

SHAMBHUNATH INSTITUTE OF PHARMACY

JHALWA, PRAYAGRAJ

IMPORTANT QUESTIONS BASED ON PREVIOUS YEAR QUESTION PAPER

NAME OF SUBJECT: MEDICINAL CHEMISTRY- I

SUBJECT CODE: (BP-502T)

COURSE AND SEMESTER: B. PHARM & IVTH SEMESTER

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UNIT-I

Short questions:

1. Define partition coefficient and give its applications. (2018-19, 22)
2. Explain role of ionization towards biological action of drug. (2018-19)
3. Define solubility. (2019-20)
4. What is ring equivalent bioisosterism. (2019-20)
5. Define Bioisosterism. Give examples. (2022-23,24)
6. Differentiate Phase I and Phase II reactions. (2022-23,)
7. Mention the significance of Ionization and solubility in relation to biological action. (2022-23)
8. Enlist the factors affecting drug metabolism. (2023-24)
9. Discuss the importance of optical isomerism in relation to biological action. (2023-24)
10. Define Metabolism. (2021-22)
11. Explain role of Protein binding towards biological action of drug. (2023-24)

Long questions:

1. Define biotransformation. Explain principles of drug metabolism including phase I and phase II pathways. (2018-19,20, 22,24)
2. Explain Bioisosterism, types and their role in drug discovery with suitable examples. (2018-19,23)
3. Stereochemistry contributes towards biological action of drug. Explain with examples. (2018-19)
4. Describe geometrical isomerism in relation to affect biological activity. (2019-20)
5. Explain in detail about isosterism and bioisosterism with suitable examples. (2019-20)
6. Explain physicochemical properties in relation to biological action in detail. (2022-23,22)
7. Discuss drug metabolism principles and factors affecting drug metabolism. (2023-24)
8. Illustrate optical and geometrical isomerism in relation to biological action of drugs with suitable example. (2023-24)

UNIT-II

Short questions:

1. Write the mode of action of methyl dopa. (2019-20)
2. Write the synthetic route of Phenylephrine. (2019-20)
3. Enumerate Adrenergic receptors and their distribution. (2022-23,24)
4. Give the structure and uses of methyl dopa. (2023-24)
5. Outline the biosynthesis of catecholamines. (2023-24)
6. Describe synthesis of Tolazoline. (2021-22)
7. Give the structure and uses of Phenylephrine. (2021-22)
8. Give the synthesis of Solbutamol. (2023-24)

Long questions:

1. Write synthesis, mechanism of action and uses of Tolazoline. (2018-19)
2. Define adrenergic blockers. Explain structure-activity relationship studies and uses of beta blockers. (2018-19,22)
3. Discuss in detail about indirect acting sympathomimetic agents. (2019-20)

4. Discuss the SAR beta blocker and write the mode of action synthesis of propranolol. (2019-20,22)
5. What are Sympathomimetic agents? Classify them. (2022-23)
6. Discuss classification and SAR of sympathomimetic agents. (2023-24,22,24)
7. Classify and SAR adrenergic antagonists. (2023-24,24)
8. Explain the biosynthesis and catabolism of Catecholamine. (2021-22)
9. Give uses, mechanism and synthesis of any two: Carbachol / Neostigmine /Salbutamol. (2022-23)
10. Discuss synthesis of tolazoline. (2023-24)
11. Illustrate synthesis and use of Propranolol and Carbochol. (2023-24)

UNIT-III

Short questions:

1. Explain in short biosynthesis of cholinergic neurotransmitters. (2018-19)
2. Define parasympatholytic agents. (2019-20)
3. Classify cholinesterase inhibitors. (2019-20)
4. What is Cholinesterase reactivator? Write its example and use. (2022-23,24)
5. Enlist cholinergic receptors and their distribution. (2021-22, 24)
6. Differentiate anticholinergic and anticholinesterase. (2021-22,24)
7. Outline the catabolism of Acetylcholine. (2023-24)
8. Give the structure and use of Neostigmine. (2023-24)

Long questions:

1. Write synthesis, mechanism of action and uses of Ipratropium bromide. (2018-19,24)
2. Write classification of parasympathomimetics with examples and chemical structures. (2018-19)
3. Write synthesis of Carbachol. (2018-19)
4. Write the chemical structure, mode of action, synthesis and use of carbachol and procyclidine. (2019-20)
5. Write short note on Cholinesterase inhibitors. (2022-23)
6. Give the MOA and synthesis of (i) Carbachol (ii) Neostigmine (2023-24)
7. Explain classification of Cholinolytic agents. (2023-24)
8. Illustrate the mode of action, synthesis and use of carbachol and Dicyclomine HCl. (2021-22)
9. Classify Cholinergic blocking agent. Explain the SAR of Cholinolytic agent.(2023-24)
10. Discuss cholinesterase reactivators and narcotic antagonistics with their structure, MOA and uses. (2023-24)

UNIT-IV

Short questions:

1. Define ultra-short acting barbiturates with examples. (2018-19, 24)
2. Compare benzodiazepines and barbiturates. (2018-19, 21)
3. Write synthesis of Ethosuximide. (2018-19)
4. Write chemical structure and mechanism of action for Clozapine. (2018-19,20)
5. Write chemical structures of phenytoin and Ethotoin. (2018-19)
6. Give uses of Tolazoline and Dicyclomine hydrochloride. (2022-23)
7. Write synthesis of Phenytoin. (2022-23,24)
8. From which category chlorpromazine drug belongs? Give its structure.(2022-23)
9. Give mechanism of action and structure of Chlorpromazine. (2023-24, 21)
10. Outline the synthesis of phenytoin. (2023-24)
11. What are the ideal characteristic of sedatives and hypnotics. (2019-20)
12. Write the mode of action of Ultra short acting barbiturates. (2019-20)
13. Discuss mechanism of Methohexital sodium. (2022-23)
14. Give structure and MOA of anyone atypical antipsychotic agent. (2023-24)

Long questions:

1. Write classification, mechanism of action and structure-activity relationship of antipsychotics with suitable examples. **(2018-19)**
2. Write a note on medicinal chemistry of barbiturates. **(2018-19)**
3. Write synthesis, mechanism of action and uses of –
(i) Chlorpromazine hydrochloride, (ii) Carbamazepine. **(2018-19)**
4. Classify anticonvulsant drugs and Explain SAR of succinimide. **(2019-20)**
5. Write the mechanism of action and synthesis of ethosuccinimide. **(2019-20)**
6. What are Sedatives and Hypnotics? Classify them. **(2019-20)**
7. Give SAR of Benzodiazepines, and synthesis of Diazepam. **(2019-20)**
8. Discuss SAR of Phenothiazines. **(2022,23)**
9. Compare Benzodiazepines and Barbiturates. **(2023-24, 21)**
10. Discuss in detail SAR of Benzodiazepines. **(2023-24)**
11. What are antipsychotics? Outline classification of antipsychotics and discuss SAR of phenothiazines. **(2023-24)**
12. Classify Sedative and Hypnotics. Outline the synthesis, Mode of action and uses of Diazepam. **(2021-22, 24)**
13. Classify anticonvulsant drugs. Give the synthesis of Phenytoin. **(2021-22)**
14. Differentiate between Sedative and Hypnotics and classify them. Discuss the MOA of benzodiazepine and Barbiturates. **(2023-24)**

UNIT-V

Short questions:

1. Write chemical structure and uses of Ketamine hydrochloride. **(2018-19)**
2. Write differences between Narcotic and non-narcotic analgesics. **(2018-19)**
3. Write the synthetic route of halothane. **(2019-20)**
4. Give name and structures of two narcotic antagonists. **(2022-23, 22)**
5. What is dissociative anesthesia? Give an example. **(2023-24)**
6. State the use of narcotic antagonist. Give name and structure of any two narcotic antagonists. **(2023-24)**
7. Discuss the synthesis of drug which cause dissociative anesthesia. **(2021-22)**

Long questions:

1. Write chemical structures, uses of – i) Indomethacin, ii) Valproic acid, iii) Phenacetin, iv) Meperidine hydrochloride, v) Sulindac. **(2018-19)**
2. Classify anti-inflammatory agents. Discuss the chemical structure mode of action and synthesis of ibuprofen. **(2019-20)**
3. Discuss the SAR of morphine analogues. **(2019-20)**
4. Write the mechanism of action and synthesis of fentanyl. **(2019-20)**
5. Classify Narcotic analgesics. Write SAR of Morphine analogues in detail. **(2022-23)**
6. Classify anti-inflammatory agents. Discuss the mode of action and synthesis of ibuprofen. **(2022-23,22)**
7. Differentiate narcotic and non-narcotic analgesics with suitable examples. Outline in detail SAR of morphine analogues. **(2023-24)**
8. Classify anti-inflammatory agents. Give synthesis of Mefenamic acid. **(2023-24)**
9. Classify the general anesthetics drugs. Give synthesis of Halothane. **(2021-22)**
10. Classify NSAIDs along with their MOA. Write the synthesis of Methadone. **(2023-24)**
11. How dissociative anaesthetic differs from other general anaesthetics? Discuss about synthesis MOA and uses of Ketamine HCl. **(2023-24)**