for determination of absorption rate constants from oral absorption data are:

.....

.....

.....

.....

.....

Q3: Discuss two of the following: (8 points)

1- Zero- order absorption model.

2- Determination of the elimination rate constant from the urine data.

3- Determination of absorption rate constant after oral administration

Question No. 4**(15 marks)****أ.د. / احسان حافظ**

I- Donate (T) for true statement and (F) for false one: (5)

- () 1- V_d of water soluble drugs decrease with age.
() 2- Intraindividual variability is the difference in response among group of patients.
() 3- Water insoluble drugs are easily removed by haemodialysis.
() 4- The marker used for measurement of glomerular filtration rate must be reabsorbed by renal tubules.
() 5- V_d increase during pregnancy.

II- Write the equation representing the following scientific terms: (5)

Scientific term	Equation
1- Dialysance	
2- IBW for men	
3- $T_{1/2}$ for drug elimination by dialysis	

III- Complete the following statements: (5)

1- Markers used for glomerular filtration measurement are

a- b-

2- Factors affecting drug removal by haemo-dialysis:

a- b-

b- d-

3- Methods used for extracorporeal removal of drugs are:

a- b-

b- d-



June, 27th, 2010

Final Exam.

قبل البدء فى الاجابة الرجاء قراءة هذه التعليمات جيدا

1. تأكد أن ورقة الامتحان تتكون من 5 ورقات مختلفة (10 صفحات) وفى حالة التكرار أو النقص يطلب استبدالها فوراً.
2. الامتحان يتكون من 4 اسئلة.
3. الرجاء الكتابة فى الأماكن المخصصة لذلك.
4. محاولة الاستعانة بالآخرين أو اعانتهم فى اجابة الامتحان يعرضك للمساءلة القانونية من الجامعة وما يترتب عليها.
5. سوف يعقد الامتحان الشفهى يومى الأحد 27-6-2010 بعد الامتحان النظرى مباشرة للمجموعة من رقم 1 الى رقم 200.
6. يوم الاثنين 28-6-2010 فى تمام التاسعة صباحا للمجموعة من رقم 201 الى الآخر.
7. الرجاء الإلتزام بتوزيع مجموعات الشفهى.
8. الرجاء عدم الكتابة بالقلم الرصاص.

مع اطيب الأمنيات بالنجاح والتوفيق

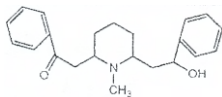
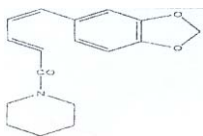
لجنة الامتحان:

- 1- الأستاذ الدكتور: داود ونيس بشاى 2- الأستاذ الدكتور: زيدان زيد ابراهيم
- 3- الأستاذ الدكتور: فاتن مصطفى درويش 4- الدكتورة: أمانى سيد أحمد

Question-1

(20 Marks)

Q1-A: complete the following tables as requested: (11 Marks)

Class	Structure and Name	Uses	Miscellaneous
1- Phenylethylamine alkaloids	 Name: Cathine		Botanical origin <i>Catha edulis, F. Celastraceae</i>
2-	 Name: Hyoscine		Source: Solanaceous plants
3-	 Name:		Botanical origin:
4-Piperidine alkaloids	 Name: Coniine		Chemical test:
5-	 Name: Piperine		Source: Piper fruits
6-			Obtained from

Class	Structure and Name	Uses	Miscellaneous
	Name		Foenugreek
7-	Name: Cocaine		Specific chemical test

And then answer the following: (4x 1.5 = 6 Marks)

a) Chemical test differentiation of (2) from other solanaceous alkaloids.

b) Detection of cinnamoyl cocaine in (7).

c) Semisynthesias of (7)(only one method)

d) Isolation of (5) from natural source

Q-1-B- How can you separate the following mixtures: (3 Marks)

1- Cocaine from benzoyl ecgonine.

2- Hyoscyamine and atropine.

3- Pelletierine from isopelletierine.

Question-II

(23 Marks)

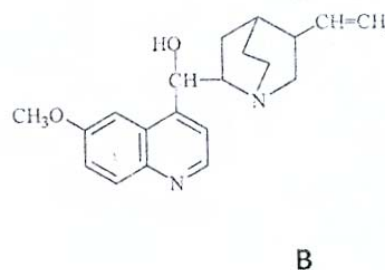
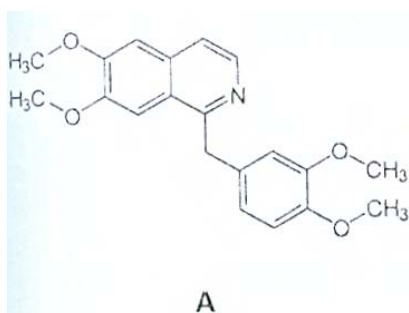
Q-II-A: Complete the following:

(6 Marks)

1- is an antiussive alkaloid, while is a smooth muscle relaxant one.

2- Cephaeline and pscychtrine can be separated from their mixture by
.....
.....

3-



Structure A represents alkaloid, which belongs to group.

Structure B represents alkaloid, which belongs to group.

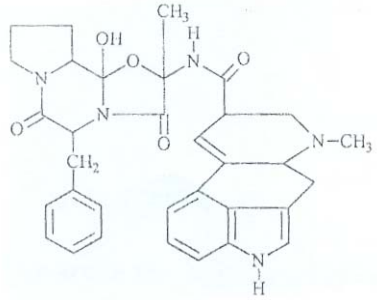
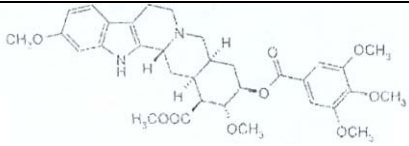
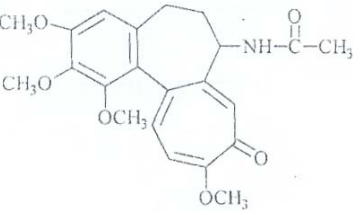
Uses of compound A:
.....

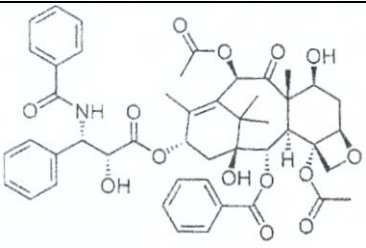
Uses of compound B:
.....

A chemical test for B:
.....

Q-II-B-Complete the following table:

(12 Marks)

Class	Name/Structure	Miscellaneous
1.	Eserine Structure	Pharmacological action:
2-	Name: 	Isolation:
3-	 Name:	Uses:
4-	Caffeine Structure	Chemical test:
5-	 Name	Botanical origin:
6-		Mechanism of action:

Class	Name/Structure	Miscellaneous
	 Name	

Q-II-C- Complete each of the following:

(5 Marks)

- 1-Harmine is an alkaloid occurs in, in small doses it has effect, while in large doses it may cause
- 2- Strychnine gives color with nitric acid and can be separated from brucine by
- 3- hydrolysis of solanine gives aglycone which is used in
- 4- Pilocarpine is isomerized to isopilocarpine by, and

Question III

(17 Marks)

Q-III-A-Give an account on each of the following:
(4x3 Marks = 12 Marks)

1- Application of ion exchange resin chromatography

2- HPLC detectors

3- Factors affecting R_f values in TLC

4- GC columns

Q-III-B- Choose the best answer: (5 Marks)

1- Detection of alkaloids on TLC is achieved by spraying with:

a- Dragendorff's reagent b- Mayer's reagent c- aniline hydrogen phthalate

2- The mobile phase leaving the column is:

a- an eluate b- an affluent c- an elute

3- Preparative PC is used mainly in:

a- analysis

b- separation

c- identification

4- The following are used as carrier gases in GC except:

a- helium

b- nitrogen

c- hydrogen

5-Rst is used in case of:

a- 2D PC

b- multiple development PC

c- descending PC

6- Separation of components in adsorption chromatography is achieved by:

a-adsorption affinity to the adsorbent

b- volatility of the solvent

c- partition coefficient

7- Separation on gel permeation chromatography depends on:

a- molecular size of the sample

b- Volatility of the solvent

c- charge of the sample

8- The suitable conc. of the solute to the adsorbant ratio in CC is:

a-1:10 – 1:20

b-1:20 – 1:50

c- 1:30 – 1:50

9- In affinity chromatography, the most common affinity matrix used is:

a-sephadex

b- agarose

c- cellulose

10- The mobile phase in reversed phase PC could be:

a-water

b- pet. Ether

c- benzene

QuestionIV

(10 Marks)

Q-IV-A: Complete the following tables as requested: (4.5 Marks)

1- Psoralens include and, draw the structure of one.

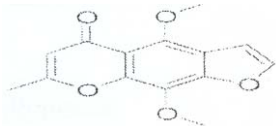
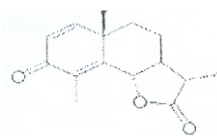
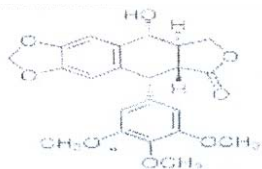
2- is an example of insecticidal bitter principle, while is an example of anthelmintic oleoresin.

3- is the active principle which is responsible of euphoria in cannabis.

4- is a resin used for the detection of blood stains.

5- is a resin used in the treatment of barbiturate poisoning.

Q-IV-B: Complete the following table as requested: (5.5 Marks)

Class	Name/Structure	Uses/Miscellaneous
1- Furanochromone	 Name:.....	Uses
2- Lactone bitter principle	 Name:	Uses
3-	Structure: Name: Abetic acid	Chemical test
4-	 Name:.....	Semisynthetic derivatives and their uses

BEST OF LUCK

كلية الصيدلة – جامعة أسيوط

أجب عن الأسئلة التالية

السؤال الأول: ناقش مدى صحة العبارات التالية (مع التعليق): (25 درجة)

- 1- التسويق الدوائى موجه فقط للمرضى.
- 2- تعمل الصناعات الدوائية فى إطار قانونى وتشريعى يحكم تصرفاتها.
- 3- للأدوية تسمية واحدة.
- 4- تنقسم السوق الدوائية بوضوح الأدوار التى يلعبها الأطباء والصيادلة.
- 5- إن اختيار المزيج الترويجى الملائم يتحدد من قبل مستهلك أو مشتري الدواء.

السؤال الثانى: اذكر المصطلح العلمى للمفاهيم التالية: (25 درجة)

- 1- هو العملية التى يتم من خلالها بلوغ سوق الرعاية الصيدلانية.
- 2- تشمل هذه الفئة الأطباء والصيادلة والأطباء البيطريين والمرضات، وهؤلاء يمثلون أهمية خاصة لشركات صناعة الدواء لأنهم يمثلون المستهلك أو العميل الداخلى.
- 3- المزيج من المكونات المادية وغير المادية والتى يشتريها المستهلك جمبعا وفى آن واحد وذلك بهدف إشباع حاجة من حاجاته المتعددة وتلبية متطلباتها.
- 4- مجموع العناصر التى تكون جزء من المنتج والتى تباع معه من أجل حفظ محتوياته.
- 5- هو أى مادة أو خليط من المواد ، يتم تصنيعها كدواء فى شكل صيدلى ، سواء للاستعمال الأدمى أو البيطرى ، وتخضع لرقابة التشريعات والقوانين الصحية للبلاد.
- 6- عملية وضع أهم البيانات والمعلومات على أو داخل المنتج وهى مهمة لإظهار كيفية استعمال المنتج وفاعليته بالإضافة الى المضاعفات الناتجة عن استعماله.
- 7- اسم أو تعبير أو إشارة أو رمز أو تصميم أو تركيبة من المفاهيم التى تهدف الى تشجيع العملاء المحتملين لتمييز سلعة أو سلع يمتلكها شخص عن سلعة أو سلع منافسة.
- 8- مجموعة الجهود الترويجية التى تسعى لتعريف جمهور الأطباء واقناعهم بأنواع المنتجات الدوائية ودفعهم لوصفها لمرضاهم.
- 9- هو القيمة النقدية للمنتج مقابل المنفعة.
- 10- هو الذى يتركز عمله على توفير طلبيات الأدوية التى تحتاجها الصيدليات.

السؤال الثالث: ما اسم الاستراتيجية المتبعة فى كل حالة مما يلى: (30 درجة)

- 1- يتحدد السوق المستهدف بقطاعين أو أكثر من قطاعات السوق.
- 2- يتعامل المسوق فى تلك الاستراتيجية مع السوق الكلى ككتلة واحدة أو كقطاع واحد.
- 3- توسيع التشكيلة بإضافة نماذج جديدة.
- 4- التخلي عن بعض المنتجات التى أصبحت فى طريق الزوال وليس لها أى مرودية.
- 5- تطوير أو تغيير بعض الصفات للمنتجات القائمة مع ابقاء عدد المنتجات ثابت.
- 6- إضافة خطوط جديدة الى خطوط منتجاتها الحالية التى تختلف استخداماتها عن المنتجات الأخرى ولكن تحت نفس العلامة.
- 7- يحاول المنتج تحقيق أكبر قدر من تغطية السوق ولذا فإنه يتعامل مع الأكبر عدد ممكن من تجار التجزئة والجملة فى كل منطقة.
- 8- توفير السلع فى متاجر أو منافذ قليلة ومنتقاة من عدة بدائل ويتم اختيارها على أساس سمعة الموزع والتزامه بالسعر.
- 9- تنشيط وحث المستهلكين الجدد على تجربة المنتجات الجديدة ، وتقدم الحوافز للمستهلكين المداومين على استهلاك منتجات الشركة لزيادة معدلات الاستخدام.
- 10- تتبع هذه الإستراتيجية فى السوق المتباينة حسب فئات الدخل ، ويتم تحديد سعر مرتفع للسلعة الجديدة بحيث يوجه هذا السعر الى الفئة الأولى فى السوق والتى يهتمها الحصول على السلعة مهما كان السعر مرتفعاً.

السؤال الرابع: اكتب فى الموضوعات التالية: (20 درجة)

- 1- أهمية دراسة السوق.
- 2- مراحل تطوير المنتج الصيدلانى الجديد.
- 3- أهمية الترويج بالنسبة للمنتج الدوائى.
- 4- مهام رجل البيع.

انتهى الامتحان مع أطيب التمنيات بالتوفيق

Q1	Q2	Q3	Q4	Total*

Assiut University, Faculty of Pharmacy, Dept. of Pharmaceutics

Pharmaceutics II Periodical Exam.

الرقم:

20th Nov. 2010

الاسم:

First Question, Dr. S. Ismail (4 points)

Select the most appropriate Answer :

- 1-** The limitation of benzalkonium chloride as a preservative is :
A- its low aqueous solubility B- its incompatibility with other agents
C- its high effective concentration
- 2-** One of the good reasons for adjustment of pH value in ophthalmic solutions is to :
A- optimize the drug activity B- optimize the drug stability C- both A and B
- 3-** The corneal absorption of a drug is improved when it is formulated as : .
A- hypotonic solution B- hypertonic solution C- viscous solution
- 4-** Methyl paraben is used as :
A- antioxidant B- preservative C- viscolizer
- 5-** When chlorbutanol is used a preservative, it is better to select :
A- glass container B- plastic container C- either A or B
- 6-** Due to its complex structure , the cornea offers a barrier for the passage of some drugs like:
A- low molecular weight drugs B- high molecular weight drugs
C- lipophilic drugs
- 7-** The epithelial layer of the cornea allows the passage of :
A- lipophilic drugs B- hydrophilic drugs C- both of them
- 8-** Sterilization by filtration is recommended :
A- for lipophilic drugs B- thermostable drugs C- thermolabile drugs

Answer Sheet

	1	2	3	4	5	6	7	8
A								
B								
C								

1- Write between brackets the most suitable route of administration of the

Following: [0.5 point each]

A- Infusion fluid (-----)

B- Depot penicillin (-----)

C- Streptomycin sulfate (-----)

D-Insulin (-----)

2- Alcohol 50 % is used for hydrocortisone injections, explain the reason(s).

Third Question Dr. M. Elmahdy (3.5 points)

Discuss each of the following (with draw):

1. Functions of microcapsules. (1.5 marks)

2. Microencapsulation in aqueous solution media. (2 marks)

Fourth Question Dr. I. A. Khalil (3.5 points)

Choose the most appropriate answer in each of the following:

1. Which of the following is NOT TRUE regarding space sprays?

- A. The particle size of the released product is usually below 50 μm .
- B. The pressure is controlled by the type and amount of propellant.
- C. They commonly contain 30-40% propellant.
- D. They are released with greater pressure compared to surface sprays.

2. Which is TRUE regarding the role of carbon dioxide compressed gas in an aerosol system?

- I. It provides the necessary force to expel the contents.
 - II. A portion is expelled with the product to achieve spraying.
 - III. It serves as solvent/vehicle for certain active ingredients.
- A. I only B. I + II only
C. I + III only D. I + II + III

3. Which is NOT TRUE regarding an aerosol system using nitrogen as a propellant?

- A. A mechanical breakup actuator is used to obtain a spray dispensing.
- B. The pressure remains constant throughout the use.
- C. Only the product is discharged.
- D. Aerosol is designed to operate at pressures of around 90-100 psig.

4. Which of the following propellants is MORE environmentally acceptable?

- A. Propellant 11 B. Propellant 12
- C. Propellant 152a D. Propellant 114

5. Which of the following is NOT TRUE regarding Propellant 11?

- A. Its use is currently restricted to limited products such as aerosols for inhalation.
- B. It has a poor solvent power compared to Propellant 114.
- C. It interacts with ethanol to produce a corrosive action.
- D. It should not be used for aqueous preparations.

6. Which is NOT TRUE regarding a two-layer system based on a hydrocarbon propellant?

- A. The dip-tube must be short to avoid spraying propellant and not product.
- B. This system is characterized by the presence of a high quantity of water.
- C. Only the aqueous phase is dispensed.
- E. A specially designed valve must be used to produce the proper spray.

7. Which is TRUE regarding foam aerosol systems?

- A. They are formulated mainly as w/o emulsions.
- B. They should not be shaken before use.
- C. They generally contain about 6-10% propellant.
- D. None of the above.

Your Answer	
1	
2	
3	
4	
5	
6	
7	

GOOD LUCK

رقم الجلوس:

اسم الطالب:

تنبيه هام
(الإجابة في نفس ورقة الأسئلة)

Date: 25/11/2010

Time: one hour

Assiut University

Faculty of Medicine

Dept. of Community Medicine

=====

Mid-year exam in Public Health for 3rd Year Pharmacy

Answer the Following Questions:

(1) Mention the **three factors to be studied in descriptive epidemiology.**

(3 Marks)

- 1-
- 2-
- 3-

(2) List the **main components of the epidemiologic triangle.**

(3Marks)

- 1-
- 2-
- 3-

(3) Mention the **exit of infection.**

(5 Marks)

- 1-
- 2-
- 3-
- 4-
- 5-

(4) Enumerate the **disadvantages of chemoprophylaxis.**

(4 Marks)

- 1-
- 2-
- 3-
- 4-

(5) Mention the **complications of measles.**

(5 Marks)

- 1-
- 2-
- 3-
- 4-
- 5-

"Good Luck"

Third Year Faculty of Pharmacy

Clinical Biochemistry Exam.

- Answer the following Questions :-

- 1- Explain telomere and telomerase .
- 2- Differentiate between euokaryotic and prokaryotic polymerases .
- 3- Enumerate antioxidants, explaining one of them .
- 4- Factors affecting iron absorption.
- 5- Functions of vitamin C

- Connect :-

A- Okazaki pieces	A- Involved in transamination
B- Calcium blood levels regulatin	B- An area enough for DNA-polymerase III to work on lagging strand
C- Cell cycle control	C- controlled by parathyroid hormone, vitamin D and calcitonin
D- Vitamin B6	D-Contains ribitol
E- Vitamin B2	E- Is conducted by cyclins

Good Luck

ملحوظة:- توجد بقية الأسئلة MCQ فى الورقة الثانية.

1- Which of the following enzyme can serve as a sensitive indicator of thiamine deficiency?

- a) Glucose-6-phosphate dehydrogenase
- b) Transaldolase
- c) Mutase.
- d) Transketolase

2- Vitamin-B6 is frequently a precursor of a cofactor in all the following reactions **except:**

- a) Decarboxylation
- b) Deamination
- c) Transamination
- d) Isomerization

3 - NAD, NADP, CoA, FAD and ATP contain all the following **except:**

- a) At least one phosphate
- b) Adenine
- c) Ribose
- d) Fatty acid

4- During DNA replication the sequence $5\text{-Tp Ap Gp Ap}^{-3}$ would produce which of the following complementary structures?

- a) $5\text{-Tp Cp Tp Ap}^{-3}$
- b) $5\text{-Ap Tp Cp Tp}^{-3}$
- c) $5\text{-Up Cp Up Ap}^{-3}$
- d) $5\text{-Gp Cp Gp Ap}^{-3}$

5- Which of the following has no vitamin-B built into its structure:

- a) Thiamine pyrophosphate
- b) UDP-glucuronic acid
- c) NAD^{+}
- d) The flavoprotein, succinate dehydrogenase

6- The primary RNA-transcript in eukaryotes:

- a) Is usually shorter than the functional RNA.
- b) Is synthesized and processed on ribosomes in the cytoplasm.
- c) May contain nucleotide sequences that are not present in the functional RNA.
- d) Contain information for more than one polypeptide chain.

7- Which of the following statements about iron is not true:

- a) Can cross cell membranes only in the ferrous state.
- b) Combines with a protein to form ferritin in the intestinal cells.

8- Foods which are particularly rich in thiamine include all the following **except:**

- a) Citrus fruits
- b) Wheat germ
- c) Nuts
- d) Yeast

9- Scurvy:

- a) Is a common complication, of intestinal malabsorption,
- b) Is more likely to occur, in breast-fed than in bottle-fed infants
- c) Occurs if ascorbate is oxidized to dehydroascorbate by heat.
- d) Is best diagnosed in the laboratory by plasma or WBCs ascorbate assay.,

10- Concerning the functions of Mg, all of the following statements are true **except:**

- a) It enters in the structure of bone and teeth. ..
- b) It is important for nerve impulse transmission and muscle contraction.
- c) It activates many enzymes.
- d) It protects cell membranes against oxidative damage.

11- Plasma calcium:

- a) 80% is ionized free form.
- b) Decreased by 1,25 dihydroxycholecalciferol.
- c) Increased by PTH.
- d) Controlled by excretion only.

12- Concerning the intestinal absorption of calcium, all of the following statements are true **except:**

- a) Decreased renal failure.
- b) Increased by oral intake of phosphate.
- c) Increased by 1,25-dihydroxycholecalciferol.
- d) Decreased in the presence of steatorrhea.

13- Iron is:

- a) Absorbed in the oxidised ferric form.
- b) Absorbed very efficiently from intestine.
- c) Transported in the blood bound to albumin.
- d) Stored in the body in the form of ferritin.

- 14- Which of the following diseases may result from a mineral deficiency:
- a) Pernicious anaemia.
 - b) Xerophthalmia.
 - c) Marasmus.
 - d) Simple goiter.
- 15- In nucleic acids; these are true **except**:
- a) The normal nitrogenous bases in RNA are adenine, guanine, cytosine and uracil.
 - b) The bases in DNA are adenine, guanine, cytosine and thiamine
 - c) The total purine content of DNA is always equal, to the total pyrimidine content.
 - d) Information for protein synthesis is stored as a triplet code in DNA.
- 16 - As regards the DNA strands, the following are true **except**:
- a) Are held together by hydrogen bonding ,
 - b) will have the same amount of any one of the four bases in each strand
- 17- Concerning the cap structure of an eukaryotic mRNA, all of the following are true **except**:
- a) Plays a role in the initiation of translation.
 - b) is located at the 5' end of the polymer
 - c) It includes 7-methylguanosine .
 - d) is added to the mRNA in the cytoplasm.
- 18- Concerning the replication of DNA, which of the following is not true.
- a) Occurs by a semi-conservative mechanism
 - b) Occurs only in the 5' → 3' direction.
 - c) Requires the presence of all four deoxyribonucleoside-5', diphosphate.
 - d) Required a primer of RNA.
- 19- Which of the following vitamins is required for the action of , transaminase?
- a) Niacin
 - b) Pantothenate
 - c) Thiamine
 - d) Pyridoxal phosphate.
- 20- The recommended ratio of Ca/P in adults that allows for the best absorption for dietary phosphates is:
- a) 1: 1
 - b) 2: 1
 - c) 2: 2
 - d) 1: 2



Midterm Examination for third year Pharmacy Student (Fresh)

For each of the following MCQs, select the one most appropriate answer (shade the answer of each question in the answer sheet) (1/2 mark for each)

1. Regarding competitive antagonist, all the following statements are **false except:**
 - A. It forms strong covalent bonds with the receptors.
 - B. It produces shift of the dose response curve of the agonist to the right.
 - C. Phenoxybenzamine and atropine act as competitive antagonists.
 - D. It has high affinity and intrinsic activity.
2. Regarding receptor up regulation, **one** of the following statements is **true:**
 - A. It occurs after chronic administration of an antagonist.
 - B. It usually occurs after chronic administration of an agonist.
 - C. It may involve decrease in the effectiveness of receptors.
 - D. It usually involves a decrease in the number of receptors.
3. Pharmacodynamic of drugs means study **one** of the following:
 - A. Mechanism of action and pharmacological actions.
 - B. Binding of a drug to plasma proteins.
 - C. Redistribution of a drug.
 - D. Eliminations of a drug.
4. Concerning therapeutic index, all the following statement are **correct except:**
 - A. It indicates the safety of a drug.
 - B. It equals LD50/ED50.
 - C. It equals ED50/LD50.
 - D. A drug with a therapeutic index equal 1 cannot be used therapeutically.
5. Concerning adrenergic neurotransmission **one** of the following statement is **correct:**
 - A. Tyrosine hydroxylase enzyme catalyzes the rate limiting step of norepinephrine synthesis.
 - B. Dopamine is converted to norepinephrine in the cytoplasm of adrenergic neurons.
 - C. Degradation by MAO enzyme is the major pathway for terminating the action of norepinephrine.
 - D. Uptake-I is highly specific for norepinephrine and is blocked by cocaine.

6. Activation of central α_2 -adrenoceptors produces **one** of the following effects:
 - A. Increased rennin release from juxtaglomerular cells.
 - B. Relaxation of smooth muscles in the bladder neck.
 - C. Decreased peripheral vascular resistance.
 - D. Increased insulin release and hypoglycemia.
7. Concerning epinephrine **one** of the following statements is **correct**:
 - A. It increases triglyceride contents of adipose tissue.
 - B. It is effectively used in anaphylactic shock and in prophylaxis of bronchial asthma.
 - C. Like dipivefrin, it reduces intraocular pressure with marked cycloplegic effect.
 - D. It is not recommended in cases of angina pectoris and hypertension.
8. Concerning therapeutic uses of sympathomimetic drugs **one** of the following statements is **incorrect**:
 - A. Midodrine is used in the treatment of chronic orthostatic hypotension.
 - B. Dopamine is recommended in shocked patients with compromised renal function.
 - C. Salmeterol is given by inhalation in the treatment of acute bronchial asthma.
 - D. Ritodrine is used to delay premature labor through activation of uterine B₂-adrenergic receptors.
9. Concerning amphetamine and ephedrine **one** of the following statements is **incorrect**:
 - A. Each of them enters the sympathetic nerve terminal and cause norepinephrine release.
 - B. Ephedrine is used in cases of hypotension associated with spinal anesthesia.
 - C. Each of them is effectively used in the treatment of narcolepsy and attention deficit hyperactivity disorder.
 - D. Tolerance, addiction and suicidal tendency are among the adverse effects of amphetamine.
10. Concerning B-adrenergic receptor blockers, **one** of the following statement is **incorrect**:
 - A. Carvedilol has antioxidant activity and equal blocking effect in alpha and beta receptors.
 - B. Pindolol is preferably used in patients who are liable to develop bradycardia.
 - C. Propranolol but not atenolol is preferably used for the treatment of essential tremors.
 - D. Nebivolol possesses nitric oxide-mediated vasodilator effect.
11. Concerning ergot alkaloids **one** of the following statements is **incorrect**:
 - A. Ergotamine is given in combination with caffeine in the treatment of acute attacks of migraine.
 - B. Ergotamine dilates the cerebral blood vessels during the aura stage of migraine.
 - C. Ergonovine possesses oxytocic effect and can be used to prevent post partum hemorrhage.
 - D. Hydrogenated ergotoxin (hydergine) possesses alpha adrenergic blocking activity.

12. All the following statements are **true except**:
- A. Lipid solubility and pH do not influence the passage of drugs into glomerular filtrate.
 - B. For weak bases, the degree of ionization decreases as pH increases.
 - C. For weak acids, the degree of ionization decreases as pH increases.
 - D. For weak acids, the degree of ionization decreases as pH decreases.
13. Factors affecting distribution include all the following **except**:
- A- Regional blood flow. B- Drug elimination
 - C- Tissue binding D- Plasma protein binding
14. All the following statements are **true except**:
- A. Lipid soluble drugs are readily eliminated by the kidney.
 - B. Some drugs are actively secreted by renal tubules.
 - C. The excretion of acidic drugs can be increased by administration of sodium bicarbonate.
 - D. The excretion of basic drugs can be increased by of ammonium chloride.
1. All the following are contraindications of cholinergic agonists except:
- A- Bronchial asthma B- Hyperthyroidism
 - C- Sjogren' s syndrome and xerostomia D- Peptic ulcer

Select (T) for true answer and (F) for false answer (shade the answer of each question in the answer sheet) (1/2 mark for each)

1. Drug tolerance means an increase of a drug response due to repeated administration.
2. A drug with high therapeutic index is toxic.
3. Receptor down- regulation means continued stimulation of the cell with an agonist that leads to a state of depression.
4. Receptor antagonism occurs when an antagonist prevents an agonist interacting with its receptors to produce an effect.
5. Each of reserpine and guanadrel has central and peripheral hypotensive action.
6. Tamsulosin is superior to prazosin in patients with benign prostatic hypertrophy.
7. Abrupt withdrawal of clonidine cause hypertensive crisis that can be treated by phentolamine
8. Norepinephrine after atropine administration causes rise in mean arterial blood pressure with bradycardia.
9. Esmolol is much safer than propranolol since its half-life is about ten minutes.
10. Epinephrine but not norepinephrine is used in cases of phenoxybenzamine overdose.
11. Each of metyrosine and labetalol is used in pheochromocytoma
12. Any factor that delays gastric emptying will decrease drug absorption.
13. Rate of absorption affects oral bioavailability.
14. Plasma protein binding limits the drug glomerular filtration.
15. Nicotinic receptors are present in skeletal neuromuscular junction, adrenal medulla, autonomic ganglia and CNS.

Pharmacology Examination for third year Pharmacy Student (Fresh)

Time allowed: 3 hours

Date: 10/1/2011

For each of the following MCQs, select the one most appropriate answer (shade the answer of each question in the answer sheet) (0.5 mark for each)

- 1- Regarding a non-competitive antagonist, **one** of the following statements is **incorrect**
- A) It binds with receptors by a covalent bond
B) It decreases the efficacy of the agonist
C) Shift of the dose response curve of the agonist to the right
D) High concentration of agonist cannot overcome its effect
- 2- **One** of the following can be used as a relative indicator of the margin of safety of a drug
- A) LD_{50} B) ED_{50} C) EC_{50} D) T.I.
- 3- When a decrease of the intensity of response to a drug occurs rapidly after its administration, this is called: **I**
- A) Tachyphylaxis B) Tolerance C) Cross- Tolerance D) Intolerance
- 4- Regarding biotransformation, **one** of the following statements is **incorrect**:
- A) It usually leads to inactive metabolites.
B) It is considered to be one of the drug termination mechanisms.
C) It may lead to formation of an active metabolite from active drug.
D) It takes place only in the liver.
- 5- Biotransformation of a drug usually renders it:
- A) Less ionized C) More lipid soluble
B) More pharmacologically active D) Less lipid soluble
- 6- All the followings are examples of ligand-gated Ion Channels receptors **except**
- A) $GABA_A$ B) $5HT_3$ C) Glutamate D) Dopamine
- 7 - Muscarinic cholinergic receptors belong to **one** of the following:
- A) Intracellular receptors for lipid soluble ligands
B) Tyrosine kinase linked receptors
C) G-protein coupled receptors
D) Ligand-gated ion channels
- 8- Regarding route of drug administration, all of the following statements are **true except**:
- A) Intrathecal injection is performed directly into subarachnoid space
B) Intraarticular injection is performed directly into the joint
C) Intramuscular administration can be used for oily solutions
D) Inhalation provides slow access to the general circulation
- 9- Regarding oral bioavailability of drugs, **one** of the following statements is **incorrect**:
- A) It has a value between 0 and 1
B) Bioavailability of lidocaine equals 1
C) Poor absorption denotes low bioavailability
D) It is not affected by plasma protein binding

- 22-Concerning sympatholytics one of the following statements is correct:
- A) Guanadrel acts entirely central to produce hypotensive effect.
 - B) Marked tachycardia is the common adverse effect of each of prazosin and phentolamine.
 - C) Each of clonidine and armethylidopa directly stimulate α_2 receptors.
 - D) Reserpine should be used cautiously in patients with Parkinsonism.
- 23-Concerning diuretics one of the following statements is correct:
- A) The natriuretic effect of hydrochlorothiazide leads to excretion of at least 20% of filtered sodium.
 - B) Furosemide decreases the amount of sodium delivered to collecting tubules.
 - C) Each of spironolactone and amiloride is used in hyperaldosteronism.
 - D) Combined administration of furosemide and hydrochlorothiazide is used in refractory edema.
- 24-All the following diuretics can be effectively used when glomerular filtration rate falls below 30ml/min except:-
- A) Metolazone. B) Hydrochlorothiazide. C) Furosemide. D) Bumetanide
- 25-All the following diuretics and their linked therapeutic uses are correct except:-
- A) Mannitol - Congestive heart failure.
 - B) Furosemide - Hypercalcemia
 - C) Hydrochlorothiazide - Hypercalciuria
 - D) Amiloride - Lithium-induced nephrogenic diabetes insipidus.
- 26- All the following are among the adverse effects of thiazide diuretics except:-
- A) Hyperuricemia. B) Hypokalemia. C) Hypocalcemia. D) Hyperglycemia.
- 27- One of the following is a carbonic anhydrase inhibitor used in glaucoma:
- A) Indapamide. B) Eplerenone C) Mannitol D) Acetazolamide.
- 28- One of the following drugs is used in acute renal failure to prevent tubular necrosis:
- A) Mannitol B) Hydrochlorothiazide C) Triamterene D) Dobutamine.
- 29- One of the following drugs is used in attention deficit hyperactivity disorder in children:
- A) Ephedrine. B) Isoproterenol C) Amphetamine. D) Methoxamine
- 30- One of the following drugs is used to delay premature labor:
- A) Isoproterenol B) Ritodrine C) Salmeterol D) Albuterol.
- 31- One of the following drugs is used in differential diagnosis of primary hypertension and pheochromocytoma:
- A) Clonidine B) Apraclonidine. C) Phenylephrine. D) a-methylidopa.
- 32- One of the following drugs is used in the treatment of benign prostatic hyperplasia:
- A) Phenoxybenzamine. B) Tamsulosin C) Amphetamine. D) Phentolamine.
- 33- One of the following drugs is used in acute attacks of migraine:
- A) Ergotamine. B) Ergonovine C) Guanadrel. D) Propranolol.
- 34- One of the following reversible cholinesterase inhibitors is used for Alzheimer disease
- A) Physostigmine B) Edrophonium C) Donepezil D) Pyridostigmine
- 35- One of the following drugs is potassium channel blocker
- A) Propranolol B) Lidocaine C) Sotalol D) Verapamil.
- 36- One of the following drugs is used in the management of acute pulmonary edema:
- A) Mannitol B) Furosemide C) Spironolactone D) Albuterol

- 37- Your selection in the above mentioned question (Q NO. 36) is based on **one** of the following:
- A) The drug produces vasodilatation and reduces venous return.
 - B) The drug decreases potassium excretion.
 - C) The drug increases extracellular fluid volume.
 - D) The drug produces persistent bronchodilatation.
- 38- **One** of the following is the life saving drug in anaphylactic shock:
- A) Amphetamine B) Epinephrine C) Clonidine D) Isoproterenol
- 39- Your selection in the above mentioned question (Q NO. 38) is based on one of the following:
- A) A drug produces bronchodilatation and elevation in blood pressure.
 - B) The drug stimulates α_2 - adrenoceptors in vascular smooth muscles.
 - C) The drug activates central adrenoceptors.
 - D) The drug stimulates the release of norepinephrine from adrenergic nerve terminals.
- 40- Mannitol is used in dialysis disequilibrium syndrome to produce all the following effects **except**:-
- A) Increases osmolality of extracellular fluid.
 - B) Shifts the fluid from extracellular to intracellular compartment.
 - C) Moves the fluid from intracellular to extracellular compartment.
 - D) Reduces the cerebral edema.
- 41- All the following are among the contraindications of propranolol **except**:
- A) Alone in pheochromocytoma C) Complete A-V block
 - B) Portal hypertension. D) Acute bronchial asthma.
- 42- **One** of the following drugs is a selective adrenergic agonist used in the treatment of glaucoma:
- A) Apraclonidine B) a-methyldopa C) Dipivefrin D) Clonidine
- 43- **One** of the following groups of drugs is the first choice for treatment of dyslipidemia:
- A) Statins C) Fibric acid derivatives
 - B) Bile acid binding resins D) Nicotinic acid
- 44- **One** of the following is an adverse effect for statins:
- A) Flushing & itching C) Induction of insulin resistance
 - B) Dose-dependent hepatotoxicity D) Hyperuricemia
- 45- Regarding the mechanism of action of atorvastatin, all the following statements are **correct except**:
- A) It inhibits HMG-CoA reductase enzyme
 - B) It increases hepatic receptors for LDL
 - C) It inhibits the intestinal absorption of dietary cholesterol
 - D) It decreases LDL and increases HDL levels in the blood
- 46- **One** of the following groups of drugs mostly lowers triglycerides level in blood:
- A) Statins C) Fibric acid derivatives
 - B) Bile acid binding resins D) Nicotinic acid
- 47- **One** of the following drugs activates peroxisome proliferator-activated receptor α (PPAR α)
- A) Fenofibrate B) Ezetimibe C) Colestipol D) Simvastatin

- 48- Bile acid binding resins can produce all of the following adverse effects **except**:
- A) Interfere with the absorption of fat soluble vitamins
 - B) Decrease the absorption of fat soluble drugs
 - C) Cause prostaglandin mediated flushing and itching
 - D) Produce nausea and abdominal discomfort
- 49- Quinidine can produce all the following effects **except**
- A) Blockade of sodium channels)
 - B) Atropine like action
 - C)Cinchonism
 - D)Direct cardiac stimulant effect
- 50- Hypothyroidism is a possible side effect of **one** of the following drugs
- A) Procainamide
 - B)Mexiletine
 - C) Amiodarone
 - D) Sotalol
- 51- Regarding use of hydralazine in treatment of heart failure, all the following effects are **false except**
- A)Afterload reduction
 - B)Preload reduction
 - C)Venodilatation and arterio dilatation
 - D) Marked positive inotropic activity
- 52- A 20 years old girl has taken a suicidal overdose of digoxin. One of the following drugs is used for the treatment of this life-threatening toxicity
- A) Quinidine
 - B)Epinephrine
 - C)Digoxin antibodies
 - D) Oral potas,sium chloride
- 53-**One** of the following drugs is an antihypertensive agent used during pregnancy:
- A) Verapamil
 - B) α -Methyldopa
 - C) Enalapril
 - D) Clonidine
- 54-Dry cough is the main side effect of **ONE** of the following drugs:
- A) Sodium nitroprusside
 - B)Hydrochlorothiazide
 - C) Prazosin
 - D) Captopril
- 55-**One** of the following antihypertensive agents is a structural analog to thiazides and acts through opening of K channels:
- A) Diazoxide
 - B)Fosinopril
 - C)Nifedipine
 - D) Hydralazine
- 56-**One** of the following drugs is used for long term control of hypertension in asthmatic patients with diabetes mellitus
- A) Hydrochlorothiazide
 - B)Propranolol
 - C) Diltiazem
 - D) sodium nitroprusside
- 57 - All of the following drugs could be used for management of Prinzmetal' s angina **Except**:
- A)Isosorbide dinitrate
 - B)Propranolol
 - C) Nitroglycerin
 - D) Verapamil
- 58- All of the following are therapeutic uses of nitrates **except**:
- A)Anginal attacks
 - B)Hypertensive emergencies
 - C) Heart failure
 - D) Tachyarrhythmias
- 59- All of the following are adverse effects of nitrates **except**:
- A) Bronchoconstriction
 - B) Tachycardia
 - C)Tolerance
 - D) Throbbing headache
- 60-**One** of the following statements describes the mechanism of action of nitric oxide (NO)
- A) Stimulates guanylyl cyclase, increase cGMP concentration and vasodilation
 - B) Stimulates guanylyl cyclase, decreases cGMP concentration and vasodilation
 - C) Inhibits guanylyl cyclase, increases cGMP concentration and vasodilation
 - D) Inhibits guanylyl cyclase, decreases cGMP concentration and vasoconstriction

Select (T) for true answer and (F) for false answer (shade the answer of each question in the answer sheet) (0.5 mark for each)

- 1- Pharmacokinetics is the effect of the body on the drug and pharmacodynamics is the effect of the drug on the body .
- 2- Redistribution is responsible for of termination of thiopental effect
- 3- Topical administration of drugs usually provide high local concentration with little or no systemic effects
- 4- The drug with high therapeutic index is used safely.
- 5- Physiological antagonism appears when two drugs produce opposite effects on the same physiological function.
- 6- For intravenous (IV) dosages, bioavailability assumed to be 100%
- 7- High concentration of an agonist can completely prevent the effect of a given concentration of a competitive antagonist
- 8- Therapeutic drug monitoring is needed for digoxin because it has a narrow therapeutic window.
- 9- Half life is dependant on both clearance and volume of distribution
- 10- Intravenous injections are more suitable for oily solutions
- 11- A receptor is a cellular macromolecule to which a drug molecule has to bind to elicit its specific effects.
- 12- Captopril acts by inhibiting the ability of renin to convert angiotensinogen to angiotensin I
- 13- Diacylglycerol (DAG) and inositol triphosphate are examples of second messengers
- 14- Drug response is usually proportional to the administered dose
- 15- Receptor up regulation occurs after chronic administration of an antagonist.
- 16- Loading dose of a drug is used to achieve steady state concentration rapidly.
- 17- Organophosphorous compounds have limited therapeutic uses.
- 18- Acetylcholine is the chemical mediator released at both parasympathetic and sympathetic preganglionic neurones
- 19- Reversible cholinesterase inhibitors are used in the treatment of nocturnal enuresis
- 20- M_3 receptors are located on the endothelial lining of blood vessels.
- 21- Butyrylcholinesterase hydrolyze both acetylcholine and methacholine.
- 22- The main side effects of muscarinic agonist are increased salivation, tachycardia and hypotension.
- 23- Carbachol has a selective muscarinic effect on the smooth muscles of the urinary bladder and G.I.T.
- 24- Physostigmine is a quaternary amine that can be used in atropine poisoning.
- 25- Both pyridostigmine and ecothiophate are irreversible cholinesterase inhibitor.
- 26- Neostigmine is an irreversible choline esterase inhibitor used in the case of curare intoxication.
- 27- Metyrosine inhibits tyrosine hydroxylase enzyme.

- 28- Uptake -1 is the major pathway for terminating the action of norepinephrine.
- 29- The pressor effect of each of norepinephrine and epinephrine can be reversed by prior administration of prazosin .
- 30- Each of amphetamine and ephedrine directly activates adrenergic receptors.
- 31- Propranolol is preferable to atenolol in diabetic patients.
- 32- Nebivolol possesses nitric oxide mediated vasodilator effect.
- 33- First dose phenomenon is the main adverse effect of prazosin.
- 34- Isoproterenol is selective β_1 - adrenoceptor agonist used in hypotension states.
- 35- Hyperuricemia and ototoxicity are among the adverse effects of loop diuretics.
- 36- Each of loop and thiazide diuretics increase renal excretion of Na^+ , K^+ and Ca^{+2} •
- 37-Each of amiloride and eplerenone is used cautiously with captopril .
- 38- Mannitol is used in closed angle glaucoma to reduce the production of aqueous humor by ciliary bodies .
- 39- The concurrent use of furosemide with cephalosporins is not recommended.
- 40- Furosemide is preferable to hydrochlorothiazide in patients with osteoporosis.
- 41- Propranolol is preferable to metoprolol in asthmatic patients.
- 42- Chronic use of phenylephrine as nasal decongestant is not recommended.
- 43- Stimulation of β_1 -adrenoceptors increased rennin release from Juxtaglomerular cells
- 44- Hypokalemia is the main adverse effects of amiloride.
- 45- Epinephrine is not recommended in hypertensive patients.
- 46- The natriuretic effect of spironolactone leads to excretion of at least 25% of filtered sodium
- 47- Physical dependence and tolerance are the main adverse effects of amphetamine.
- 48- In the treatment of atrial fibrillation, digitalization is necessary prior to quinidine.
- 49- Dofetilide has other characteristic extracardiac effects beside its cardiac potassium charu blocking activity.
- 50- Unlike dobutamine, levosimendan increases myocardial oxygen consumption.
- 51- Nesiritide is a recombinant human brain natriurtic peptide used for the treatment congestive heart failure.
- 52- β - blockers are used in cardiac arrhythmias to slow sinus rhythm and decrease spontaneous rate of depolarization of ectopic pacemakers.
- 53- Digoxin inhibits Na^+/K^+ -ATPase and increases intracellular concentrations of calcium myocytes.
- 54- Lidocaine is useful in the acute intravenous therapy of ventricular arrhythmias.
- 55- Hydrochlorothiathide is used in nephrogenic diabetes insipidus.
- 56- Mannitol is completely reabsorbed by the renal cell .
- 57- Amphetamine is in used attention deficit hyperactivity disorder in children.
- 58- Salmeterol is a non-selective ~ 2 agonist used in acute bronchial asthma.
- 59- Clonidine is used in differential diagnosis of primary hypertension and pheochromocytoml
- 60- Severe hypotension is the main adverse effect of tamsulosin.
- 61- Ergonovine is used to relax uterine muscle and prevents premature labor

- 62- Hydrolysis, reduction and glycine conjugation are examples of non-synthetic metabolic reactions.
- 63- Digoxin toxicity occurs more less frequently in patients with hypokalemia .
- 64- Niacin is a vitamin B-complex used in very high doses to produce a hypolipidemic action
- 65- Myopathy with muscle stiffness and weakness is a common adverse effect for both statins and fibric acid derivatives.
- 66- Liver function test is not necessary done in patients receiving statins.
- 67- The efficacy of bile acid binding resins is decreased when they are given with statins.
- 68- Fibrates increase the activity of lipoprotein lipase, thereby decreasing blood level of triglycerides.
- 69- Statins have no effect on blood levels of triglycerides.
- 70- Digoxin is effective only orally with a steady state concentration reached after 48 hours.
- 71- Salt and water retention and reflex tachycardia is among side effects of arterial vasodilators.
- 72- Verapamil is used safely with propranolol for the management of stable angina.
- 73- Furosemide could be used in hypertensive emergency with renal failure.
- 74- Nifedipine is an antihypertensive drug that doesn't cause reflex tachycardia.
- 75- Angioneurotic edema is a main adverse effect of losartan.
- 76- Hypertrichosis is a side effect of minoxidil.
- 77- Angiotensin converting enzyme inhibitors cause hyperkalemia in patients with renal disease
- 78- In therapeutic doses, the dihydropyridine Ca^{2+} channel blockers are mainly arterial vasodilators, while nitrates are mainly venodilators.
- 79- Verapamil is recommended at the initial stages of treating patients with heart failure.
- 80- ACE inhibitors are used safely in patients with bronchial asthma or diabetes.

GOOD LUCK

لجان الشفوى:

يبدأ امتحان الشفوى لجميع الطلاب فى تمام الساعة 12 ظهرا ولايسمح لأى طالب أن يمتحن فى غير هذا الميعاد ولا فى أى لجنة غير اللجنة المقرر امتحانه امامها حسب اللوحة المعلنة بقسم الفارماكولوجى

Date: 12/1/2011

Time: two hours

Marks: 80

Assiut University

Faculty of Medicine

Dept. of Community Medicine

Exam in Public Health for 3rd Year Pharmacy

Answer the following Questions:

1. Give an account on the following: [20 Marks]

- a- Prevention of TB
- b- Modes of transmission of HBV
- c- List the steps of water purification

2. Write short notes on the following: [20 Marks]

- a- What is meant by reference man
- b- List importance (functions) of proteins
- c- Mention food groups
- d- Definition of health according to WHO

3. Give a short account on the following: [20 Marks]

- a- Anti-infective properties of breast milk
- b- Preventive measures of diarrhea
- c- Draw the cycle of communication
- d- Public health importance of carriers

4. Give a short account on the following: [20 Marks]

- a- Draw or list the components of the infectious cycle
- b- Chemoprophylaxis
- c- Mention basic modes of disease transmission

(Good Luck)

Date: 13/2/2011

Time: two hours

Marks: 1.00

Assiut University

Faculty of Medicine

Dept. of Community Medicine

Exam in Public Health for 3rd Year Pharmacy Students

Answer the following Questions:

1- Define the following Terms:

a.Health.

b.Reference protein.

2- List the links of the infectious chain.

3- What are the dangerous groups of carriers.

4- Write an account on chemoprophylaxis.

5- Mention preventive measures of T.B.

6-Explain the chain of communication.

7- What are the functions of calcium?

8- Mention the advantages of breast feeding for mothers.

9- Mention the preventive measures of rickets.

10- Mention vaccines which should be given to the infants (Illustrate your answer in table).

(Good Luck)

Third year pharmacy
Midyear examination

Date: 17/1/2011

(Time allowed 3 hours)

-
- 1- write on : (6marks each)
- a- Post - transcriptional processing of mRNA
 - b- Dual specificity of enzymes.
 - c- Structure and function of Retinoic acid.
 - d- Types of free radicals.
- 2- write down 3 differences between: (6marks each)
- a- Coenzymes - prosthetic group - cofactors - Apoenzyme
 - b- Water soluble and fat soluble vitamins.
 - c- Prokaryotic and eukaryotic DNA-dependent RNA polymerases.
- 3- Define only the following: (3marks each)
- a- Isoenzymes.
 - b- Phase 1 xenobiotics.
 - c- Nucleosome.
- 4- Explain the following:
- a- Genetic code and its characters (5 marks)
 - b- Competitive' enzyme inhibitors (5 marks)
 - c- Antioxidants (5 marks)
 - d- Functions of vitamin B6 (5 marks)

"good luck"

ملحوظة:-

- 1- الرجاء اجابة كل سؤال على حده وبالترتيب.
- 2- الامتحان الشفوى عقب النظرى مباشرة.

MCQ Exam
Third year pharmacy

(One mark each)

Date: 17/1/2011

Time allowed: (30 minutes)

- The coenzyme pyridoxal phosphate.

- a) Is a derivative of niacin.
- b) Is a coenzyme for phosphorylation-dephosphorylation reactions.
- c) Is a coenzyme for transaminase (aminotransferase) reaction.
- d) Is a coenzyme for CO₂ fixation

- Match the vitamin with the appropriate associated, clinical condition:

- | | |
|---------------------|--|
| a) Vitamin C | 1- a combination of diarrhea,
mental changes and dermatitis |
| b) Nicotinic acid | 2- rickets |
| c) Excess vitamin A | 3- Scurvy |
| d) Vitamin D | 4- Liver damage and hair loss |

- Which is not true in relation to nucleic acids?

- a) Base pairing occurs between a pyrimidine and purine base
- b) The bonding between a guanine base and a cytosine base occur with the formation of 3 hydrogen bonds
- c) The two polynucleotide chains in DNA have opposite polarity.
- d) Their hydrolysis yields bases and phosphorus groups

- Which of the following compounds does not contain sugar residues?

- a) ATP
- b) NAD
- c) RNA
- d) Cytosine.

- Pyridoxal phosphate is required as a cofactor in the following reactions **except**:

- a) Deamination I
- b) Decarboxylation
- c) Transamination
- d) Acetylation

- Concerning TATA box (Hogness box):

- a) It binds to anticodon
- b) It encodes repressor protein
- c) It regulates translation
- d) It binds RNA polymerase

- In transcription, the termination signal is read by:

- a) The sigma subunit of RNA-polymerase
- b) The RNA-polymerase core enzyme
- c) Primase
- d) The rho factor

- Correct statements about iron metabolism include the following **except**:

- a) Iron is transported in plasma bound to transferrin
- b) Iron is stored in the tissues as ferritin.
- c) Iron can be lost in the feces.
- d) About 10% of the total iron is present in circulation as hemoglobin

- Blood calcium:

- a) Consists entirely of diffusible Ca^{2+} ions.
- b) Is involved in neuromuscular activity.
- c) Passes into the glomerular filtrate with no subsequent reabsorption from the kidney tubules.
- d) Has a concentration that is not controlled by hormonal action.

- All of the following are true about vitamin E **except**:

- a) It includes a group of compounds known as tocopherols
- b) It may function as an antioxidant to protect membrane lipids from oxidation
- c) Its deficiency in infants is characterized by edema, thrombocytosis and rash
- d) Its serum levels correlate closely with body stores.

- In case of enzyme inhibited reaction:

- a) A competitive inhibitor changes the V_{max}
- b) Enzyme is never inhibited by its product.
- c) Both competitive and non competitive inhibitors change K_m .
- d) Competitive inhibitor decreases the enzyme affinity toward the substrate

- DNA-dependent-RNA polymerase:

- a) Has 3'-5' polymerase activity
- b) Has 5'-3' exonuclease activity
- c) Has 3'-5' exonuclease activity
- d) Can recognize a particular sequence in DNA "promoter sequence"

- The cytochrome P450 system:

- a) Is involved in the hydroxylation of steroids.
- b) Is involved in the hydroxylation of phenylalanine to tyrosine.
- c) Is involved in the hydroxylation of proline in collagen.
- d) Requires NADPH for activity.

- All of the following are true for allosteric effector **except**:

- a) Affect the rate limiting enzyme
- b) Bind to a site other than substrate binding site.
- c) May be activator or inhibitor.
- d) Change the equilibrium constant of the enzyme catalyzed reactions.

- Nicotinic acid:

- a) Can be converted in the body to nicotinamide
- b) Is absorbed poorly from the intestine
- c) Is a coenzyme for the transaminases
- d) Requires biotin for its nonnal synthesis from tryptophan

- Concerning folate, all the following statements are true **except**:

- a) The form of tetrahydrofolate is necessary for the synthesis of nucleic acids
- b) Deficiency is a recognized complication of pregnancy.
- c) Does not improve the megaloblastic anemia of vitamin B12 deficiency.
- d) With vitamin-B12 have similar co-enzyme activity.

- Which of the following is phase I reaction of the liver:

- a) Acetylation.
- b) Hydroxylation.
- c) Conjugation
- d) Methylation

- The Michaelis constant (K_m) is:

- a) Approximately proportional to the velocity of enzyme catalyzed reaction.
- b) Dependent on the enzyme concentration.
- c) A substrate concentration giving half maximum reaction velocity.
- d) A substrate concentration giving maximum reaction velocity .

- Deficiency of vitamin- A:

- a) Is unlikely to occur in children whose diet contains plenty of legumes.
- b) Is an important cause of blindness in under-developed countries.
- c) Is the cause of the typical manifestations of intestinal malabsorption
- d) Is a recognized cause of squamous carcinoma of the skin.

- During DNA replication cytosine pairs with:

- a) Guanine
- b) Adenine
- c) Thymine
- d) Uracil

**Assiut University,
Faculty of Pharmacy,
Dept. of Pharmaceutics**

Pharmaceutics-2 Final Exam.

Date: Jan. 26th, 2011

Time Allowed: three hours

20

First Part (Dr. S. Ismail)

**First Question (10 marks)
Answer Sheet**

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

Choose the most proper answer in the following statements :

1- Which of the following is not true:

- A- the cornea offers as a barrier for lipophilic drugs.
- B- the cornea offers as a barrier for hydrophilic drugs.
- C- the cornea offers as a barrier for high molecular weight drugs.

2- The cornea is consisting of :

- A- a lipophilic layer between two hydrophilic layers.
- B- a hydrophilic layer between two lipophilic layers.
- C- one Upophilic layer.

3- Most ocular drugs seem to penetrate the cornea by :

- A- carrier transport mechanism
- B- endocytosis
- C- diffusion

4- The main drawback of benzalkonium chloride is :

- A- its irritant effect
- B- low aqueous solubility
- C- its incompatibility with anionic compounds

5- The use of organic mercurials as preservatives in ophthalmic solutions is restricted due to :

- A- possibility of mercury to be deposited into the lens.
- B- their alkaline pH values
- C- their ability to interact with most drugs.

6- The use of methylparaben in ophthalmic solutions is limited because:

- A- it causes a stinging effect.
- B- it is incompatible with anionic drugs.
- C- its ability to be oxidized.

7- Which is not true regarding chlorbutanol:

- A- its use is limited to formulations packaged in glass containers.
- B- it is slowly decomposed and resulting in an increase in pH value.
- C- it is volatile and can permeate plastic containers.

8- Which is true regarding phenylethyl alcohol :

- A- it is not able to permeate through the plastic containers.
- B- it is readily soluble in water.
- C- it is liable to be salted out from the ophthalmic solutions.

9- Regarding the epinephrine salts ophthalmic preparations :

- A- it is better to be packaged in glass containers.
- B- it is better to be packaged in plastic containers.

- C- it is better to keep the pH value alkaline.
- 10-** Polyvinyl alcohol is used to :
 A- reduce drug decomposition. B- increase the viscosity.
 C- preserve the ophthalmic solutions.
- 11-** The surfactants could be arranged according to their toxic effects as :
 A- anionic > cationic > nonionic. B- nonionic > anionic > cationic.
 C- cationic > anionic > nonionic.
- 12-** Which is true for polymeric ophthalmic solutions:
 A- it better to exhibit Newtonian flow. B- it better to exhibit dilatent flow.
 C- it better to exhibit pseudoplastic flow.
- 13-** The corneal penetration of dipivalyl epinephrine is much greater than the parent drug due the following reason :
 A- it is more hydrophilic B- it is more lipophilic C- it chemically stable.
- 14-** The disadvantages associated with aqueous ophthalmic gels for ocular delivery is due to:
 A- the tears diffuse into the gel interior and leach out the water soluble drugs.
 B- they induce an irritant effect. C- they are hypertonic in nature.
- 15-** Poloxamer 407 ophthalmic gel is formed via :
 A- change in the pH value. B- addition of electrolytes. C- temperature change.
- 16-** Cellulose acetate hydrogen phthalate gels are formed via :
 A- change in the pH value. B- addition of electrolytes. C- temperature change.
- 17-** The main advantage of gelrite ophthalmic gel is :
 A- its ability to form gel in the cul-de-sac within few seconds.
 B- it forms gel at a much lower concentration. C- both A and B.
- 18-** The diffusion of drugs from ocuserts follows :
 A- first order B- zero order C- non of the above
- 19-** The rate controlling membrane in ocuserts is composed of :
 A- ethylene vinyl acetate B- poloxamer C- carbomer
- 20-** In ocusert pilo 20 , the release rate is :
 A- 20 µg / min. B- 20 µg / hr C- 20 mg / hr

Second Question

10

Complete the following statements: (one mark for each space)

1- Phase transition in gel formation can be mediated by a change In :

- A-
- B-
- C-

2- Examples of drug-contact lens interactions are :

- A-
- B-
- C-

3- Examples of non-specific bioadhesive polymers are :

- A-
- B-
- C-

D-

Part II (20 marks) *Dr. Ehsan Hafez*

Answer the following questions:

I- Illustrate by a diagram the following: (4 marks)

a- Effect of I.V. injection of 0.9% NaCl on RBC's

b- An example for the use of compartment vial

II- Complete the following: (6 marks)

a- Effect of release of alkalinity on the injection solution

1-

2-

3-

4-

b- Injection which must be isotonic are:

1-

2-

3-

4-

c- preservatives used for aqueous injections are:

- 1-
- 2-
- 3-
- 4-

III-Denoate (T) for true statment and (F) for false one: (10 m.)

- ()I.M. route is used for allergy test.
- ()Fragility point of RBC's occures at 0.7% Nacl.
- ()Leaker test used for incomplete sealing of vials.
- ()I.Th. injection is made between the first and second lumbar vertebrae
- ()Insulin injection can be packed in alkaline glass.
- ()Isotonicity is essential for I.M. injection.
- ()Crushed-glass USP test is suitable for all types of glass.
- ()Sodium citrate used as anticoagulant in blood transfusion bottles.
- ()Alkaline glass is safely used for oily injections.
- ()Divalent metals in the structure of glass incresees its durability.

Third Part (Dr. Mona M. Elmahdy) (15 marks)

15

I. Denote (T) for the true statement and (F) for the false one and correct the false one: (2 marks)

1. A Yield of 100% encapsulation efficiency is possible using spray drying method ()

--

2. Complex coacervation process, non-solvent addition and temperature change method are examples of micro encapsulation in organic solution media ()

3. In Wurster process, the coating section has wider sectional area than settling section ()

--

4. The rate of drug release from matrix-diffusion controlled is time independent ()

II- Give the reason(s) for each of the following: (3 marks)

A. In microencapsulation utilizing vacuum evaporation deposition, NMEC is preferred than NRC process.

1) -----

2) -----

B. The presence of compressed air in Wurster-coating equipment.

1) -----

2) -----

C- Uses of Nitro-spray drying apparatus of capsule slurry:

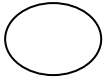
1) -----

2) -----

III. Draw and describe FOUR of the following:

(10 marks)

1. Microencapsulation utilizing electrostatic deposition bonding technique.



2. Wurster Process.

3. Microencapsulation of an organic solution by spray-drying process.

3. Complex coacervation process.

4. Microencapsulation using vacuum evaporation technique.

15



Fourth Part (Dr. Ikramy A. Khalil)(15 marks)

1. Answer the following questions:

1. Mention FOUR factors that affect the spray characteristics of aerosols.

2. Discuss the disadvantages of cold filling of pharmaceutical aerosols.

3. Discuss the disadvantages of regular metered dose inhalers (MDIs).

4. Explain the differences between sustained- and controlled-release dosage forms.

5. Discuss the advantages of matrix diffusion-controlled compared to membrane permeation-controlled drug delivery systems.

II. Choose the most appropriate answer in the following:

1. Which of the following is **NOT TRUE** regarding pulmonary drug delivery?

- A. Particles smaller than 1-3 μ m reach the alveolar sacs.
- B. It produces prolonged duration of action.
- C. It avoids the degradation in the GIT.
- D. It avoids the first pass effect.

2. Propellant 152a is chemically -----

- A. Difluoroethane.
- B. Monochlorodifluoroethane.
- C. Trifluoromonoethane.
- D. Monochlorodifluoromethane.

3. Which is **NOT TRUE** regarding chemical and physical properties of propellants?

- A. Propellant 11 is not suitable for aqueous preparations.
- B. The solvent power is generally poor for highly fluorinated compounds.
- C. The density of a propellant generally decreases as the number of fluorine atoms increase.
- D. As the temperature increases, the vapor pressure increases.

4. Which is the **BEST** propellant for a glass container containing ethanol as cosolvent?

- A. Propellant 11 alone
- B. Propellant 12 alone
- C. Propellant 12/11 mixture (50:50)
- D. Propellant 12/114 mixture (10:90)

5. Which is **NOT TRUE** regarding water-based aerosol formulations?

- A. The most useful surfactants for stable foams are those with low water solubility.
- B. Quick breaking foams generally find the propellant in the external phase.
- C. The recommended size for suspension formulations is generally less than 50 μ m.
- D. In case of suspensions, the particle size of drug depends mainly on the propellant ratio.

6. Enteric-coated tablets can be regarded as -----

- A. Immediate-release dosage form
- B. Delayed-release dosage form
- C. Extended-release dosage form
- D. Controlled-release dosage form

7. Which is **NOT TRUE** regarding targeted drug delivery systems?

- A. They provide controlled and prolonged drug delivery.
- B. They enhance the activity and selectivity.
- C. They control the distribution of drug within the body.
- D. They reduce the toxicity and side effects.

8. How to obtain a constant drug release from drug/hydrophilic polymer matrix?

- A. Coat the matrix with fast release drug layer.
- B. Add a water-miscible polymer as a cosolvent
- C. Control the rate of formation of the gel layer.
- D. Add an osmotic agent

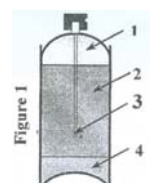
Answer Sheet

1	2	3	4	5	6	7	8

III. Look at the given figures and complete the tables with suitable numbers: (4marks)

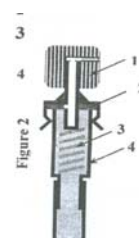
Regarding the three-phase aerosol system shown in Figure 1:

Propellant vapor	
Propellant liquid	
Aqueous base containing the active ingredients	
The part that serves to bring the formulation from the container to the valve.	



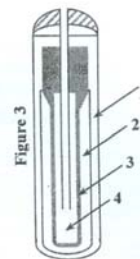
2. Regarding the valve assembly of an aerosol shown in Figure 2:

A part that serves to prevent leakage of the formulation when the valve is in the closed position	
It serves as the link between the dip tube and stem actuator	
It is the mechanism by which the actuator retracts when pressure is released	
It is the part which the user presses to activate the valve assembly for emission of the product	



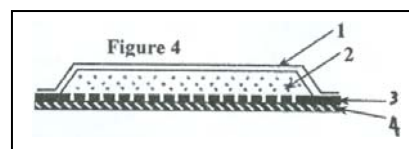
3. Regarding the Alzet Osmotic Pump shown in Figure 3:

A solution formulation drug reservoir.	
A layer of osmotically active salt such as NaCl.	
A collapsible, impermeable polyester bag .	
A rigid housing walled with a semi-permeable membrane.	



4. Regarding the Transderm-Nitro system shown in Figure 4:

A dispersion of nitroglycerin lactose triturate in silicone medical fluid.	
A drug-impermeable metallic plastic laminate	
A drug permeable rate-controlling membrane of ethylene vinyl acetate copolymer	
A layer of silicone adhesive	



IV. Draw a schematic diagram with full labels for each of the following:

1. The principle of action of a push-pull oral osmotic system

2. The basic structure of Deponit system as a method of achieving controlled drug release.

قبل البدء في الإجابة إقرأ هذه التعليمات جيدا

- 1- اكتب اسمك ورقم جلوسك باللغة العربية وبخط واضح على غلاف كراسة الإجابة فقط.
- 2- تأكد أن كراسة الامتحان تتكون من 8 ورقات (ست عشرة صفحة) بالإضافة الى صفحة التعليمات وفي حالة تكرار أو نقص أى أوراق إطلب استبدالها فورا.
- 3- يتكون الامتحان من أربعة أجزاء ومطلوب الإجابة عليها جميعا.
- 4- تكتب الإجابات في الفراغات المخصصة بها مع مراعاة رسم المركبات في الفراغ المخصص لها.
- 5- في الأسئلة متعددة الاختيارات يتم وضع علامة حول الإجابة الصحيحة فقط.
- 6- المستطيل المبين على يمين الصفحة في بداية كل جزء يترك فارغا حيث يقوم السيد الأستاذ الدكتور/ عضو هيئة التدريس بتسجيل الدرجة التي حصل عليها الطالب.
- 7- محاولة الاستعانة بالآخرين أو اعانتهم في اجابة الامتحان يعرضك للمسائلة القانونية من الجامعة ومايترتب عليها.
- 8- ممنوع منعاً باتاً الكتابة أو الرسم بالقلم الرصاص أو أى ألوان.
- 9- عدم كتابة إسمك أو أى علامات داخل الكراسة.

موعد الامتحان الشفهي

الامتحان الشفهي عقب الامتحان النظري مباشرة وسيعلن توزيع الطلاب على لجنة الامتحان الشفهي بلوحة الاعلانات بالقسم.

مع أطيب الأمنيات بالتوفيق والنجاح،،

لجنة الامتحان

أ.د. / نوال أبو بكر عبد الحليم
Assiut Univ. Faculty of Pharmacy, Med. Chem. Dept., Med. Chem. 1, June 19, 2011 page 1 of 16
د. / حمدي محمد محمد عبد الرحمن

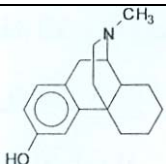
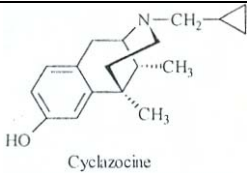
أ.د. / محمود عبد الفتاح الجندى
يوسف حسن حسين

Part I

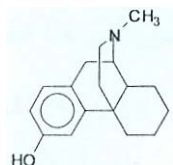
Question No. 1

17.5

A) Match the medicinal compounds in the following table (completing its contents) with the following medicinal uses: (Mixed opioid agonist and antagonist, antitussive, pure opioid antagonist, opioid agonist) adding the group derivative to which the drug belongs (morphine, morphinan, benzomorphan, pure synthetic)

No.	Drugs Generic names	Chemical structure	Medicinal uses	Group derivative
1	Naloxone			
2-				
3	Pentazocine			
4	Pholcodine			
5	Levallorphan			
6				
7	Dextromethorphan			
8	N-Allylnormorphine			

B) Draw the synthesis of levallorphan starting form



Question No. 2

A) Draw the structure of the following drugs:

1- Meclofenamic acid

2- (4-Isobutylphenyl)propionic acid

3-Diclofenac

4- 1-6-Dimethylamino-4,4-diphenylheptan-3-one

5- Phenylbutazone

6- p-Acetylaminophenol

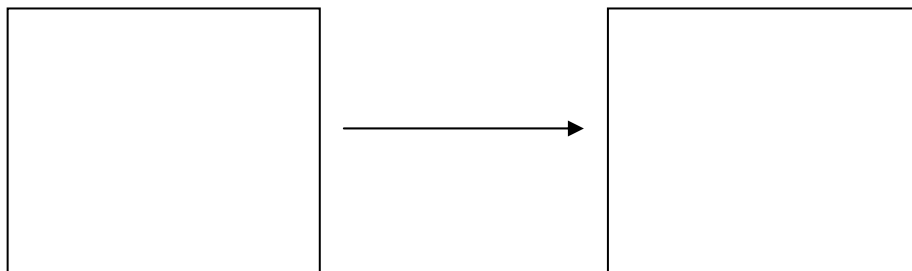
B) Give Synthesis of Diclofenac

Question No. 3

How to analyse a mixture if antipyrine and amidopyrine

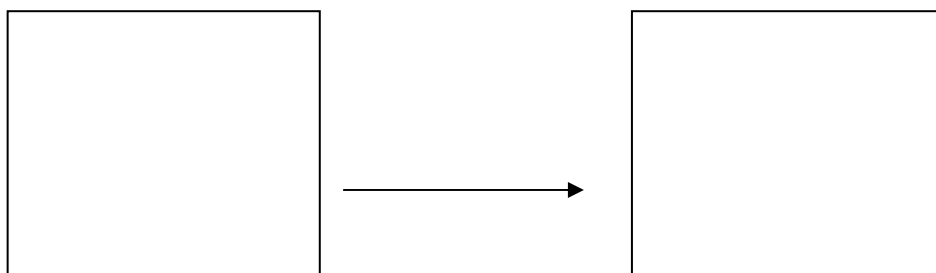
Question No. 4

A) Mention two NSAIDs compounds acting as prodrugs and give their active metabolites



Compound 1

Active metabolite



Compound II

Active metabolite

B) Draw the synthesis of any one of the above mentioned compounds

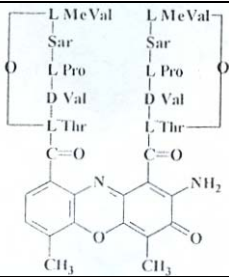
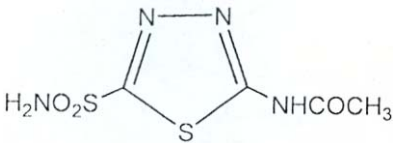
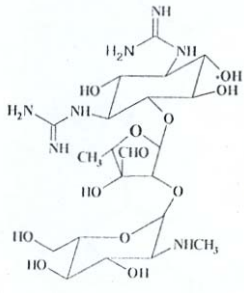
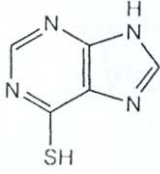
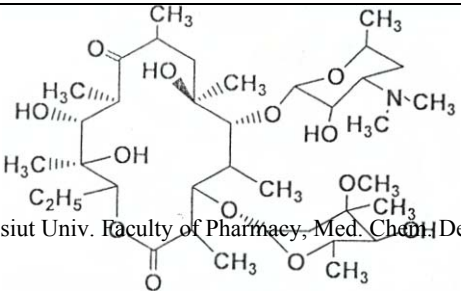
Assiut Univ. Faculty of Pharmacy, Med. Chem. Dept., Med. Chem. 1, June 19, 2011 page 4 of 16

Question No. 1

Complete the following statement in the table:

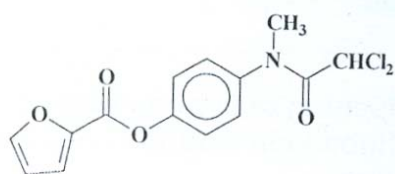
Part II
(10 points)

45

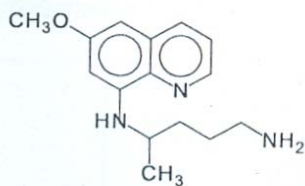
	-Opening of lactone ring of actinomycin lead to ----- activity -Mechanism of action by -----
	-The assigned drug used in treatment of ----- - Sulfamoyl group must be ----- and -----
	-Generic name: ---- -Mechanism of action:
	The assigned drug to be active must be converted to ----- Which prevent oxidation of inosinic to -----
	Structural characteristics of Macrolides: 1- 2-

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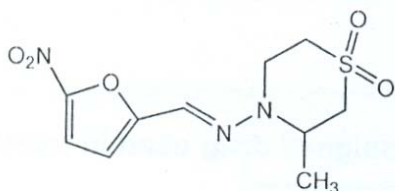
Question No. 2 (6 points)
Fill the following table using the structures I-VI



I

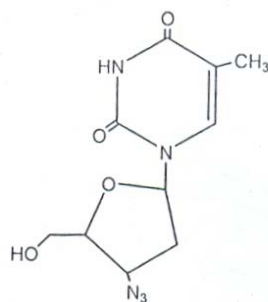


II

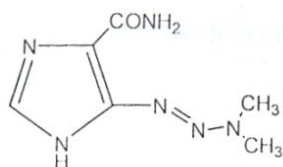


III

IV



VI



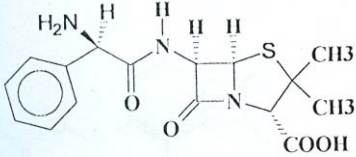
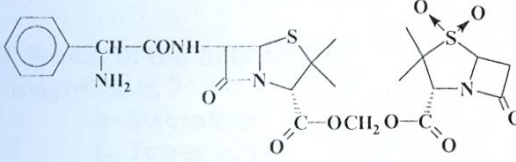
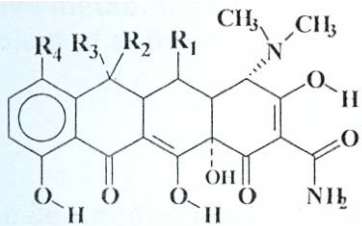
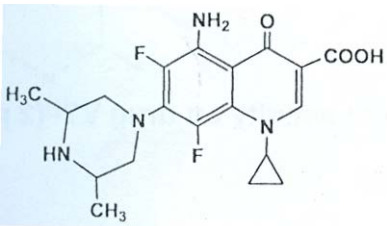
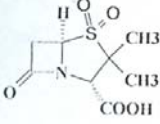
V

Compd No.	Generic name	Activity
III		
		Alkylating agent
		Antiamaebic
II		
		Antiviral
		Antimetabolite

Question No. 3

(10 points)

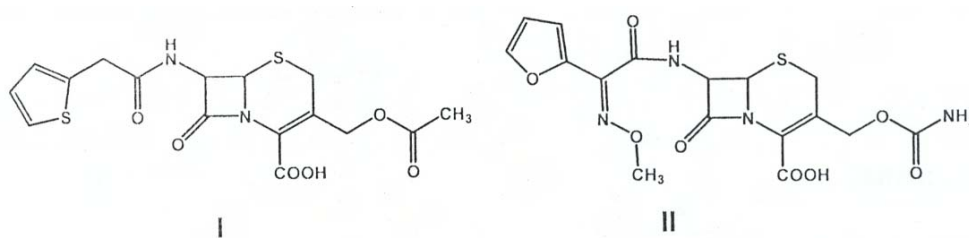
Choose the correct answers and complete the following:

 Generic name:	The drug illustrated is: - a- effective orally - b- Narrow spectrum - c- β-Lactamase resistant - d- Bind to 50 S ribosome
	The drug illustrated is: - a- Sensitive to β-lactamase - b- Non-classical Cephalosporins - c- Latent penicillin - d- Ampicillin Is it latent drug?
	Tetracycline is - a- Protein sybthesis inhibitors - b- Cell wall synthesis inhibitors - c- Possess 2 pKa - d- Ring A/B fusion should be trans -removal of dimethyl amino group at C4 lead to ----- activity
	All of the following are true for the Sparfloxacin except: - a- It is a second generation quinolone derivatives. - b- Third generation - c- Presence of F increase activity - d- Substituted piperazinyl increase activity -It inhibit -----
 Assiut Univ. Faculty of Pharmacy, Med. Chem. Dept., Med. Chem. June 19, 2011 page 7 of 16 Generic name:	The assigned drug - a- is a monobactam antibiotics - b- is synergistic with ampicillin - c- is a β-lactamase inhibitor - d- Possess intibacterial activity -Used with ampicillin or amoxacillin

Question No. 4

(7 points)

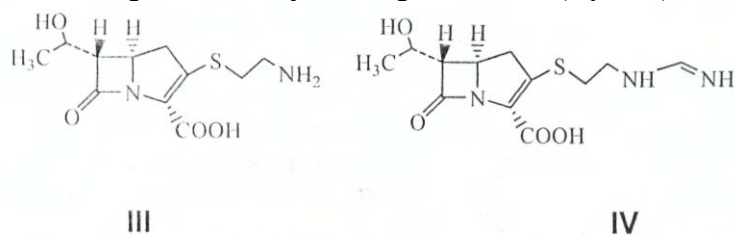
A) Examine compound (I and II) carefully then answer the questions? (3 points)



i) Compound () is β -lactamase resistant due the presence of

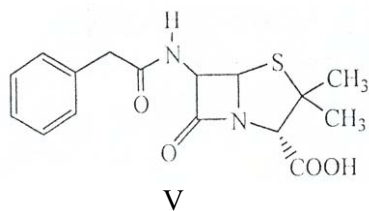
ii) Compound () is metabolically less stable due to -----

B) which drug is chemically stable, give reason? (2 points)



Compound () is chemically stable due to

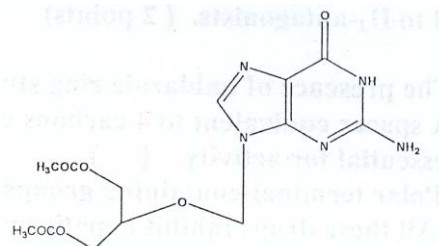
C) Suggest a method to obtain broad spectrum of activity on drug V? (2 points)



Question No. 5 (12 points)

a) Draw the changes in structure VI to obtain the parent drug

(2 points)



VI

b) Which of the following classes of compounds inhibit bacterial protein biosynthesis? (3 points)

- a- Macrolide
- b- Tetracycline
- c- Aminoglycoside
- d- Lincosamides
- e- β -lactams

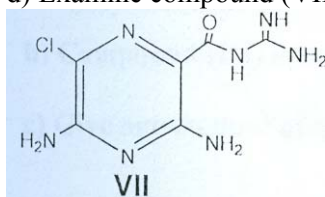
Assiut Univ. Faculty of Pharmacy, Med. Chem. Dept., Med. Chem. 1, June 19, 2011 page 8 of 16

Answer:

c) The active metabolite of spironolactone is ----- (2 points)

Mechanism of action is:

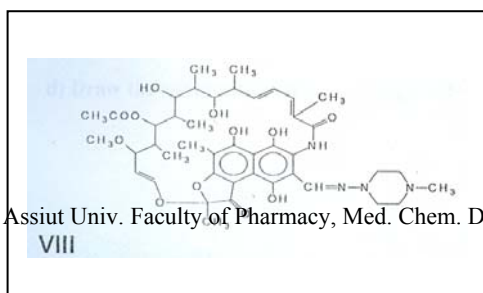
d) Examine compound (VII and VIII) carefully then answer the questions? (5 points)



VII

SAR of amiloride

- 1-
- 2-



VIII

Metabolism of rifampine

- 1-
- 2-

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Fourth part

(32.5 Points)

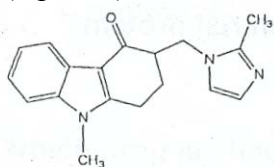
32.5

Q) Mark the true statements with (✓) and the false statements with

(X) with regard to H₂-antagonists. (2 points)

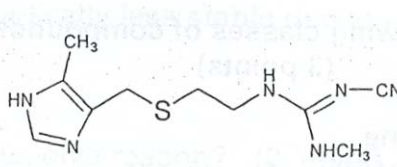
- i) The presence of imidazole ring structure is essential for activity ()
- ii) A spacer equivalent to 4 carbons chain between the ring and the nitrogen group is essential for activity. ()
- iii) Polar terminal-containing groups are essential for activity ()
- iv) All these drugs inhibit hepatic cytochrome P-450 as a side effect. ()

Q) a) Answer the following question regarding compounds (I) and (II)?
(4 points)



(I) Gen.Name..... (II) Gen.Name.....

Med.use.....



Med.use.....

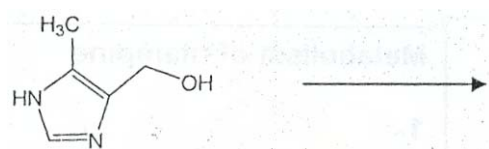
b) Regarding Compound (I) it is a:

- a) H₂-receptor antagonist
- b) Gastrin inhibitor
- c) Proton Pump Inhibitor
- d) 5-HT₃ antagonist

c) Mention the main side effects of compound (II)?

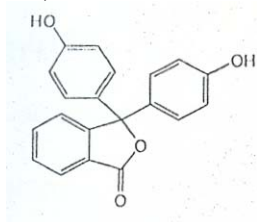
- 1-
- 2-
- 3-

d) Compound (II) can be prepared as follows:

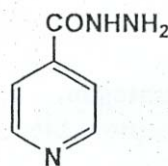


Q) Draw the general structure of classical antihistamines and discuss their structure activity relationships: (2 points)

Q) a) Answer the following question regarding compounds (III) and (IV)?
(3.5 points)



(III) Gen. Name.....



(IV) Gen. Name

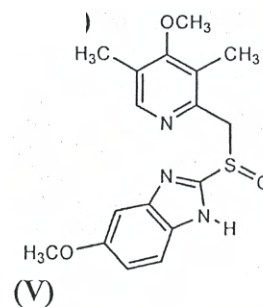
b) Compound (III) is used as, while compound (IV) is a

c) Give one method of assay for ONLY ONE of them?

d) Draw the synthesis scheme for ONLY ONE of them?

Q) a) The generic name of the opposite structure (V) (3 points)
Is:

47

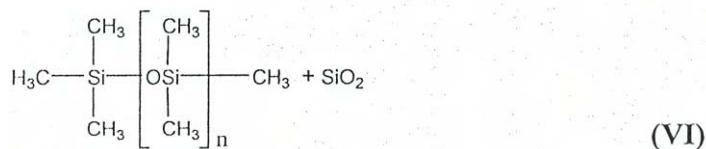


(V)

- i) Omeprazole
- ii) Lanseprazole
- iii) Rabeprazole

- b) It is used for treatment of
- c) It is prodrug that must be activated in medium.
- d) Benzimidazole or substituted benzimidazole is essential for its activity (True / False)
- e) 4- Fluorolkoxy group substitution on the pyridine nucleus enhances the lipophilicity of the molecule (True / False)

Q) Regarding structure (VI) (1.5 points)

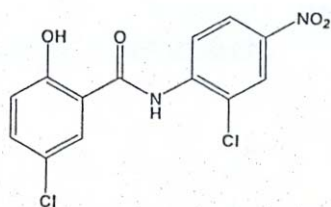
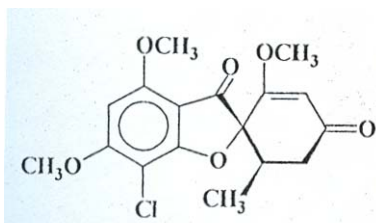


Its Generic name is and it is:

- a) IL2- receptor antagonist
- b) Dopamine receptors blocker
- c) Gastrin inhibitor
- d) Non of the above, but

Q) Draw the general structure of antibacterial sulphonamides and discuss their structure-activity relationships (SARs) (2 points)

Q) a) Answer the following question regarding compounds (VII) and (VIII)?(2.5 points)



(VII) Med. Use

(VIII) Med. Use.....

b) The generic name of Compound (VII) is:

- | | |
|-------------------|------------------|
| i- Miconazole | ii- Ketoconazole |
| iii- Griseofulvin | iv- Econazole |

d) The generic name of Compound (VIII) isI

e) It is chemically named as:

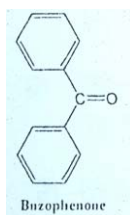
- | |
|---|
| i) 5-Chloro-N-(2-chloro-4-nitrophenyl)-2-hydroxybenzamide |
| ii) 4-Amino-5-chloro-N-[2-(diethylamino)ethyl]-2-methoxybenzamide |

Q) Diphenhydramine (IX) (2 points)

Is a

Its chemically named as

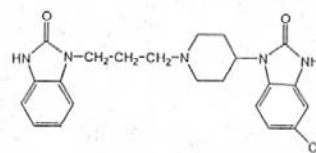
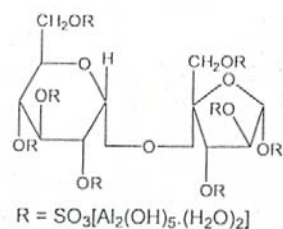
It can be prepared as follows:



Q) Mention the main objectives for use of antacid combinations?
(2 points)

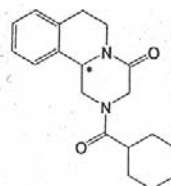
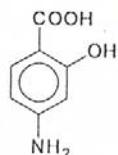
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Q) a) Examine the following structures and write the generic name and medicinal uses:
(8 points)



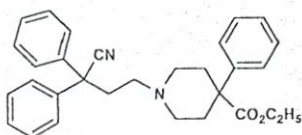
(X) Gen. name:
Med. use:

(XI) Gen. name:
Med. use:



(XII) Gen. name:
Med. use:

(XIII) Gen. name:
Med. use:



(XIV) Gen. name:
Med. use:

(XV) Gen. name:
Med. use:

a) Give the chemical name of ONLY ONE of the above compounds:

b) Structure of major metabolite of (XIV)

c) Compound (II) can be assayed by:

i- Direct titration with NaNO_2 .

Assiut Univ. Faculty of Pharmacy, Med. Chem. Dept., Med. Chem. 1, June 19, 2011 page 14 of 16

ii- spectrophotometrically.

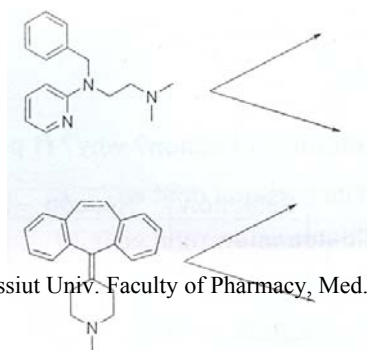
iii-Diazotisation and coupling.

Part IV

25

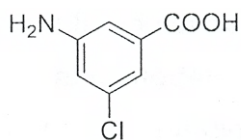
Q 1 Select the appropriate answer (8 points. 1 point each)

- 1) The main site for drug metabolism is:
a) Kidney b) Intestine c) Liver d) Brain
- 2) Soft drugs are contain the structural characteristics required for activity BUT:
a) Not active b) Not metabolized c) Easily metabolized d) Easily excreted
- 3) Drugs are ABSORBED MAINLY in the -----form.
a) Ionized b) Un-ionized c) active d) Inactive
- 4) All of the following are CORRECT about prodrugs. EXCEPT:
a) Prodrugs are more stable than their parent drugs
b) Prodrugs have better bioavailability
c) Prodrugs have more side effects
d) Prodrugs converted to active drugs *in vivo*.
- 5) Which of the following enzymes is involved in PHASE II metabolic reactions
a) Cytochrome P450 b) Esterase c) Reductase d) N-acetyl transferase
- 6) The introduction of the group DECREASE polarity of drugs.
a) OH b) COOH c) CH₃ d) NH₂
- 7) The functional groups used mostly for making prodrugs is:
a) Carboxylic acids and alcohols b) nitro group
c) Carbonyl group d) amino group
- 8) Which of the following is a phase II metabolic pathway of primary amines
a) hydrolysis b) Acetylation c) Oxidation d) sulfate conjugation
- 9) Draw TWO phase I metabolic reactions for the following drugs? (4 points)

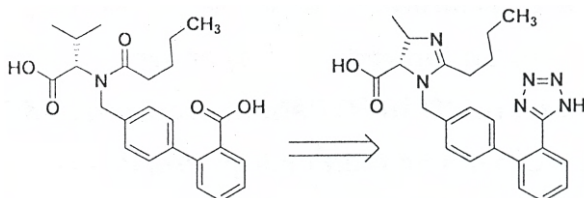


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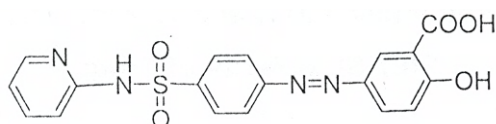
- 10) Suggest TWO phase II reaction for following molecule? (2 points)



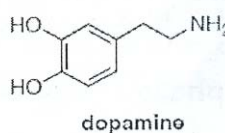
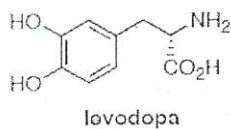
11) In the following lead optimization process, mention show two isosteric groups? (1 point)



12) Mention the rationale for the design of the following prodrug? Draw structure of active metabolite? (2 points)



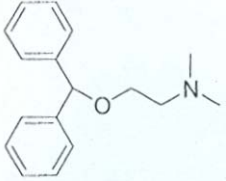
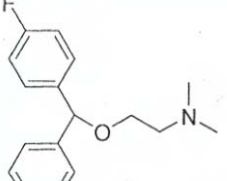
13) Although levodopa is more polar than dopamine, it is used as a prodrug to increase BBB penetration of dopamine, Explain (1 point)



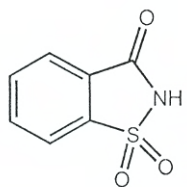
14) Which of the following drugs have shorter duration of reaction? Why? (1 point)

Drug A	Drug B	Selection	Reason

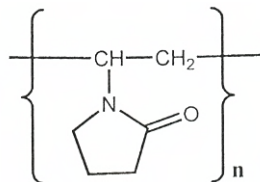
15) Which of the following drugs have LONGER duration of action?why?(1 point)

Drug A	Drug B	Selection	Reason
			

16) Give uses of the following compounds (I) and (II)? (1 point)



(I)



(II)

Use:

Use:

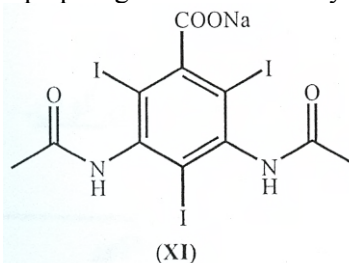
17) Ligands for radionuclides (radiopharmaceuticals) are used for the following objectives: (1.5 points)

a)

b)

Example of these ligands:

18) Compound (XI) is a radiopaque agent used for X-ray examination (2.5 points)



- The high contrast ability is due to the presence of -----
- The high water solubility is due to the presence of -----
- The low viscosity of the compound is due to the presence of -----
- The main side effect is ----- this is due to the presence of ---



**PHARMACOLOGY EXAMINATION FOR
THIRD YEAR PHARMACY STUDENTS**

- All questions are to be attempted.
- Answer the short essay questions according to the order of their appearance (8 marks for each).
- Shade the answers of MCQ and (T or F) in the attached answer sheet (½ mark for each).

Part I -Short Essay Questions (40 marks)

- 1- Mention the following:
 - A) Mechanism of action, one therapeutic use, two adverse effects and one contraindication of misoprostol. (5 marks)
 - B) Mechanism of action, one therapeutic use and two adverse effects of amantadine (3 marks)
- 2- A) Mention the mechanism of action, pharmacokinetics and therapeutic uses of cromolyn. (4 marks)
B) For each of the following disease states name one drug which is preferably used. Mention the mechanism of action and one adverse effect of each drug: (2 marks for each)
 - i- Bipolar affective (manic- depressive) disorders.
 - ii- Absence (petit mal) seizures.
- 3- Concerning benzodiazepines mention: three drug examples, mechanism of action, four therapeutic uses and two adverse effects (8 marks)
- 4- Briefly explain why? (2 marks for each)
 - A) Morphine is useful in the treatment of cardiac asthma with pulmonary edema.
 - B) Morphine should be avoided in patients with head injury.
 - C) Dantrolene is used in the management of malignant hyperthermia.
 - D) Epinephrine is concurrently used with local anesthetics.
- 5- Outline four differences between each of the following pairs of drugs: (4 marks for each)
 - A) Aspirin and paracetamol.
 - B) Heparin and warfarin.

GOOD LUCK



Clinical Biochemistry Dept
12/6/2011
Time allowed : 3 hours

Assiut University
Faculty of Medicine
Clinical Biochemistry Dept

Third year Pharmacy
Second term.
Examination.

=====

All questions are to be answered.

Illustrate your answers with Formulae as much as you can.

- 1) Write down three differences between:-
 - a. Liver Glycogen and muscle glycogen.
 - b. Microsomal and Mitochondrial system of fatty acid elongation.
 - c. Oxidative and nonoxidative deamination.
 - d. Group 11 a and 11 b hormones.
- 2) Write down the following biochemical transformations.
 - i. Propionic acid to succinyl coA.
 - ii. Glucose to serine.
 - iii. Pyruvic acid to acetyl coA.
 - iv. Serine to sphingosine.
- 3) Explain 3 functions of :
 1. α - Oxidation of fatty acids
 2. Gluconeogenesis.
 3. transamination.
 4. parathyroid hormone.
- 4) Write on the following:
 - i. Products obtained from phenylalanine explaining one of them.
 - ii. Mode of pentose phosphate pathway in rapidly dividing cells.
 - iii. Oxidative phosphorylation can be inhibited at many stages, explain.
 - iv. Difference between hexokinase and glucokinase with respect to function.
 - v. Taurine synthesis.

GOOD LUCK

ملحوظة هامة:-

- 1- الرجاء اجابة كل سؤال على حده وبالترتيب وفي صفحة منفصلة
- 2- الامتحان الشفوى من 1-350 عقب النظرى يوم 2011/6/12 وباقى الدفعة من 350 الى الآخر يوم 2011/6/13 الساعة 9 صباحا.

أجب عن الأسئلة التالية

السؤال الأول: ناقش مدى صحة العبارات التالية (مع التعليق): (25 درجة)

- 1- إن التسويق الدوائى نشاط مضلل يهدف الى إثارة رغبات المستهلك (المريض) واستغلال حاجته لإقناعه بشراء الأدوية.
- 2- تقتصر القوانين والتشريعات عللانتاج وتسويق الدواء فقط.
- 3- ان العادات الصحية لأفراد المجتمع فى استهلاك الدواء لها دور فى رواج أو كساد المنتجات الدوائية.
- 4- نظرا للخصوصية الفريدة للسوق الصيدلانى، فإن الضرورة تقتضى أن نصنف الأطباء تماما كما نصنف المرضى.
- 5- رجل التسويق الدوائى أكثر قدرة على وضع الرسالة الإعلانية من رجل التسويق للمنتجات العادية.

السؤال الثانى: اذكر المصطلح العلمى للمفاهيم التالية: (25 درجة)

- 1- هى مجموعة من العناصر التى تعد أساسا للجوانب التى يشملها القرار التسويقى وهى المنتج، والسعر، والمكان، والترويج.
- 2- هى المجال التسويقى الذى تتمتع فيه منشأة معينة بميزة تفضيلية بالنسبة للمنشآت المنافسة لها.
- 3- الطلب الكلى للمشتريين المحتملين للسلعة أو الخدمة.
- 4- مادة كيميائية تؤثر على حياة الانسان وتستعمل فى تغيير أو معالجة الأنظمة الفسيولوجية الخاصة بالمريض.
- 5- هى تلك العلامة المملوكة بواسطة المنتج ذاته، وعادة ما يطلق عليها العلامة القومية.
- 6- عملية وضع أهم البيانات والمعلومات على أو داخل المنتج وهى مهمة لإظهار كيفية استعمال المنتج وفاعليته بالإضافة الى المضاعفات الناتجة عن استعماله.
- 7- القيمة المعطاه لسلعة أو خدمة معينة والتى يتم التعبير عنها فى شكل نقدى.

- 8- عملية نقل المنتجات الدوائية من أماكن الانتاج الى أماكن الاستهلاك فى الوقت والمكان المناسبين.
9- مجموعة الجهود الترويجية التى تسعى لتعريف جمهور الأطباء واقناعهم بأنواع المنتجات الدوائية ودفعهم لوصفها لمرضاهم.

10- هو الذى يتعامل مع الأطباء لإقناعهم باستخدام أدوية شركته دون الشركات الأخرى.

السؤال الثالث: ما اسم الاستراتيجية المتبعة فى كل حالة مما يلى: (30 درجة)

- 1- عندما يتعامل المسوق مع السوق الكلى ككتلة واحدة أو كقطاع واحد.
- 2- عندما تضيف الشركة خطوط جديدة الى خطوط منتجاتها الحالية التى تختلف استخداماتها عن المنتجات الأخرى ولكن تحت نفس العلامة.
- 3- عندما تقوم الشركة بتقليص عدد المنتجات الداخلية فى الخط الواحد أو عدة خطوط إنتاجية.
- 4- عندما يحاول المنتج تحقيق أكبر قدر من تغطية السوق ولذا فإنه يتعامل مع الأكبر عدد ممكن من تجار التجزئة والجملة فى كل منطقة.
- 5- عندما تحاول الشركة أن تدفع مستهلكيها الى زيادة المستوى الشرائى لديهم وجذب المستهلكين الذين يتعاملون مع المنافسين ، واقناعهم بالتعامل معها.

السؤال الرابع: اكتب فى الموضوعات التالية: (20 درجة)

- 1- أهمية دراسة السوق.
- 2- خصائص المنتجات الصيدلانية.
- 3- العوامل المؤثرة فى تحديد عناصر المزيج الترويجى الدوائى.
- 4- أساسيات الأعمال التنفيذية لرجل البيع.

انتهى الامتحان مع أطيب التمنيات بالتوفيق



Assiut university
Faculty of medicine
Paracitology dapartment
Date:27/6/2011
Time allowed: one hour

Parasitology examination for Third year students of pharmacy

Discuss briefly the following (Total 40 marks)

- (1) Sources of parasitic infections (5 marks)
- (2) Ectopic fascioliasis (5 marks)
- (3) Autoinfection (5 marks)
- (4) Bancroftian filariasis (5 marks)
- (5) Diagnosis and control of schistosomiasis (5 marks)
- (6) Sleeping sickness (5 marks)
- (7) Parasites transmitted by dogs and cats (5 marks)
- (8) Diagnosis and control of malaria (5 marks)

Good luck

Prof, Dr. ABDRL RAHMAN . M . ELBADR

امتحان الشفوى عقب التحريرى مباشرة



قسم الباثولوجيا



كلية الطب

Date: 27 / 6 / 2011

Time: 1 hour

Pathology Examination for Third Year Pharmacy Students

- 1- Compare between dry and moist gangrene in a table form. (10 marks)
 - 2- Mention the spread of malignant tumors. (10 marks)
 - 3- Enumerate the followings : (5 marks each)
 - a- Types of granuloma and give an example for each type.
 - b- Factors affecting repair (5 only) .
 - c- Complications of intestinal bilharziasis.
 - d- Fate and effects of thrombi.
-

Good Luck

Oral Examination:

All students after written examination (27/6/2011)



Midterm Pharmacology Examination for 3rd year Pharmacy Student (Fresh)

Part one: For each of the following MCQs, select the one most appropriate answer (shade the answer of each question in the answer sheet) (1/2 mark for each)

1- One of the following routes of administration is used for highly irritant drugs:

- (A) Oral administration (B) Inhalation
(C) Sublingual administration (D) Intravenous administration

2- Phase II metabolic reactions Include all the followings EXCEPT:

- (A) Hydrolysis (B) Glucoronidation
(C) Sulfation (D) Glutathione conjugation

3- Factors affecting distribution of drugs include all the followings EXCEPT:

- (A) Liver disease (B) Regional blood flow
(C) Capillary permeability (D) plasma protein binding

4- One of the following is applicable to antagonist:

- (A) Interacts with receptors without producing any effect
(B) Produces an effect without interacting with receptors
(C) Interacts with the receptors with initiating changes in the cell leading to various effects
(D) Interacts with plasma proteins without producing any effects

5- One of the following is incorrect regarding therapeutic index?

- (A) It equals LD₅₀/ED₅₀ (B) It equals ED₅₀/LD₅₀
(C) It indicates safety of drugs (D) If it equals one, the drug can not be used therapeutically

6- Concerning partial agonist, all the following are correct EXCEPT:

- (A) It produces lower response than that of full agonist in the presence of an antagonist
(B) It produces dose response curve similar to the full agonist in the presence of an antagonist that irreversibly blocks some of the receptors
(C) It enhances the full agonist response (D) Both A and B are correct

7-All of the following are intracellular second messengers that mediate signal transduction EXCEPT:

- (A) Cyclic AMP (B) Inositol trisphosphate
(C) Diacyl glycerols (D) G protein

8- Concerning adrenergic transmission, one of the following statements is CORRECT:

- (A) Conversion of tyrosine into dopa occurs in storage vesicles
(B) Activation of central α_2 - receptors increases peripheral vascular resistance
(C) Activation of β_1 - receptors increases renin release
(D) Uptake-1 is highly specific for norepinephrine

9- Concerning catecholamines, one of the following statements is CORRECT:

- (A) Epinephrine increases triglyceride contents of adipose tissues
(B) Each of epinephrine and norepinephrine increases blood pressure and heart rate
(C) Dopamine activates D₁, β_1 and α_1 - receptors in a dose dependant manner
(D) Each of isoproterenol and dobutamine selectively activates β_1 -receptors

10-Concerning therapeutic uses of sympathomimetic drugs, one of the following statements is incorrect:

- (A) Salmeterol is used by inhalation in acute bronchial asthma
- (B) Midodrine is used in orthostatic hypotension
- (C) Amphetamine but not ephedrine is used in attention deficit hyperactivity disorders
- (D) Ritodrine is used to delay premature labor

11-Concerning α -adrenoceptor blocking agents, one of the following statements is correct:

- (A) Tamsulosin is better than prazosin in patients with benign prostatic hyperplasia
- (B) First dose phenomenon and tachycardia are the main adverse effects of prazosin
- (C) Phenoxybenzamine is preferable to phentolamine in cases of hypertensive crisis
- (D) The hypotension associated with large doses of phenoxybenzamine is effectively reversed by epinephrine

12-Concerning β -adrenoceptor blocking agents, one of the following statements is incorrect:

- (A) Pindolol is preferably used in patients who are liable to develop bradycardia
- (B) Carvedilol blocks α_1 , β_1 and β_2 receptors
- (C) Nebivolol possesses nitric oxide mediated vasodilator effect
- (D) Atenolol is preferable to propranolol in patients with essential tremors

13- Contraindications to the use of choline esters Include all the following EXCEPT:

- (A) Hyperthyroidism (B) Bronchial asthma (C) Peptic ulcer (D) Urinary retention

14- One of the following drugs Is used in glaucoma and xerostomia:

- (A) Pilocarpine (B) Physostigmine (C) Neostigmine (D) Echothiophate

15- All the following drugs and their linked therapeutic uses are correct EXCEPT:

- (A) Neostigmine.....atropine poisoning (B) Edrophonium.....diagnosis of myasthenia gravis
- (C) Scopolamine.....motion sickness (D) Pirenzepine.....peptic ulcer

Part Two: Select (T) for true answer and (F) for false answer (shade the answer of each question in the answer sheet) (1/2 mark for each)

- 1- Receptor up-regulation may be present after long term exposure of cells to agonist
- 2- Drug tolerance is a condition of increased response to drug on its repeated administration
- 3- All muscarinic cholinergic receptors belong to the G-protein coupled receptors
- 4- Half life of a drug is directly proportional with clearance
- 5- V_d is the ratio of amount of the drug in the body to its plasma concentration at zero time
- 6- 5 half lives are required for a drug to reach steady state concentration
- 7- MAO enzyme is located in mitochondria of adrenergic neurons and GIT
- 8- α -methyldopa directly activates central α_2 receptors
- 9- Purinergic neurons in GIT is an example of NANC transmission system
- 10- Guanadrel enters the adrenergic nerve terminals and prevents the storage and release of norepinephrine
- 11- Prior administration of reserpine can prevent the sympathomimetic effects of subsequently administered amphetamine
- 12- Stimulation of postganglionic sympathetic fibers supplying sweat glands causes release of acetylcholine
- 13- The enzyme choline acetylase is essential in acetylcholine synthesis
- 14- Large doses of atropine produces bradycardia due to central blockade of vagus nerve nucleus
- 15- Pralidoxime is effectively used in late stages of organophosphorous poisoning

Good Luck

Faculty of Medicine
Pharmacology Department

Date: 31/12/2011
Time allowed: 1/2 hour

Pharmacology Midterm test for Third Year pharmacy students (First-Term)

Student's Name:.....

Student's Serial number:.....

Answer of part I (MCQs)

1	2	3	4	5	6	7	8	9	10
☐ D	☐ A	☐ A	☐ A	☐ B	☐ C	☐ D	☐ C	☐ C	☐ A
11	12	13	14	15					
☐ A	☐ D	☐ D	☐ A	☐ A					

Answer of part II (T or F)

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



Assiut University
Faculty of Medicine
Department of Pharmacology

Date: 31/12/2011
Time allowed: 11/4 hour

Practical Pharmacology Examination for 3rd year Pharmacy Student (Fresh)

For each of the following MCQs, select the one most appropriate answer
(Shade the answer of each question In the attached answer sheet) (1 mark for each)

1- Guinea pigs are the animals of choice for testing one of the following:

- (A) The effect of drugs on the neuromuscular junction
- (B) The effect of drugs on the respiratory and cardiovascular system
- (C) Acute and chronic toxicity studies
- (D) The CNS depressant action of drugs

2- One of the following is the convenient method for administering drugs into frogs:

- (A) Intravenously through one of their superficial tail veins
- (B) Orally using stomach tube
- (C) Subcutaneously into the dorsal lymph sac
- (D) Intravenously into the marginal ear vein

3-Regarding handling of a mouse, one of the following statements is incorrect:

- (A) The mouse is lifted from the tail
- (B) The mouse is grasped from its nape between index and thumb fingers
- (C) The mouse is grasped by the 2 hands and lifted from its ears
- (D) The mouse is allowed to grip the wire mesh of the cage with its forelegs

4- Subcutaneous administration is the most suitable when the drug is:

- (A) Highly irritant
- (B) To be administered in large volume by infusion
- (C) Available in a suspension form
- (D) To be administered in an emergency state

5- Concerning intravenous route of administration, one of the following statements is incorrect:

- (A) It has rapid onset of action
- (B) It is not suitable for irritant drugs
- (C) It is not suitable for suspensions
- (D) It is difficult to treat overdose reaction

6-Phenobarbitone was injected into group of mice for seven consecutive days. Subsequently on the 8th day thiopental sodium was injected and the sleeping time was determined and compared to saline treated control group. One of the following observations was recorded:

- (A) The sleeping time was less than that of control group
- (B) The sleeping time was more prolonged than that of control group
- (C) The sleeping time was identical to that of control group
- (D) Thiopental does not produce hypnosis in all animals

7- The observation recorded in the above mentioned question (No. 6) is due to one of the following:

- (A) Repeated administration of phenobarbitone decreases the rate of biotransformation of thiopental
- (B) Repeated administration of phenobarbitone increases toxicity of thiopental
- (C) Repeated administration of phenobarbitone increases the rate of biotransformation of thiopental
- (D) Repeated administration of phenobarbitone decreases the rate of excretion of thiopental

8- Orally administered magnesium sulphate to a rat produces one of the following effects:

- (A) Loss of righting reflex (B) Slow and shallow respiration
(C) Purgative effect (D) Constipation

9-Administration of one of the following solutions would decrease the excretion of sodium salicylate:

- (A) Ammonium chloride (B) Sodium bicarbonate (C) Sodium carbonate (D) Normal saline

10- The drug selected in the above mentioned question (No.9) produces one of the following effects:

- (A) Enhanced ionization of salicylate (B) Decreased ionization of salicylate
(C) Neutralization of salicylate (D) precipitation of salicylate

11- Concerning the dose response curve, one of the following statements is correct:

- (A) It represents the relation between the dose of a drug and its plasma levels
(B) A steeper slope indicates the wide margin of safety of a drug
(C) Competitive antagonists produce shift of the curve to the left and downwards
(D) Non-competitive antagonists produce shift of the curve to the right and downwards

12- One of the following drugs is a non-competitive antagonist:

- (A) Propranolol (B) Prazosin (C) Phenoxybenzamine (D) Atropine

13-Instillation of atropine into rabbit's eye causes one of the following effects:

- (A) Miosis and reduction in intraocular pressure (B) Mydriasis and cycloplegia
(C) Miosis and cycloplegia (D) Mydriasis and spasm of accommodation

14- In a rabbit, atropine was administered into the left eye and ephedrine was administered into the right eye. One of the following effects was observed:

- (A) Light reflex was abolished in both eyes (B) Light reflex was present in the left eye
(C) light reflex was present in both eyes. (D) Light reflex was abolished only in the left eye

15- Homatropine produces one of the following ocular effects:

- (A) Stimulation of cholinergic receptors in the circular muscle fibers of the iris
(B) Blockade of cholinergic receptors in the circular muscle fibers of the iris
(C) Stimulation of cholinergic receptors of the ciliary muscles
(D) Relaxation of the radial muscles of the iris

16- All the following drugs are used in the treatment of glaucoma EXCEPT:

- (A) Timolol (B) Epinephrine (C) Pilocarpine (D) labetalol

17- All the following drugs produce miosis when applied locally to the eye EXCEPT:

- (A) Ecothiophate (B) Epinephrine (C) Pilocarpine (D) Physostigmine

18- Concerning physiological salt solution used for Isolated rabbit intestine preparation, one of the following is Incorrect:

- (A) Tyrode's solution is used (B) Lock-Ringer's solution is used
(C) It should be bubbled with air, oxygen or carbogen mixture
(D) The temperature of the solution is kept at 37-38°C

19- One of the following drugs can decrease contraction of isolated rabbit's intestine:

- (A) Barium chloride (B) Epinephrine (C) small dose of nicotine (D) Acetylcholine

20-A relaxant action of the drug selected in question (No.19) is produced by one of the following mechanisms:

- (A) Stimulation of peripheral alpha and beta adrenoreceptors
(B) Blocking of both alpha and beta adrenoreceptors
(C) Stimulation of peripheral muscarinic receptors
(D) Stimulation of parasympathetic ganglia

21- An unknown drug caused contraction of the Isolated rabbit's Intestine which was persisted even after the addition of each of a large dose of nicotine or atropine. The stimulant effect of the unknown drug is due to one of the following:

- (A) Stimulation of peripheral muscarinic receptors
- (B) Direct action on the smooth muscles
- (C) Stimulation of the release of acetylcholine from the cholinergic nerve terminals
- (D) Inhibition of cholinesterase enzyme

22-Regarding the effect of drugs on isolated rabbit's heart, all the following statements are true EXCEPT

- (A) Digoxin produces +ve inotropic and +ve chronotropic effects
- (B) Epinephrine produces +ve inotropic and +ve chronotropic effects
- (C) Acetylcholine produces -ve inotropic and -ve chronotropic effects
- (D) Calcium ions produce opposite effects to that of potassium ions

23- In an anesthetized rabbit, the I.V. Injection of acetylcholine produces all the following effects on blood pressure EXCEPT:

- (A) Biphasic action (increase followed by decrease)
- (B) Its action is reversed after pretreatment with large dose of atropine
- (C) Its action is potentiated by physostigmine
- (D) Its action is due to stimulation of muscarinic receptors

24- All the following drugs will produce a decrease in the blood pressure when injected intravenously EXCEPT:

- (A) Acetylcholine (B) Methoxamine (C) Epinephrine (D) Physostigmine

25- Isoproterenol was injected I.V into a rabbit, one of the following effects was observed:

- (A) increased blood pressure and decreased heart rate
- (B) Increased blood pressure and increased heart rate
- (C) Decreased blood pressure and decreased heart rate
- (D) Decreased blood pressure and increased heart rate

26- The effect selected in the previous question (No.25) is due to:

- (A) Stimulation of β_1 and β_2 receptors
- (B) Stimulation of β_1 receptors only
- (C) Stimulation of β_2 receptors only
- (D) Blockade of β_1 and β_2 receptors

27-Intravenous injection of norepinephrine into anesthetized rabbit caused rise in blood pressure which is characterized by all the following EXCEPT:

- (A) It is usually accompanied by bradycardia
- (B) It is mainly due to stimulation of α_1 -adrenoceptors
- (C) It is mainly due to stimulation of α_2 -adrenoceptors
- (D) Can be blocked by prior administration of prazosin

28- Regarding organophosphorous poisoning, all of the following statements are true EXCEPT:

- (A) The primary cause of death is respiratory failure
- (B) Atropine is effectively used in the treatment
- (C) Atropine reverses the neuromuscular paralysis
- (D) Oximes are effective only within short time after poisoning

29- All the following are among the signs of organophosphorous poisoning EXCEPT:

- (A) Pinpoint pupil (B) Bradycardia (C) Hypotension (D) Dryness of secretions

30- A 50-year old man complains of shortness of breath, dyspnea on exertion and ankle edema. The condition was diagnosed as moderate congestive heart failure. Initial treatment will include one of the following drugs:

- (A) Verapamil (B) Captopril (C) Propranolol (D) Guanadrel

31- The drug chosen in Q. 30 Produces all the following effects EXCEPT:

- (A) Reduction of both cardiac preload and afterload
(B) Reduction of peripheral vascular resistance
(C) Decreased production of angiotensin II
(D) Decreased production of bradykinin

32- A 60-year old man, recording his blood pressure showed figures of 170/100 mmHg. The proper non-drug measures failed to control his blood pressure. One of the following drugs was then preferably prescribed:

- (A) Sodium nitroprusside I. V.
(B) Spironolactone orally
(C) Hydrochlorothiazide orally
(D) Diazoxide I.V.

33- All the following statements are applicable to the drug selected in Q.32 EXCEPT:

- (A) It decreases plasma volume and consequently cardiac output
(B) It produces vasodilatation through opening of vascular potassium channels
(C) It can be also used in management of heart failure
(D) Hypokalemia and hyperuricemia are among its adverse effects

34- A 60-year old heavy smoker woman complains from pressing chest pain radiating to left shoulder. The condition was diagnosed as stable angina pectoris. One of the following drugs is prescribed to relieve acute attack of angina'

- (A) Nitroglycerin (B) Nifedipine (C) Digoxin (D) Atenolol

35- The drug selected in Q. 34 produces one of the following effects:

- (A) Inhibition of Na/K ATPase in cardiac tissue
(B) Activation of adenylyl cyclase and an increase in cGMP
(C) Blockade of calcium channels in cardiac tissue
(D) Blockade of cardiac β_1 adrenoceptors

Good Luck

Professor Dr. Hussein El-Bitar

Dr. Romany H Thabet, lecturer

Pharmacology Practical test for Third Year pharmacy students (First-Term)

Student's Name:.....

Student's Serial number:.....

Answers

1	2	3	4	5	6	7	8	9	10
B	C	C	C	B	A	C	C	A	B
11	12	13	14	15	16	17	18	19	20
D	C	B	D	B	D	B	B	B	A
21	22	23	24	25	26	27	28	29	30
B	A	A	B	D	A	C	C	D	B
31	32	33	34	35					
D	C	B	A	B					

Pharmacology Examination
for
Third year Pharmacy Student
Frish

Time allowed: Three hours

Date: 4/1/2012

NOTE

الامتحان يقع في هذه الورقة وفي ظهرها

- * All the following questions are to be attempted in your answer notebook.
- * Answer each question in a separate page.
- * You have 10 Questions, 7 Mark for each

1- Select true or false for each of the followings giving your reasons:

- A) Pralidoxim (PAM) should be used in early stages of organophosphorous poisoning.
- B) Neostigmine but not physostigmine is used for treatment of atropine poisoning.
- C) The main function of Gs protein is to regulate gene expression.
- D) Therapeutic index is the least dose of a drug required to produce a therapeutic effect.

II- Outline the following

- A) **Four** atropine substitutes with different therapeutic uses.
- B) **Three** therapeutic uses of pilocarpine

III- Give a brief account on

- A) **Four** factors affecting drug metabolism.
- B) Volume of drug distribution.

IV- Mention the differences between each of the following pairs:-

- A) Up and down regulation of receptors.
- B) Competitive and non competitive receptor blockers.
- C) Idiosyncrasy and allergic reactions.

من فضلك أقلب الورقة لمتابعة باقى الأسئلة

V- Enumerate each of the followings:-

- A) **Three** precautions to be considered during use of digoxin.
- B) **Four** cardiovascular protective effects of the ACE inhibitors, captopril.

VI- Mention each of the followings:-

- A) **Four** therapeutic uses of verapamil.
- B) Mechanism of action of nitrates in angina pectoris.

VII-In a table form compare between furosemide and spironolactone as regarding:-

- A) Site of action.
- B) Mechanism of action.
- C) Main side effects.

VIII- Mention each of the followings:-

- A) The differences between the antidysrhythmic activity of each of amiodrone and adenosine.
- B) **Four** non lipid lowering effects of statins.

IX- Briefly explain the reasons underlying each of the following:

- A) Dopamine is recommended in shocked patients with compromised renal function.
- B) Tamsulosin is used in the treatment of benign prostatic hyperplasia.
- C) Salbutamol is used in the treatment of bronchial asthma.
- D) Propranolol is used cautiously in diabetic patients.

X- Write in your answer book the name of the item that matches the description given:

- A) A drug used in attention deficit hyperactivity disorder in children.
- B) A selective β_2 agonist used to delay premature labour.
- C) A selective α_1 agonist used in the treatment of chronic orthostatic hypotension.
- D) A non competitive alpha blocker used in the treatment of pheochromocytoma.
- E) A mixed acting sympathomimetic used in hypotensive states associated with spinal anesthesia.
- F) It is the rate limiting enzyme in the biosynthesis of norepinephrine.
- G) It is the major pathway for terminating the action of norepinephrine.

GOOD LUCK

Third Year Medical
Medical Biochemistry Examination
End of the Term Exam

- 1) Write down 3 differences between:
 - a. Enzymes and Inorganic catalysts.
 - b. B-form, A-form and Z-form of DNA.
 - c. Functions of copper and Zinc.
 - d. Phase I and phase II xenobiotics.
- 2) Define only the following:
 - a. Osteomalacia.
 - b. Vitamins.
 - c. Mutations.
 - d. Solubility product of calcium and phosphorous.
- 3) Write down the functions of :
 - a. Phosphorous.
 - b. Telomere.
 - c. Biotin.
 - d. Antienzymes.
- 4) Write on:
 - a. Factors affecting iron absorption.
 - b. Role of vitamin A in vision.
 - c. Types of feedback (allosteric) inhibition of enzymes.
 - d. Mechanism of nucleotide excision repair.
- 5) Discuss:
 - a. The different activation steps of Vitamin D.
 - b. Drugs as competitive inhibitors of enzymes.
 - c. Post-transcriptional processing of m-RNA.
 - d. Causes of hypocalcemia.
 - e. antioxidants.

Good Luck,

ملحوظة هامة: الرجاء إجابة كل سؤال على وفي صفحة منفصلة وبالترتيب

* الامتحان الشفوي غدا الموافق 2012/1/16 في تمام الساعة 9 صباحا لكل الطلاب.

Third Year Medical
Medical Biochemistry Examination
End of the Term Exam
MCQ

Choose the best answer

- 1) Many antimicrobials inhibit protein translation, which of the following antimicrobials is correctly paired with its mechanism of action?
 - a. Tetracyclines inhibit peptidyltransferase.
 - b. Diphtheria toxin binds to the 30S ribosomal subunit.
 - c. Puromycin inactivates EF -2.
 - d. Clindamycin binds to the 30S ribosomal subunit.
 - e. Erythromycin binds to the 50S ribosomal subunit.
- 2) Which of the following is required for both prokaryotic and eukaryotic protein synthesis?
 - a. Binding of the small ribosomal subunit to the shine-Dalgarno sequence.
 - b. fMet- tRNA.
 - c. Movement of the mRNA out of the nucleus and into the cytoplasm.
 - d. Recognition of the 5'-cap by initiation factors.
 - e. Translocation of the peptidyl-tRNA from the A site to the P site.
- 3) Which one of the following statements concerning vitamin B₁₂ is correct?
 - a. The cofactor form is vitamin B₁₂ itself.
 - b. It is involved in the transfer of amino groups.
 - c. It requires a specific glycoprotein for its absorption.
 - d. It is present in plant products.
 - e. Its deficiency is most often caused by a lack of the vitamin in the diet.
- 4) Which one of the following statements concerning vitamin D is correct?
 - a. Chronic renal failure requires the oral administration of 1,25-dihydroxycholecalciferol.
 - b. It is required in the diet of individuals exposed to sunlight.
 - c. 25-Hydroxycholecalciferol is the active form of the vitamin.
 - d. Vitamin D opposes the effect of parathyroid hormone.
 - e. A deficiency in vitamin D results in an increased secretion of calcitonin.

- 5) While studying the structure of a small gene that was recently sequenced during the Human Genome project, an investigator notices that one strand of the DNA molecule contains 20 As, 25 Gs, 30 Cs, and 22 Ts, How many of each base is found in the complete double-stranded molecule?
- A = 40, G = 50, C = 60, T = 44.
 - A = 44, G = 60, C = 50, T = 40.
 - A = 45, G = 45, C = 52, T = 52.
 - A = 50, G = 47, C = 50, T = 47.
 - A = 42, G = 55, C = 55, T = 42.
- 6) Enhancers are transcriptional regulatory sequences that function by enhancing the activity of
- General transcriptional factors.
 - RNA polymerase to enable the enzyme to transcribe through the terminating region of a gene.
 - Transcription factors that bind to the promoter but not RNA polymerase.
 - RNA polymerase at a single promoter site.
 - Spliceosomes.
- 7) Which of the following statements is TRUE?
- Niacin deficiency leads to beriberi.
 - Oxidative decarboxylation requires both thiamin and pantothenic acid.
 - Dietary carbohydrate determines the pyridoxal phosphate requirement.
 - Biotin deficiency leads to pellagra.
- 8) Which of the following is not containing a vitamin B component?
- Thiamine pyrophosphate.
 - UDP - glucuronic acid.
 - NAD⁺.
 - The flavoproteins, e.g., succinate dehydrogenase.
- 9) Pantothenic acid is a constituent of the coenzyme involved in :
- Decarboxylation.
 - Acetylation.
 - Dehydrogenation.
 - Oxidation.
- 10) A Conformation of an enzyme is :
- Flexible structure.
 - Is a defined shape and volume.
 - A defined volume ..
 - All of the above.

Good Luck,

Date: 22/1/2012
Time: two hours
Marks: 80

Assiut University
Faculty of Medicine
Dept. of Community Medicine

Exam in Public Health for 3rd Year Pharmacy

Answer the Following Questions:

- (1) Mention the components of the epidemiologic infectious cycle (6 Mark)
- (2) Give some examples for chemoprophylaxis. (5 Mark)
- (3) Mention the dangerous groups of carriers. (6 Mark)
- (4) Mention the diseases targeted by the vaccination during the first two years of child life. (9 Mark)
- (5) List the approaches of achieving health promotion. (10 Mark)
- (6) Mention the steps of TB prevention. (7 Mark)
- (7) List the body fluids from which HIV could be isolated. (7 Mark)
- (8) Mention symptoms and complications of Swine Influenza in man. (12 Mark)
- (9) Mention the ten Steps to Successful Breastfeeding
- (10) List factors that may help effective communication. (10 Mark)

"Good Luck"

Prof. Mohamad Qayed
Prof. Omaila EI-Gibaly
Dr. Manal Darwish

18

First Part (Prof. Dr. S. Ismail) (18 marks)

First Question

10

Answer Sheet for First Question

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

Choose the most proper answer in the following statements: (0.5 mark for each)

1- Regarding the epinephrine salts ophthalmic preparations:

- A- it is better to be packaged in glass containers.
- B- it is better to be packaged in plastic containers.
- C- it is better to keep the pH value alkaline.

2- The main advantage of gel rite ophthalmic gel is:

- A- its ability to form gel in the cul-de-sac within few seconds.
- B- it forms gel at a much lower concentration.
- C- both A and B.

3- The disadvantages associated with aqueous ophthalmic gels for ocular delivery is due to

- A- the tears diffuse into the gel interior and leach out the water soluble drugs.
- B- they induce an irritant effect.
- C- they are chemically unstable.

4- It is better for an ophthalmic solution preserved with phenylethyl alcohol to be packaged in:

- A- glass container
- B- plastic container
- C- rubber container

5- The most suitable antioxidant for epinephrine salts, as eye drops, is:

- A- EDTA
- B- BHA
- C- sodium bisulphite

6- When a hypotonic ophthalmic solution is instilled into the eye, the drug concentration on the ocular surface is temporarily:

- A- decreased
- B- increased
- C- not affected

7- It is recommended for the polymer used to increase the viscosity of ophthalmic solution to display:

- A- Newtonian flow
- B- plastic flow
- C- pseudoplastic flow

8- Polyvinyl alcohol is used to:

- A- reduce drug decomposition.
- B- increase the viscosity.
- C- preserve the ophthalmic solutions.

9- In ocusert pilo 20, the release rate is:

- A- 20 µg/min. B- 20 µg/hr C- 20 mg/hr

10- The diffusion of drugs from ocuserts follows:

- A- first order B- zero order C- non of the above

11- Cellulose acetate hydrogen phthalate gels are formed via:

- A- change in the pH value. B- addition of electrolytes. C- temperature change.

12- Which of the following is not true?

- A- the cornea offers as a barrier for lipophilic drugs.
B- the cornea offers as a barrier for hydrophilic drugs.
C- the cornea offers as a barrier for high molecular weight drugs.

13- Which is not true regarding chlorbutanol?

- A- its use is limited to formulations packaged in glass containers.
B- it is slowly decomposed and resulting in an increase in pH value.
C- it is volatile and can permeate plastic containers.

14- The rate controlling membrane in ocuserts is composed of:

- A- ethylene vinyl acetate B- poloxamer C- carbomer

15- The use of organic mercurials as preservatives in ophthalmic solutions is restricted due to:

- A- possibility of mercury to be deposited into the lens. B- their alkaline pH values
C- their ability to form complexes with most drugs.

16- Poloxamer 407 ophthalmic gel is formed via:

- A- change in the pH value. B- addition of electrolytes. C- temperature change.

17- Which is true regarding phenylethyl alcohol?

- A- it is not able to permeate through the plastic containers.
B- it is readily soluble in water. C- it is liable to be salted out from the ophthalmic solutions.

18- Thesurfactants could be arranged according to their toxic effects as:

- A- anionic> cationic > nonionic. B- non ionic > anionic > cationic.
C- cationic> anionic> nonionic.

19- A slightly acidic drug intended to be formulated into eye drops. This drug will be well absorbed if the pH of the solution is:

- A- slightly acidic B- slightly bqsic C- neutral

20- The corneal penetration of dipivalyl epinephrine is much greater than the parent drug due the following reason:

- A- it is more hydrophilic B- it is more lipophilic C- it chemically stable.

Complete the following statements:

(one mark for each space)

1- Phase transition in gel formation can be mediated by a change in:

- A-
- B-
- C-

2- Examples of drug-contact lens interactions are:

- A-
- B-
- C-

3- Nanoparticles are classified into:

- 1-
- 2-

Second Part (Prof. Dr. Ehsan Hafez) (22 marks)

22

I. Denote (T) for the true statement and (F) for the false one: (5 marks)

- () - Crushed-glass test is suitable for all kinds of glass containers.
- () - Vasoconstrictor drugs can be injected into S.C. route.
- () - Ethylene oxide gas is safely used to sterilize plastic parenteral containers.
- () - Allergy of an individual to penicillin can be tested by the I.M. route.
- () - The non-volatile pyrogen can be removed by distillation of H₂O.
- () - Pyrogen test for oily injections is based on fever response.
- () - Benzyl-benzoate is the solvent of choice for dimercaprol injection.
- () - Addition of Na₂O to pure silica facilitates glass processing.
- () - I.Th. injection is made between the 4th and 5th lumbar vertebrae.
- () - lipophilic drugs can be injected by I.V. route as o/w emulsion.

II. Give the suitable injection vehicle and route of administration for each of the following drugs: (9 marks)

Drug	Vehicle	Rout of administration
Dimercaprol		
Insulin		
Depot penicillin		
Progesterone propionate		
Thiopentone sodium		
Hydrocortisone		
Streptomycin sulfate for treatment of meningitis		
Large volume parenterals		
Amethocain HCl		

III. Give the scientific term for each of the following statements: (4 marks)

Statement	Scientific Term
1. An enzyme that facilitates the infusion of parenteral fluids.	
2. It is S.C. infusion of large volume parenterals.	
3. It is the diagnostic route for allergy or immunity tests.	
4. Treatment of glass containers by silicone	

IV. Illustrate by a diagram the following:

(4 marks)

a- Effect of I.V. injection of 3% NaCl on RBCs.

b- An example for the use of compartment vial.

Third Part (Dr. Mona M. Elmahdy) (12 marks)

12

I. Denote (T) for the true statement and (F) for the false ones and correct them: (3 marks)

1. Complex coacervation of polycompartment system is carried out by employing gelatin as a polycation and hemoglobin and gum Arabic as polyanion. ()
.....
2. Salt coacervation is a type of encapsulation utilizing system of phase separation from an organic solution. ()
.....
3. The presence of Van Wheel in Wurster coating equipment caused fine particles to be returned from the coating section to the settling section. ()
.....

II. Give reason(s) for each of the following:

(3 marks)

1. Presence of compressed air in Wurster coating equipment.

.....

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2. In Wurster microencapsulation, the settling section has wider sectional area than coating section.

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3. Microcapsules reduce the side effects of irritating drugs than tablets.

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III. Discuss ONLY TWO of the following:

1. Microencapsulation process in aqueous solution media are:

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.....

Draw one of them

2. Function of microcapsules.

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3. Wurster process.

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Fourth Part (Dr. Ikramy A. Khalil) (18 marks)

18

I. Answer the following questions:

(5 marks)

1. Mention TWO advantages and TWO disadvantages of pressure filling of aerosols.



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2. Briefly discuss the advantages and disadvantages of membrane permeation-controlled drug delivery systems.

3. Explain why the following drugs are not suitable candidates for oral CR dosage forms (furosemide – sulphonamides – digoxin).

II. Look at the given figures and complete the tables:

(3 marks)

1. Regarding a push-pull osmotic system shown in Figure 1:

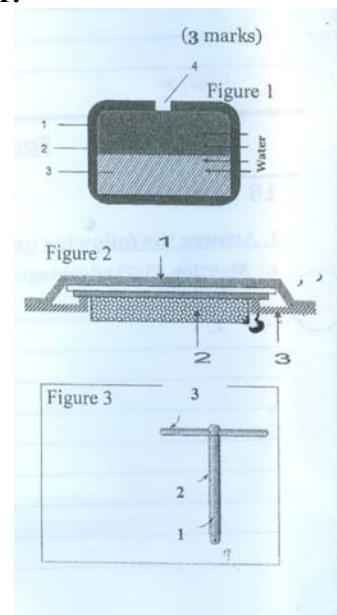
Semi-permeable membrane	
Osmotic drug core	
Polymeric osmotic push compartment	
Delivery orifice	

2. Regarding the Nitro-Dur system shown in Figure 2:

Drug hydrophilic polymer matrix	
Impermeable polyethylene coverstrip backing	
Microporous acrylic polymer adhesive rim	
Drug release from this system follows zero-order kinetics (Put √ or x)	

3- Regarding the IUD shown in Figure 3:

	1
	2
	3
Such a system suffers from a possible dose dumping. (Put √ or x)	



III. Complete the following sentences with appropriate words:(5 marks)

(Transfer your answer to the answer sheet given below)

1. Advantages of hydro carbon propellants include ----- and -----.
2. Nitrogen is a commonly used compressed gas, owing to ----- and -----.
3. In the case of liquefied gas aerosols, the pressure within the container remains virtually constant because -----.
4. Disposal of pharmaceutical aerosols may be difficult because -----.
5. In the case of two-layer aerosol systems in which the propellant is heavier than solution, the dip tube must be -----.
6. Disadvantage of aerosol plastic containers include ----- and -----.
7. Advantages of targeted drug delivery systems include ----- and -----.
8. The main improvement in Deponit system compared to other matrix transdermal patches is -----.
9. A constant release rate can be obtained from reservoir diffusion controlled systems as long as the drug is -----.
10. Drugs with significant first pass metabolism are not suitable candidates for SR oral dosage forms because -----.

Answer Sheet

1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

IV. Choose the most appropriate answer in the following: (5 marks)

- 1. Space aerosols generally contain as much as -----% propellant.**
A. 10% B. 30%
C. 70% D. 85%
- 2. ----- frequently serve(s) a dual role of propellant and solvent for product concentrate.**
A. Chlorofluorocarbons B. Hydrochlorofluorocarbons
C. Hydrofluorocarbons D. All of the above.
- 3. Propellant ----- shows a greater rate of hydrolysis than other compounds.**
A. Chloropentafluoroethane B. Dichlorodifluoromethane
C. Dichlorotetrafluoroethane D. Trichloromonofluoromethane
- 4. In aerosols, larger orifices and less propellant are used for products to be emitted as -----.**
A. Fine sprays B. Solid streams
C. Foams D. Band C
- 5. Glass containers are considered safe when the pressure is below -----**
A. 10 psig B. 25 psig
C. 50 psig D. 70 psig
- 6. In suspension aerosols, the recommended particle size is -----**
A. 5-10. um B. 25-50. um
C. 50-100. um D. None of the above
- 7. The following are true regarding controlled release systems EXCEPT**
A. The release kinetics is usually zero-order B. They also offer sustained release profile
C. Basically restricted to oral dosage forms D. Can be achieved by using therapeutic systems
- 8. The following are true regarding matrix-diffusion controlled systems EXCEPT**
A. No coating is required B. No dose dumping
C. Release rate follows zero-order kinetics D. Easier to formulate
- 9. The following are unsuitable for CR or SR oral dosage forms EXCEPT**
A. Drugs with very low aqueous solubility B. Drugs with biological $t_{1/2} > 12$ hrs
C. Drugs with high absorption D. Drugs given in acute situations
- 10. The following are true regarding oral osmotically controlled systems EXCEPT-----.**
A. They typically give a zero order release B. Hole size is critical
C. Suitable for a wide range of drugs D. Drug release is dependent on pH of the GIT

Answer Sheet

1	2	3	4	5	6	7	8	9	10

End of Questions

GOOD LUCK

الإمتحان الشفوي عقب الإمتحان النظري مباشرة بإذن الله بقسم الصيدلانيات بمبنى بـ الدور الثاني

المجموعة الأولى (من رقم 1 الى رقم 525) : من الساعة 12 ظهرا

المجموعة الثانية (من رقم 526 الى الآخر) : من الساعة 4 عصرا

Date: 23/2/2012
Time: two hours
Marks: 100

Assiut University
Faculty of Medicine
Dept. of Community Medicine

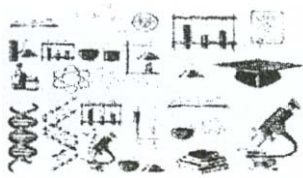
Exam in Public Health for 4th Year Pharmacy
Defaulter 3rd Year

Answer the Following Questions:

- (1) List the body fluids from which HIV could be isolated. (14 Mark)
- (2) List factors that may help effective communication. (8 Mark)
- (3) Mention types of carriers. (8 Mark)
- (4) Write down the Epidemiologic Triangle. (6 Mark)
- (5) List the 4 basic means of disease transmission. (8 Mark)
- (6) Give examples for live attenuated vaccines. .. (8 Mark)
- (7) Mention the disadvantages of chemoprophylaxis. (8 Mark)
- (8) List the approaches of achieving health promotion. (10 Mark)
- (9) How to Prevent TB? (14 Mark)
- (10) Mention *signs and symptoms* of Swine Influenza in swine. (16 Mark)

"Good Luck"

Prof. Mohamad Qayed
Prof. Kawther Fadel



Date: 8/5/2012
Time: 10-12pm

Assiut University
Medical Biochemistry Department
Third year Pharmacy
Mid Term Exam
MCQ



Answer the following questions:

1. write the functions of:

- a. Glycolysis. (2 marks)
- b. Transamination . (1.5 marks)
- c. α -oxidation. (1.5 marks)

2. Answer the following: (2.5 marks each)

- a. Pyruvate dehydrogenas complex, its distinct enzymes and the type of the reaction catalyzed by each one.
- b. Deamination of glycine.
- c. Synthesis of acetoacetate.
- d. Glut I and Glut3.

Good Luck,



Date: 8/5/2012
Time: 10-12pm

Assiut University
Medical Biochemistry Department
Third year Pharmacy
Mid Term Exam
MCQ



Chooses the best answer:-

1. Which amino acid undergoes transamination to form oxaloacetate:

- a. Alanine.
- b. Glycine
- c. Aspartate
- d.. Lysine
- e. Ornithine

2. serine is converted to ethanolamine by the removal of:

- a. Hydrogen
- b. Oxygen
- c. Carbondioxide
- d. Ammonia
- e. A carboxyl group

3. concerning glutamine. Which one of the following statements is incorrect?

- a. Its synthesis needs glutamine synthetase.
- b. It trapped ammonia in a nontoxic form in the brain.
- c. It is one reactant of all transamination reaction.
- d. It is the source of N_3 and N_9 of purine bases.
- e. It may be used in regulation of acid base balance in the kidney.

4. conjugation of glycine with benzoic acid products :

- a. Hippuric acid.
- b. Glucuronic acid.
- c. Aspartic acid.
- d. GABA.
- e. Creatine

5. The rate of flow of electrons through the electron transport chain is regulated by:

- a. The ATP/ADP ratio.
- b. Feed back inhibition by H_2O .
- c. The concentration of acetyl CoA.
- d. The rate of oxidative phosphorylation.

6. All of the following compounds are members of the electron transport chain except:

- a. Coenzyme Q
- b. Cytochrome. C
- c. Carnitine.
- d. NAD.

7. continuation of the fatty acid oxidation cycle in the metabolism of long-chain fatty acids is dependent on the presence of all the following except:

- a. Acyl-CoA dehydrogenase.
- b. Enoyl hydratase.
- c. β -ketothiolase .
- d. Thiokinase.

8. The breakdown of the fatty acid $\text{CH}_3(\text{CH}_2)_7\text{COOH}$ Via the β -oxidation pathway would:

- a. Yield three mol propionyl units.
- b. Yield four mol acetyl units only.
- c. Yield four mol acetyl units and one mol propionyl unit.
- d. Yield three mol acetyl units and one mol propionyl unit.

9. the factors affecting the activity of the citric acid cycle include the following except:

- a. Levels of oxaloacetic acid.
- b. Levels of NAD^+
- c. Ratio of concentrations of ADP/ATP
- d. Number of mitochondria per cell

10. All of the following compounds contain a high energy phosphate bond except:

- a. ADP.
- b. Glucose-6-phosphate.
- c. Phosphoenol pyruvate,
- d. 1,3- diphosphoglycerate.

Good Luck,



Assiut University
Faculty of Medicine
Department of Pharmacology

PHARMACOLOGY EXAMINATION FOR THIRD YEAR PHARMACY STUDENTS

Time allowed: Three hours

Date: 3/6/2012

NOTES

الامتحان يقع فى ورقة واحدة (الوجه والظهر)

- * All the following questions are to be attempted in your answer notebook.
- * Answer each question in a separate page.
- * You have 7 questions, 10 Marks for each

Answer all the following questions:-

1) Outline each of the following:-

- A) Mechanism of actions, **three** therapeutic uses and **three** main side effects of diazepam.
- B) Pharmacological properties of each of zolpidem and buspirone.

2) Write an account on each of the following:-

- A) Mechanism of action, therapeutic uses and main side effects of omeprazole.
- B) Advantages of low molecular weight heparins over heparin, and their therapeutic uses.

3) Mention the therapeutic uses, mechanism of action and adverse effects of each of the Following:-

- A) Valproic acid.
- B) Lithium.

4) Explain the pharmacological reasons underlying each of the following:-

- A) The use of N-acetylcysteine in the treatment of acute paracetamol toxicity.
- B) The dose of 6-mercaptopurine should be reduced when given concurrently with allopurinol.
- C) Colchicine is effectively used in acute attacks of gouty arthritis.
- D) Aspirin is not preferred in children with febrile viral illness.

5) Mention each of the following:-

- A) Three hemodynamic effects of general anaesthesia.
- B) Four anesthetic adjuvants and the aim of their use.
- C) The reasons for the combined administration of epinephrine with local anaesthetics.
- D) The reasons for the ultra short duration of thiopental sodium.

6) Discuss each of the following:-

- A) Drug treatment of status asthmaticus.
- B) Differences between drug abuse and misuse.

من فضلك أقلب الورقة لمتابعة باقى الأسئلة

7) For each of the following MCOs select the ONE most appropriate answer and WRITE IT IN YOUR ANSWER NOTEBOOK:-

1- Therapeutic drug monitoring is indicated in which **one** of the following antiasthmatic drugs?

- A) Cortisone. B) Ipratropium. C) Theophylline. D) Albuterol.

2- Aspirin can produce **One** of the following effects:

- A) Reversible inhibition of both COX-1 and COX-2 enzymes.
B) Hypothermia in toxic doses. C) Prolongation of gestation period.
D) Metabolic acidosis in sub therapeutic doses.

3- **One** of the following drugs is effectively used in failure of closure of ductus arteriosus in neonates:

- A) Paracetamol. B) Indomethacin. C) Celecoxib. D) Methotrexate.

4- **One** of the following drugs acts mainly as tumor necrosis factor- α (TNF- α) inhibitor:

- A) Etanercept. B) Leflunamide. C) Ibuprofen. D) Cyclosporine.

5- **One** of the following is the main factor that determines the speed and recovery from inhalation of anesthetic agents:

- A) Blood: gas partition coefficient. B) Oil: gas partition coefficient.
C) Minimum alveolar concentration. D) All of the above.

6- **One** of the following agents is the suitable antidote in case of heparin toxicity:

- A) Aminocaproic acid. B) Protamine sulfate.
C) Tranexamic acid. D) Vitamin K.

8- **One** of the following is correct regarding NMDA receptors:-

- A) They are linked to ion channels. B) They are inhibitory receptors.
C) They are targets for GABA.
D) Their antagonists are described as neuroexcitatory drugs.

9- Regarding ranitidine, all the following statements are **false** Except;

- A) It blocks hydrogen/ potassium adenosine triphosphate enzyme system.
B) It blocks the H₂ histamine receptors.
C) It may lead to hip fracture on its prolonged use.
D) It blocks M) muscarinic receptors.

10- Select the **One False** statement regarding drug abuse:

- A) It is the non-medical use of drugs. B) It is the misuse of drugs.
C) It may be induced by drugs acting on mood and behavior.
D) Opioids, antidepressants and cocaine are examples.

 Date: 7/6/2012 Time: 9-12pm	Assiut University Medical Biochemistry Department Third year Pharmacy Paper 1 (MCQ)	
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Choose the correct answer :(one mark each)

1- Substrate -level phosphorylation in the citric acid (Krebs) cycle depends directly on the energy of the:

- A. Thioester bond of succinyl CoA.
- B. Oxidative decarboxylation of isocitrate to (1- ketoglutarate).
- C. Formation of citrate from oxaloacetate and acetyl CoA.
- D. FAD- dependent oxidation of succinate to fumarate.
- E. Phosphoanhydride bond of 1,3-bisphosphoglycerate .

2- Which of the following pairs of compounds are interconvertible in the liver by a single polypeptide chain containing two different catalytic sites:

- A. Glucose and glucose 6-phosphate .
- B. 3-phosphoglycerate and phosphoenolpyruvate.
- C. Phosphoenolpyruvate and pyruvate.
- D. Fructose 6-phosphate and fructose 1,6-bisphosphate.
- E. Fructose 6-phosphate and fructose 2,6-bisphosphate .

3- Medium - chain fatty acids are given because they:

- A. Are more calorically dense than long -chain fatty acids.
- B. Enter directly into the portal blood ,and can be metabolized by the liver.
- C. Are activators of lipoprotein lipase.
- D. Are more efficiently packed into serum lipoproteins .
- E. Can be converted into a variety of gluconeogenic precursors
- F. Stimulates VLDL production by the liver.

4- Cholesterol is the precursor of the following compounds EXCEPT

- A. Vitamin D3.
- B. Bile acids.
- C. Testosterone.
- D. β - Hydroxy butyrate.
- E. Progesterone.

- 5- NADPH+H⁺ is important for the following reactions EXCEPT:
- A. Respiratory burst.
 - B. Xenobiotics metabolism by cytochrome p450.
 - C. Reduction of pyruvate by lactate dehydrogenase.
 - D. Reduction of glutathione by glutathione reductase.
- 6- S-Adenosylmethionine is a methylating agent that transfers a methyl group to:
- A. Acetate.
 - B. Homocysteine.
 - C. Norepinephrine.
 - D. Pyruvic acid.
 - E. Testosterone.
- 7- Amino acids considered non-essential for human are:
- A. Those incorporated into protein.
 - B. Those not synthesized in the body.
 - C. Those synthesized post -translation ally •
 - D. Those cannot be transaminated.
 - E. Those cannot be deminated •
- 8- Reoxidation of F ADH₂ gives:
- A. One ATP
 - B. Two ATP
 - C. Three ATP
 - D. Four ATP
- 9- Fatty acid biosynthesis involves all of the following compounds EXCEPT:
- A. Malonic acid.
 - B. Malonyl-CoA.
 - C. Acyl carrier protein.
 - D. Coenzyme A.
- 10- In insulin deficiency:
- A. Protein synthesis is depressed.
 - B. Protein degradation is increased.
 - C. Nitrogen excretion is increased.
 - D. Fatty acid synthesis is depressed.
 - E. All of these.
-

Good Luck.....

 Date: 7/6/2012 Time: 9-12pm	Assiut University Medical Biochemistry Department Third year Pharmacy Paper 2 (MCQ)	
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Answer the following questions:

1- Write down the following biochemical transformations: (3marks each)

- a. Serine to pyruvic acid.
- b. Acetyl CoA to malonyl CoA.
- c. Glycine to creatinine.
- d. Glucose to fructose 1,6 diphosphate.
- e. Phenyl alanine to Adrenalin.

2- Write down 3 differences between: (3 marks each)

- a. Glucokinase and Hexokinase.
- b. Transamination and transdeamination .
- c. Mitochondrial and Microsomal system of fatty acid elongation.
- d. Group I and Group II hormones.
- e. Reductive and oxidative deamination .

3-Write down short notes on: (3 marks each)

- a. a - Oxidation and its importance
- b. Biochemical significance of HMP shunt.
- c. Fate of ammonia.
- d. Ketosis.
- e. Synthesis of lecithin.
- f. Types of second messengers .
- g. Metabolism of propionic acid.

4- Write down the function of: (1.5 marks each)

- a. Hormones regulating blood calcium level.
- b. Glycogen.
- c. β - oxidation.
- d. Gluconeogenesis.
- e. Uncouplers
- f. Glutathione.

Good Luck

*إجابة كل سؤال على حده وفي صفحة منفصلة وبالترتيب.

*الامتحان الشفوي من رقم 1 الى رقم 400 عقب امتحان النظرى مباشرة ومن رقم 400 الى اخر رقم يوم السبت 9 صباحا.



قبل البدء فى الاجابة الرجاء قراءة هذه التعليمات جيدا

1. تأكد أن ورقة الامتحان تتكون من خمس ورقات مختلفة (عشر صفحات) وفى حالة التكرار أو النقص يطلب استبدالها فوراً.
2. الامتحان يتكون من أربعة اسئلة.
3. الرجاء الكتابة فى الأماكن المخصصة لذلك.
4. محاولة الاستعانة بالآخرين أو اعانتهم فى اجابة الامتحان يعرضك للمساءلة القانونية من الجامعة وما يترتب عليها.
5. سوف يعقد الامتحان الشفهى يوم الجمعة 2012-6-15 .
مجموعة أ (1 – 400) من الساعة 9 - 11 .
مجموعة ب (401 – للآخر) من الساعة 11 – 1:30

مع اطيب الأمنيات بالنجاح والتوفيق

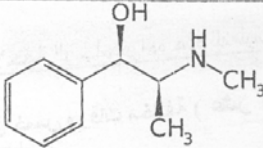
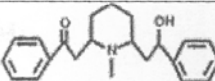
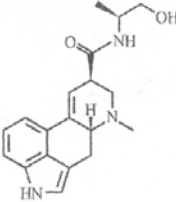
لجنة الامتحان:

- 1- الأستاذ الدكتور: زيدان زيد ابراهيم
- 2- الأستاذ الدكتورة: فاتن مصطفى درويش
- 3- الأستاذ الدكتورة: سلوى فاروق فرج
- 4- الدكتورة: أمانى سيد أحمد

QUESTION-I:

(15 Marks)

Q-I-A- Complete the following table:**(10 marks)**

NO.	Name	Structure	Miscellaneous
1-	Name:.....		Uses:
2-	Codeine		Chemical test: Detection of meconic acid
3-	Name:.....		Uses
4-	Papaverine		Uses:
5-	Trigonelline		Uses
6-	Ergometrine		Uses: Detection of ergot in flour

Q-I-B: How can you isolate the following mixtures:**(5x1=5 marks)**

1- Ephedrine from pseudo- ephedrine.

2- Nicotine from nor-nicotine.

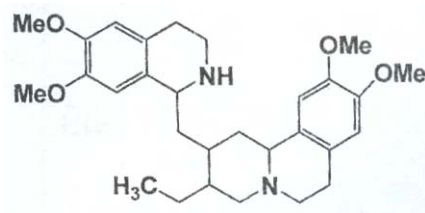
3- Morphine from codeine

4- Pelletierine from isopelletierine.

QUESTION-II:

(12 Marks)

Q-II-A- In the following table Complete the underlined items for each compound: (9.5 marks)

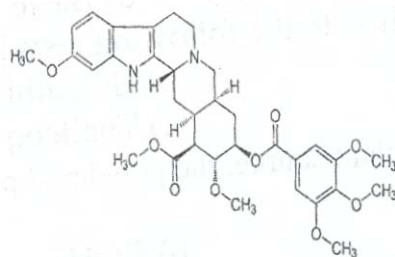
Compound 1	Compound 2
Name: Cocaine Botanical origin: Uses: Chemical test: Effect of warming with HCl (By equation):	Uses: Antimalarial Name: Structure: <u>Separation from its isomer:</u>
Compound 3	Compound 4
Name: Hyoscyamine Structure: Uses: <u>Separation from its isomer:</u>	Name: Botanical origin: Structure:  Uses:

Q-II-B- Choose the best answer:

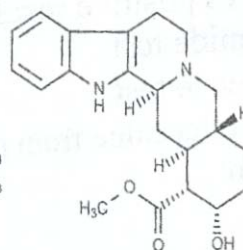
(2.5 Marks)

Q-III-B-Concerning the following structure:

(2.5 Marks)



A



B

Name -----

Compound A belongs to class ----- of alkaloids, it is used as -----

Compound B is used as -----

Q-III -C-Complete the following:

(6 Marks)

1----- resin gives deep blue colour on addition of oxidizing reagent.

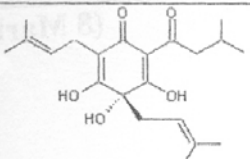
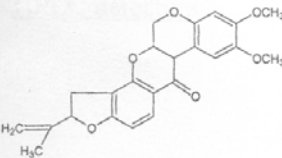
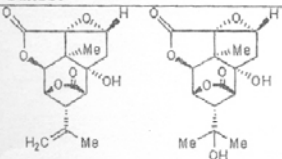
2-Castor oil is contraindicated to be taken with male fern resin, because -----

3-We can differentiate between asafitoea and galbanum by a chemical test, -----

4- Etiposide is used in -----,
while teniposide is used for -----,
both are semisynthetic derivatives of -----.

Q-III -D-Complete the following table:

(9 Marks)

Structure/name/class	Use OR Action	Chemical test
 Name:----- Class:-----		
Name: Khellin Class:-----		
 Name:----- Class:-----		1 ml of acetone solution + 1ml HNO ₃ + equal volume of H ₂ O, leave for 30 ', add 1 drop of 10%NaOH solution gives blue colour
 Name:----- Class:-----		
Name:THC Class: Resin		Pet. Ether extract + 15% HCl gas gives red colour

Question-IV:

(20 Marks)

Q-IV-A- Discuss each of the following concerning Ion exchange chromatography:
(8 marks)

1- Mechanism of separation

2- Ion exchange resins

3- Applications and uses

Q-IV-B- Give a brief comment on each of the following:
(8 marks)

- 1- Advantages and applications of GC.
- 2- HPLC detectors
- 3- Separation techniques in molecular exclusion chromatography
- 4- Special modes of development of PC

Q-IV -C-Complete each of the following:

(4 Marks)

- 1- and
are advantages of descending technique in PC.
- 2- Gel permeation column separate proteins according to
.....
- 3- Detectors used in case of affinity chromatography are,
..... and which is highly
selective.
- 4- Advantages of gradient elution are
and

Best Wishes

لجنة الممتحنين: د. إجلال محمود حسين	امتحان مادة التسويق والاعلام الدوائى الفرقة الثالثة	جامعة أسيوط كلية الصيدلة
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الزمن : ساعتان التاريخ: 2012/6/ 10	دور يونيو 2011	الامتحان صفحتان	د. سناء مصطفى محمد
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أجب عن الأسئلة الآتية:

(30 درجة)

السؤال الأول:

أكتب المصطلح العلمي للمفاهيم التالية (المطلوب عرض الإجابة في شكل جدول على النحو التالي)

رقم العبارة	إسم المصطلح

- 1- هي العملية التي يتم من خلالها بلوغ سوق الرعاية الصيدلانية.
- 2- هي العملية المستمرة القائمة علي جمع وتسجيل وتحليل المعلومات والبيانات حول المستهلكين والمنافسين والسوق.
- 3- هي المجال التسويقي الذي تتمتع فيه منشأة معينة بميزة تفضيلية بالنسبة للمنشآت المنافسة لها.
- 4- تشمل هذه الفئة الأطباء والصيدلة والأطباء البيطريين والممرضات وهؤلاء يمثلون أهمية خاصة لشركات صناعة الدواء لأنهم يمثلون المستهلك أو العميل الداخلي.
- 5- هي أي مادة أو خليط من المواد ، يتم تصنيعها كدواء في شكل صيدلي سواء للاستعمال الآدمي أو البيطري ، وتخضع لرقابة التشريعات والقوانين الصحية للبلاد.
- 6- تمثل تعديلات طفيفة في السلعة أو الخدمة مثل العبوة ، اللون ، الشكل ، ولا تؤدي وظائف جديدة ، ولا تتطلب تغييرات في العادات أو النمط الاستهلاكي للمستهلك.
- 7- عملية وضع البيانات والمعلومات علي أو داخل المنتج وهي مهمة لإظهار كيفية استعمال المنتج وفاعليته ، بالإضافة إلي المضاعفات الناتجة عن استعماله.
- 8- هي مجموعة من المتاجر أو المحلات التي تعمل وفق نظام موحد عن طريق مركز رئيسي واحد.
- 9- هي تتعلق بمدى التغيير النسبي في الكمية المطلوبة مقارنة بالتغيير النسبي في السعر.
- 10- هو الذي يتعامل مع الأطباء لإقناعهم باستخدام أدوية شركته دون الشركات الأخرى.

(20 درجة)

السؤال الثاني:

علق على مدى صحة العبارات الآتية:

- 1- تعمل الصناعات الدوائية في إطار قانوني وتشريعي يحكم تصرفاتها.
- 2- لا يختلف المنتج الصيدلاني في خصائصه عن المنتجات الأخرى العادية.
- 3- إن عملية التغليف في المنتجات الصيدلانية ليست كأى عملية تغليف أخرى.
- 4- في الصناعات الدوائية يوجه المزيج الترويجي في الغالب إلي المستهلك أو المستخدم النهائي للدواء "المريض".

أنظر الصفحة الثانية

الصفحة الثانية

السؤال الثالث:

(20 درجة)

أذكر اسم الإستراتيجية المتبعة في كل حالة مما يلي:

- 1- عندما يتحدد السوق المستهدف بقطاعين أو أكثر من قطاعات السوق.
- 2- إضافة خطوط جديدة إلى خطوط منتجاتها الحالية التي تختلف استخداماتها عن المنتجات الأخرى ولكن تحت نفس العلامة.
- 3- تتبع هذه الإستراتيجية في السوق المتباينة حسب فئات الدخل ، ويتم تحديد سعر مرتفع للسلعة الجديدة ، بحيث يوجه هذا السعر إلى الفئة الأولى في السوق والتي يهتمها الحصول على السلعة مهما كان السعر مرتفعاً.
- 4- تهدف الشركة من إتباع هذه الإستراتيجية إلى الحصول على حجم كبير من السوق غير المجزأ حسب الدخل بحيث تسعى إلى الوصول إلى السوق الكلية وذلك عن طريق تحديد أسعار منخفضة لسلعها.
- 5- تبحث المؤسسة عن رفع مبيعاتها بدخول منتجاتها الحالية لأسواق جديدة ، تستطيع توسيع أسواقها محلياً أو وطنياً أو دولياً.

السؤال الرابع:

(30 درجة)

(أ) أكتب عن الموضوعات التالية:

- 1- خصائص الصناعات الدوائية.
- 2- عوامل التجزئة الفعالة للسوق.
- 3- سلبيات مهنة مندوبي البيع في شركات الأدوية.

(ب) قارن بين كل مما يأتي:

- 1- علامة المنتجين وعلامة الموزعين.
- 2- التوزيع المكثف ، والتوزيع الانتقائي ، والتوزيع الوحيد.

مع أطيب التمنيات بالتوفيق ، ، ،

- قبل البدء فى الإجابة إقرأ هذه التعليمات جيدا
1. أكتب اسمك ورقم جلوسك باللغة العربية وبخط واضح على غلاف كراسة الاجابة فقط
 2. تأكد أن كراسة الامتحان تتكون من 6 ورقات (اثني عشر صفحة) بجانب صفحة التعليمات وفى حالة تكرار أو نقص أى أوراق أطلب استبدالها فوراً.
 3. يتكون الامتحان من ثلاثة اجزاء ومطلوب الاجابة عليها جميعاً.
 4. تكتب الاجابات فى الفراغات المخصصة بها مع مراعاة رسم المركبات فى الفراغ المخصص لها.
 5. فى الأسئلة متعددة الاختيارات يتم وضع علامة حول الاجابة الصحيحة فقط.
 6. المستطيل المبين على يمين الصفحة فى بداية كل جزء يترك فارغاً حيث يقوم السيد الأستاذ الدكتور/ عضو هيئة التدريس بتسجيل الدرجة التى حصل عليها الطالب.
 7. ممنوع منعاً باتاً الكتابة أو الرسم بالقلم الرصاص أو أى ألوان.
 8. عدم كتابة إسمك أو أى علامات داخل الكراسة.
 9. محاولة الاستعانة بالآخرين أو إعانتهم فى إجابة الامتحان يعرضك للمساءلة القانونية من الجامعة وما يترتب عليها.

موعد الامتحان الشفهى

الامتحان الشفهى عقب الامتحان النظرى وسيعلن توزيع الطلاب على لجان الامتحان بلوحة الاعلانات بالقسم.

لجنة الامتحان

أ.د./ عاطف عبد المنعم عبد الحافظ
أ.د./ نوال أبو بكر
د/ أحمد صفوت أبو رية

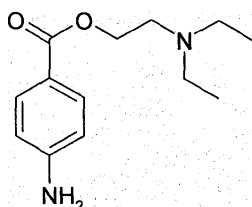
مع أطيب الأمنيات بالتوفيق والنجاح ،،،

Dept of Medicinal Chemistry, Med. Chem. II Final Exam, June, 19th, 2012, Page 1 of 12

PART ONE

Question No. 1 Given the following structure of the medicinally used drug, choose the most correct statement from the followings

19



1. The above drug is used clinically as
 - a. Antiarrhythmic
 - b. Antidepressant
 - c. Local Anesthetic
 - d. Antiadrenergic ..
 - e. None of the above
2. The given structure is considered as
 - a. Amino ether derivative
 - b. Amino amide derivative
 - c. Amino ester derivative
 - d. Amino ketone
 - e. All of the above
3. You can retain the biological activity of the above drug if you replace the 4-amino group with a
 - a. 4-Nitro group
 - b. 3-Amino group
 - c. 3-Chloro moiety
 - d. 2-Amino group
 - e. None of the above
4. The above drug elicits its action by
 - a. Blockage of sodium channels
 - b. Opening of Potassium channels
 - c. Blockage of Calcium channels
 - d. Inhibition of dihydrofolatereductase
 - e. None of the above
5. To enhance the stability of the given drug, One can replace the ester moiety by
 - a. An amide
 - b. An ether
 - c. A reversed amide
 - d. Both a & c
 - e. None of the above
6. The chemical nomenclature of the given drug is
 - a. 2-(dimethyl amino)ethyl 4-aminobenzoate
 - b. 2-(diethylamino)methyl 4-aminobenzoate

- c. 2-(diethylamino)ethyl 4-aminobenzoate
- d. 4-(diethylamino)ethyl 3-aminobenzoate
- e. 2-(diethylamino)ethyl 5-aminobenzoate

7. The biological activity of the given drug is influenced by:

- a
- b
- c

8. The above drug can be synthesized as follows:

.....

.....

.....

.....

.....

.....

.....

.....

.....

9. Which one of the following local anesthetic drugs is considered as amino ketone derivative?

- a. Pramoxine
- b. Chlorbutanol
- c. Eugenol
- d. Dyclonine
- e. None of the above

Question No. 2 Choose the most appropriate answer from the followings

1. The chemical classes of anthelmintics are except

- a. Macrocyclic lactones
- b. Substituted phenols
- c. Imidazothiazoles
- d. Ethanol amines
- e. Salicylanilides

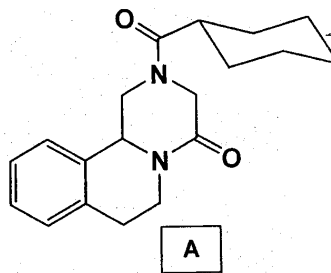
Dept of Medicinal Chemistry, Med. Chem.II Final Exam, June, 19th, 2012, Page 3 of 12

2. Which one of the following anthelmintics is considered as imidazothiazole derivative

- a. Praziquantel
- b. Levamisole

- c. Niclosamide
- d. Mebendazole
- e. Diethylcarbamazepine

3. Drug A is an anthelmintic drug that acts by
- a. Decrease ATP production in worms
 - b. Inhibiting the reuptake of dopamine
 - c. Mitotic arrest
 - d. Block regeneration of acetylcholine
 - e. Change the cell wall permeability



4. The chemical nomenclature of drug A is
- a. 2-(Cyclohexylcarbonyl)-1,2,3,6,7,11 b-hexahydro-4-H-pyrazino(2,1-a]isoquinoline-4-one
 - b. 4-(Cyclohexylcarbonyl)-1,2,3,6,7, 11 b-hexahydro-4-H-pyrazino(2, 1-a]isoquinoline-4-one
 - c. 2-(Cyclohexylcarbonyl)-1,2,3,6,7,11 b-hexahydro-4-H-pyrazino(2, 1-b]isoquinoline-4-one
 - d. 2-(Cyclohexylcarbonyl)-1,2,3,6,7,11 b-'hexahydro-4-H-pyrazino(2, 1-a]isoquinoline-5-one
 - e. 2-(Cyclohexylcarbonyl)-1,2,3,6,7,11 b-hexahydroA-H-pyrazino(2, 1-a]isoquinoline-4-one
5. Which one of the following anthelmintics is considered as salicylanilide derivative
- a. Praziquantel
 - b. Levamisole
 - c. Niclosamide
 - d. Mebendazole
 - e. Diethylcarbamazepine

Question No. 3 Answer the followings:

1. Mechlorethamine alkylates nucleophilic sites in DNA to form inter- and intramolecular cross-links. Illustrate one round of alkylation of a hypothetical nucleophile (Nu:) starting with mechlorethamine hydrochloride

.....

.....

.....

.....

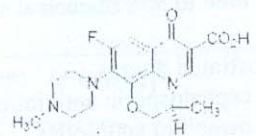
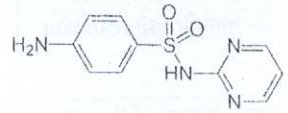
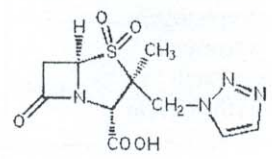
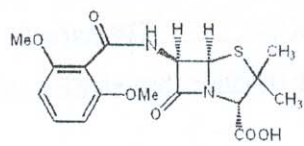
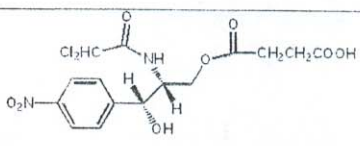
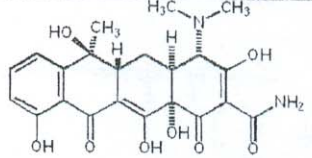
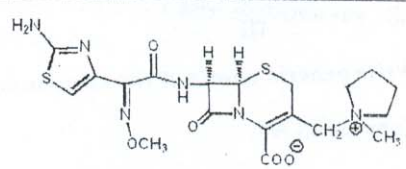
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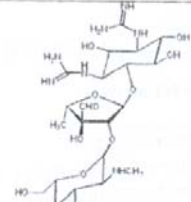
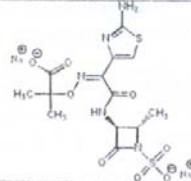
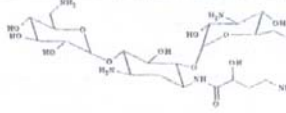
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Dept of Medicinal Chemistry, Med. Chem. II Final Exam, June, 19th, 2012, Page 4 of 12.....

2. Rank the rate of aziridinium ion formation for compounds I - III below if aqueous solutions of each were allowed to stand at room temperature.

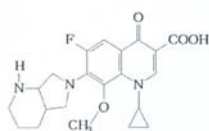
Choose the correct answer

The illustrated drug is 1- Fluoroquinolone derivative 2- Used with antacid 3- First generation antibiotics 4- Active against gram -ve only	
The illustrated drug is used for 1- ophthalmic infections 2- Urinary tract infections 3- burns 4- Ulcerative colitis	
The illustrated drug 1- is a Penicillin antibiotic 2- is synergistic with ampicillin 3- is a β-lactamase inhibitor 4- is narrow spectrum of activity	
The illustrated drug is 1- broad spectrum antibiotic 2- can be given orally 3- β-lactamase sensitive 4- Acid sensitive	
The illustrated drug is 1- Cell wall synthesis inhibitor 2- Used orally 3- Protein synthesis inhibitor 4- Used as antifungal	
The illustrated drug is 1- bind to 30S ribosomal subunit 2- bind to 50S ribosomal subunit 3- their acid salts are unstable 4- inhibit cell wall synthesis	
The illustrated drug is 2- taken orally 3- β-lactamase sensitive 4- Penicillin derivative 5- Narrow spectrum of activity	

The illustrated drug is 1- Cause nephrotoxicity 2- Oxidation of aldehyde gives active compound 3- Removal of guanidine group abolish activity 4- bind to 50S ribosomal subunit	
The illustrated drug is 1- cephalosporin antibiotics 2- penicillin antibiotics 3- polyene antibiotics 4- β-lactamase resistant	
The generic name of the illustrated drug is 1- streptomycin 2- kanamycin 3- amikacin 4- erythromycin	

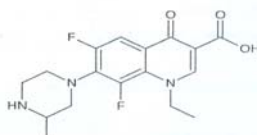
Question No. 2 (10 marks)

A) Examine carefully the following structures and then answer the questions (6 marks)



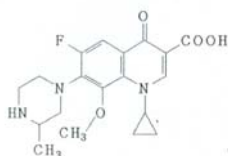
I

Generic name :

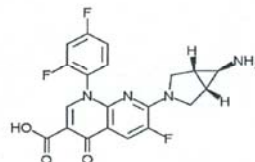


II

Generic name :



III



IV

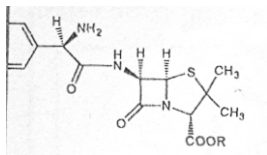
1- Write generic names of the compounds I and II , which one is third generation?

Compound No.

2- Role of methoxy group in compound No. III ?

3- Encircle azabicyclo group of compound No. IV

Write changes in ® in the structure to obtain prodrugs (1 mark)



B) Complete the following table then answer the question: (5 marks)

I	II	III
IV	V	VI

1- Use of Compounds No. I and VI

2- Compound No. II gives ----- at acidic pH of urine

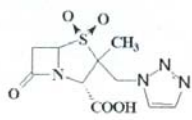
3- SAR of compound No. III (Just one)

4- Chemical nomenclature of Compound No. IV

5- Compound No. V inhibits bacteria by blocking the conversion of -----

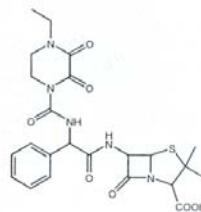
Question No. 3 (10 marks)

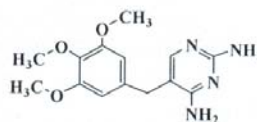
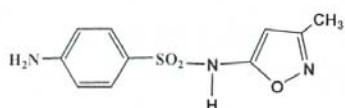
A) Each of the following combinations is preferable than single therapy, mention the clinical use(s) and the advantage(s) of each combination than the single one.



Use(s):

Advantage(s):

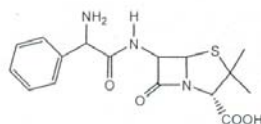




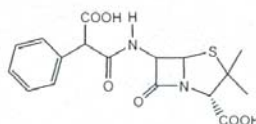
Use(s):

Advantage(s):

B) Which of the following compounds is used orally and why?



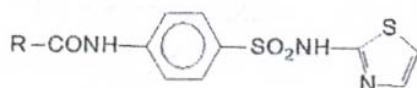
I



II

Compound No. is used orally because

C) To afford intestinal sulfonamide, write R=



D) Method of assay of tetracyclines

E) Synthesis of sulfanilamide

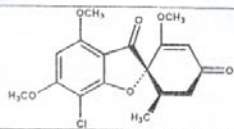
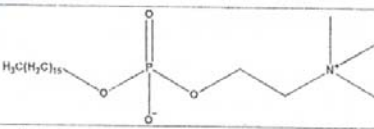
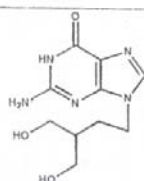
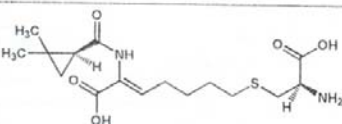
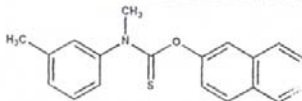
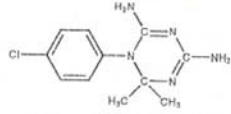
F) **Formaldehyde gas** is used for

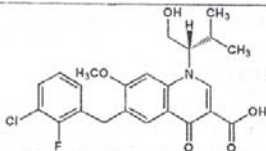
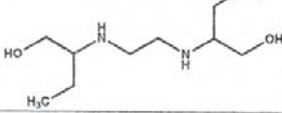
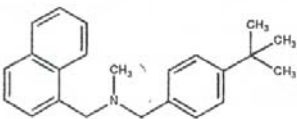
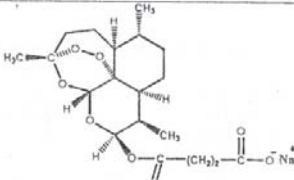
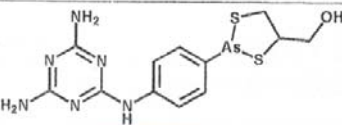
Mechanism of action:

While **povidone Iodine** is used for

PART THREE

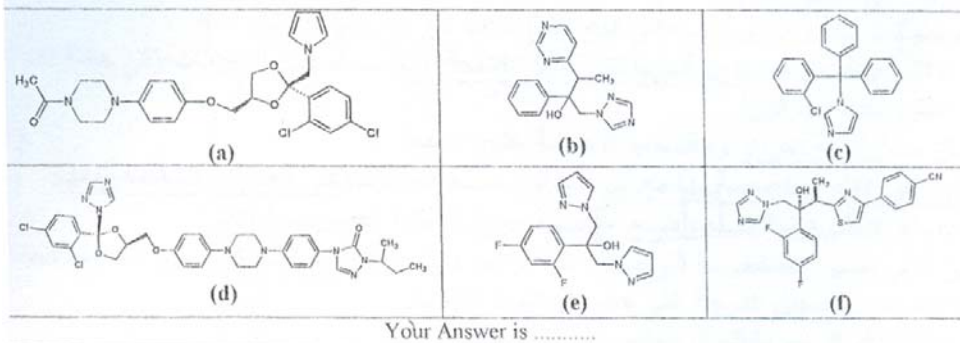
Question No. 1 Select the Best and Most Complete answer for each of the following chemically illustrated drugs (*in the provided space indicate your answer with letters only*) (12 marks, 1 mark each)

1		I. It is used in the treatment of aspergillosis II. Reversible, noncompetitive inhibitors of squalene epoxidase III. Spiro Antifungal drug		
a. I only b. II only	c. III only d. I & II	e. I & III f. II & III	g. I, II & III h. None of the above	<i>your answer</i>
2		I. Its generic name is Fosfarnet II. An alkylphosphocholine analogue III. Used for the treatment of visceral leishmaniasis		
a. I only b. II only	c. III only d. I & II	e. I & III f. II & III	g. I, II & III h. None of the above	<i>your answer</i>
3		I. Inhibitor of Hepatitis B virus replication II. Antifungal Prodrug III. More stable than Acyclovir		
a. I only b. II only	c. III only d. I & II	e. I & III f. II & III	g. I, II & III h. None of the above	<i>your answer</i>
4		I. Broad spectrum beta-lactam antibiotic II. It has no antibacterial activity III. It has bactericidal effect		
a. I only b. II only	c. III only d. I & II	e. I & III f. II & III	g. I, II & III h. None of the above	<i>your answer</i>
5		I. Thiosemicarbazide derivative II. β -glucan synthase inhibitors III. Its spectrum is restricted primarily to dermatophytes		
a. I only b. II only	c. III only d. I & II	e. I & III f. II & III	g. I, II & III h. None of the above	<i>your answer</i>
6		I. It is the active form of Acyclovir II. It is the active form of Proguanil III. It is the active form of Metronidazole		
a. I only b. II only	c. III only d. I & II	e. I & III f. II & III	g. I, II & III h. None of the above	<i>your answer</i>

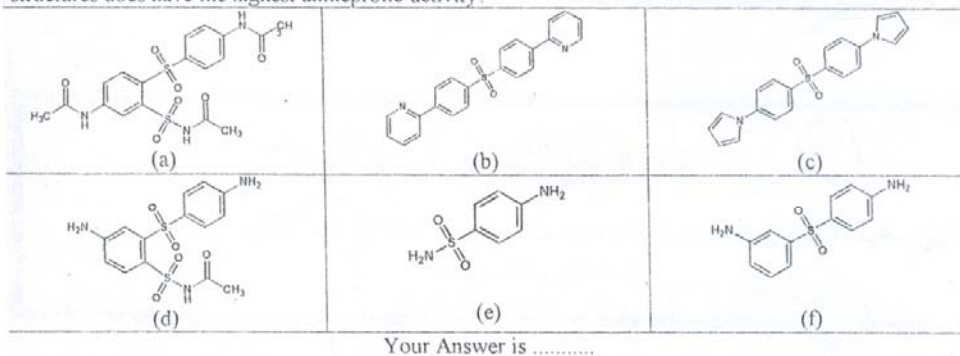
7		I. For the antiviral activity, the prime structural determinant is the diketo acid group II. For the antiviral activity, the prime structural determinant the hydroxyethylene scaffold III. HIV integrase inhibitor		
a. I only b. II only	c. III only d. I & II	e. I & III f. II & III	g. I, II & III h. None of the above	your answer
8		I. It inhibits arabinosyl transferases involved in cell wall biosynthesis II. The levo isomer is more active than the dextro one as antitubercular drug III. It has 4 optical isomers		
a. I only b. II only	c. III only d. I & II	e. I & III f. II & III	g. I, II & III h. None of the above	your answer
9		I. Its generic name is Butenafine II. Used for treatment of superficial dermatophyte infections III. Squalene epoxidase inhibitor		
a. I only b. II only	c. III only d. I & II	e. I & III f. II & III	g. I, II & III h. None of the above	your answer
10		I. Hemisuccinate derivative of the active metabolite artemisin II. It is the most frequently used of all the artemisinin-type drugs III. It is particularly well suited for the treatment of severe <i>P. falciparum</i> malaria		
a. I only b. II only	c. III only d. I & II	e. I & III f. II & III	g. I, II & III h. None of the above	your answer
11		I. It is a prodrug II. It is used for treatment of the Rhodesian trypanosomiasis III. The most commonly used drug for American trypanosomiasis		
a. I only b. II only	c. III only d. I & II	e. I & III f. II & III	g. I, II & III h. None of the above	your answer
12		I. Its generic name is Rimantadine II. Its generic name is Amantadine III. It could be used in prophylaxis of influenza A virus infections		
a. I only b. II only	c. III only d. I & II	e. I & III f. II & III	g. I, II & III h. None of the above	your answer

Question No. 2 Choose the Best answer for the following questions (*in the provided space indicate your answer with letters only*) (3 marks, 1 mark each)

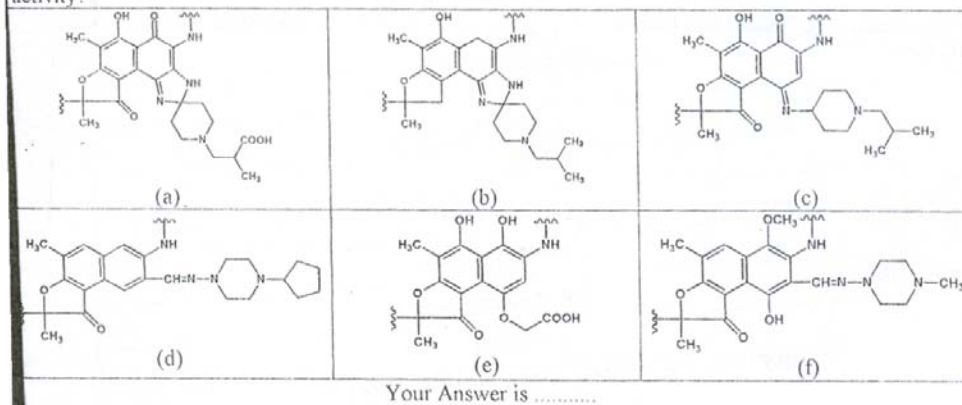
(I) According to theoretical aspects of *Azoles Antifungal drugs*, which one of the following structures does have the highest antifungal activity?



(II) According to theoretical aspects of *Sulfones Antileprotic drugs*, which one of the following structures does have the highest antileprotic activity?

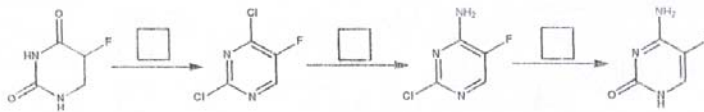


(III) According to theoretical aspects of *rifamycin derivatives Antitubercular drugs*, which one of the following chromophoric nucleus provides the rifamycin derivative with the highest antitubercular activity?

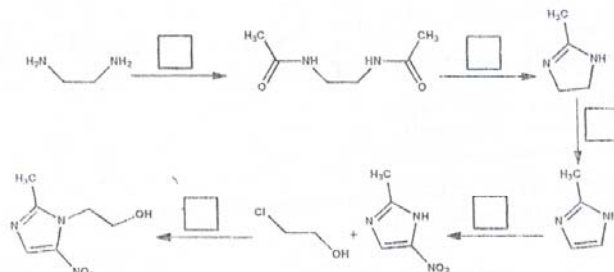


Question No. 3 Complete the following equations by using the suitable reagents from the following table (*in the provided boxes*, indicate your answer with letters only) each reagent could be used once, twice or more or not used at all (6 marks, 1/2 mark each)

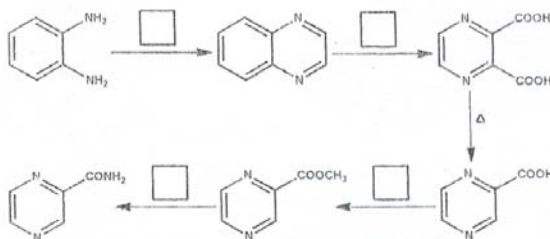
(A)



(B)



(C)



A. NaH	B. SOCl ₂
C. HCl/H ₂	D. Ethylene oxide
E. Br ₂	F. ClSO ₃ H
G. CH ₃ OH/HCl	H. POCl ₃
I. H ₂ /Ni	J. KMnO ₄
K. CaO	L. NH ₃
M. NH ₂ NH ₂	N. CH ₃ COOH
O. Glyoxal	P. HNO ₃ /H ₂ SO ₄
Q. Epichlorohydrin	R. Thiophosgene
S. C ₄ H ₉ Li	T. NH ₂ OH

END OF QUESTIONS, WITH BEST WISHES

(All questions should be attempted)

First Part (Prof. Dr. Sayed Ismail)

25

First Question

16

Answer Sheet for First Question

#	A	B	C
1			
2			
3			
4			
5			
6			
7			
8			

#	A	B	C
9			
10			
11			
12			
13			
14			
15			
16			

Select the most appropriate answer in the following MCQs: (One mark for each question)

1- A 60 kg woman started on a continuous I.V infusion of a drug at 40 µg/hr. At the steady state, the plasma concentration was 12 µg/ml. The Vd is 30 L for this drug.

The clearance of this drug in this patient is:

A- 1.33 L/ hr

B- 3.33 ml/ hr

C- can not be determined

2- The drug concentration after oral administration could be calculated using the following equation:

A- $C_p = C_0 e^{-kt}$

B- $C_p = \{(F K_a D_0) / V_d (K_a - K)\} (1 - e^{-kt})$

C- $C_p = \{(F K_a D_0) / V_d (K_a - K)\} (e^{-kt} - e^{-k_{at}})$

3- The time of the peak concentration after an oral administration depends on:

A- k_a and k B- k_a , k and V_d C- k , V_d and F

4- Drug infusion is usually modeled as a:

A- first order rate process

B- zero order rate process

C- zero and first order rate processes.

(Page 1 of 10)

5- In I. V. infusion, C_{ss} is reached:

- A- when the infusion rate equals the elimination rate.
- B- when the infusion process is stopped.
- C- after 7 hours from starting the infusion.

6- A drug is given as 40 mg I. V. bolus dose and the initial drug concentration was found to be 2 IJg/mL What is the apparent V_d ?

- A-10 L
- B-20 L
- C-30 L

7- If the elimination rate constant, $k_e = 0.2 \text{ hr}^{-1}$ and the $V_d = 32 \text{ L}$, the infusion rate required to maintain a concentration of 12 mg/L is:

- A- 7.68 mg / hr
- B- 76.8 mg / hr
- C- 768 mg / hr

8- The onset time for a drug given orally is the time for the drug to:

- A- reach the peak plasma drug concentration.
- B- reach minimum effective concentration.
- C- begin to be eliminated from the body

9- The elimination half life for a drug given:

- A- orally is smaller than that when the drug is given IV.
- B- IV is much greater than when the drug is given IM.
- C- by any route of administration is the same.

10- To determine the absolute bioavailability of a drug given as an oral tablet, the bioavailability of the drug must be compared to the bioavailability of the same drug from:

- A- an oral solution of the drug in the same dose.
- B- a parenteral solution of the drug given as I V bolus injection.
- C - a reference (brand) extended release tablet that is a pharmaceutical equivalent.

11- The volume of distribution is obtained by relating:

- A- The Concentration of the drug in plasma to time
- B- The amount of drug in the body to concentration
- C- The concentration of the drug to the amount of the drug in plasma

12- The mathematical pharmacokinetic models make it possible to develop equations describing the relationship between:

- A- the elimination rate constant and time
- B- Biological half-life and time
- C- drug concentration and time

13- The pharmacokinetic model is open since:

- A - the drug is eliminated from the system
- B- the drug is accumulated in the uremic patients
- C- the V_d is constant

14- A compartment is considered as a tissue or a group of tissues that have:

- A- similar blood flow.
- B- similar drug affinity
- C- both A and B.

15- When log urinary excretion rate is plotted against time, a straight line will be obtained:

- A- the slope of this line = $-0.44 k$
- B- the intercept = $\log k_e D_0$
- C- both A and B are correct

16- Creatinin clearance =

- A- rate of creatinin production / serum creatinin.
- B- V_d / serum creatinin
- C- serum creatinin / volume of distribution.

(Page 2 of 10)

Second Question

9

Write the scientific Term for each of the Following statements: (1.5 mark for each)

#	Statement	Scientific Term
1-	It is expressed as the ratio between the amount of the drug in the body to the plasma concentration	
2-	Those drug products whose rate and extent of absorption are nearly the same when they are given in the same dosage form and the same molar dose.	
3-	Drug products that contain an identical therapeutic moiety but not necessarily in the same amount or dosage form or the same salt or ester.	
4-	Volume of the blood that completely cleared from the drug per unit time	
5-	The initial bolus dose of the drug that is used to attain the steady state concentration as rapidly as possible.	
6-	A pharmacokinetic model, in which the drug in the GIT is absorbed systemically at a constant rate.	

6 I. Denote (T) for the true statements and (F) for the false ones: (6 marks)

- () 1. Protein-binding drugs are difficult to be removed by haemodialysis.
- () 2. Men have level of creatinine than women.
- () 3. Vd of water soluble drugs decrease with age.
- () 4. Normal G FH. is the same for men and women.
- () 5. Vd increases during pregnancy.
- () 6. Salicylic acid clearance was higher in Inale than female.
- () 7. Drugs with large V cl are dialysed more slowly.
- () 8. Marker must be freely filtered by the kidney.
- () 9. Creatinine test is not suitable in detecting early stage kidney disease.
- () 10. Vd increases in obese patients.
- () 11. Vegetarians have lower creatinine level.
- () 12. Normal GFH for individuals is in the range of 100-150 ml/min/ 1.73 cm².

II. Write the scientific term representing the following equations/ statements:

(5 marks)

Equations/ Statements	Scientific Term
1. $Q(Ca-Cv) / Ca$	
2. 50 ± 1 kg / 2.5 cm above or below 150 cm in height.	
3. It is a parameter taken to describe kidney function.	
4. $0.693 Vd / Cl_T$	
5. It is the clearance of drug via dialysis machine.	

III. Complete the following:

(4 marks)

A. Factors affecting drug removal by haemodialysis include:

1.
2.
3.
4.

B. Extracorporeal methods for drug removal from the body include:

1.
2.
3.
4.

Third Part (Dr. Mona M. Elmahdy) (15 marks)

I. Denote (T) for the true statements and (F) for the false ones and correct them:

(2 marks)

1.	The passive diffusion mechanism does not require energy. -----	()
2.	Fats and fatty acids inhibit both gastric secretion and gastric emptying -----	()
3.	The bonding of most drugs to receptors is an irreversible process. -----	()
4.	Bile salts enhance the dissolution rate of poorly water soluble drugs. -----	()

II. Give reason(s) for the following:

(4 marks)

1. The absorption of sparingly soluble drug griseofulvin is increased when it is taken with a high fat meal.

.....

2. The amount of riboflavin totally absorbed from oral doses administered after breakfast is much greater than fasting subjects.

.....

3. The presence of food in the GIT reduces the rate and extent of drug absorption.

.....

III. Discuss THREE of the following:

(9 marks)

1. Mechanism of drug absorption.

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2. Factors influencing the gastric emptying.

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3. factors affecting inhibition of active transport.

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4. Interactions of drugs with the components of the GIT.

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Fourth Part (Dr. Ikramy A. Khalil) (15 marks)**I. Answer the following questions (give examples whenever possible):** (4 marks)

1. Write about complexation for increasing drug solubility.

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2. Explain why particle size reduction is not always desirable.

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IIA. Denote (T) for the true statements and (F) for the false ones and correct them:

(2 marks)

1.	The degree of distribution depends largely on the physicochemical properties of the drug, in particular its crystal form.	()
2.	In plasma concentration time curve after oral dosing, changes in the AUC only reflect modifications in the kinetics of distribution and elimination.	()
3.	The conversion of the amorphous form of novobiocin to the crystalline form can be retarded by the addition of PEG 4000 into the medium.	()
4.	If the drug adsorbent interaction is not readily reversible, there will be a reduction in the rate and extent of drug absorption.	()

(page 8 of 10)

IIB. Choose the most appropriate answer in each of the following: (2 marks)

1. Which is TRUE regarding the minimum effective concentration (MEC)?

- A. It varies from drug to drug.
- B. It varies from individual to individual.
- C. It varies with the type and severity of the disease state.
- D. All of the above.

2. Medicinal chemists are using the following approaches for improving the dissolution rate of poorly soluble drugs EXCEPT:

- A. Introducing ionizable groups.
- B. Reducing melting points.
- C. Changing polymorphs.
- D. Stabilizing the amorphous form.

3. Factors affecting the concentration of drugs in solution in the GIT include the following EXCEPT:

- A. Complexation.
- B. Adsorption.
- C. Micellar solubilization.
- D. Partition coefficient.

4. The following complexation examples contribute to drug poor bioavailability EXCEPT:

- A. Mucin / streptomycin
- B. Tetracycline / calcium
- C. Phenobarbital / PEG 4000
- D. Lincomycin / kaolin

Answer Sheet

1	2	3	4

IIC. Circle the most appropriate answer regarding the biopharmaceutical classification scheme: (2 marks)

1. Class IV drugs are liable to have ----- oral bioavailability.	(poor / high)
2. One example of class IV drugs is -----.	(furosemide / atenolol)
3. For class II drugs, ----- is liable to be the rate limiting step in oral absorption.	(dissolution / absorption)
4. ----- drug are amenable to formulation approaches to improve the bioavailability.	(Class II / Class III)
5. Propranolol and metoprolol are example of ----- drugs.	(Class I / Class II)
6. It is important that dosage forms containing ----- drugs release them rapidly.	(Class II / Class III)
7. A drug is considered highly soluble when the highest dose is soluble in ----- or less of aqueous media.	(100 mL – 250 mL)
8. A drug is considered highly permeable when the extent of absorption is greater than ----- of administered dose.	(70% - 90%)

III. Give reason(s) to explain each of the following sentences (5 marks)

1. Chloramphenicol is used as palmitate ester in pediatric suspensions.

.....

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2. The dissolution rate of tolbutamide sodium is much faster than that of the free acid.

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3. Erythromycin estolate produces higher bioavailability compared to erythromycin base .

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4. Doxycycline is taken in small doses compared to normal tetracycline.

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5. Insulin is sometimes used as a mixture of amorphous and crystalline forms .

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***** END of Questions - GOOD LUCK *****

الامتحان الشفوي لجميع الطلاب عقب الامتحان النظري مباشرة بمشيئة الله بقسم الصيدلانيات
(page 10 of 10)

امتحان مقرر : تسويق الدواء

جامعة اسيوط

دور : يونية ٢٠١٣ م

كلية الصيدلة

الزمن : ساعتان

الفرقة : الثالثة

أجب عن الأسئلة الآتية

السؤال الأول (٣٠ درجة)

أكتب المصطلح العلمي الدال علي المفاهيم الآتية :

- ١- عملية اتصال مباشر أو غير مباشر بالمستهلك لتعريفه بمنتج منظمة ما ومحاولة إقناعه بأنه يحقق حاجاته ورغباته .
- ٢- استبعاد خطوط انتاجية قائمة أو تبسيط بعض التشكيلات داخل خطوط المنتجات .
- ٣- العملية التي يتم من خلالها بلوغ سوق الرعاية الصيدلانية .
- ٤- تقسيم السوق إلي فئات محددة بهدف ربط المنتج أو الخدمة بفئة محددة من المستهلكين دون غيرهم .
- ٥- عدد الخطوط الانتاجية المختلفة التي تمتلكها مؤسسة ما وتقوم بالإنتاج من خلالها .
- ٦- مجموعة العناصر التي تمثل جزء من المنتج ، والتي تباع معه من أجل حفظ محتوياته .
- ٧- الطريق الذي تسلكه السلعة من المنتج إلي المستهلك النهائي أو المشتري الصناعي من خلال أجهزة متخصصة قد تكون تابعة للمنتج أو مستقلة عنه .
- ٨- اتصال شخصي بين البائع والمستهلك في محاولة لإتمام عملية التبادل .
- ٩- الأسعار المعروفة لدي الجميع ودامت لفترات طويلة علي الثبات والاستقرار .
- ١٠- اسم أو تعبير أو إشارة أو رمز أو تصميم تميز سلعة ما عن سلعة أو سلع أخرى منافسة .

أنظر الورقة الثانية

السؤال الثاني (٣٠ درجة)

ناقش مدي صحة العبارات الآتية مع التعليق علي كل منها بشكل مفصل :

١- يعد التوجه بالتسويق البيئي (الأخضر) أكثر ملائمة في مجال التسويق الدوائي .

٢- يمكن استخدام جميع أسس تقسيم سوق الدواء إلي قطاعات دون قيد أو شرط

٣- ليس للبيئة الاجتماعية أثر يذكر في مجال صناعة الدواء أو تسويقه .

٤- تحقق استراتيجية كشط السوق من وجهة نظر المستهلك العديد من المزايا .

٥- هناك مجموعة من القيم الأخلاقية ينبغي أن تتوافر في رجل البيع .

٦- هناك عدد من التحولات الاقتصادية يجب أن تؤخذ في الاعتبار عند رسم السياسة

التسويقية في مجال الدواء .

السؤال الثالث (٤٠ درجة)

اكتب مذكرات مختصرة في القضايا التسويقية التالية :

١- الخصائص المميزة للصناعات الدوائية .

٢- العوامل المؤثرة في قرار التسعير .

٣- مفهوم التغليف وأهميته في مجال المنتجات الدوائية .

٤- الترويج وخصوصية السوق الدوائي .

٥- طرق تحديد مخصصات الترويج الدوائي .

انتهت الأسئلة ، خالص التمنيات لجميع الطلاب بالتوفيق (الممتحنون)

دكتور / محمد الناصر طه إبراهيم

دكتور / نادية أمين محمد علي

Date: 13/11/2012
Time allowed: 1 h
Student No.:
Name: -----

Assiut University
Faculty of Medicine
Community Medicine Dept.

Mid year Public Health and Community Medicine
Exam for 3rd Year Pharmacy Student

- Exam in TWO pages

I- Indicate whether each of the following statements is True (✓) or False (X): (7.5 marks)

1-	health is a state of complete physical and social well being not merely absence of disease or infirmity	
2-	Infection means invasion of human body by a non autochthonous agent	
3-	Healthy carrier is an individual who gets infected from polluted environment	
4	Healthy skin and mucous membrane form the first line of defense and facilitates introduction of infection	
5-	Colostrum is poor in antibodies while whole breast milk is rich in antibodies	
6-	Repeated exposure to subclinical infection gives immunity against endemic diseases in the community	
7-	DPT is a killed vaccine and is given in the ages of 2, 4, 6 and 18 months	
8-	BCG vaccine is a live attenuated vaccine given subcutaneously in the first three months after delivery	
9-	Primary level of prevention starts before the occurrence of any disease process	
10-	Health education and adequate nutrition are approaches for health promotion	
11-	Measles is transmitted by droplet infection while meningococcal meningitis is a food borne disease.	
12-	One of the main complications of mumps is serious congenital defects of the baby when the mother is infected in the first trimester of pregnancy .	
13-	Vaccination against meningococcal meningitis can be given in two doses to provide solid immunity for life.	
14-	Risk groups for blood borne diseases include hospital medical, nursing and laboratory staff	
15-	The lower the age at the time of acquiring hepatitis B infection, the higher the carrier rate.	

II- Complete the following sentences:

1- Dangerous groups of carriers include

- a.
- b.
- c.
- d.

2- Disadvantages of chemoprophylaxis are:

- a.
- b.
- c.
- d.

3- Primary level of prevention includes the following approaches

- a.
- b.

4- Prevention of measles infection can be done by:

- a.
- b.
- c.

5- Elements of communication circle are

- a.
- b.
- c.
- d.

6- Major sources of air pollution are

- a.
- b.
- c.

7 - Modes of transmission of hepatitis B include :

- a.
- b.
- c.

8- The following activities doesn't transmit HIV

- a.
- b.

Good luck

Prof. Mohamed Abed-El Fatah

Dr Dalia Galal

Prof. Kawther Fadel

Dr. Manal Darwish

Pharmacology Examination
for
Third year Pharmacy Student
Frish

Time allowed: Three hours

Date: 30/12/2012

NOTE

الامتحان يقع في هذه الورقة وفي ظهرها

- * All the following questions are to be attempted in your answer notebook.
- * Answer each question in a separate page.
- * You have **THREE PARTS TO BE ANSWERED**

PART I

Write an account on each of the following: (5 Marks Each)

- 1) Four therapeutic uses of epinephrine.
- 2) Four therapeutic uses of β -adrenergic blockers.
- 3) Compare between prazosin, terazosin and tamsulosin.
- 4) Apparent volume of distribution and its clinical application.
- 5) Three non-lipid lowering effects of statins.
- 6) Mechanism of action, therapeutic uses, and adverse effects of Two different muscarinic antagonists.
- 7) Explain how the heat shock protein plays a role in drug-receptor interaction.
- 8) Justify why beta adrenergic blockers are contraindicated in Prinzmetal's angina.
- 9) Explain how the protein 'Arrestin' induces down regulation of drug receptors.
- 10) Mechanism of action and Three different uses of digoxin.

PART II

Write the name of only One drug which exhibits the following character:-

- 1) It binds covalently to the α -receptors and produces irreversible non competitive type of blockade.
- 2) It is used to manage narcolepsy and attention deficit hyperactivity disorders.
- 3) Its Long-term use may associate with hypertrichosis.
- 4) It is a potassium channel opener used intravenously in hypertensive emergency.
- 5) It may cause ototoxicity if concurrently used with aminoglycoside antibiotics.
- 6) It is the best diuretic used in combination with digitalis in heart failure.
- 7) It is used in diagnosis of Myasthenia gravis.
- 8) It is a HMGCO-A reductase inhibitor and used in hyperlipidemia.

من فضلك اقلب الورقة لمتابعة باقى الأسئلة

PART III

For each of the following MCQs, select the most appropriate answer:- (1.5 Marks Each)

1- ONE of the following is Incorrect with regard to plasma protein binding of drugs:

- A) It is usually reversible.
- B) Drugs always bind to albumin.
- C) Bound fraction of the drug is pharmacologically inactive.
- D) Hypoalbuminemia leads to increased drug effects and side effects.

2- Acetylcholine produces all the following effects Except:

- A) Decrease of cardiac contraction.
- B) Increase of heart rate.
- C) Decrease of AV conduction.
- D) Vasodilation.

3- Pilocarpine is used in one of the following:

- A) To produce mydriasis.
- B) Shock.
- C) Epilepsy.
- D) Glaucoma.

4- Concerning hypertensive emergencies ONE of the following statements is Correct:

- A) It is usually not associated with end organ damage.
- B) Excessive and rapid lowering of blood pressure is encouraged.
- C) Intravenous hydralazine is preferable in patients with coexisting angina pectoris.
- D) Sodium nitroprusside provides rapid and controllable hypotensive effect.

5- Concerning drugs used in hypertension ONE of the following statements is Incorrect:

- A) Alpha methyl dopa is safely used in pregnant women.
- B) Angiotensin converting enzyme inhibitors should be avoided in hypertensive diabetic patients.
- C) The hypotensive effect of hydrochlorothiazide occurs at doses below the maximal diuretic dose.
- D) Diazoxide is used cautiously in diabetic patients.

6- All the following antihypertensive drugs affect the rennin-angiotensin system Except:-

- A) Hydralazine.
- B) Losartan.
- C) Aliskiren.
- D) Propranolol.

7- All the following diuretics and their linked mechanisms of action are Correct Except:-

- A) Furosemide - Inhibition of Na^+ - K^+ - 2Cl^- cotransport.
- B) Hydrochlorothiazide - Inhibition of Na^+ - Cl^- cotransport.
- C) Acetazolamide - Inhibition of carbonic anhydrase enzyme.
- D) Mannitol - Inhibition of renal epithelial Na^+ channels.

8- All the following drugs and their linked contraindications are Correct Except:

- A) Hydrochlorothiazide - Osteoporosis.
- B) Mannitol - Congestive heart failure.
- C) Enalapril - Bilateral renal artery stenosis.
- D) Spironolactone - Hyperkalemia.

Part 1 (18 marks)	Part 2 (18 marks)	Part 3 (17 marks)	Part 4 (17 marks)

Faculty of Pharmacy – Assiut University – Dept. of Pharmaceutics
Pharmaceutics-2 Final Exam. Third Year Pharmacy Students
Time Allowed: three hours Date: Jan. 9th, 2013

Part 1 (Prof. Dr. S. Ismail) (18 marks)

18

First Question

10

Answer Sheet for First Question

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

Choose the most appropriate answer in the following statements: (0.5 mark for each)

1- Which of the following is incorrect:

- A- topical ocular drug delivery systems are preferred over systemic ones.
- B- topical ocular drug delivery systems are having slow onset of action.
- C- topical ocular drug delivery systems are having smaller doses as compared with the systemic route.

2- The rapid decline in the drug concentration in the tears after instillation into the eye is due to :

- A- drainage B- dilution C- both A and B

3- The corneal epithelium is responsible for the movement of the :

- A- hydrophilic drugs B- lipophilic drugs C- Neither A nor B

4- The extent of corneal drug penetration appears to depend :

- A- directly with partition coefficient. B- inversely with partition coefficient.
- C- parabolically with partition coefficient.

5- The toxicity of surfactants in ophthalmic preparations could be ranked as:

- A- anionic > cationic > nonionic B- cationic < non ionic < anionic
- C- non ionic > anionic > cationic

6- Regarding epinephrine ophthalmic solutions, it is better to:

- A- be filled in glass containers. B- be filled. in plastic containers.
- C- keep the pH value alkaline.

7- The main advantage of gelrite ophthalmic gel is:

- A- its ability to form gel in the cul-de-sac within few seconds.
- B- that the gel is formed at a lower concentration. C- both A and B.

8- When a slightly water soluble drug is formulated into a pluronic ophthalmic gel, the corneal penetration will be:

- A- enhanced B- reduced C- not be affected

- 9- Cellulose acetate hydrogen phthalate forms gel when :
 A- the temperature is raised to body temperature B- sodium chloride is added
 C- the pH is raised to pH 7.4
- 10- It is better for an ophthalmic solution preserved with phenyl ethyl alcohol to be packaged in:
 A- glass container B- plastic container C- rubber container .
- 11- The most suitable antioxidant for epinephrine salts, as eye drops, is:
 A- BHT B- EDTA C- sodium bisulphite
- 12- It is recommended for the polymer used to increase the viscosity of ophthalmic solution to display:
 A- Newtonian flow B- plastic flow C- pseudoplastic flow
- 13- In ocusert pilo 20, the release rate is:
 A- 20 µg/min. B- 0.48 mg/day C- 20 mg/h
- 14- The diffusion of drugs from ocuserts follows:
 A- first order B- zero order C- non of the above
- 15 -The rate controlling membrane in ocuserts is composed of:
 A- ethylene vinyl acetate B- poloxamer C- carbomer
- 16- Which of the following is not true regarding chlorbutanol?
 A- its use is limited to formulations packaged in glass containers.
 B- it is slowly decomposed and resulting in' an increase in pH value.
 C- it is volatile and can permeate plastic containers.
- 17- Which of the following is incorrect:
 A- topical ocular drug delivery systems are preferred over systemic ones.
 B- topical ocular drug delivery systems are having slow onset of action.
 c- topical ocular drug delivery systems are having smaller doses as compared with the systemic route
- 18- Which of the following is not true? .
 A- the cornea offers as a barrier for lipophilic drugs.
 B- the cornea offers as a barrier for hydrophilic drugs.
 C- the cornea offers as a barrier for high molecular weight drugs.
- 19- The use of organic mercurials as preservatives in ophthalmic solutions is restricted due to:
 A- possibility of mercury to be deposited into the lens.
 B- their alkaline pH values .
 C- their ability to form complexes with most drugs.
- 20- A slightly acidic drug intended to be formulated into ophthalmic drops. This drug will be highly absorbed if the pH of the solution is:
 A- slightly acidic B- slightly basic C- neutral

Second Question (One mark for each space)

8

Complete the Following Statements:

- 1- Types of contact lenses are:
 A- ----- B- -----C- -----

- 2- Administration of rifampicin may cause lens ----- ,while
 administration of rbavirin may cause lens :-----
- 3- Although liposomes are considered as a useful ocular drug delivery system, they suffer from the following disadvantages : (mention three) .
 A- -----
 B- -----
 C- -----

Part 2 (Prof Dr. Ehsan Hafez)

I- Complete the following statements: (9 marks)

- 1-groups in polydimethyl siloxan provide water repellent property in silicon treated glass.
- 2-route of parenteral administration is used to test allergy of an individual to penicillin.
- 3-type of glass is safely used for oily injection.
- 4- of RBC occurs at 0.45% NaCl.
- 5- enzyme is used in hypodermoclysis.
- 6- is added to glass structure to facilitate processing.
- 7-test is used to estimate sealing of ampoules.
- 8-is used as anti-coagulant in blood transfusion bottles.
- 9-alkalinity test not suitable for treated glass.

II-Illustrate by a diagram the effect of I.V. injection of 0.3% NaCl. (5marks).

III-Give an example to demonstrate the use of compartment vial. (4 marks)

Part 3 (Prof Dr. Gamal-elgindy)

(1) CHOOSE THE CORRECT ANSWER: (total mark 7.5, each = 0.5)

1- From the characteristics of drug unsuitable for oral controlled sustained release DDSs

- a) when large doses are required (>1 g). e.g. Sulfonamides
- b) drugs with poor absorption,
- c) drugs with significant first pass metabolism,
- d) all the above.

2- From the biological factors influencing oral CR dosage form design:

- a) biological half life,
- b) absorption
- c) metabolism
- d) all the above

3- In case of infusion, after an initial increase in drug plasma concentration, a steady state concentration is reached depending on

- a) the infusion rate and the elimination kinetics of the drug,
- b) absorption rate
- c- distribution of drug.
- d) all the above.

4- The aim of developing a controlled-release DDSs is to achieve:

- a) rapid treatment of the disease
- b) slow elimination rate.
- c) a similar plasma concentration versus time profile as would be achieved by administering drugs by infusion
- d) none of the above

5- Gasket serves to

- a) support the actuator,
- b) link the dip tube and stem and actuator,
- c) return the valve to the closed position,
- d) all the above.

6- Metered valves used when:

- a) fine mist is wanted
- b) the content is formulated as foam, operation of the valve,
- c) a definite volume of the product is required to be released in one
- d) none of the above

7- Pharmaceutical aerosols differ from other dosage forms in the dependence of medication delivery upon the function of:

- a) the container
- b) the valve assembly
- c) the propellants
- d) all the above

8- From the advantages of pulmonary or nasal delivery over other dosage forms:

- a) Circumvention of the first-pass effect.
- b) Low cost
- c) sterile formulation
- d) Non of the above

9- Pharmaceutical aerosols must not be subjected to heat because:

- a) fluorinated hydrocarbon gases are flammable,
- b) high pressure inside the container may develop.
- c) the content may be destroyed.
- d) all the above.

10- From the advantages of controlled release :

- a) suitable for drug used for emergency cases like shock and cardiac arrest
- b) suitable for drugs used for long term treatment,
- c) biocompatibility,
- d) non of the above,

11- From the disadvantages of controlled release DDSs:

- a) fate of polymer additives, e.g, plasticizers, stabilizers, etc.
- b) used from long term treatment drugs.
- c) suitable when a constant plasma concentration is clinically beneficial
- d) non of the above.

12- From the reasons for the oral controlled and sustained released DDSs:

- a) ease of administration,
- b) to give rapid action of drugs,
- c) to give slow extraction,
- d) all of the above.

13- The pressure of an aerosol is controlled by:

- a) the type and amount of propellant
- b) valve assembly
- c) the amount of active ingredients.
- d) all of the above

14- The selection of the container of an aerosol depends on:

- a) its ability to sustain the pressure intended for the produ
- b) its collapsibility.
- c) its intended use
- d) all the above

15- Plastic coatings are commonly applied to the outer surface to :

- a) improve the appearance of the container, b) increase the internal pressure,
- c) increase the resistance to accident d) none of the above.

(II) COMPLETE THE FOLLOWING SENTENCES:(total mark 9.5, each = 0.5)

- 1- Aerosols for inhalation therapy must present particles in the form of a mist or as
- 2- Aerosols can be classified based on particle size:, or
- 3- Pharmaceutical aerosols can be classified based on intended use
- 4- Metered valves produce controlled, and uniform dosage
- 5- Drugs generally administered may be given by inhalation or intranasally
- 6- The greater the proportion of propellant,
- 7- In case of cold filling, since the product concentrate will
- 8- Inhalation are drugs administered by the
- 9- A nebulizer produces by through a solution to produce droplets of 5µm or less in size.
- 10-is the concentration interval between the MEC and the MTC.
- 11- Therapeutic index (TI) =/.....
- 12 - = C_{max} / C_{min} .
- 13- The total amount of reserve drug in the formulation = X total number of hrs of sustained effect.
- 14- Foam aerosols may contain only propellant.
- 15- Glass containers are considered safe when the pressure is below psig and no more than propellant is used.

Q1	Q2	Q3	Total

Fourth Part (Dr. Mona El. Mahdy) (17 points)

Q1) Give reason(s) for the following: (3 points)

a)-Presence of compressed air in Wurster coating equipment

b) NMEC is preferred than NRC in micro encapsulation using vacuum evaporation deposition technique

c) In Wurster process, the settling section has a wider surface area than coating section

d) Microcapsules reduce the side effect of irritating drugs

Q2): Complete the following sentences: (4 points)

a) Starting material for encapsulations by spray-drying process is:

1) ----- 2) ----- 3) -----

b) Microencapsulation process in organic solution media are:

1) ----- 2) ----- 3) -----

c) The current velocity (v) necessary for suspending the core material in Wurster process is expressed by

d) The most important function of microcapsules are:

4) Microencapsulation of Naphthyl-1,5diisocyanate (NDI).

5) Micro encapsulation using vacuum-evaporation deposition technique.

GOOD LUCK



Date: 14/01/2013
Time: Three hours
9am:12pm

Assiut University
Biochemistry Department
Faculty of Pharmacy
Third year



Answer the following question :- (4 marks each)

1. Differentiate between:
 - a. Factors affecting calcium and iron absorption.
 - b. Prokaryotic and Eukaryotic mRNA
 - c. Retinol and Retinoic acid
 - d. Hypocalcemia and hypercalcemia
2. Write on : (5 marks each)
 - a. Genetic code and its characters
 - b. Processing of t-RNA
 - c. Functions of copper
 - d. Deficiency of zinc
3. write only the functions of: (4 marks each)
 - a. Vitamin C
 - b. Spliceosome
 - c. Telomere and telomerase
 - d. Vitamin B₁₂
4. Enumerate only the following :-
 - a. Antioxidant vitamins (2 marks)
 - b. Steps of activation of vitamin D into calcitriol. (3marks)
 - c. Phase II xenobiotic metabolism (3 marks)

-
- الرجاء إجابة كل سؤال على حده وفي صفحة منفصلة.
 - امتحان الشفوي عقب النظرى مباشرة.

Good Luck



Date: 14/01/2013
Time: Three hours
9am:12pm

Assiut University
Biochemistry Department
Faculty of Pharmacy
Third year
MCQ



Choose the best Answer: _____ (1 marks each)

1. RNA molecules that exhibit catalytic activity are called
 - A) mRNAs
 - B) ribonucleases
 - C) ribosomes
 - D) ribozymes .
 - E) ribonucleotides
2. If a double-stranded DNA molecule undergoes two rounds of replication in an in vitro system that contains all of the necessary enzymes and nucleoside triphosphates that have been labeled with ^{32}P , which of the following best describes the distribution of radioactivity in the four resulting DNA molecules?
 - A) Exactly one of the molecules contains no radioactivity.
 - B) Exactly one of the molecules contains radioactivity in only one strand.
 - C) Two of the molecules contain radioactivity in both strands.
 - D) Three of the molecules contain radioactivity in both strands.
 - E) All four molecules contain radioactivity in only one strand.
3. The deficiency of an excision endonuclease may produce an exquisite sensitivity to ultraviolet radiation in Xeroderma pigmentosum. Which of the following functions would be absent in a patient deficient in this endonuclease?
 - A) Removal of introns
 - B) Removal of pyrimidine dimers
 - C) Protection against DNA viruses
 - D) Repair of mismatched bases during DNA replication
 - E) Repair of mismatched bases during transcription
4. Vitamin K :-
 - A) Is a water soluble vitamin
 - B) Vitamin K₂ is synthetic.
 - C) Essential for clot formation.
 - D) Present normally in the intestine of newborn infants;
 - E) Long use of dicumarol promotes its action.

5. Vitamin E acts as :-
 - A) Anti-rickets
 - B) Anti- scurvy
 - C) Antibody
 - D) Antioxidant
6. The absorption of light by cells in the retina of the eye results in the conversion of:
 - A) p-carotene to retinal
 - B) Cis-retinal to all trans-retinal
 - C) All trans- retinal to cis retinal
 - D) Retinal to retinol.
 - E) Retinol to retinal
7. Blood calcium:
 - A) Consists entirely of diffusible Ca^{2+} ions.
 - B) Is involved in neuromuscular activity.
 - C) Passes into the glomerular filtrate with no subsequent reabsorption from the kidney tubules.
 - D) Has a concentration that is not controlled by hormonal action.
8. All of the following about the intestinal absorption are correct except:
 - A) Calcium takes place mainly in the upper small intestine.
 - B) Iron absorption is stimulated by anemia.
 - C) Magnesium probably requires the presence of vitamin-D.
 - D) Calcium is enhanced by the presence of a high concentration of fatty acids in the intestine.
9. Correct statements about iron metabolism include the following except:
 - A) Iron is transported in plasma bound to transferrin
 - B) Iron is stored in the tissues as ferritin.
 - C) Iron can be lost in the feces.
 - D) About 10% of the total iron is present in circulation as hemoglobin
10. The cytochrome P450 system:
 - A) Is involved in the hydroxylation of steroids.
 - B) Is involved in the hydroxylation of phenylalanine to tyrosine.
 - C) Is involved in the hydroxylation of proline in collagen.
 - D) Requires NADH for activity.

Good Luck



Date: 23/1/2013
Time allowed: 2 hours

Assiut University
Faculty of Medicine
Community Med. Dept.

Public Health and Community Medicine Exam for 3rd Year
Pharmacy Student

Answer the following questions:

- 1- Mention **FIVE** (5) of the 10 steps to successful breast feeding (5marks)
- 2- List **FIVE** (5) absolute contraindications to the use of combined pills (5marks)
- 3- what are the preventive measures of diarrhea (5marks)
- 4- illustrate links of the infectious process (cycle) (5marks)
- 5- enumerate functions of calcium (5marks)
- 6- Define carrier and mention its types (5marks)
- 7- Define chemoprophylaxis and give 3 examples (5marks)
- 8- List **FIVE** (5) vaccine preventable **diseases** that could infect children (5 marks)
- 9- List at least **Two** (2) indications for T.B. testing and other **Three** (3) indications for T.B treatment (10 marks)
- 10- In a table format, illustrate Tetanus toxoid vaccination schedule for pregnant women showing **dose** and **minimal period** between successive doses (10 marks)
- 11- Discuss in brief modes of transmission and complications of rubella (10 marks)
- 12- What are the effects of air pollution on human? Mention **FOUR** (4) methods of air pollution prevention. (10 marks)

Good luck

Prof. Mohamed Ahd- El Fatah

Prof: Kawther Fadel

Dr Dalia Galal

Dr Manal Darwish



Date: 12/02/2013
Time: Three hours
9am:12pm

Assiut University
Biochemistry Department
Faculty of Medicine
Third year Pharmacy
تخلفات



Answer the following question :-

1. Differentiate between:
 - A. Calcium and Iron.
 - B. DNA and RNA
 - C. Retinol and Retinoic acid.
 - D. Absolute and Relative enzyme specificity.
 - E. Prokaryotic and euokaryotic mRNA.
2. Write on :
 - A. Factors affecting calcium aborption.
 - B. Factors affecting enzyme activity.
 - C. Genetic code and its characters.
 - D. Mitochondrial DNA.
 - E. Enzyme inhibition.
3. Write down the functions of:
 - A. Vitamin C
 - B. Telomere and telomerases
 - C. Vitamin K
 - D. Gene promoter.
 - E. Copper.

-
- الرجاء اجابة كل سؤال على حده وفى صفحة منفصلة.
 - امتحان الشفوى والعملى عقب النظرى مباشرة.

Good Luck,



Date: 14/02/2013
Time: Three hours
9am:12pm

Assiut University
Biochemistry Department
Faculty of Medicine
second year
تخلفات



Answer the following question :-

1. Define only the following:
 - A. Transamination.
 - B. Gluconeogenesis
 - C. Ketolysis
2. Write down 3 differences between
 - A. Liver glycogen and muscle glycogen.
 - B. Transamination and Deamination.
 - C. HMP shunt and glycolysis.
3. Write down the following biochemical transformations:
 - A. Acetyl coA to malonyl coA.
 - B. Tyrosine to Thyroxine.
 - C. Ammonia to Urea
 - D. Cysteine to pyruvate.

● الرجاء اجابة كل سؤال على حده وفي صفحة منفصلة.

● امتحان الشفوى والعملى عقب النظرى مباشرة.

Good Luck,



Assiut University
Faculty of Medicine
Department of Medical Biochemistry

Final Exam.

Date: 1 - 6 -2013
Time: 3 h

For Pharmacy Students (II)

*****There is another MCQ paper:**

I- Illustrate with formulae the following:

(4 marks each)

- 1- Conversion of glucose into serine.
- 2- Oxidative phase of pentose phosphate shunt.
- 3- Conversion of propionyl-CoA into succinyl-CoA.
- 4- Synthesis of dihydroshingosine.
- 5- α -oxidation of fatty acids.

II- On the biochemical basis give reasons of the following: (2 marks each)

- 1-Lipoprotein lipase is called plasma clearing factor.
- 2-During electrophoresis, LDH₁ is the fastest LDH isozyme toward anode.
- 3-Methotrexate is a drug used as anticancer.
- 4-Phosphofructokinase is affected by change of pH.
- 5-Steroids belong to group I hormones.
- 6-Gluconeogenesis is very limited in skeletal and smooth muscles.

III- In brief, comment on:

(2 marks each)

- 1- Maple syrup urine.
- 2- G-proteins.
- 3- Glycogenin.
- 4- Chemical name, precursors, and site of action of carnitine.
- 5- Site, class, requirements, and product of acetyl-CoA carboxylase.

IV- Enumerate:

(8 marks)

- 1-Pathological causes of ketoacidosis.
- 2-Enzymes used in diagnosis of myocardial infarction.
- 3-Coenzymes which are required for α -ketoglutarate dehydrogenase.
- 4-Two important hormones that are produced from tryptophan and tyrosine.

GOOD LUCK

امتحان الشفوى ان شاء الله يوم السبت 6/1 عقب امتحان النظرى مباشرة من 1- 600
باقي الدفعة يوم الاحد من التاسعة صباحا

First Part	Second Part	Third Part	Fourth Part	Fifth Part	TOTAL
14	17	13	13	13	70

**FACULTY OF PHARMACY
ASSIUT UNIVERSITY
DEPT. OF PHARMACEUTICS**

Biopharmaceutics and Pharmacokinetics Final Exam. for Third Year Students
Date : June 15, 2013 **Time Allowed : Two hours**

First Part (Pro. Dr. Sayed Ismail)

Answer Sheet

14

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
A														
B														
C														

Select the most appropriate answer:

1- The loading dose of a drug is usually based on :

A- fraction of drug excreted unchanged in the urine

B-Vd and the desired drug concentration in the plasma

C- AUC

2- Which equation is true for a zero order reaction rate of a drug ?

A) $dA/dt = -k$

B- $t_{0.5} = 0.693/k$

C- $A = A_0 e^{-k}$

3-The half life of the drug is 4 hr, therefore :

the time needed for 92.5 % of IV dose to be eliminated is ;

A- 12 hr

B- 15 hr

C- 16 hr

4- The half life of a drug when 18% of the dose remains 4 hr after administration of an IV bolus dose is :

A- 4.4 hr

B- 3.8 hr

C- 1.6 hr

5- When 100 mg of a drug was given as an IV bolus dose, the following relationship was obtained by the following equation :

$$C = 7.14 e^{-0.17t}$$

the volume of distribution is :

A- 10 L

B- 14 L

C- 20 L

6- the half life in question No. 5 is :

A- 4 hr

B- 7 hr

C- 10 hr

7- The integrated equation used to calculate C_p at any time before C_{ss} has been attained is :

A- $C_p = C_{po} e^{-kt}$

B- $C_p = C_{ss}(1 - e^{-kat})$

C- $C_p = R/kV_d (1 - e^{-kt})$

8- if the infusion rate R is increased, the time needed to attain C_{ss} will be :

A- increased

B- decreased

C- not affected

9- C_{ss} after IV infusion is :

A- directly proportional with infusion rate

B- inversely proportional with infusion rate

C- independent on the infusion rate

10- Which of the following is true ?

A- one compartment pharmacokinetic model exhibits first order elimination rate constant.

B- one compartment pharmacokinetic model can exhibit both zero order and first order elimination rate constants.

C- for zero order elimination, the fraction of the drug removed per unit time, remains the same

11- The time required to go from C_{ss} to C_p after stopping of infusion is dependent on :

A- infusion rate

B- elimination half-life

C- both A and B

12- The fraction of a steady state concentration to be achieved at time t after an IV infusion is equal to :

A- $(1 - e^{-kt})$

B- e^{-kt}

C- $(1 - e^{-kat})$

13- When log urinary excretion rate is plotted versus time, the intercept of the resulting line is equal to :

A- $k/2.303$

B- $\log k_e D_0$

C- $-0.44k$

14- In I. V. infusion, C_{ss} is reached :

A- when the infusion rate equals the elimination rate.

B- when the infusion process is stopped.

C- after 7 hours from starting the infusion.

Second Part (Prof. Dr.Ehsan Hafez)

17

Answer the following questions:

A- "Extracorporeal methods for drug removal are used for patients with end stage renal disease and patients who are intoxicated with a drug."

On the light of the previous statement, answer the following:

a) Factors affecting drug removal by haemodialysis are: (2 marks)

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

2. ----- 4. -----

b) The term dialysance refers to: (4 marks)

• -----

• -----

And it is given by the following equation:

$$\text{-----} = \frac{\text{-----}}{\text{-----}}$$

Where:

C_a : -----

C_v : -----

Q : -----

B- Complete the following:

(5 marks)

a) GFR describes the ----- through the kidney.

b) The normal value of GFR through the kidney is -----.

C- Requirements for the markers are :

- | | |
|----------|----------|
| 1. ----- | 4. ----- |
| 2. ----- | 5. ----- |
| 3. ----- | 6. ----- |

C-"On the light of the individual variability in the relationship between the dose of the drug administered and the concentration of the drug in the body ", answer the following:

a) Factors affecting patient's variability: (3 marks)

- | | |
|----------|----------|
| 1. ----- | 4. ----- |
| 2. ----- | 5. ----- |
| 3. ----- | 6. ----- |

b) V_d of a drug increases if the patient is: (3 marks)

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

Third Part (Prof. Dr. Gamal El-Gindy) (13 marks)

Q.1 Give the most appropriate scientific expression for the following statements (4 marks, 0.5 for each)

- 1- The period during which the concentration of drug in the plasma exceeds the MEC.
(-----)
- 2- The dynamic equilibrium exists between the concentration of the drug in the blood plasma and the drug at its site(s) of action. (-----)
- 3- That is related to the total amount of drug absorbed into the systemic circulation following the administration of a single dose. (-----)
- 4- The transfer of molecules or ions from a solid state into solution.
(-----)
- 5- The solution that is obtained when the amount of substance passes into solution when equilibrium is established between the solution and excess substance. (.....)

- 6- The presence of many drugs in more than one crystalline form. (-----)
- 7- The phenomenon that can occur if a drug is able to associate with solvent molecules to produce crystalline form. (-----)
- 8- The method that can be used to determine the absorption rate constant after extra vascular administration is termed ()

Q.2.Circle the letter of the best answer: (4 marks, 0.5 for each):

- 1- A reduction of particle size of Griseofulvin from about 10 μm to 2.7 μm was shown to produce approximately :
- a) double the amount of drug absorbed in humans, c) non of the above.
- b) triple the amount of drug absorbed in humans
- 2- If an increase in surface area does not increase the absorption rate, it is likely that:
- a) the dissolution process is rate limiting, c) both of the above.
- b) the dissolution process is not rate limiting,
- 3- The diffusion coefficient, D, of the drug in the GIT fluids may be decreased by the presence of substances that:
- a) decrease the viscosity of the fluid, b) increase the viscosity of the fluid,
- c) unchanged the viscosity of the fluid.
- 4- The dissolution rate of the oral hypoglycemic tolbutamide sodium in is faster than that of the free acid by:
- a) 50 times, b) 500 times, c) 5000 times.
- 5- Noyes-Whitney Equation under sink condition become:
- a) $dc/dt = DAC_s / h$ b) $dc/dt = DAC / h$ c) $dc/dt = DA(C_s - C) / h$
- 6- From Noyes-Whitney Equation D means:
- a) dissolution rate constant b) diameter of particle size, c) diffusion coefficient.
- 7-hydrate is:
- a) type of solvate in which the solvent is water, b) amorphous form of drug.
- c) both of above.
- 8- The antibiotic streptomycin has poor bioavailability, due to:
- a) complexation with calcium or iron, b) complexation with mucin, c) non of the above.

Q.3 Complete the following sentences: (5 marks, 0.5 point for each space):

1- In case of Insulin, the administration of a mixture of amorphous and crystalline forms is preferable because:

.....
.....

2- The amorphous form of the antibiotic novobiocin is the only form administered orally because.....

.....

3- Generally, the greater the solvation of the crystal, the are the solubility and dissolution rate in a solvent identical to the solvation molecules

4- It is advised that patients do not take products containing calcium or iron, such as milk, iron preparations or indigestion remedies, at the same time of day as the tetracycline, because

.....

5- The adsorption of a drug on to solid adsorbents such as kaolin or charcoal may reduce its rate and/or extent of absorption, owing to

.....

6- Talc, , which can be included in tablets as a glidant, is not recommended to use with cyanocobalamin tablet due to its ability tothis vitamin and interfere with the absorption of this vitamin.

7- The enhancement of drug absorption after meals is often related to the increased bile flow which used as for the drug molecules.

8- Penicillin G and methicillin are given normally parenterally, because, they by the acidic medium of the stomach.

9- The enteric coating of tablets containing erythromycin are used to Improving the bioavailability of erythromycin in the GIT because

.....

.....

10-The antifungal drug ketoconazole, a weak base, is particularly sensitive to gastric pH, dosing ketoconazole 2 hours after the administration of the H2 blocker cimetidine, which reduces gastric acid secretion, results in a significantly

.....

Fourth Part (Dr: Mona el-mahdy) (13 points)

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

- a) The passive diffusion mechanism requires energy. ()
- b) The absorption of weak acids is favored in the intestine and that of weak bases is favored in the stomach. ()
- c) Fats and fatty acids increase gastric secretion. ()
- d) Bile salts decrease the dissolution rate of poorly water soluble drugs. ()

Q2: Give reason(s) for the following (6. 5 points)

- The reduction in the absorption rate observed in case of stomachic trauma or extensive irritation.
- The absorption of griseofulvin is increased when is taken with a high fat meal
- The co-administration of quaternary drugs with an inert quaternary compounds of ammonium compound increased their bioavailability.
- The presence of food in the G.I.T. reduces the rate and extent of drug absorption

Q3: Discuss briefly on three of the following:

(4.5 points)

1) Mechanism of drug absorption.

2) Factors that may result in the change of gastric pH.

3) How can active transport be inhibited ?

4) Factors influence the gastric emptying .

Fifth Part (Dr. Mahmoud El-sabahy)(13 Marks)

Choose the most appropriate answer for each of the followings (1 mark each)

1. In first-order processes, as the plasma drug concentration decreases during elimination, clearance:
A) Remains constant B) Decreases C) Increases D) None of the above
2. In patients with renal dysfunction, the clearance and elimination half-life:
A) Increase B) Decrease C) Remain constant D) None of the above
3. Creatinine clearance depends on all of the following except:
A) Age B) Weight C) Analysis time D) Sex
4. Drugs with low minimum effective concentrations should have duration of action.
A) Shorter B) The same C) Longer D) None of the above
5. Onset time is the time at which the plasma concentration of the drug reaches:
A) The minimum effective concentration B) The maximum therapeutic concentration
C) The toxic concentration D) None of the above
6. Bioavailability refers to the amount of unchanged drug that reaches:
A) Blood B) Site of action C) Both A and B D) None of the above
7. AUC is most commonly measured by:
A) Trapezoidal Rule B-Integration method C-Weight method D)Planimeter
8. Urinary drug excretion data may be used to assess:
A) Bioavailability B) Biodistribution C) Pharmacodynamics D) All of the above
9. Nonvolatile drugs are excreted mainly by:
A) Kidney B) Liver C) Both A and B D) None of the above
- 10..... is used in estimating dosage regimens in uremic patients.
A) Nomogram B) Renogram C) Dosimeter D) None of the above
- 11.Nanoparticles can treat diseases on the molecular level because:
A) They are designed on the nanoscale B) They can diffuse passively into cells
C) They have smart components D) None of the above
- 12.Nanoparticles can permeate into pathological sites with leaky vasculature and accumulate due to impaired lymphatic drainage at these areas, this is known as:
A) Enhanced permeability and retention effect B) Passive targeting
C) Active targeting D) Both A and B
- 13.Stealth nanoparticles will:
A- Have prolonged circulation time B-Have lower uptake by the mononuclear phagocyte system (MPS)
C) Allow passive targeting D) All of the above

Assiut University
Faculty of Pharmacy
Medicinal Chemistry Dept.

Time Allowed: 2 hours
Med. Chem. (II) (PHC-457) Final Exam

Third year pharmacy students
Date: June, 6th, 2013
Total Mark: 70 marks

- قبل البدء في الإجابة إقرأ هذه التعليمات جيداً
١. إكتب إسمك ورقم جلوسك باللغة العربية وبخط واضح على غلاف كراسة الإجابة فقط.
 ٢. تأكد أن كراسة الامتحان تتكون من 6 ورقات (اثني عشر صفحة) بجانب صفحة التعليمات وفي حالة تكرار أو نقص أى أوراق اطلب استبدالها فوراً.
 ٣. في الأسئلة متعددة الاختيارات يتم تظليل الإجابة الصحيحة فقط في Answer Sheet المرفق بكراسة الإجابة.
 ٤. عدم كتابة إسمك أو أى علامات داخل الكراسة أو في Answer sheet.
 ٥. محاولة الاستعانة بالآخرين أو إعانتهم في إجابة الامتحان يُعرضك للمسائلة القانونية من الجامعة وما يترتب عليها.

موعد الامتحان الشفهي

الامتحان الشفهي عقب الامتحان النظري مباشرةً وسيعلن توزيع الطلاب على لجان الامتحان بلوحة الإعلانات بالقسم.

لجنة الامتحان

أ.د/ عاطف عبد المنعم عبد الحافظ أ.د/ نوال أبوبكر عبد الحليم

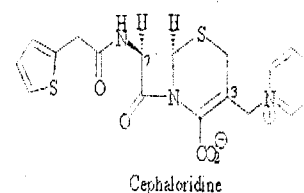
د/ أحمد صفوت أبورية

مع أطيب الأمنيات بالتوفيق والنجاح ،،،

▪ Select the **Best and Most Complete** answer for each of the following:

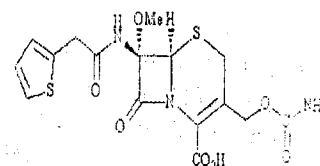
1. Cephaloridine has a pyridinium ring in place of the acetyl group in cephalothin. Which of the following statements is true?

- (a) Cephaloridine is more easily absorbed through the gut wall
- (b) Cephaloridine has a shorter duration of action than cephalothin
- (c) The pyridinium ring acts as a good leaving group in the inhibition mechanism
- (d) The pyridinium ring abolishes the antibacterial activity
- (e) The pyridinium ring is more easily metabolised than the acetyl group of cephalothin



2. The opposite structure is an example of a cephamycin. What is the significance of the urethane group?

- (a) It acts as a steric shield leading to longer activity.
- (b) It is resistant to hydrolysis by esterases leading to longer activity.
- (c) It acts as a steric shield for the β -lactam ring leading to lower activity.
- (d) It acts as a polar group resulting in better water solubility.
- (e) It increases the lipid solubility of the drug

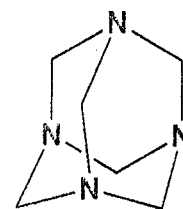


3. Concerning the structure-activity relationships of quinolones as antibacterial agents, the followings are correct except

- (a) Substitution at C-2, reduce the activity.
- (b) Substitution at C-5; 6; and/or 7 retain the activity and improve the pharmacokinetic properties.
- (c) Substitution of C-8 with nitrogen abolish the activity
- (d) Fluoro substituent at C-6 enhances the activity.
- (e) Piperazine substituents at C-7 broaden the spectrum

4. Regarding the opposite compound, choose the incorrect answer

- (a) The mandilate salt used as urinary antiseptic
- (b) Used as preservative in eye drops
- (c) It is a tricycle compound
- (d) Prepared by evaporating formaldehyde solution with strong ammonia
- (e) It releases formaldehyde in urine under acidic conditions

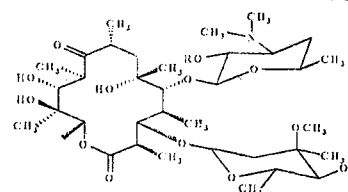


5. Which of the following chemical modifications is used to mask the bitter taste of Chloramphenicol

- (a) Formation of hemisuccinate ester at C-3
- (b) Shifting of p-amino group to m-position
- (c) Replacement of 4-nitro group by CH_3SO_2 - group
- (d) Formation of palmitate ester at C-3
- (e) Conversion of phenyl group to pyridyl one

6. The opposite illustrated drug is:

- I. Binds to 50S ribosomal subunits
- II. Macrolide antibiotic
- III. A protein synthesis inhibitor

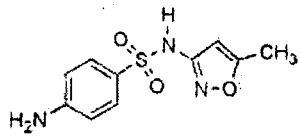
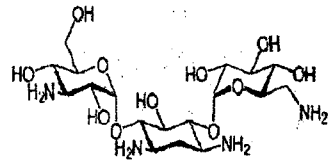
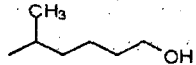
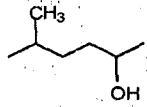
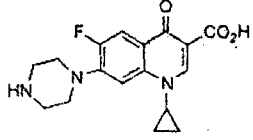
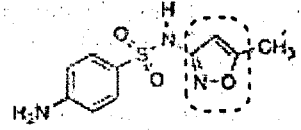


- (a) I only (b) III only (c) I and III only (d) II and III only (e) I, II, and III

7. Tetracyclines inhibit bacterial protein synthesis by:

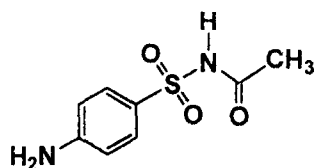
- I. binding to the 30S ribosomal subunit.
- II. Chelation of Mg^{2+} in the bacterial cells.
- III. preventing cross-linking in the cell wall.

- (a) I only (b) II only (c) I and II only (d) II and III only (e) I and III

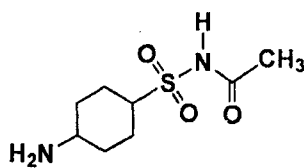
8. For the opposite structure, the pKa of the sulfonamide group is 5.4. What percent of this compound will be unionized at physiological pH? (a) 1% (b) 10% (c) 90% (d) 99% (e) 99.9%	
9. The opposite illustrated drug is: I. Spiramycin macrolide II. inhibit protein synthesis III. nephrotoxic (a) I only (b) III only (c) I and III only (d) II and III only (e) I, II, and III	
10. For the opposite illustrated structures I- Compound A is more lipophilic than B II- Compound B is more lipophilic than A III- Compound A has a higher log P than B (a) I only (b) I and II only (c) I and III only (d) III only (e) I, II, and III	(A)  (B) 
11. The opposite compound exerts its antibacterial action by inhibiting: (a) the function of microtubules. (b) the initiation of bacterial protein synthesis. (c) DNA gyrase. (d) alanine racemase. (e) the translocation step of bacterial protein synthesis.	
12. The compound shown in the above question is best classified as a(n): (a) acid. (b) base. (c) amphoteric compound. (d) electrolyte. (e) non-electrolyte	
13. Chemically the above compound (in question 11) is considered as (a) 1,4-Naphthyridine derivative (b) Naphthalene derivative (c) Quinoline derivative (d) Pyrimidine derivative (e) 1,8-Naphthyridine derivative	
14. Shown oppositely is sulfamethoxazole. Similar to all sulfonamides, sulfamethoxazole contains a heterocyclic ring (highlighted). What is the most important chemical property of this heterocyclic ring? (a) It increases water solubility (b) It increases lipid solubility (c) It is electron withdrawing (d) It is electron donating (e) It provides adequate steric hindrance.	

15. Which of the following would be the most effective sulfa drug?

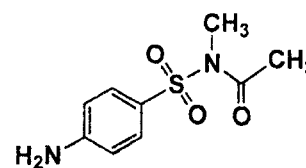
(a)



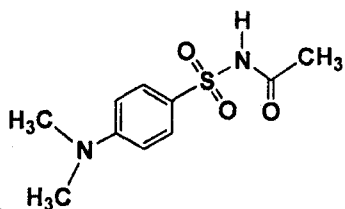
(b)



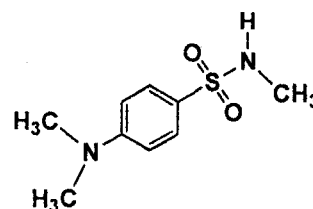
(c)



(d)

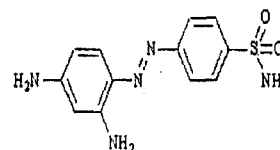


(e)



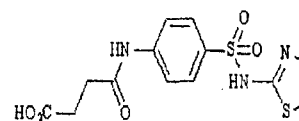
16. Which of these statements is true about the opposite structure?

- (a) It is a prodrug which is converted to prontosil in the body
- (b) It is a prodrug which is converted to sulfanilamide in the body
- (c) It was the first active sulfonamide
- (d) It shows antibacterial activity *in vitro*
- (e) It shows antifungal activity *in vivo*



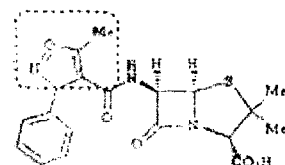
17. What type of infection is succinyl sulfathiazole used for?

- (a) Urinary tract infections.
- (b) Eye infections.
- (c) Mucous membrane infection.
- (d) Gut infections.
- (e) Ear infections



18. Oxacillin was introduced as an improvement over methicillin for the treatment of penicillin-resistant strains of *Staphylococcus aureus*. Which of the following statements is false?

- (a) The highlighted feature has an electron-donating effect on the neighbouring amide.
- (b) The highlighted feature has a steric effect which protects the β -lactam ring.
- (c) The highlighted feature makes the structure more stable to acid.
- (d) The highlighted feature has an electron-withdrawing effect on the neighbouring amide.
- (e) The highlighted feature blue makes the structure orally active.



19. Which of the following statements best describes the importance of the bicyclic system in penicillins to antibacterial activity?

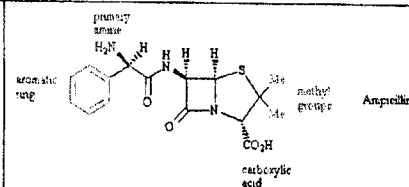
- (a) It acts as a scaffold to hold the carboxylate group and acyl side chain in the correct relative orientations for binding
- (b) It is the correct shape and size to fit the binding site
- (c) It increases the strain of the β -lactam ring and increases reactivity and antibacterial activity
- (d) It is a folded ring system and protects the β -lactam ring from hydrolysis
- (e) It decreases the strain of the β -lactam ring and increases reactivity and antibacterial activity

20. What tactic is successfully used to increase the stability of penicillins to acid hydrolysis whilst retaining antibacterial activity?

- (a) Expanding one or other ring to relieve ring strain
- (b) Adding an electron withdrawing group to the β -lactam ring
- (c) Adding an electron withdrawing group to the acyl side chain
- (d) Removing the acyl side chain
- (e) Esterifying the carboxylic group

21. What feature of ampicillin is important in its acid stability

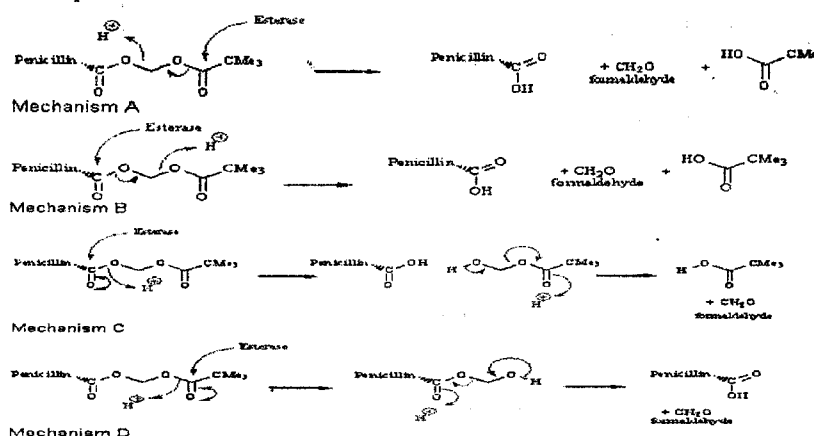
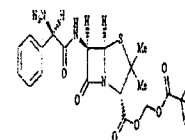
- (a) The carboxylic acid
- (b) The aromatic ring
- (c) The primary amine
- (d) The methyl groups
- (e) The stereochemistry around C-6



22. What is the relevance of β -lactamase enzymes to penicillins?

- (a) Fungi containing β -lactamase enzymes can synthesise penicillins.
- (b) Bacteria containing β -lactamase enzymes show resistance to penicillins.
- (c) Mammalian cells are unaffected by penicillins because they contain β -lactamase enzymes.
- (d) The mechanism of antibacterial activity depends on the inhibition of β -lactamase enzymes
- (e) Only bacteria containing β -lactamase enzymes are susceptible to penicillins.

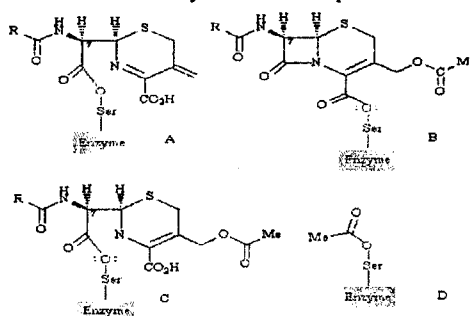
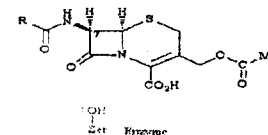
23. Pivampicillin (below) is used as a prodrug for ampicillin. Which of the following mechanisms best describes the conversion of the prodrug to ampicillin?



- (a) Mechanism A.
- (b) Mechanism B.
- (c) Mechanism C.
- (d) Mechanism D.
- (e) None of the above

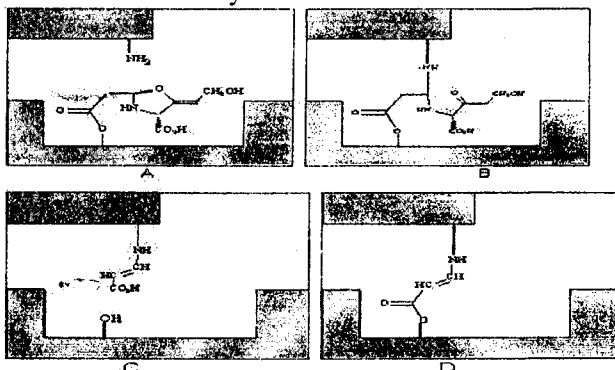
24. A serine residue in the active site of the transpeptidase enzyme reacts with cephalosporins, resulting in a covalent bond being formed between the enzyme and the cephalosporin.

What is the structure of this enzyme-bound product?

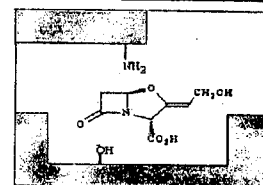


- (a) Structure A.
- (b) Structure B.
- (c) Structure C.
- (d) Structure D.
- (e) None of the above

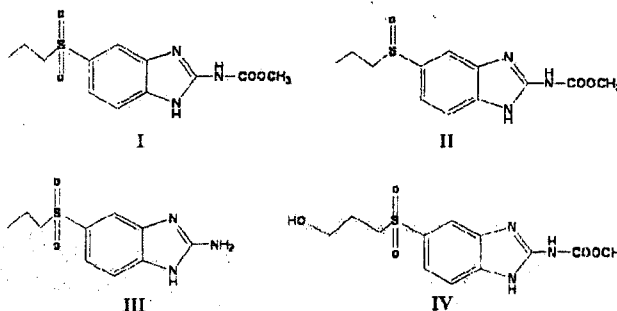
25. The opposite diagram shows clavulanic acid in the active site of a β -lactamase enzyme. What is the final result of the interaction of clavulanic acid with the enzyme?



- (a) Diagram A. (b) Diagram B. (c) Diagram C. (d) Diagram D.
(e) None of the above

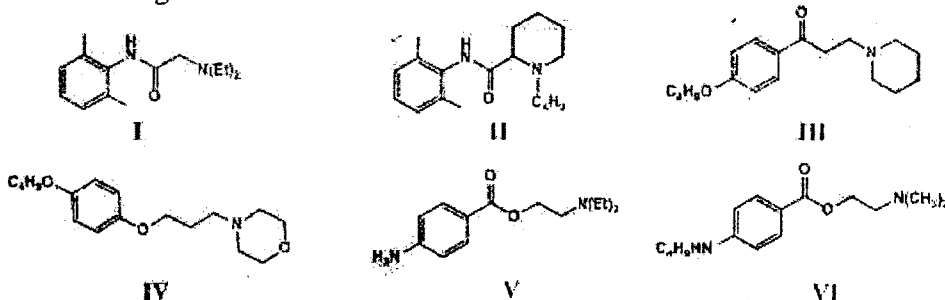


26. Which structures is the active form of albendazole metabolites



- (a) structure I (b) structure II (c) structure I and III (d) structure III and IV

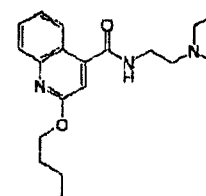
27. Which of the following local anesthetics are aminoamides



- (a) II and IV (b) I and VI (c) III and V (d) I and II

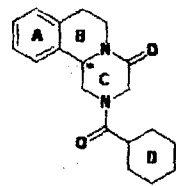
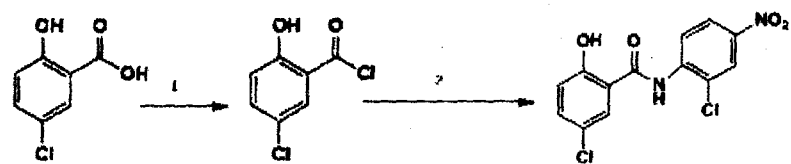
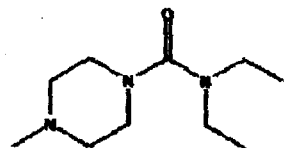
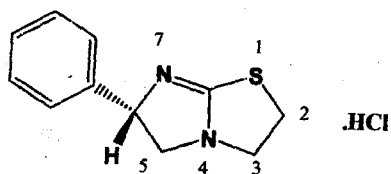
28. The chemical nomenclature of Dibucaine is

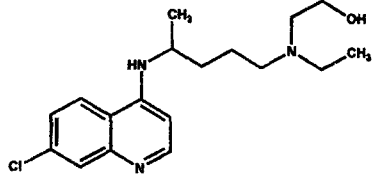
- (a) 2-butoxy-N-[2-(diethylamino) ethyl] quinoline-4-carboxamide
(b) 1-butoxy-N-[2-(diethylamino) ethyl] quinoline-4-carboxamide
(c) 2-(diethylamino)-N-(2,6-dimethylphenyl)acetamide
(d) 2-dialkylaminoethyl-4-amino benzoate

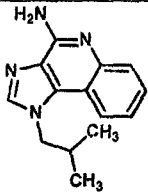
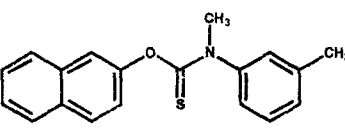
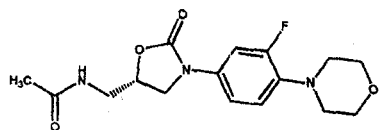
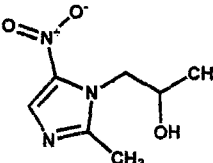
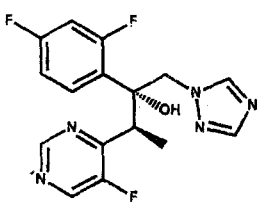
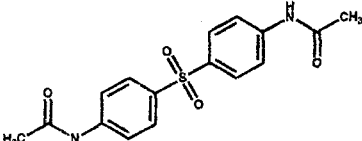
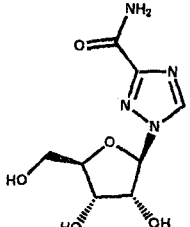
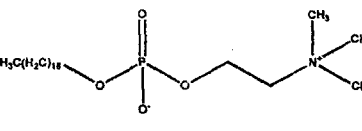


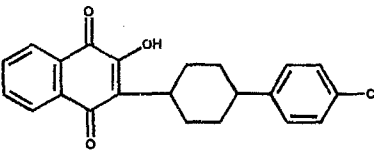
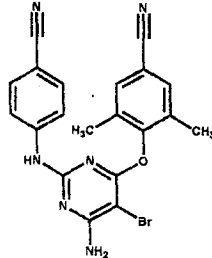
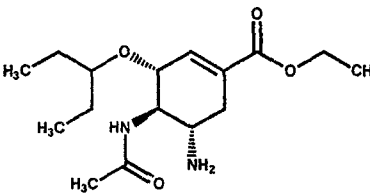
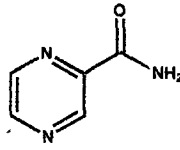
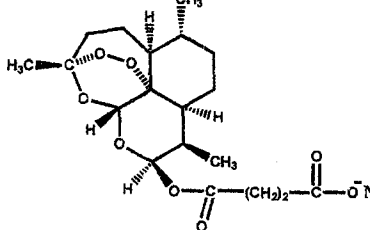
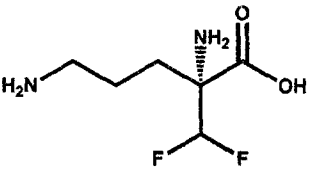
29. Ester links of local anesthetics shows

- (a) shorter duration of action.
(b) slow onset of action
(c) Clearance dependent of liver flow
(d) cause Loss of consciousness

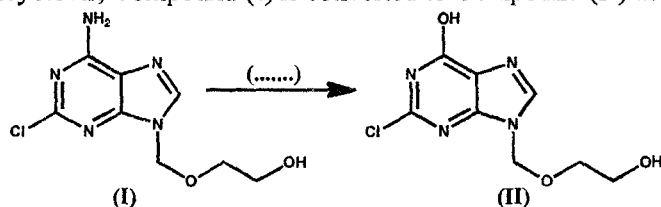
30. In Praziquantil (a) Opening of aliphatic acyl derivatives lead to increase activity (b) Acyl or thioacyl group in the position 2 is not essential for activity (c) metabolites are active (d) metabolites are inactive	
31. In the synthesis of niclosamide reagent 1 and 2 are  (a) thionyl chloride and 3-chloro-4-nitroaniline (b) Chlorine and 2-nitro -4- chloroaniline (c) thionyl chloride and 2-chloro-4-nitroaniline (d) ethanol and 2-chloro-4-aminoaniline	
32. Assay of diethylcarbamazepine can be done by (a) acid base titration (b) non aqueous titration as weak acid (c) non aqueous titration as weak base (d) spectrophotometry	
33. The generic name of the drug assigned is (a) grisovulfin (b) levamisole (c) meconazole (d) pyrantel	
34. Nitrosoureas is (a) associated with nausea and vomiting (b) used to treat brain tumors (c) transformed into two different monofunctional alkylating agent (d) used to treat prostatic cancer	
35. Cyclophosphamide (a) Can be administered intravenously (b) Is bifunctional alkylating agent (c) Is antimetabolite (d) Is a plant product	
36. 5- Fluorouracil (a) is converted to its 2'-3'-azidodeoxyribosylmonophosphate (b) can irreversibly bind to and inhibit thymidylate synthetase (c) is a purine antimetabolite (d) cause mitotic arrest	

37. Rationale for adding epinephrine to a local anesthetic solution: (a) reduced local anesthetic systemic absorption (b) increased anesthetic concentration near nerve fibers (c) reduced duration of conduction blockade (d) increase duration of conduction blockade	
38. Primary side effect/toxicities associated with local anesthetic use: (a) allergic reactions (b) systemic toxicity (c) both	
39. In chlorambucil synthesis we start with nitrophenylbuteric acid then (a) esterification and reduction (b) reduction and esterification (c) reaction with ethylene oxide and thionyl chloride	
40. Analysis of thiotepa can be performed by (a) acid base titration using sulfuric acid (b) sod. thiosulfate, titrate liberated base with HCl (c) non aqueous titration as weak acid	
41. Busulfan active metabolite is (a) 3-hydroxythiolane1,1-dioxide (b) cyclic sulfonium ion (c) aziridinium ion	
42. The difference between Gemcetabine and Cytarabine (a) presence of 2' fluorine atom (b) presence of 2',2' difluorine atoms (c) presence of 2' methoxy group	
43. Dacarbazine chemical nomenclature is (a) 5-(3,3-Dimethyl-1-triazenyl)-1-H-imidazole-4-carboxamide (b) 4-(3,3-Dimethyl-1-triazenyl)-1-H-imidazole-3-carboxamide (c) 5-(2,2-Dimethyl-1-triazenyl)-1-H-imidazole-3-carboxamide	
44. The active form of Methyl nitrosourea is (a) methylcarbonium ion (b) methyldiazohydroxide (c) vinylcarbonium ion	
45. L-asparagenase hydrolyse (a) d- asparagines to d-aspartic acid (b) l-aspartic to l-asparagine (c) l-asparagine to l-aspartic acid	
46. All are tubulin binding agent except (a) taxol (b) vincristine (c) estramustine	
47. Mechanism of action of Anthracyclines is (a) intercalates with double helical DNA and inhibit Topoismerase II (b) Redution followed by intercalation, attack OH radicals which cause scission DNA strands (c) intercalation only	
48. The opposite drug: (a) is the drug of choice in the treatment of nonfalciparum and sensitive falciparum malaria (b) is a highly effective tissue schizonticide (c) is preferred over chloroquine for treatment of mild rheumatoid arthritis (d) is the recommended chemoprophylactic drugs for use in most malaria-endemic regions	

49. The opposite drug: (a) has <i>in vitro</i> antiviral activity (b) is an immunomodulatory agent (c) is effective for systemic treatment of dermatologic conditions (d) is a purine nucleoside analogue	
50. The opposite drug: (a) is noncompetitive inhibitors of squalene epoxidase (b) is competitive inhibitors of squalene epoxidase (c) its spectrum is restricted primarily to <i>Cryptococcus</i> (d) inhibits cell mitosis in fungi	
51. The opposite drug: (a) the <i>R</i>-enantiomer is the active form (b) the <i>S</i>-enantiomer is the active form (c) the drug is used as racemate (d) the <i>E</i>-enantiomer is the active form	
52. The opposite drug: (a) is a prodrug that requires reductive activation of the nitro group (b) is selectively absorbed by aerobic bacteria and sensitive protozoa (c) is effective against organisms in the bowel lumen but not against trophozoites in the intestinal wall (d) is not active against tissue trophozoites	
53. The opposite drug: (a) is used in topical treatment of ringworm (b) is used in combination with fluconazole, in the treatment of oropharyngeal infections arising from <i>Candida</i> spp. (c) is indicated only for the treatment of serious systemic infections caused by susceptible strains of <i>Cryptococcus</i> spp. (d) is recommended for the treatment of adults with invasive aspergillosis	
54. The opposite drug: (a) has low activity <i>in vivo</i> but is used as an injectable depot sulfone (b) is used in treatment of leprosy (c) is used in treatment of tuberculosis (d) works by binding to the guanine bases of bacterial DNA	
55. The opposite drug: (a) is nucleotide reverse transcriptase inhibitors (b) is a thymidine analogue (c) is a purine nucleoside analogue (d) is a pyrimidine nucleoside analogue	
56. The opposite drug: (a) is used for the treatment of visceral leishmaniasis (b) is used as the first-line therapy for early-stage <i>T. brucei rhodesiense</i> (c) is a second therapy for advanced central nervous system African trypanosomiasis (d) is the most commonly used drug for American trypanosomiasis	

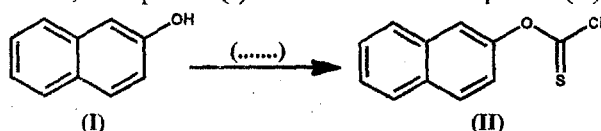
57. The opposite drug: (a) is administered in combination with Pyrimethamine for treatment of malaria (b) is administered in combination with Cilastatin for treatment of malaria (c) is administered in combination with Amikacin for treatment of malaria (d) is administered in combination with Proguanil for treatment of malaria	
58. The opposite drug: (a) reverse transcriptase inhibitors target the active substrate binding sites (b) is used in its oral prodrug forms (c) reverse transcriptase inhibitors target the allosteric nonsubstrate binding sites (d) is effectiveness against HCMV	
59. The opposite drug: (a) has been considered a potential strategy for the prophylaxis of influenza A virus infections (b) is the only available HIV entry inhibitor (c) neuraminidase inhibitor that is used to curtail the annual recurrences of seasonal influenza A (d) is the most effective antiH1N1 treatment	
60. The opposite drug: (a) is one of the second line treatment of tuberculosis (b) exhibits bactericidal activity <i>in vitro</i> only at a slightly acidic pH (c) is a very lipophilic compound with a high affinity for tissues (d) could act by competitively blocking the synthesis of dihydrofolic acid	
61. The opposite drug: (a) is the most effective artemisinin compound and the least stable (b) is used in combination with metronidazole to treat individuals with amebic colitis (c) is a derivative of natural product extracted from the dry leaves of <i>Artemisia annua</i> (d) is gametocidal against the four human malaria species	
62. The opposite drug: (a) its use is restricted due to the low profit of production (b) is an inhibitor of lysine decarboxylase (c) is a second therapy for advanced central nervous system American trypanosomiasis (d) is the only effective drug available for treatment of the late meningoencephalitic stage of African trypanosomiasis	

63. In the synthesis of Acyclovir, Compound (I) is converted to Compound (II) using:



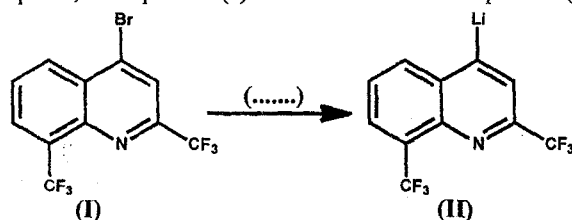
- (a) Sodium Hydroxide and glacial acetic acid
- (b) Sodium nitrite and sodium hydroxide
- (c) Sodium azide and copper acetate
- (d) Sodium nitrite and glacial acetic acid

64. In the synthesis of Tolnaftate, Compound (I) is converted to Compound (II) using:



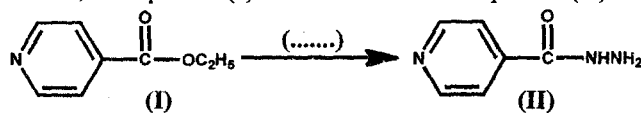
- (a) Phosgene
- (b) Thiophosgene
- (c) Thionyl chloride
- (d) Sulphuric acid

65. In the synthesis of Mefloquine, Compound (I) is converted to Compound (II) using:



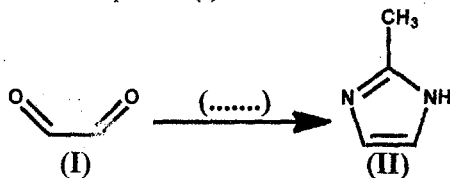
- (a) Ethylene oxide and phosphoryl Chloride
- (b) n-Butyl Lithium
- (c) Palladium acetate
- (d) Lead acetate

66. In the synthesis of Isoniazid, Compound (I) is converted to Compound (II) using:



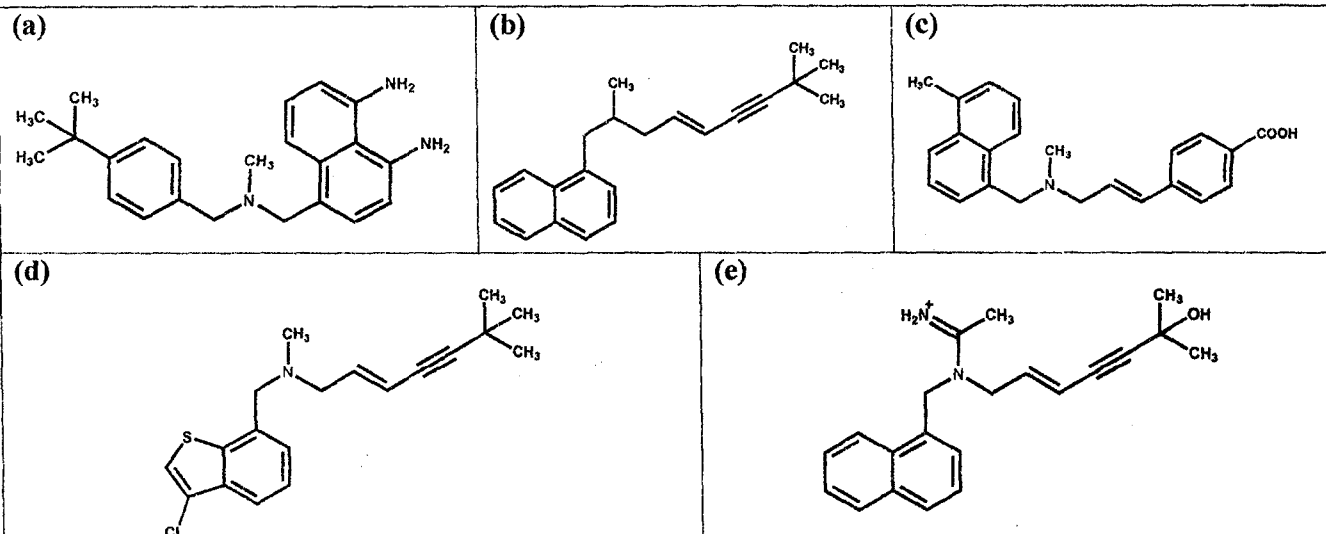
- (a) Diethylamine
- (b) Ammonia
- (c) Aniline
- (d) Hydrazine hydrate

67. In the synthesis of Metronidazole, Compound (I) is converted to Compound (II) using:

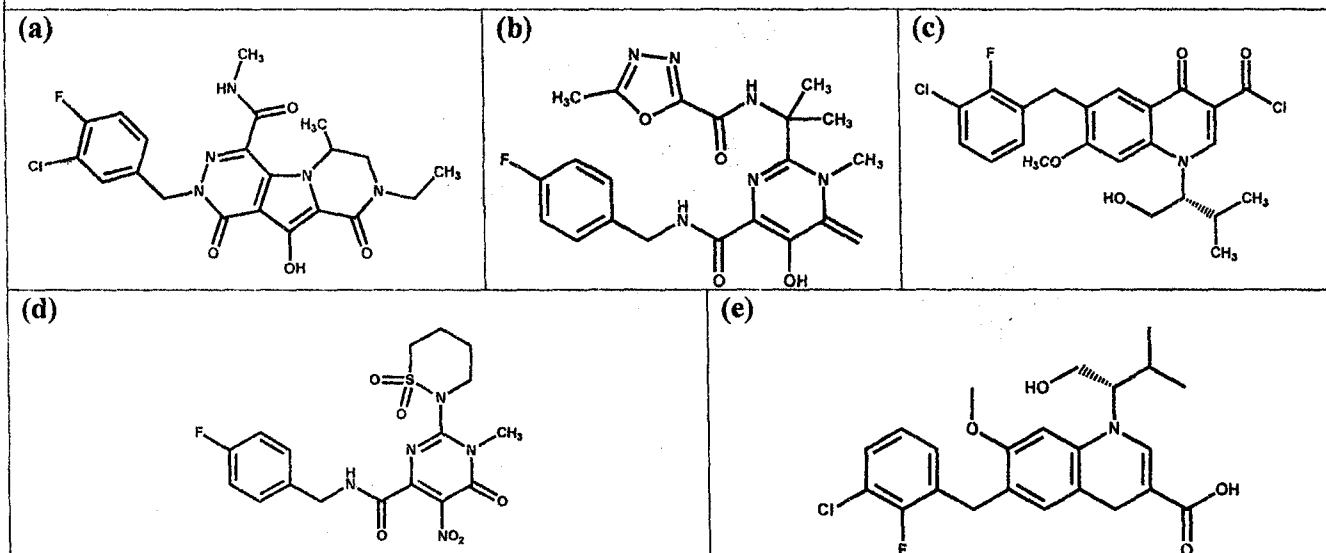


- (a) Two equivalents of ammonia and formaldehyde
- (b) Two equivalents of ammonia and acetone
- (c) Two equivalents of ammonia and acetaldehyde
- (d) Two equivalents of ammonia and acetophenone

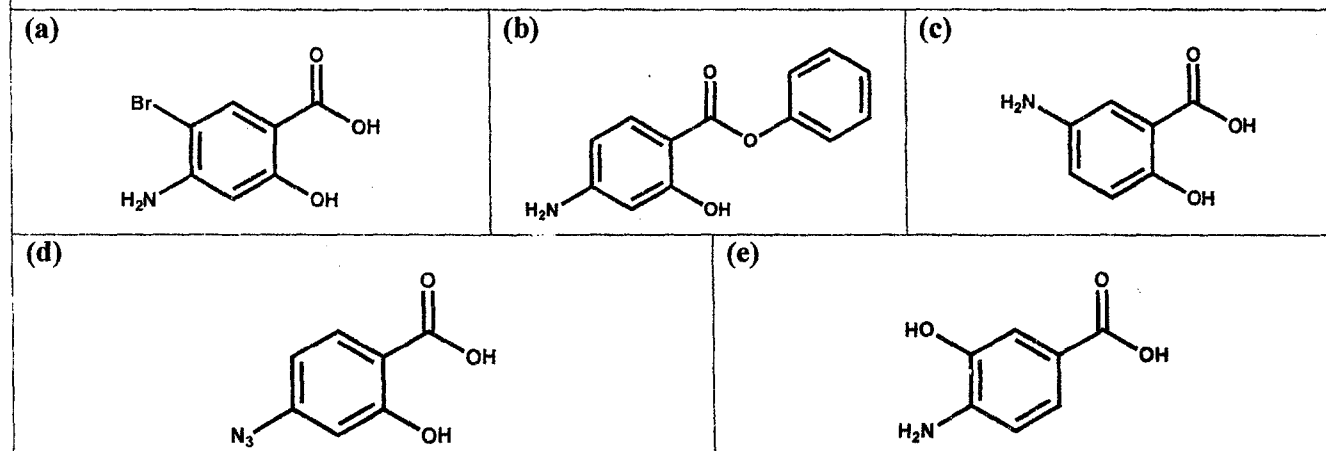
68. According to theoretical aspects of *Allylamines Antifungal drugs*, which one of the following structures does have the highest antifungal activity?



69. According to theoretical aspects of *HIV Integrase Inhibitors Antiviral Drugs*, which one of the following structures does have the highest integrase inhibitory activity?



70. According to theoretical aspects of *Antimycobacterial 4-aminosalicylic acid derivatives*, which one of the following structures does have the highest antitubercular activity?



END OF QUESTIONS, WITH BEST WISHES

Pharmacology Examination
For
Third year pharmacy Students.

Time allowed: Three Hours

Date: 26/5/2013

NOTE

All the following questions are to be attempted in your answer notebook.

You have TWO parts to be answered:

Part I: composed of FIVE questions (Total 50 Marks).

Part II: composed of MCQs and F&T (Total 20 Marks).

Please start the answer of each question in a separate page

I- Compare between each of the following (10 Marks):

A) Aspirin and acetaminophene regarding:

- 1) Adverse reactions. 2) Therapeutic uses. 3) Treatment of toxicity.

B) Heparin and warfarin regarding:

- 1) Mechanism of action. 2) Therapeutic uses. 3) Treatment of toxicity.

II- Write a brief account on each of the following (10 Marks):

- A) TWO most common DMARDs (disease modifying anti-rheumatic drugs) used for rheumatoid arthritis. B) Mechanism of actions of local anesthetics.
C) The adverse effects of general anesthetics. D) Endogenous opioid neuropeptides.

III- Write on therapeutic uses, mechanism of action and main adverse effects of each of the following (10 Marks):

- A) Memantine. B) Selegiline. C) Diazepam. D) Chlorpromazine

IV- Name ONE drug of preferred choice used for treatment of the following disease states, mention its mechanism of action and its main side effects(10 Marks):

- A) Acute left ventricular failure. B) Status epilepticus.
C) Acute attack of gout. D) Schizophrenia.

IV- Briefly explains why? (10 Marks):

- A) Lactulose may be useful in cases of hepatic encephalopathy.
B) Concurrent administration of sucralfate with omeprazole should be avoided.
C) Metoclopramide is used in the treatment of gastroesophageal reflux disease.
D) Patients who are treated with MAO inhibitors should not eat old cheese.
E) Lithium is not safely used to sodium depleted patients.

GOOD LUCK

For each of the following MCQs select the most appropriate answer(15 Marks):

- 1- Which of the following drugs is a preferred choice in aspirin-induced bronchial asthma:
A) Salbutamol. B) Zafirlukast. C) Theophylline. D) Ipratropium.
- 2- The bronchodilator effect of theophylline is mediated through inhibition of ONE of the following:
A) Acetylcholine B) Adenyl cyclase.
C) Eosinophil. D) Phosphodiesterase.
- 3- Which neurotransmitter is impaired in amount and function in Parkinsonian patients?
A) Histamine. B) GABA. C) Dopamine. D) Serotonin.
- 4- Tricyclic antidepressants can produce all the following effects EXCEPT:
A) Anticholinergic effect. B) Mode elevation in normal individuals within six weeks.
C) Lowering of seizure threshold. D) Weight gain and postural hypotension.
- 5) Serotonin syndrome is a consequence of administration of administration of ONE pair of the following drugs:-
A) Imipramine + phenelzine
B) Lithium + chlorpromazine
C) Fluoxetine + phenelzine
D) Imipramine + Carbamazepine
- 6) ONE of the following antidiarrheal agents is not used for young babies:
A) Rehydration solution. B) Diphenoxylate.
C) Pectin. D) Kaolin.
- 7) ONE of the following anti emetics blocks 5HT₃ receptors:-
A) Domperidone. B) Tetrahydrocannabinol.
C) Aprepitant. D) Ondansetron.
- 8) Mechanism of action of amantadine includes all the following EXCEPT:
A) Increased synthesis of dopamine. B) Increasing release of dopamine.
C) Blocking of cholinergic receptors. D) Blocking of NMDA receptors.
- 9) All of the following drugs can be used for treatment of generalized tonic-clonic seizures EXCEPT:
A) Valproic acid. B) Carbamazepine. C) Phenytoin. D) Clonazepam.
- 10) ONE of the following is correct regarding naloxone:
A) It is considered as a partial agonist to morphine receptors.
B) It is used in treatment of acute opioid poisoning.
C) It is contraindicated in treatment of opioid-induced fetal asphyxia.
D) It is given orally due to its high bioavailability.

For each of the following select T for the true and F for the false statement (5Marks):

- 1) Salmeterol is best indicated in treatment of an acute attack of bronchial asthma.
- 2) The brain concentration of serotonin in schizophrenic and manic patients is markedly decreased.
- 3) Buspirone binds selectively to 5HT_{1A} receptor centrally to produce anxiolytic effect.
- 4) Ester-type local anesthetics have longer duration of action compared to amides.
- 5) Lamotrigine competes with glycine on NMDA-receptor binding site.