T10028 - final yr B pharm CBSGS, Sem VIII – pc IV
Date: 24/4/18

Q. P. Code: 34588

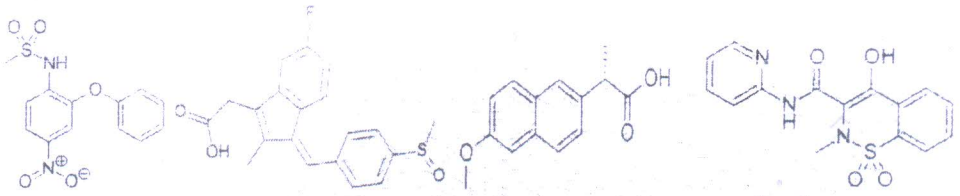
Time 3 hrs **Total marks: 70**

N.B: All questions are compulsory

Q1| Answer the following questions. 15

i. Identify the drug given below and indicate the receptor to which it binds for activity. 1

ii. Identify the following drugs and indicate to which chemical class of NSAIDs they belong. 2



a **b** **c** **d**

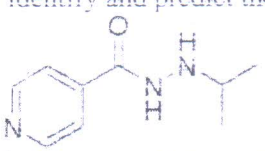
iii. Amantadine is used in the treatment of CNS disorders. T/F. Justify. 1

iv. Give the structure of a ureide anticonvulsant that binds to voltage gated sodium channels. 1

v. Write the structure of the following drug: 1
10-[2-(1-methylpiperidin-2-yl) ethyl]-2-methylsulfanylphenothiazine

vi. Predict whether the following drug is a prodrug. Write the structure of its active metabolite. [2-(carbamoyloxymethyl)-2-methylpentyl] N-butylcarbamate. 1

vii. Identify and predict the MOA of the following drug. 1

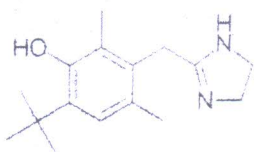


viii. Indicate to which mechanistic class the following drugs belong. 1

a **b**

ix. Give the name and structure of a non-rigid opioid drug (structure needed). 1

x. Indicate the salt form of the drug given below. 1



xi. Give the name of an antidote used in organophosphate poisoning. 1

xii. Give the name of the enzyme that converts prednisone to prednisolone. 1

xiii. Name an alkynyl estrogen ether compound used as an oral contraceptive. 1

xiv. Give the structure of a bisphosphonate used in osteoporosis. 1

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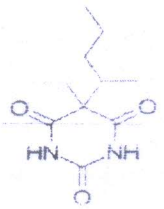
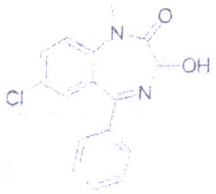
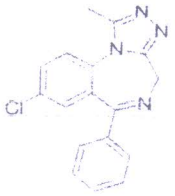
Q2] A. Answer the questions with respect to the structures given below (any four). 4



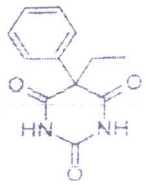
a



b



c



d

i. Indicate the chemical class of drugs **a** and **c** and their MOA.
ii. Predict the effect of replacing the 5-phenyl group on activity in drug **d**.
iii. Predict the effect of substituting the two nitrogens in drug **a** with methyl groups.
iv. Give the structure of two metabolites each of drugs **a** and **b**.
v. Name the enzymes involved in the biosynthesis and metabolism of 4-amino butanoic acid.

B. Answer the following questions with respect to adrenergic drugs. 4

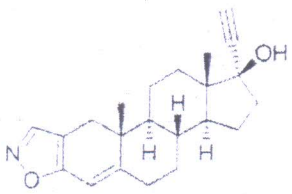
i. Indicate the important binding groups in catecholamines (structure needed) involved in binding to the adrenergic receptors.
ii. Predict the effect of introducing substitution on the side chain linking the aromatic ring to the amine.
iii. State the effect of introducing a bulky N-alkyl group on the amine N of catecholamines.
iv. Write the structure of an aryloxypropanolamine analogue that is a β-blocker.

C. Give the synthesis of tacrine indicating the reagents and reaction conditions used. 3

Q3] A. Depict the schematic classification of anticonvulsants based on mechanism of action. Give suitable examples with structures in each class. Illustrate the metabolism of valproic acid and indicate the metabolites responsible for toxicity. 4

B. Answer the following questions with respect to estrogens (any four). 4

i. In estrogens, steroid nucleus is essential for activity. T/F. Justify.
ii. Insertion of hydroxyl group at 6, 7, 11 enhances activity. T/F. Justify.
iii. Identify the drug given below and indicate its therapeutic use.



iv. Name the enzyme that converts testosterone to DHT.

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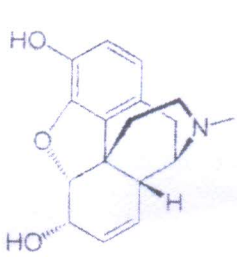
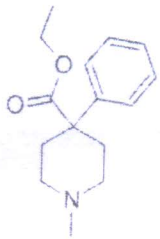
v. Give an example and structure of a non-steroidal estrogen.

C. Outline the structural modifications in rings A and B of adrenocorticosteroids to modify glucocorticoid or mineralocorticoid activity. 3

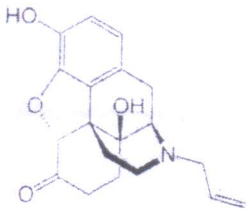
Q4] A. Answer the following with respect to the structure given below. 4



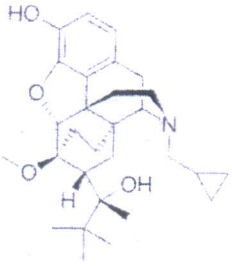
a



b



c



d

i. What is common to the structures above? Comment on the structural differences between **a** and **c** and their effect on activity.
ii. Indicate the effect of replacing 3-hydroxy with 3-acetyloxy group in drug **a**.
iii. Identify drug **d** and indicate its MOA.
iv. Predict two structural changes that will increase the activity of drug **b**.

B. Answer the following questions. 4

i. Give the structures and mechanism of action of two classes of drugs used in the treatment of gout. 2

ii. Give the biosynthesis and metabolism of norepinephrine. 2

C. Give the synthesis of chlorpromazine with the reagents and reaction conditions used. 3

OR

C. With respect to butyrophenones as antipsychotic agents, answer the questions given below (structure needed). 3

i. Indicate the structural features in butyrophenones that are essential for activity.

ii. Give example and structure of a drug wherein the amine nitrogen is part of a cyclic structure. What happens if the amine nitrogen is removed?

iii. Comment on the activity if the keto group is replaced and the alkyl chain is branched.

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Q5] A. Answer the following with respect to the structure given below. 4

i. Identify the structures, number them and give therapeutic use of drugs belonging to each of the two classes.
ii. Indicate the nature of substitution on the N in each structure and its effect on the activity.

C] Answer the following questions. 4

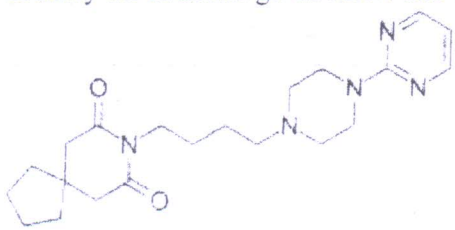
i. Discuss in brief the Portoghese theory of opioid receptors. 2
ii. Give two active metabolites (structure needed) of tamoxifen and indicate its use. 2

B] With respect to cholinergic drugs, answer the questions given below. 3
i. Comment on binding interaction of acetylcholine with acetyl cholinesterase.
ii. Suggest one way to increase the enzymatic stability of acetyl choline.
iii. Indicate type of substituents that will confer muscarinic antagonist activity.

Q6] A. Answer the following questions (any four). 4

i. Give two metabolites of 4-(6-methoxy-2-naphthyl)-2-butanone
ii. NSAIDS are generally characterized by gastrointestinal side-effects.
iii. Give two functional groups that have been used as bioisosters of COOH group in the development of NSAIDS and indicate its advantages.
iv. Mention 3 common structural features of NSAIDS. Support your answer with two examples.

B. Answer the following questions. 4
i. Give the names and structures of two drugs functioning as antiparkinsons agents by different mechanistic pathways. 2
ii. Give structures of two active metabolites of chlorpromazine. 1
iii. Identify the structure given below and indicate its MOA. 1



C. Give the synthesis of labetalol indicating the reagents and reaction conditions used. 3

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T10028 - F.Y. B Pharm, Sem VIII (CBSGS] - Pharmaceutics V

Q.P. CODE: 34983

Time: 3 Hours **70 marks**

N. B: (1) All questions are compulsory.

(2) Figures to the right indicate full marks.

(3) Draw neat labelled diagram wherever necessary

1 a) Write in brief on Equipment Qualification. 04

b) Elaborate on any one sales forecasting technique. 04

OR

Explain concept of EOQ model of inventory control.

c) Describe a test to study mucoadhesive strength of polymers. (3)

d) Explain the basic principle of an Osmotic drug delivery system. (2)

e) Discuss Quality control standards of identity and potency. (2)

2 a) Write a note on Multiorifice centrifugal process for microencapsulation. (4)

OR

Describe Spray drying and Spray congealing process.

b) Give a layout plan for manufacturing of ophthalmic ointment. (4)

c) With reference to cGMP state the general requirements for a Pharmaceutical Plant. (3)

3 a) Write a note on erodible ocular inserts. (4)

b) Give an outline for validation of steam sterilization process. (4)

c) Explain the importance of documentation in case of Pharmaceuticals. (3)

4 a) Discuss factors to be considered for selection of site for small scale Pharmaceutical Plant. (4)

b) Write a short note on Quality Control Charts. (3)

c) Explain the concept of Active and Passive Targeting. (2)

d) Explain the use of bioadhesive polymers in nasal drug delivery. (2)

OR

Enlist the various limitations associated with colonic drug delivery.

5 a) Write on specifications of packaging and labelling material as components of Quality control. (4)

b) Write a note on factors affecting mucoadhesive strength of polymers. (3)

c) List out the core and coat material properties required for microencapsulation. (2)

d) State the requirements for personnel working in pharmaceutical industry (2)

6 a) Discuss the design and release kinetics for an elementary osmotic pump. (4)

b) Give a BMR for a terminally sterilized aqueous injection. (4)

OR

Discuss parameters to be considered for scale up of a suspension.

c) Explain use of polysaccharides for colon specific drug release . (3)

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Fourth Year B Pharm, Sem VIII [CBSGS] - Biopharm & P'Kinet
Date: 2/5/18

Q.P. Code: 36886

Time: 3 hours **Marks: 70**

Please check whether you have got the right question paper.

N.B: (1) All questions are **compulsory**.
(2) Figures to the right indicate **full marks**.
(3) **Use of scientific calculator is permitted.**

Q.1		Answer the following:	
	a.	Define Distribution.	2
	b.	Comment on bioavailability from buccal route of drug absorption.	2
	c.	Give the reasons for a lower volume of distribution of a drug than volume of plasma.	1
	d.	Define enzyme inhibition with a suitable example.	2
	e.	What is enterohepatic cycling?	2
	f.	State the BCS Classification.	2
	g.	State disadvantages of compartment modelling.	2
	h.	Compare absolute and relative bioavailability.	2
Q.2	a.	State the characteristics of primary active transport of drugs.	4
	b.	Explain in brief the pH partition hypothesis. What are assumptions on which it is based?	4
	c.	Discuss three significant factors that influence gastric emptying.	3
Q.3	a.	How do the various types of tablet dosage forms influence drug bioavailability.	3
	b.	Write in detail binding of drugs to human serum albumin.	4
	c.	Write a short note on rate of excretion method for urine analysis after IV administration.	4
		OR	
		Elaborate on the causes of non-linearity in drug absorption and distribution.	4
Q.4	a.	Describe Phase I reductive reactions.	4
	b.	Explain briefly concepts of clearance.	3
	c.	Discuss two important factors that affect renal excretion.	4
Q.5	a.	Explain the Film theory for drug dissolution.	4
	b.	Enlist dissolution rate testing apparatus official in the USP with an example of dosage form to be evaluated in each of them.	3
	c.	Discuss any four methods of bioavailability enhancement by accelerating drug solubility and dissolution.	4
		OR	
		Describe Latin square design for crossover Bioequivalence studies.	4

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Q.6 a. Draw the plasma concentration –time profile and discuss any three parameters. 4

OR

How will you determine absorption rate constant by method of residuals? 4

b. The pharmacokinetics of plasma drug concentration curve for drug A given by IV bolus (Dose = 200mg) fits one compartment open model. The equation of the curve that fits the data is :

$C = 76\ e^{-0.46t}$

Calculate the following:

i.) Half life and volume of distribution **01**

ii.) Clearance and AUC(0 to ∞) **01**

iii.) The plasma drug concentration after 7 hrs **01**

iv.) Time required to eliminate 75% of the dose **02**

v.) Amount remaining in the body after 3 hours **02**

Sem-VIII - CBSGS

May 04, 2018

Subj:- Pharmacognosy and phytochemistry

Q. P. Code: 31272

[Time: 3 Hours] **[Marks:70]**

Please check whether you have got the right question paper.

N.B:
1. All questions are compulsory.
2. Write all sub-questions together.
3. Draw structure and diagram wherever necessary.

Q.1 Answer the following. 15

a) Write name and structure of active constituent of oil of wintergreen.
b) Enlist methods of extraction of volatile oil.
c) Give biological source of any one aldehyde containing volatile oil drug.
d) Give biological source of a steroidal saponin containing drug used as a galactogoggue.
e) Write chemical test for detection of deoxy sugar in cardiac glycosides.
f) Mention bio potential of Ginseng.
g) Give confirmatory test for Colophony.
h) Write source of any one oleo resin containing drug.
i) Give name and structure of any one iso-flavone derivative.
j) Write biological source of any one herbal photo sensitizer drug.
k) Write biological source of any one terpenoidal anti-cancer drug.
l) Mention traditional uses of Ashoka bark.
m) Give biological source of any one herbal disintegrant.
n) Mention any two examples of marketed ayurvedic churna formulation.
o) Write name and structure of any one phenyl propanoid marker.

Q.2

a) Describe complete pharmacognosy of Cassia cinnamon **OR** Fennel. 4
b) Write a note on Crocin and Zeaxanthin 4
c) Write a note on any two herbal colorants 3

Q.3

a) Describe in detail about Liquorice. 4
b) Give source, constituents and traditional uses of Shankpushpi and Kalmegh 4
c) Write short note on lemon peel **OR** peppermint as herbal flavoring agent. 3

Q.4

a) Give source, method of preparation, chemical constituents and uses of Eucalyptus oil. 4
b) Explain de-toxification process of Ayurvedic drugs with any two examples. 4
c) Write a short note on Cannabis **OR** Ginger. 3

Q.5

a) Describe complete pharmacognosy of *Digitalis purpurea*. 4
b) Give source, constituents and uses of Buckwheat and Orange peel. 4
c) Write a note on regulatory requirement for manufacturing of ASU drugs. 3

Q.6

a) Describe any two examples of Herb-Drug interactions. 4
b) Write source, chemical constituents and a confirmatory chemical test for Asafoetida and Guggul. 4
c) Give biosynthetic scheme of Coriandrol. 3

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B. Pharm. Sem – VIII – CBSGS

Subj – Clinical Pharmacy.

8/5/18

Q.P. Code :00984

[Time: Two Hours] **[Marks:35]**

Please check whether you have got the right question paper.

N.B: 1. All questions are compulsory.
2. Figures to right side Indicate full marks.

Q. 1 Answer the following. **07**

i. Write benefits offered by community pharmacist to the patients.
ii. Explain the role of drug analysis method for detecting non-compliance.
iii. Write examples of drugs causing hemolytic anemia as a allergic responses.
iv. How does impaired renal function contribute to drug interaction?
v. Enlist various reasons restricting administration of drug in first trimester of pregnancy.
vi. Comment on influence of sampling time for effective TDM.
vii. Define pharmacovigilance.

Q. 2 A. Answer **any one** of the following **04**

i. Define patient counselling. Explain with examples instructions for administering any two dosage forms.
ii. Discuss $3C^s$ of clinical pharmacy services

B. Answer the following **03**

i. Enlist reasons for non-compliance. Explain role of patient counseling and education to improve compliance.

Q. 3 A. Answer **any one** of the following **04**

i. How does dosage error leads to Adverse drug reactions. Explain role of cohort studies in detecting ADR.
ii. Describe role of pharmacist in reporting of Adverse drug reactions.

B. Answer the following **03**

i. Write need for therapeutic drug monitoring.

Q. 4 A. Answer **any one** of the following **04**

i. Write reasons for drug interactions. Explain pharmacodynamic interaction due to alteration of electrolyte level and due to MAO inhibitor.
ii. Explain in brief with examples. How self-medication of over the counter product (OTC) contributes to produce potential Drug- drug interactions.

B. Answer the following **03**

i. Define & explain in brief rational use of medication in pediatrics.

Q. 5 Answer **any one** of the following **04**

i. Write different types of clinical trials. Discuss in detail confirmatory clinical trials.
ii. Explain cross over design. Write the role and responsibility of institutional review board (IRB) while execution of clinical trials.

B. Answer the following **03**

i. Write a short note on lead optimization in drug development.
