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UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Theory Examination, May 2023

Course: Medicinal chemistry-I
Program: B. Pharm.
Course Code: BP 402T

Semester: IV
Time: 03 hrs.
Max. Marks: 75

Instructions: Attempt all the questions

SECTION A

S. No.	CO	Objective/ Multiple Choice Questions (20X1)	Mark s
Q1			20
1	CO1	Codeine differs in structure from morphine by a) N-methyl group b) -Cl group c) -OC ₂ H ₅ group d) -OCH ₃ group	1
2	CO4	Barbituric acid is prepared by the condensation of a) Malonic acid and urea b) Diethylmalonate and urea c) Malonic acid with methyl urea d) Diethyl malonate with methyl urea	1
3	CO1	Dopamine is biosynthesized from..... a) L-Alanine b) L-Tyrosine c) L-Phenylalanine d) L-DOPA	1
4	CO1	Carbachol differs from acetylcholine by a) Ester b) Amide c) Chloro group d) Hydroxyl group	1
5	CO1	Which of the following is a pure muscarinic agonist a) Arecoline b) Pilocarpine c) Muscarine d) Acetyl choline	1

6	CO1	The most significant protein involved in binding with a drug is a) Albumin b) Lipoprotein c) Glycoprotein d) Globulin	1
7	CO1	What are bioisosters? Give an example	2
8	CO4	Propranolol is prepared by condensing a) α -naphthol and epichlorohydrin b) α -naphthol and chloro propanol c) phenol and epichlorohydrin d) chloro naphthol and propanol	1
9	CO1	Draw the structure of Diazepam.	1
10	CO2	Which one of the following belongs to long-acting barbiturates a) Pentobarbital b) Amobarbital c) Phenobarbital d) Secobarbital	1
11	CO2	Draw the structure and write uses of Halothane.	2
12	CO1is called as dissociative anesthetics a) Sevoflurane b) Ketamine c) Thiopental Na d) Methoxyflurane	1
14	CO1	Write the structure of acetylcholine.	1
15	CO3	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
16	CO1	Give the structure of Phenytoin	1
17	CO2	Enlist Phase-I reactions.	1
18	CO1, CO2	Draw the structure of Aspirin	1
19	CO1	Which of the following drug is a volatile substance that is administered by inhalation a) Thiopental b) Halothane c) Alprazolam d) Buspirone	1

SECTION B

Long Answers (Answer two out of 3) 2X10

Q2			20
1	CO1, CO2, CO3	Write the biosynthesis and catabolism of acetylcholine and explain the SAR of direct acting para- sympathomimetic agent.	2.5+2.5 +5
2	CO1, CO3	Define sedative and hypnotics. Classify them and give the SAR of barbiturates.	10
3	CO2, CO4	Write down the Synthesis, mechanism of action and uses of the following drugs. a) Propanalol b) Mefenamic acid	(5+5)
SECTION C			
Short Answers (Answer 7 out of 9) 7X5			
Q3			35
1	CO2, CO4	How Ibuprofen can be synthesized from isobutyl benzene and acetyl chloride? Give the clinical uses of Ibuprofen.	5
2	CO1	Discuss the role of partition coefficient and hydrogen bonding in pharmacokinetics and pharmacodynamics.	5
3	CO1, CO2	Write a short note on SAR of phenothiazine compounds.	5
4	CO1, CO4	What are hydantoins? Write the chemistry of hydantoins.	5
5	CO1, CO4	Discuss the salient structural requirement and SAR for Morphine and related drugs.	5
6	CO4	Discuss SAR of direct acting para-sympathomimetic agent.	5
7	CO1, CO4	Write down the mechanism of action and synthesis of Salbutamol.	5
8	CO1	Give the biosynthesis and metabolism of nor-adrenaline	5
9	CO1, CO4	Give an account on reversible and irreversible Cholinesterase inhibitors	5
		Total	75