Name: **Enrolment No:**	

UPES

End Semester Examination, May 2025

Course: Medicinal Chemistry-I **Semester: IV**
Program: B. Pharm **Duration: 03 Hours**
Course Code: BP402T **Max. Marks: 75**
Instructions: No additional material like graph paper, log table, *etc* is allowed for this examination.

SECTION A

(20 Q x 1 M = 20 Marks)

S. No.	Attempt all questions from section A.	Marks	COs
Q 1	Which of the following is hydantoin analogs? a) Phensuccimide b) Phenytoin c) Piroxicam d) Zomepirac	**1**	**CO1**
Q 2	Most weakly basic drugs (pKa > 8) are absorbed from… a) Stomach b) Intestine c) Both d) None of the above	**1**	**CO1**
Q 3	Generally, drugs are absorbed in which form? a) In ionized form b) In unionized form c)In both of above form d)In none of above form	**1**	**CO1**
Q 4	……is the NSAIDs drug, which Indole derivative. a) Mefenamic acid b) Ibuprofen c) Piroxicam d) Indomethacin	**1**	**CO1**
Q 5	Choose the basic nucleus present in the sympathomimetic agents. a) Catechol nucleus b) Benzyl nucleus c) Naphthol d) Indole	**1**	**CO1**
Q 6	Draw the structure of Ibuprofen.	**1**	**CO1**
Q 7	……is Ultra-short-acting Barbiturates. a) Phenobarbitone b) Butobarbitone c) Pentobarbitone d) Thiopentone	**1**	**CO1**
Q 8	Enlist Phase-I reactions.	**1**	**CO1**
Q 9	The most significant protein involved in binding with drug is…… a) Albumin b) Glycoprotein c) Lipoprotein d) Globulin	**1**	**CO1**
Q 10	Replacement of oxygen at C-2 position of barbituric acid by a sulfur atom …… a) Has no change in the activity b) Increases the activity c) Decreases the activity d) Show anxiolytic activity	**1**	**CO1**
Q 11	Write the structure of Phenylephrine.	**1**	**CO2**
Q 12	Write the structure of carbachol.	**1**	**CO2**
Q 13	Draw the structure of Aspirin.	**1**	**CO2**
Q 14	Which type of ring system found in Diazepam?	**1**	**CO2**
Q 15	Propranolol is prepared by condensing…… a) α-naphthol and epichlorohydrin b) α-naphthol and chloropropanol c) Phenol and epichlorohydrin d) Chloro naphthol and propanol	**1**	**CO2**
Q 16	Define Bioisoster with an example.	**1**	**CO2**

Q 17	Carbachol differs from acetylcholine by…….. a) Ester b) Amide c) Chloro group d) Hydroxyl group	**1**	**CO2**
Q 18	Introduction of methyl group at alpha (α) position of acetylcholine forms acetyl-α-methyl choline which has more selectivity towards…… a) Nicotinic receptor b) Muscarinic receptor c) Both d) None of the above	**1**	**CO2**
Q 19	Loxapine belongs to….. derivative a) Dihydroindole b) Phenothiazine c) Dibenzoxazepine d) Diphenylbutyl piperidines	**1**	**CO2**
Q 20	Barbituric acid is prepared by the condensation of…... a) Malonic acid and urea b) Diethylmalonate and urea c) Malonic acid with methyl urea d) diethylmalonate with methyl urea	**1**	**CO2**
SECTION B (20 Marks) **(2 Q x 10 M = 20 Marks)**			
	Attempt any two questions from section B.	**Marks**	
Q 1	Classify the cholinergic receptors. Explain the breakdown of acetylcholine and the SAR of a direct acting parasympathomimetic drug.	**(2+8)**	**CO3**
Q 2	A. Give biosynthesis, metabolism of nor-adrenaline. B. Write the classification and SAR of adrenergic agents.	**(4+6)**	**CO3**
Q 3	A. Define the terms sedative and hypnotic. B. Classify and explain the SAR and mechanism of barbiturates.	**(2+8)**	**CO4**
SECTION-C (35 Marks) **(7 Q x 5 M = 35 Marks)**			
	Attempt any seven questions from section C.	**Marks**	
Q 1	Outline the synthetic step for Mefenamic acid	**5**	**CO3**
Q 2	Explain the catabolism of acetyl choline and explain the SAR of direct acting parasympathomimetic agent.	**(2+3)**	**CO3**
Q 3	Classify general anesthetics with examples. Outline the synthesis of Ketamine.	**(3+2)**	**CO3**
Q 4	Discuss following physicochemical properties of drug in relation to biological action. I) Isomerism II) Partition coefficient	**(2.5+ 2.5)**	**CO4**
Q 5	Discuss SAR and Classification of Morphine Analogs.	**(2.5+ 2.5)**	**CO4**
Q 6	Give an account on inhalation anesthetics.	**5**	**CO4**
Q 7	Discuss in detail SAR of Benzodiazepines as sedative and hypnotics.	**5**	**CO4**
Q 8	What are hydantoins? Write the chemistry of hydantoins.	**5**	**CO5**
Q 9	Give an account on reversible and irreversible Cholinesterase inhibitors.	**5**	**CO5**