Sem-VIII (CBSGS) 17/04/2017
Sub- PC-IV

Q.P. Code : 03159

[Time : 3 Hours] [Marks : 70

Please check whether you have got the right question paper.

N.B: i) **All** questions are **compulsory**.

1. Answer the following question : **15**

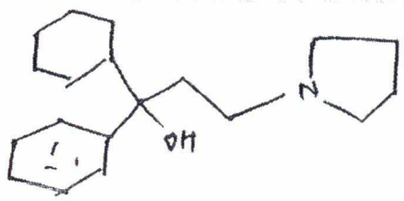
i) Give the generic name and structure of a triazole ring containing benzodiazepine. **1**

ii) Give the generic name and structure for phenylpiperidine derivative with greater selectivity for serotonin. **1**

iii) Draw the structure of drug containing azaspirone ring. Also name the drug. **1**

iv) Give the chemical class of Haloperidol. **1**

v) Identify the following antiparkinsons, indicate the chemical class. **1**

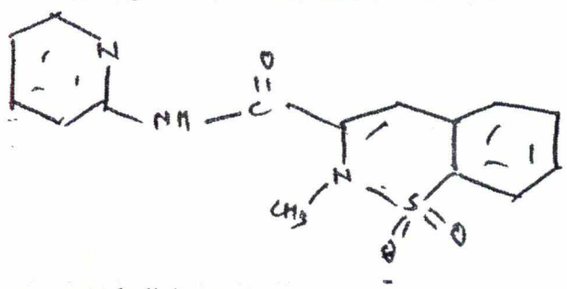


vi) Give the ionized structure of norepinephrine. **1**

vii) Name an enzyme which metabolizes acetylcholine. **1**

viii) Name any two opioids that are antidiarrheal. **1**

ix) Identify the following drug and indicate its use. **1**



x) Name two enzymes metabolizing estrogens. **1**

xi) Name the enzyme that converts testosterone to estradiol. **1**

xii) Give the structure of uracil derivatives that is used in hyperthyroidism. **1**

xiii) Draw the structure of benzothiophene derivative used in osteoporosis. **1**

xiv) One of the drug used as an anticonvulsant modulate sodium channel and prevent glutamate release. Draw the structure and give name. Name the heterocyclic ring in the molecule. **2**

2. A) Answer the following : **4**

i) State whether the barbiturates are acids, bases or neutral. How does substitution at C – 5 improve the activity?

ii) Give the basic structure and numbering of benzodiazepine ring. Explain the effect of 3-hydroxy substitution in the benzodiazepines.

TURN OVER

B) Outline the synthesis of cyclopentolate along with reaction conditions and reagents. 3

C) What changes need to be made to the structures of the sympathomimetics such that they are : 3

a) Resistant to COMT

b) Resistant to MAO

OR

C) The following list of adrenergic blockers include both selective and non-selective drugs. Classify them as selective and non-selective and state the receptor.

3. A) Answer the following : 4

i) Give structure and MOA of vigabatrin.

ii) Give the metabolic pathway of carbamazepine and state the name of toxic metabolite.

B) Write a note on aromatase inhibitors. 3

C) Answer the following :

i) The steroid nucleus is not required for estrogenic activity. Explain. 2

ii) Give name and structure of drug with name 1-methyl-2-mercaptoimidazole used as antithyroid drug. 1

iii) Give one example with structure and use of triphenylethylene estrogens. 1

4. A) Outline the synthesis of haloperidol with reaction conditions and reagents. 3

B) Answer the following : 4

i) "On replacement of ortho dichlorines in clonidine by methyl groups, potency is retained but duration of action is reduced." Justify with structure.

ii) Give structure of any two metabolites of diclofenac. Also label then as active or inactive.

C) Answer the following : 4

i) Specify the most important substitution that produces antagonistic activity in morphine analogs. Give name and structure of any one antagonist.

ii) Briefly describe Beckett and casy model for opioid receptor binding.

5. A) Give the effect of the following structural changes on the activity of muscarinic agonists. 4

i) Conversion of acetyl group in acetyl choline to propionyl group.

ii) Replacement of acetyl group with carbamoyl group in acetyl choline.

iii) Addition of α-methyl substitution on Ethylene Bridge.

iv) Increasing the ethylene bridge to four carbons.

B) Outline the synthesis of doxepine along with reaction conditions and necessary reagents. 3

C) Answer the following questions : 4

i) Discuss the stereochemistry of morphine.

ii) What are progestin's? Explain giving suitable examples.

6. A) Outline the synthesis of terbutaline along with reaction conditions and necessary reagents. 3

A) Give the effect of the following structural modifications in norepinephrine on its pharmacological activity : 4

i) Addition of isopropyl group as N-substituent.

ii) Addition of α-methyl substitution.

iii) Replacement of catechol by resorcinol nucleus.

B) Answer the following : 4

i) Give the mechanism of action of probenecid and allopurinol.

ii) Give the generic name, structure and use of a naphthalene analogue that inhibits COX enzyme.

C) Answer the following : 4

i) MPTP neurotoxicity.

ii) Absence of EPS in atypical antipsychotic agents.

Fourth Year Sem-VIII (CBSGS) 21/04/1;

Sub- Pharmaceutical-V

Q.P. Code :04874

[Time: 3 Hours] [Marks:70]

Please check whether you have got the right question paper.

N.B: 1. All questions are compulsory.
2. Draw neat diagram wherever necessary

Q.1	a)	Explain in brief any one type of validation.	02
	b)	List parameters to be considered to validate wet granulation process.	02
	c)	Define EOQ. Name the different types of inventories.	02
	d)	Which are the various sales forecasting techniques?	02
	e)	Name 4 methods for mucoadhesion evaluation.	02
	f)	Explain standards of Quality with specifications.	02
	g)	Give the principle of release kinetics from osmotic systems.	02
	h)	Name 2 polymers used in pH based colon specific release systems.	01
Q.2	a)	Elaborate on multi orifice – centrifugal process of microencapsulation	04
		OR	
		With the help of a diagram explain phase separation coacervation process.	
	b)	Illustrate the layout of tablet manufacturing and specify it's regulatory requirements.	04
	c)	Justify the need for CGMP in pharmaceutical manufacturing.	03
Q.3	a)	Explain the concept and design of floating GRDDS.	04
	b)	Explain the term 'D' value and the steps in validation of steam sterilization cycle.	04
	c)	Elaborate on the importance of documentation in the current pharma scenario.	03
Q.4	a)	Describe QC charts.	04
	b)	Justify the need for NDDS and explain barriers involved in colon targeting.	04
		OR	
		With the help of examples explain how a novel drug delivery system overcomes limitations of conventional dosage forms.	
	c)	What are the site selection requirements and environmental factors to be considered in the design of a small scale pharmaceutical industry?	03
Q.5	a)	Write in brief about microbiological control in pharmaceutical manufacturing. State briefly requirements of personnel as per CGMP.	04
	b)	Explain theories of Mucoadhesion.	04
	c)	Define microencapsulation and with examples explain concept of core and coating material.	03
Q.6	a)	Classify oral osmotic pumps and elaborate on multi chambered type	04
	b)	Prepare on SOP for a single punch compression machine.	04
		OR	
		Discuss factors to be considered during scale-up of creams.	
	c)	Elaborate on timed release systems for colon targeting.	03

B. Pharm, sem-VIII (CBSGS) 27/04/2021
sub - BAP

Q.P. Code :04395

[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 Clinical Pharmacokinetics. 02
b. Comment on the bioavailability from sublingual route. 02
c. Warfarin has apparent volume of distribution lesser than the true volume of distribution Justify. 01
d. Give the mechanism of competitive enzyme inhibition. 02
e. Oral contraceptives show prolonged therapeutic activity –Justify. 02
f. State the challenges in drug delivery of BCS Class IV drugs. 02
g. What are the assumptions of one compartment model. 02
h. Explain bioavailable fraction. 02

Q.2
a. Explain the mechanisms for absorption of polar drugs. 04
b. Discuss limitations of pH partition hypothesis. 04
c. What are the consequences of various disease states on oral bioavailability of a drug? 03

Q.3
a. The influence of compression force on drug dissolution and absorption from tablets is unpredictable. Explain. 03
b. Discuss drug interactions due to protein- drug binding. 04
c. What are the causes of non-linearity in drug distribution and metabolism? 04

OR

Discuss sigma- minus method for determination of K_E. 04

Q.4
a. Describe the biotransformation of drugs by conjugation reactions. 04
b. Discuss intrinsic capacity hepatic clearance. 03
c. How does the urine pH affect the renal excretion of drugs. 04

Q.5
a. Elaborate on the diffusion layer theory and the variables that influence drug dissolution. 04
b. Explain any one dissolution apparatus for the evaluation of transdermal patches. 03
c. Discuss methods for enhancement of bioavailability of poorly permeable drug candidates. 04

OR

What are the necessary criteria for BCS biowaiver for invivo bioavailability / bioequivalence studies? 04

Q.6
a. Draw the typical plasma concentration vs time profile obtained after oral dose and explain the different features of the profile. 04

OR

How is the elimination half-life, elimination rate constant and clearance determined after an IV bolus administration. 04

TURN OVER

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Q.6 b. An IV bolus injection of 125 mg of a drug followed one compartment kinetics The plasma concentration time profile is represented by –

$C = 45e^{-0.07t}$

Calculate the following:

a) Elimination half-life and AUC (zero to infinity). 01
b) Volume of distribution and Clearance. 01
c) The plasma concentration after 8 hrs. 01
d) The amount eliminated after 5 hrs. 02
e) The time required for elimination of 25% of the dose. 02

B. Pharm, Sem-VIII (CBSGS) 04/05/17
Sub - P & P-III

Q.P. Code :00129

[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 question together.**
3. **Draw structure & diagram wherever necessary.**

Q.1) Answer the following. 15

a) Mention preferred method of extraction for lemon grass oil.
b) Give name & structure of any one ester containing volatile oil.
c) Give source of a drug containing thymol as an active constituent.
d) Give source of any one bufadienolide containing drug.
e) Mention biological source of commercially used steroidal saponin containing drug.
f) Write source of a pentacyclic triterpenoid saponin containing drug used as immunomodulator.
g) Write name and structure of pungent principle of capsicum.
h) Write confirmatory test for colophony.
i) Give name and structure of any one flavonoid from buckwheat.
j) Mention biological source of a drug used in the treatment of Psoriasis.
k) Mention biopotential of Crocin.
l) Mention traditional uses of lehsun.
m) Give biological source of any one herbal flavorant.
n) Give any two example of marketed Ayurvedic taila.
o) Write schedule Y statement as per Drugs and Cosmetics Act.

Q.2) a) Give Pharmacognostic account of Clove **OR** Fennel. 04
b) Give source, Constituents and uses of Kalmegh & Quassia. 04
c) Write a note on any one herbal excipient used in perfumery. 03

Q.3) a) Define Cardenolides. Explain in detail the chemistry of *Digitalis purpurea* & *Digitalis lanata*. 04
b) Give source, constituents & uses of Guggul & Artemesia. 04
c) Write a note on any two herbal excipients used as binding agent. 03

Q.4) a) Give biological sources of citral and write its biosynthetic pathway 04
b) Write a note on Asava & Arista formulations with examples of marketed preparation. 04
c) Enumerate the quality control & safety parameters for herbal drugs as per WHO guidelines. 03

Q.5) a) Give a complete account of Dioscorea . 04
b) Write biological source, constituents, chemical test & uses of Orange peel **OR** Liquorice. 04
c) Write a note on schedule T. 03

Q.6) a) What are pathological resin? Give an account of Benzoin **OR** Asafoetida. 04
b) Write a note on extraction methods for volatile oil. Give benefits of terpeneless volatile oil. 04
c) Write a note on Cannabis. 03

Sem VIII Dak: 8/5/19

Sub: Clinical pharmacy

Q.P. Code :00983

[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 indicate full marks.

Q. 1 Answer the following : 07

i. Define the term community pharmacy.
ii. Enlist different reasons for patient non-compliance.
iii. If hemolytic crisis occurs in Glucose -6-phosphate deficient patient treated with primaquine. Name type of ADR with justification.
iv. Justify why special precaution is needed when lithium carbonate is given to the patient on treatment with diuretics.
v. Enlist few indications for TDM.
vi. Why dose adjustment is needed in Geriatric patient.

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

i. Discuss the role of hospital pharmacist n patient counselling.
ii. Explain objectives and goal of community pharmacy. Add a note on counseling instructions to be given for patient treated with tuberculosis.

B Answer the following : 03

i. Write a note on precautions and directions to be given to improve patient compliance.

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

i. Discuss Type-B ADR with suitable examples
ii. Compare and contrast any two methods for detection of ADR.

B Answer the following 03

i. Explain different factors influencing interpretation of TDM.

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

i. Explain with suitable examples drug interaction due to alteration in GI motility and distribution of drug.
ii. Discuss various predisposing factors for drug interaction.

B Answer the following 03

i. Write a short note on key considerations in Geriatric drug therapy.

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

i. Discuss in brief about various ethical issues in clinical trials.
ii. Write a note on scope of GCP in clinical trials.

B Answer the following 03

i. Explain significance of toxicity study in pre – clinical trials.
