III. Short answers (Answer seven out of nine questions) 5x7=35

- 1. Define adrenergic blockers. Highlight two examples non-selective alpha adrenergic blockers with structures. 2+3
- 2. Give synthesis of ipratropium bromide and dicyclomine HCl. 2+3
- 3. Write the SAR of cholinergic blocking agent. 5
- 4. Write the biosynthesis of adrenaline. 5
- 5. Classify general anaesthetics. Write their mechanism of action. Outline the synthesis of Halothane. 2+1+2
- 6. Write the biological source of opium. Discuss SAR of morphine analogues. 1+4
- 7. Discuss the SAR of barbiturates. Outline the synthesis of phenytoin. 3+2
- 8. Define anticonvulsant. Outline the synthesis of ethosuximide and mention its mechanism of action. 1+3+1
- 9. What is bioisosterism? Discuss different type of bioisosterism with suitable examples. 1+4

2023/EVEN/13/38/BP-402/008

B Pharm Even Semester Examination, September, 2023

PHARMACEUTICAL SCIENCES

(4th Semester)

Course No: BP-402T

(Medicinal Chemistry-I- Theory)

FM: 75 Time: 3 Hours

The figures in the right margin indicate full marks for the question

I. A. Multiple Choice questions 1x10=10

- 1. Which of the following drug does not bind to the GABA receptor?
 - i) Alprazolam
- ii) Phenobarbitone
- iii) Oxazepam
- iv) Buspirone
- 2. What would be the last stage of general anaesthesia?
 - i) Delirium
- ii) Amnesia
- iii) Analgesia
- iv) Respiratory paralysis
- 3. Which of the following enzymes is not involved in catalyzing Phase I metabolic reaction?
 - i) Flavin-containing monooxygenases
 - ii) Oxidation of alkyl groups
 - iii) Glucuronyl transferase

- iv) Esterases
- 4. Which of the following are the natural opiates?
 - i) Fentanyl
- ii) Oxycodone

iii) Codeine

- iv) All of the above
- 5. Which of the following NSAIDs is a selective COX-2 inhibitor?
 - i) Diclofenac
- ii) Indomethacin
- iii) Celecoxib
- iv) Piroxicam
- 6. The rate controlling enzyme for adrenaline biosynthesis is
 - i) Tyrosine hydroxylase
 - ii) DOPA decarboxylase
 - iii) Dopamine beta hydroxylase
 - iv) Phenylethanolamine-N-methyl transferase
- 7. Propranolol is prepared by condensing
 - i) Alpha naphthol and epichlorhydrin
 - ii) Alpha naphthol and chloropropanol
 - iii) Phenol and epichlorohydrin
 - iv) Chloronaphthol and propanol
- 8. The nitrogen present in acetylcholine is
 - i) Primary type
- ii) Secondary type
- iii) Tertiary type
- iv) Quaternary type

- 9. The starting compound for the synthesis of salbutamol is
 - i) Catechol
 - ii) 3 hydroxymethyl-4 hydroxy benzene
 - iii) Resorcinol
 - iv) None of the above
- 10. In ethylene bridge of acetylcholine incorporation of beta substitution leads to reduction of
 - i) Muscarinic activity ii) Nicotinic activity
 - iii) No Change
- iv) All of these above

I. B. Objective type

2x5=10

- 1. Write the structure and chemical name of the following drugs
 - a) Salbutamol b) Tolazoline c) Aspirin d) Barbital
 - e) Haloperidol

II. Long answers (Answer two out of three questions) 10x2=20

- 1. Define and classify sympathomimetic drugs. Write the SAR of phenyl ethanolamine derivative as sympathomimetic drugs. Outline the synthetic scheme of propranolol. 1+2+4+3
- 2. Classify NSAIDs. Discusstheir mechanism of action. Outline the synthesis of fentanyl citrate and methadone hydrochloride. 3+2+(2.5+2.5)
- 3. What is biotransformation? Explain the Phase I and II biotransformation reactions with suitable examples. 2+8