Seat No: _____ Enrollment No: _____

PARUL UNIVERSITY

FACULTY OF PHARMACY

B. Pharm. Summer 2022 - 23 Examination

Semester: 4 **Date: 12/04/2023**
Subject Code: BP402T **Time: 10:00am to 1:00pm**
Subject Name: Medicinal Chemistry I – Theory **Total Marks: 75**

Instructions:
1. Figures to the right indicate maximum marks.
2. Make suitable assumptions wherever necessary.

Q.1 Multiple Choice Questions (MCQs) (1 Mark Each) **(20)**

1. Classical bio isosteres have.
   a) Similarities in shape and electronic configuration
   b)Differ in shape and electronic configuration
   c) Similarities in size and mass
   d) All
2. Partition coefficient majorly influence.
   a) Drug Metabolism
   b) Drug Action
   c) Drug Protein Binding
   d) Drug Transport
3. Active transport of a substance across biological membranes has the following characteristics except:
   a) It is specific
   b) It is pH dependent
   c) It is saturable
   d) It requires metabolic energy
4. Biotransformation (metabolism) of drugs is primarily directed to:
   a) Activate the drug
   b) Inactivate the drug
   c) Convert lipid soluble drugs into nonlipid soluble metabolites
   d) Convert nonlipid soluble drugs into lipid soluble Metabolites
5. The following drug metabolizing reaction is entirely nonmicrosomal:
   a) Glucuronide conjugation
   b) Acetylation
   c) Oxidation
   d) Reduction
6. Prazosin belongs to the class…
   a) Pyridyl quinoxaline
   b) Piperazinyl quinoxaline
   c) Pyridyl quinazoline
   d) Piperazinyl quinazoline
7. Choose correct IUPAC name of Tolazoline …..
   a) 2-ethyl-4,5-dihydro-1H-imidazole
   b) 2-toluidyl-4,5-dihydro-1H-imidazole
   c) 2-methyl-4,5-dihydro-1H-imidazole
   d) 2-benzyl-4,5-dihydro-1H-imidazole
8. Epinephrine is a following type of sympathomimetic agent
   a) Indirect acting
   b) Direct acting
   c) Mixed mechanism
   d) None
9. Adrenoreceptors are following type of receptor
   a) Enzyme linked receptors
   b) Ion-channel linked recptors
   c) G-protein coupled receptors
   d) None of the above
10. Labetalol is
   a) Selective B-blocker
   b) Selective α-blocker
   c) Mixed β, α-blocker
   d) None of the above
11. Pilocarpine contains ……..ring
   a) Tetrahydrofuran
   b) Piperazine
   c)Piperidine
   d) Pyridine
12. Drug used as insecticide in agriculture
   a) Echothiophate
   b) Pyridostigmine
   c) Pralidoxime chloride
   d) Parathione

13. Atropine, a tropane alkaloid, is an enantiomeric mixture of….
    a) *d*-scopolamine and *l*-scopolamine
    b) *d*-hyoscyamine and *l*-hyoscyamine
    c) Tropinone and Scopine
    d) None
14. Dicyclomine synthesize from …
    a)Benzyl cyanide
    b) Dibenzyl amine
    c) Benzyl alcohol
    d) Benzoic acid
15. 1-cyclohexyl-1-phenyl-3-pyrrolidin-1-yl-propan-1-ol hydrochloride is IUPAC name for
    a) Biperidine
    b) Procyclidine
    c) Isopropamide
    d) Ethopropazine
16. Type of ring structures present in the structure of diazepam?
    a) a) Quiniclidine
    b) Quinoline
    c) Diazepine
    d) All of the above
17. Barbital potentiates which receptor?
    a) GABA receptor
    b) Neuronal acetylcholine receptor
    c) Glutamate receptor
    d) Kainate 2
18. Choose correct position of Chlorine atom in the structure of Chlorpromazine
    a) N1
    b) C2
    c)C5
    d)C6
19. Which of the following are natural opiates?
    a) Codeine
    b) Oxycodone
    c) Fentanyl
    d) Endomorphins
20. Choose correct statement for opioids
    a) Tertiary N is essential for opioid activity
    b) Secondary N is essential for opioid activity
    c) Methylation of 3-OH group increases opioid activity
    d) All

Q.2 Long Answers (any 2 out of 3) (10 Mark Each) **(20)**

1. Write the factors affecting drug metabolism. Give the SAR of β-adrenergic blocking agents. Outline the synthesis of propranolol.
2. Discuss the role of reversible and irreversible cholinesterase inhibitors as medicinal agents. Write the synthesis, mechanism of action and uses of neostigmine.
3. Define antipsychotic drugs. Write the structure of any four drugs to treat the same belonging to different classes. Outline the synthesis of Fentanyl citrate

Q.3 Short Answers (any 7 out of 9) (5 Mark Each) **(35)**

1. Explain the role of solubility and partition coefficient.
2. What is phase II biotransformation? Discuss any two conjugation reactions
3. Write the structure, mechanism of action of Terbutaline, and Clonidine with uses.
4. Give the biosynthesis and metabolism of nor-adrenaline.
5. Write the structure of atropine. Discuss its mechanism of action, uses and side effects.
6. Discuss SAR of cholinolytic agents.
7. Define and classify convulsions. Outline the synthesis of Carbamazepine.
8. Differentiate between narcotics and NSAIDS. Outline the synthesis of Mefenamic acid.
9. Discuss the SAR of Benzodiazepines.