YSPM'S Yashoda Technical Campus,
Faculty of Pharmacy

FOURTH SEMESTER B.PHARM DEGREE EXAMINATION

MEDICINAL CHEMISTRY -I
(BP402T)

QUESTIONBANK

UNIT 1

LONG ANSWER

1. What is phase I biotransformation. Discuss any two oxidative reactions.
2. What is phase II biotransformation? Discuss any two conjugation reactions
3. Write the factors affecting drug metabolism
4. Define biotransformation. What is its importance? Write the sites of biotranformation.
5. Discuss the role of glucouronic acid and glycine in biotransformation.
6. Explain role of Cytochrome P-450 in biotransformation.
7. Write in detail ionization & solubility as an important physico-chemical parameter.
8. Add a note on hydrogen bonding and protein binding.
9. Explain the role of solubility and partition coefficient
10. Explain the role of chelation and bioisosterism.
11. Explain optical and geometrical isomerism in relation to biological action.
12. Discuss hepatic and extra-hepatic metabolism.
13. Explain the role of solubility and protein binding.
14. Explain the role of hydrogen boding and partition coefficient
15. Explain the role of ionisation and bioisosterism.
16. Explain the role of ionisation and chelation
17. Discuss reductive and hydrolytic drug metabolism with its importance.
18. Explain the role of solubility and hydrogen bonding..

SHORT ANSWER

1. Oxidation reactions in drug metabolism
2. Reduction reactions in drug metabolism
3. “Hydrolytic reactions in drug metabolism

4. Write the aim and purpose of drug metabolism
5. Sites of biotransformation
6. First pass effect in hepatic drug metabolism
7. Importance of extra hepatic drug metabolism
8. Write the diagrammatic representation of Cytochrome
9. Importance of hydrogen bonding in drug action
10. Importance of plasma protein binding in drug action
11. Importance of solubility in drug action.
12. Importance of partition coefficient in drug action.

UNIT II

LONG ANSWER

1. Define and classify adrenergic agents? Discuss adrenergic blocking agents in detail and give the synthesis of propranolol.
2. Classify adrenergic antagonists with suitable example in each class along with Structure. Write the synthesis of Tolazoline.
3. Give the biosynthesis and metabolism of nor-adrenaline. Write the synthesis of Salbutamol and phenylephrine.
4. Give the SAR of B-adrenergic blocking agents. Outline the synthesis of propranolol.
5. Write the class, structure ,mechanism and uses of a) Methyldopa b) Ephedrine c)Phenoxy benzamine and d) Metaprolol
6. Define, classify and write the SAR of adrenergic agents and give the synthesis of Phenylephrine.

SHORT ANSWER

1. Write the structure, mechanism ofaction of Oxymetazoline and Clonidine with Uses.
2. Write a note on alpha adrenergic antagonists and structure and use of any one.
3. Discuss on different beta receptor antagonists and write the limitations of non-selective beta blockers.
4. Explain the mechanism of action and uses of a)Esmolol b) Xylometazoline c)Prazosin d)Pseudoephedrine.

5. Explain the mechanism of action and uses a)terbutaline b)Ephedrine c)Methysergine d) Atenolol.
6. What are indirect acting sympathomimetic agents? Write the structure and uses of any one drug.

SHORT ANSWERS

1. Write the structure and uses of Propylhexedrine
2. Write the structure and uses of Dobutamine and Metaraminol.
3. Write any two drug structures for asthama
4. Write any two drug structures used for nasal decongestione
5. Write any two drug structures and uses of beta blockers.
6. Write any two drug structures and uses of alpha adrenergic blockers
7. What is catecholamine? Mention any two important neurotransmitter Catacholamines.
8. Write the structure and specific uses of Prazosin and Carvedilol
9. Write a note on alpha receptors
10. Write a note on beta receptors
11. Write any two structures of selective beta 2 agonists
12. Write the structure and uses of Metibranolol.
13. Write the structure and uses of Atenolol
14. Write the structure and uses of Betazolol
15. Write the structure and uses of Bisoprolol,
16. Write the structure and uses of Esmolol
17. Write the structure and uses of Metoprolol
18. Write the structure and uses of Carvedilol

UNIT III SHORT ANSWER

1. Explain the biosynthesis of acetyl choline and its function via various receptors
2. Explain the catabolism of acetyl choline. Write the structure and uses of pilocarpine.
3. Discuss the role of reversible and irreversible cholinaetarase inhibitors as medicinal Agents.
4. What are solanatious alkaloids? Write the synthesis and specific use of Ipratropium bromide,

5. Classify cholinergic receptors. Write a note on their distribution and function.
6. Write the synthesis of dicyclomine hydrochloride. Discuss its mechanism of action, uses and possible side effects.
7. Write the synthesis of procyclidine hydrochloride. Discuss its mechanism of action, Uses and possible side effects.
8. Discuss SAR of parasympathomimetic agents.
9. Discuss SAR of cholinolytic agents.
10. Write the structure, uses and mechanism of action of pralidoxime chloride.
11. Explain the role of cholinesterase enzyme. Write the Synthesis, mechanism of action and uses of neostigmine.
12. What are How are they useful. Explain the synthesis of Carbachol.
13. Discuss the role of acetylcholine estarase in the body. Classify acetyl choline Inhibitors with two examples each along with its specific uses.
14. Write the structure of atropine. Discuss its mechanism of action, uses and side effects.
15. Write the structure, uses and mechanism of a) scopolamine Hydrobromide b) Propantheline bromide

SHORT ANSWER

1. Write a note on muscarinic receptors
2. Write a note on Nicotinic receptors
3. Write the structure and uses Edrophonium chloride.
4. Write the structure and uses of Tacrine hydrochloride.
5. Write the structure and uses of Ambenonium chloride.
6. Write the structure and uses of Isofluorphate.
7. Write the structure and uses of Echothiophate iodide,
8. Write the structure and uses of Parathione
9. Write the structure and uses of Malathion.
10. Write a note on Cholinesterase reactivator
11. Write the structure and uses of Atropine sulphate
12. Write the structure and uses of Hyoscyamine sulphate
13. Write the structure and uses of Scopolamine hydrobromide
14. Write the structure and uses of Homatropine hydrobromide
15. Write the structure and uses of Tridihexethyl chloride
16. Write the structure and uses of Isopropamide iodide
17. Write the structure and uses of Ethopropazine hydrochloride.

18. What are cholinolytics. Write one cholinolytic structure and uses

UNIT IV

LONG ANSWER

1. Define sedatives and hypnotics. Explain the SAR of barbiturates. Write the synthesis of barbital..
2. Write the SAR of benzodiazepines. Outline the synthesis of diazepam.
3. Explain the SAR of phenothiazines. Outline the synthesis and uses of chlorpromazine Hydrochloride.
4. What are anticonvulsants? Classify chemically with an example each. Enumerate the Structure, chemical name; synthesis and specific use any one.
5. Define and classify convulsions. Outline the synthesis of phenytoin and Carbamazepine.
6. Differentiate between the term anxiolytics, sedative, hypnotic and tranquiliser. Outline the synthesis of diazepam.
7. Define antipsychotic drugs. Write the structure of any four drugs to treat the same Belonging to different classes. Outline the synthesis of chlorpromazine hydrochloride.

SHORT ANSWER

1. Discuss the SAR of Barbiturates. Write the synthesis of barbital.
2. Discuss the SAR of Benzodiazepins. Write the structure and uses of Alprazolam.
3. Write the structure and uses of sedative and hypnotics from the miscellaneous Category.
4. Write and structure and uses of a) Promazine Hydrochloride, Triflupromazine and Trifluperazine.
5. Write the structure and uses of Phenothiazine ring analogues.
6. Write the structure and specific uses of Hydantoin and Oxazolidine diones

SHORT ANSWER

1. Write the structure and specific uses of Lorazepam
2. Write the structure and specific uses of Alprazolam
3. Write the structure and uses Beta amino ketones as CNS depressants.

4. Write the structure and specific uses of phenobarbital with possible side effects
5. Write the structure of any one clinically used benzamide as CNS depressant
6. Write the mechanism of action of Phenobarbitone

UNIT V LONG ANSWER

1. What is anaesthesia? Classify general anaesthetics. Give its mechanism of action. Outline the synthesis of Halothane and ketamine hydrochloride.
2. Explain the SAR Morphine with respect to peripheral modification. Write the Synthesis of Fentanyl citrate.
3. Classify NSAIDS with example in each class. Write the synthesis of Ibuprofen.
4. What are narcotic analgesics? Give their mechanism of action with limitations. Write the synthesis of methadone hydrochloride
5. Differentiate between narcotics and NSAIDS. Outline the synthesis of methadone Hydrochloride and mefenemic acid.
6. Define anti-inflammatory drugs. Write the structure and uses of any four such drugs. Write the synthesis of Ibuprofen.

SHORT ANSWER

1. Explain inhalation anaesthetics in details with relevant structures and comparative Clinical merits.
2. What is dissociative anaesthetic ? Write synthesis and uses of ketamine hydrochloride,
3. What are Narcotic antagonists? Write the structure, uses and demerits of any two. Narcotic antagonists.
4. Write the nuclear SAR of morphine with respect to nuclear modifications.
5. Write the structure, uses and their serious side effects of a)Indomethacin b)Ketorolac c)Naproxen
6. Write the structure, uses and their serious side effects of a) Piroxicam b) Phenylbutazone and c) Aspirin.

SHORT ANSWER

1. Write structure and specific uses of Sulindac
2. Write the structure and specific uses of Tolmetin

3. Write the structure and specific uses of Zomepriac
4. Write any one drug structure of antitussive narcotic drug
5. Write the structure, specific uses and long term side effects of diclofenac
6. Write the structure and specific uses Loperamide hydrochloride