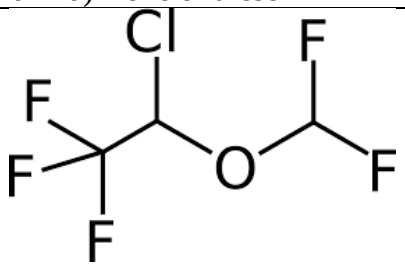
Name: Enrolment No:	UPES UNIVERSITY WITH A PURPOSE

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, May 2021

Course: Medicinal Chemistry I **Semester: IV**
Program: B. Pharm. **Time: 03 hrs.**
Course Code: BP402T **Max. Marks: 75**
Instructions: All the sections are compulsory.

SECTION A

S. No.	CO		Marks
		Answer all the questions. (MCQs / True or false or relevant)	**20**
1.	**CO1**	**Which one of the following is an ester?** a) Morphine b) Phenazocin c) Heroine d) Meperidine	**1**
2.	**CO3**	**Statement A: Salbutamol is a selective β2 agonist** **Statement B: Salbutamol has its aromatic ring different from catecholamine** **Answer choice:** a) Statement A and B are correct, and B is a probable reason for A b) Statement A and B are correct, but B is not related to A c) Statement A is correct, and B is incorrect d) Statement A and B both are incorrect	**1**
3.	**CO2**	**Which of the following is a subtype of adrenergic receptor?** a) α3 b) M1 c) N2 d) β3	**1**
4.	**CO2**	**Which drug blocks directly the PGE-2 secretion by inhibiting interleukins at the inflammation site?** a) Diclofenac b) Etoricoxib c) Colchicines d) Aceclofenac	**1**
5.	**CO3**	**Catecholamines must have** a) An aromatic ring b) Two Hydroxyl groups attached with a cyclic structure c) One amine group present as a part of the chain d) All of these	**1**
6.	**CO1**	**One of the following is not a sulfonamide drug:** a) Nimesulide b) Valdecoxib c) Rofecoxib d) Celecoxib	**1**
7.	**CO2**	**Which of the following is not a drug for ANS** a) Atenolol b) Prazosin c) Rosuvastatin d) Bisoprolol	**1**
8.	**CO2**	**Duration of barbiturate action mainly depends on** a) rate of hepatic metabolism b) excretion rate from renal and/or pulmonary systems c) lipid solubility and time to distribute throughout the body	**1**

		d) pharmacogenetic different between patients	
9.	**CO1**	**Shortest-acting benzodiazepine is** a) Diazepam b) Lorazepam (including metabolites) c) Triazolam d) Clonazepam (including metabolites)	**1**
10.	**CO1**	**Amongst the following drugs, which one belongs to tricyclic antidepressants?** a) Pargylline b) Amitryptiline c) Bupropion d) None of these	**1**
11.	**CO2**	**Which one is not a side effect of NSAIDs** a) peptic ulcer b) reduced kidney function c) GIT bleeding d) seizures	**1**
12.	**CO3**	**The relationship between the spatial orientation & activity of different atoms in a drug molecule is known as** a) Structure property relationship b) Property Activity relationship c) Structure activity relationship d) None of these	**1**
13.	**CO4**	**Which drug is formed on bromination of 2-chloro-1,1,1-trifluoroethane?** a) Halothane b) Benzazepam c) Phensuximide d) Cetrizine	**1**
14.	**CO2**	**Which of the following does not affect the biological action of a drug?** a) Partition Coefficient b) Bond length c) Hydrogen bonding d) Ionization	**1**
15.	**CO4**	**The racemic resolution of naproxen is done by** a) Mandelic acid b) Brucine salt c) D-camphor sulphonic acid d) None of these	**1**
16.	**CO1**	 **Number of chiral carbons present in the structure of isoflurane is?** a) 0 b) 1 c) 2 d) 3	**1**
17.	**CO4**	**Fentanyl can be synthesized from 4-*N*-propanoylanilinopiperidine by N-alkylation with?** a) 2-phenylethychloride b) 2-ethylchloride c) 3-methoxybutane d) Aniline	**1**
18.	**CO2**	**Side effects of drug Codeine is/are _____.** a) Respiratory depression b) Circulatory depression c) Cardiac arrest d) All of the above	**1**
19.	**CO3**	**Which type of ring system found in Carbachol?** a) Benzene b) Napthalene c) Imidazole d) None of the above	**1**
20.	**CO1**	**Ethosuximide binds to which type of channels?** a) Sodium channels b) Potassium channels c) Voltage sensitive calcium channels d) Chloride ion channels	**1**

SECTION B			
Answer any two questions of the following.			**20**
1.	**CO4**	Write the synthesis of Phenylephrine and Salbutamol.	**(5+5) = 10**
2.	**CO3**	a) What do you mean by inverse agonism? Give two examples. b) Illustrate the SAR of Butyrophenones. c) "Antipsychotic drugs can make you fat" – How?	**(3+5+2) = 10**
3.	**CO3**	a) Write down the SAR of barbituric acid analogues. b) Discuss the functional differences in between barbituric acid and benzodiazepine analogues as CNS depressants. c) "The presence or absence of 3-hydroxyl group in benzodiazepine ring is important pharmacokinetically" – Justify it.	**(5+2+3) = 10**
SECTION C			
Answer any seven questions of the following.			**35**
1.	**CO2**	Write short note on the following: a. Partition coefficient b. Hydrogen bonding	**(2.5+2. 5) = 5**
2.	**CO2**	Write the biosynthetic mechanism of Catecholamine.	**5**
3.	**CO4**	a) Give one example of synthetic cholinergic blocking agent. b) Write down the synthesis of it.	**(1+4) = 5**
4.	**CO3**	a) "The presence of 3-hydroxyl group in benzodiazepine ring is important for showing sedative activity" – justify it. b) Why shifting of double bond to the 3,4 position of benzodiazepine ring will decrease the sedative and hypnotic activity?	**(3+2) = 5**
5.	**CO3**	Discuss the SAR of Phenothiazine analogues as anti-psychotic agents.	**5**
6.	**CO1**	Write down the mechanism of action of Chlorpromazine.	**5**
7.	**CO4**	How Diazepam can be synthesized from 4-chloro-*N*-methyleamine?	**5**
8.	**CO1**	a) Write down all three proposed mechanisms of general anesthetic agents. b) Discuss the chemical classification of intravenous anesthetics with examples.	**(3+2) = 5**
9.	**CO2**	a) What do you mean by Phase I drug metabolism? b) What are the enzymes involved in non-cytochrome drug oxidation in phase I metabolism? Give examples.	**(2+3) = 5**
		Total	**75**