EAST POINT COLLEGE OF PHARMACY
East Point Campus, Jnana Prabha, Virgo Nagar Post,
Bengaluru – 560049, Karnataka

QUESTION BANK

B Pharmacy

Semester-IV

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Pharmaceutical Organic Chemistry-3

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Unit-1: 10 Marks Questions

1. What is Racemic modification? Discuss the method of resolution of racemic modification.
2. What are symmetric and asymmetric molecule? Explain asymmetric synthesis.
3. Write the rule in nomenclature of optical isomer by R S and D L configuration?
4. Define configuration. Explain the sequence rule for R S system of nomenclature of optical isomers.
5. Define configuration. Explain the sequence rule for R S and D L system of nomenclature of optical isomers.
6. A. Explain the elements of symmetry.

   B. What are relative and absolute configuration and explain the rules in determining Rand S configuration.

05 Marks Questions

1. Define the terms with suitable example a) Diastereoisomers b) Meso compounds c) Enantiomers.
2. Write a note on elements of symmetry with example.
3. Write a note of R and S system of configuration.
4. Write the reactions of chiral molecule in which bonds to the chiral centre are broken.
5. Explain the reaction of chiral molecule in which bonds to the chiral centre are not broken and generation of second chiral centre.
6. Write the possible stereoisomers of 2,3-dichlorobutane and identify the different types of isomers.
7. Mention the method used for the resolutions of racemic mixture and explain any two.
8. Explain ant two reactions of chiral molecule.
9. Distinguish between configuration and conformation with example.
10. Write a note on asymmetric synthesis.
11. Explain enantionmers and diasteromers with suitable example.
12. Define chiral and achiral molecules with example. Write any two reactions of chiral molecules.

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02 Marks Questions

1. Define stereoisomerism with example.
2. What are chiral molecule? Give example.
3. Define centre of symmetry with example.
4. What are meso compounds? Give example.
5. Define diastereoisomerism with example.
6. Define plane of symmetry with an example.
7. Define enantiomers with example.
8. Define alternative axis of symmetry with example.
9. Define meso compound with example.
10. Define racemisation and racemic modification.
11. Define asymmetric carbon atom and give the formula to calculate isomeric forms

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UNIT 2: 10 Marks Questions

1. Define geometric isomers and explain the method of nomenclature of geometric isomers.
2. Discuss the methods used to determine the configuration of geometrical isomers.
3. Explain the stereochemistry of Biphenyl and conditions required for optical activity.
4. Discuss aromaticity and chemical reactivity of Furan, Thiophene and Pyrrole
5. Give various methods of determination of configuration of geometrical isormers
6. Explain the stereochemistry of Biphenyl compounds and criteria for a molecule to exhibitOptical activity

05 Marks Questions

1. Discuss conformational isomers in Ethane
2. Discuss conformational isomers in n-butane
3. Discuss the various conformational isomers of cyclohexanie
4. Discuss the various conformational isomers of n-Butane.
5. Write a note on E & Z. and Syn & Anti systems of nomenclature

02 Marks Questions

1. Mention the name of any two methods of configuration of geometrical isomers
2. Stereospecific reaction with example
3. What are Atropisomerism? Write the example
4. Illustrate with example of Syn and Anti system of nomenclature
5. Define stereoselective reaction with suitable example
6. Illustrate with example of E and Z nomenclature
7. What do you understand by the term optical activity
8. Define conformers with example

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UNIT 3: 10 Marks Questions

1. What are heterocyclic compounds? Give their systematic nomenclature and classification
2. Give the methods of synthesis and chemical reactions of Furan and Thiophen
3. Give the methods of synthesis and chemical reactions of Furan and Pyrrole
4. Explain the stereochemistry of biphenyls and conditions required for optical activity.
5. What are heterocyclic compounds? Give their classification and systematic nomenclaturewith examples
6. Define and classify heterocyclic compounds with examples and explain aromaticity andReactivity of Furan, Pyrrole and Thiophene.

05 Marks Questions

1. Write the synthesis and chemical reactions of Pyrrole
2. Explain the relative aromaticity and reactivity of Thiophene in contrast to Furan and Pyrrole
3. Write a note on basicity and reactivity of Pyrrole
4. Explain the relative aromaticity and reactivity of Furan in contrast to Thiophene and Pyrrole
5. Write a note on aromaticity and reactivity of Thiophene
6. Discuss the systematic nomenclature of heterocyclic compounds
7. Explain the systematic classification of heterocyclic compounds with example.
8. Compare the basicity of Pyrrole with Pyridine
9. Write methods of synthesis and reactions of Furan
10. Explain Paal-Knorr Synthesis of Pyrrole
11. Give any three methods of synthesis of Thiophene
12. Discuss Paal-Knorr Synthesis of Pyrrole.

02 Marks Questions

1. What are fused heterocyclic compounds? Give examples
2. Write the structure and uses of Furan
3. Write the resonance structures of Pyrrole
4. Write the structure and medicinal uses of Thiophene derivative

5. Write the resonance structures of Furan
6. Write the structure and medicinal uses of Pyrrole derivative
7. Write the resonance structures of Thiophene
8. Write the structure and medicinal uses of Furan derivative
9. What are Hetero atoms? Name the compounds containing hetero atom
10. Write the structure of five membered heterocyclic compounds containing single heteroatom
11. Write the structure and medicinal uses of drug containing Furan nucleus.

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UNIT 4 10 Marks Questions

1. Write a note on Fischer-Indole synthesis.
2. Outline the Skraups synthesis of Quinoline
3. Write synthesis and reactions of Imidazole
4. Write the synthesis and reactions of Pyridine
5. Write the method of synthesis and chemical reactions of Isoquinoline
6. Outline the synthesis and reaction of oxazole.
7. Write the method of synthesis and chemical reactions of Thiazole
8. Write the methods of synthesis and chemical reactions of Pyrazole
9. Write synthesis and reactions of Indole
10. Write the method of synthesis and chemical reactions of Quinoline
11. Describe the method of synthesis and reactions of Imidazole.

02 Marks Questions

1. Give the reason for basicity of Pyridine
2. Write the structure and medicinal use of drug containing azepine nucleus
3. Write any one method of synthesis of Pyrazole
4. Write the basic structure and uses of Purine
5. Write any one method of synthesis of Acridine
6. Give the basic structure and uses of Pyrimidine
7. Give the basic structure and uses of Azepines
8. Write any one method of synthesis of Pyridine
9. Give the structure and uses of Acridine
10. Write the structure and medicinal uses of drug containing Furan nucleus
11. Give any one method of synthesis of Isoquinoline
12. Write the structure and uses of Pyridine derivatives

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UNIT 5: 10 Marks Questions

1. Explain the mechanism involved in Beckmanns rearrangement
2. Write the Wolff-Kishner reduction reaction
3. Write the Birch reduction reaction
4. Explain the mechanism involved in Schmidt rearrangement
5. Write the mechanism of Oppenauer-oxidation reaction
6. Explain the mechanism involved in Claisen-Schmidt condensation
7. Write the Dakin reaction
8. Write the Dakin reaction and its synthetic application

02 Marks Questions

1. What is Dakin reaction?
2. Give the structure and use of Lithium Aluminium hydride
3. Give the structure and use of Sodium Borohydride
4. What is Oppenauer-oxidation reaction?
5. Enlist the importance of Oppenauer-oxidation reaction
6. Enumerate the synthetic application of Dakin reaction
7. Write Wolff-Kishner reduction reaction
8. Enumerate the application of Oppenauer-oxidation reaction.

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Medicinal Chemistry-1

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UNIT-1
SHORT ESSAY 05 marks

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 biotransformation.
5. Discuss the role of glucuronic acid and glycine in biotransformation.
6. Explain the role of Cytochrome P-450 in biotransformation.
7. Write in detail about ionization & solubility as an important physicochemical 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 bonding 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.

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SHORT ANSWERS 02 marks

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.

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UNIT-II

LONG ESSAY 10 marks

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 beta-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 ESSAY 05 marks

1. Write the structure, mechanism of action 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.

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SHORT ANSWERS 02 marks

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 pecific 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

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UNIT-III

SHORT ESSAY 05 marks

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.

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SHORT ANSWER 05 marks

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

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UNIT-IV

LONG ESSAY 10 marks

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 ESSAY 05 marks

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 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 02 marks

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

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UNIT-V

LONG ESSAY 10 mark

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 ESSAY 05 marks

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.

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SHORT ANSWER 02 marks

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

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Physical Pharmaceutics-2

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UNIT I: Colloidal Dispersions

LONG ESSAY 10 Marks

1. Discuss the electrical properties and kinetic properties of colloids
2. Discuss the optical and electrical properties of colloids.
3. Discuss the kinetic and optical properties of colloids.
4. What are colloids? Give example. Explain any four methods of preparation of different types of colloids.
5. Explain different methods of preparation and purification of colloids.
6. Explain different purification methods and protection of colloids.

SHORT ESSAY 05 Marks

1. What are colloids? Classify the colloids. Differentiate between different types of colloids.
2. What are hydrophobic colloids? Describe any four preparation methods.
3. Discuss association colloids with examples.
4. Explain protection of colloids.
5. With the help of a neat labeled diagram explain methods for the purification of colloids.
6. Explain optical properties of colloids
7. Explain kinetic properties of colloids
8. Explain electrical properties of colloids.
9. Explain DME and its applications.
10. Explain the concept DLVO theory with energy curves. How this theory is applied in stabilizing the colloidal dispersion.
11. What are association colloids? Mention the mechanism of the formation of micelles with suitable example.

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SHORT ANSWERS 02 Marks

1. State and explain Hardy schulze rule
2. What is craft point?
3. Define and classify colloids.
4. What are association colloids?
5. What is gold number?
6. What is Tyndall effect
7. What is zeta potential? Give example.
8. What is nernst potential? Give example.
9. What is electro osmosis and electrophoresis?
10. What is streaming potential?
11. Explain the term colloid and mention its applications.
12. Explain condensation method of preparation of colloids.
13. What is meant by protective colloids? Mention one example for the same.
14. Explain Hofmeister series with example
15. List the effect of mixing different types of colloids.

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UNIT II: Rheology

LONG ESSAY 10 Marks

1. Define and explain Non Newtonian flow of liquids
2. Define Newtonian flow of liquids. Explain shear thinning system of liquids
3. Define Thixotropy. Explain different methods for its determination and give its application in pharmacy.
4. Define the mechanism of thixotropy and give its applications in pharmacy.
5. Define Viscosity. Classify different viscometers with examples. With the help of neat diagram explain the principle and working of any one single point viscometer.
6. Define Viscosity. Classify different viscometers with examples. With the help of neat diagram explain the principle and working of any one multipoint viscometer.
7. With the help of neat diagram explain the working principle of Cup & bob and Cone & plate viscometer with its advantages and disadvantages.

SHORT ESSAY 05 Marks

1. Explain the Newtonian system of flow with examples
2. Explain Plastic and dilatant flow of liquids
3. Discuss plastic and pseudoplastic system of flow
4. Explain shear thickening system with examples
5. Explain the mechanism of thixotropy with examples
6. Explain the methods to determine the thixotropic behavior of liquids.
7. Explain the principle of cup & bob viscometer
8. Explain the principle of Ostwald's viscometer
9. Explain the physical stability if suspension.
10. Explain the different methods to evaluate the stability of suspensions.

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SHORT ANSWERS 02 Marks

1. Define Rheology. Give any two applications
2. Describe a Rheogram and Rheopexy
3. What is yield value? Give its applications
4. Define dilatancy with examples
5. Define Newton's law of flow with equation
6. Give examples for plastic and pseudoplastic system of flow
7. What is Negative thixotropy
8. What are Bulges and Spurs
9. Explain Bulges with example.
10. Explain Spurs with example.
11. Define Viscosity along with its units of expressions
12. What is plug flow? How do you overcome it.
13. Define microemulsions and multiple emulsions
14. Draw flow curve for anti-thixotropy flow and explain its mechanism.
15. Explain the terms shear thinning and shear thickening system. Give example for each type of material.

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UNIT III: Coarse Dispersions

LONG ESSAY 10 Marks

1. Explain in detail interfacial properties of suspended particles.
2. Discuss formulation parameters of suspension.
3. Discuss in detail the theories of emulsion.
4. Define emulsion. Explain in detail rheological properties of emulsions.

SHORT ESSAY 05 Marks

1. Explain the formulation of emulsion by HLB method.
2. Classify emulsions with examples.
3. Write a note on identification tests of emulsions.
4. Settling of suspensions.
5. Write a note on preservation of emulsions.
6. Classify suspension with examples.
7. Differentiate between flocculated and deflocculated suspensions.
8. Write a note on phase equilibrium in coarse dispersions.

SHORT ANSWERS 02 Marks

1. Define suspensions
2. Define emulsions
3. Define phase inversions
4. Differentiate between creaming and cracking.
5. Stokes law
6. Sedimentation volume

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UNIT IV: Micromeritics

SHORT ANSWERS 02 Marks

1. State Edmundson's equation
2. State stokes law
3. Explain frequency distribution curve
4. Explain normal distribution curve
5. Explain percent log normal distribution curve
6. What is polydisperse system
7. What are equivalent diameters? Explain martins diameter
8. Explain ferret diameter and projected diameter
9. What is particle size distribution and particle number
10. What is quantasorb. Explain its principle
11. What are fundamental properties? Give examples
12. What is bulk density ant true density
13. Define angle of repose. Write its significance
14. What is void volume and porosity
15. What is granular density and true density
16. What is compressibility index
17. What is rate of flow of powder and explain carr's index
18. Give packaging arrangement of powders
19. Define volume-surface mean diameter. Give the equation for its calculation.
20. Define shape factor. What is its importance in micromeritics?
21. List four methods to improve the flow properties of granules and powders.
22. List the ways to characterize a powder

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SHORT ESSAY 05 Marks

1. How do you represent particle size distribution
2. Enumerate methods to determine the particle size. Explain any two methods to determine the particle size
3. With the help of neat diagram explain Andreason's pipette method to determine the particle size
4. With the help of neat diagram explain principle and working of coulter counter method to determine the particle size
5. What is specific surface area? How is it measured by air permeability method
6. What are derived properties of powders? Explain any two
7. Define angle of repose. Explain the method to determine the same
8. Explain porosity. Give its applications in pharmacy
9. Enumerate different methods of determination of true density and explain any one.
10. List different types of densities of powder/granules. Write the experimental method for the determination of any one of them.

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UNIT V: Drug stability

LONG ESSAY 10 Marks

1. Define first order reaction with suitable examples. Deduce an equation for the determination of rate constant, half life and shelf life for first order reaction kinetics.
2. Define Zero order reaction with suitable examples. Deduce an equation for the determination of rate constant, half life and shelf life for zero order reaction kinetics.
3. Explain chemical degradation of pharmaceutical compounds due to hydrolysis. Explain its preventive measures.
4. Explain chemical degradation of pharmaceutical compounds due to oxidation. Explain its preventive measures.
5. Explain chemical degradation of pharmaceutical compounds due to hydrolysis and oxidation.
6. Enumerate the different methods of determination of order of reaction. Explain any two methods in detail
7. Define stability studies. Explain in detail how the shelf life of pharmaceutical product is determined.
8. Give the objectives, salient features, methodology and limitations of accelerated stability studies.

SHORT ESSAY 05 Marks

1. Explain the factors influencing the rate of a reaction.
2. Explain the preventive measures for chemical degradation due to oxidation.
3. Explain the preventive measures for chemical degradation due to hydrolysis.
4. Explain the graphical and half life method for determination of order of reaction.
5. Define order of reaction. Explain the substitution method for determination of order of reaction.
6. Define order of reaction. Explain the differential method for determination of order of reaction.
7. Explain physical degradation of pharmaceuticals and its preventive measures.

8. Explain environmental factors affecting degradation of drugs.
9. Define Arrhenius plot and give its significance in calculation of shelf life.
10. Explain effect of temperature on rate of a reaction.
11. Explain methodology to calculate shelf life of a drug with graphical representation.

SHORT ANSWERS 02 Marks

1. Define rate and order of a reaction
2. Define molecularity of reaction with example
3. Define pseudo zero order reaction with example
4. Define pseudo first order reaction with example
5. Enlist different methods of determination of order of reaction
6. Define zero order reaction with suitable example
7. Define first order reaction with suitable example
8. Give expressions for rate constant and half life of zero and first order rate of a reaction
9. Give expressions for rate constant and half life of first and second order rate of a reaction
10. How are pharmaceuticals stabilized against hydrolysis
11. How are pharmaceuticals stabilized against oxidation
12. Define physical and chemical degradation with examples
13. Enlist environmental factors affecting degradation of drugs
14. Enlist various applications of chemical kinetics in pharmacy
15. Give Arrhenius equation and its significance
16. Define shelf life of a medicinal product
17. Draw Arrhenius plot and mention its use
18. Derive an expression for the time taken for 90% retention of potency for a zero order reaction
19. Derive an equation to show that half life is independent of the concentration in first order reaction
20. Explain why suspension mostly follow zero order
21. Define half-life. Explain concept of half life in first order reaction.

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Pharmacology-1

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Unit-1 General pharmacology

SHORT ESSAY 05 marks

1. What are the essential drugs and give examples?
2. What are the different route of drug administration with examples
3. Explain the tachyphylaxis with examples.
4. Explain the different membrane transport systems with example
5. What is enzyme induction and inhibition with examples?
6. What are the factors affecting the absorption of drugs?
7. What are the factor affecting the metabolism of drugs?
8. Write a note on metabolism of drugs by Phase I reaction
9. Write a note on metabolism of drugs by Phase II reaction.
10. Write in detail about different routes of drug elimination

SHORT ANSWERS 02 marks

1. Define agonist and give example
2. Define antagonist with examples
3. What do you mean by competitive antagonism?
4. Explain about the first and zero order kinetics of elimination.
5. Explain tolerance and dependence with examples.
6. Explain the significance of renal clearance.
7. Explain the significance of volume of distribution.
8. Write note son spare receptors
9. Write short notes on physiological antagonism
10. Write short note on non-competitive antagonism
11. Write note on idiosyncracy
12. Write note on addiction
13. Write note on tolerance
14. Write note on dependence
15. Write note on tachyphylaxis

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Unit-2 General Pharmacology

LONG ESSAY 10 marks

1. Write the principle and mechanism of drug action?
2. What are G-protein coupled receptors? Explain about the G-protein couple signal transduction mechanism.
3. What are enzyme linked receptor? Explain the tyrosine enzyme linked receptor signal transduction mechanism.
4. What are ion channel receptor? Explain any one ion channel receptor transduction mechanism.
5. What are the types of drug interactions? Explain the factor affecting the pharmacokinetics drug-drug interaction.
6. What are the different types of drug interactions? Explain the factors affecting the pharmacodynamics drug-drug interaction.
7. Explain the different preclinical evaluation phase in drug discovery.
8. Explain the different clinical evaluation phase in drug discovery.
9. Write a detailed note on mechanism of drug action.

SHORT ESSAY 05 marks

1. Explain the JAK-STAT binding receptor transduction mechanism.
2. What are the factor affecting the absorption of drug?
3. What are the transcription factor? How receptor regulate the transcription factor.
4. What are the factor modifying drug action?
5. What is adverse drug reactions? What are the types of adverse drug reaction.
6. What are the different steps involved of drug discovery?
7. Write the different phases of the clinical studies.
8. What do you mean by preclinical toxicity tests? Explain the types of preclinical toxicity test.
9. Write note on dose responses relationship
10. Define Synergism and write about time synergism.
11. Write detailed note on Dug -Drug interactions
12. Explain the pharmacokinetic drug-drug interactions.
13. Write short notes on pharmacovigilance
14. Explain the pharmacodynamic drug-drug interactions

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SHORT ANSWERS 02 marks

1. What are the types of signal transduction mechanism
2. What do you mean by drug receptor interactions?
3. What is significance of therapeutic index?
4. What are combined effects of drugs with examples?
5. What is dose response relationship with examples?
6. What are application of pharmacovigilance?
7. Write notes on ionchannel receptors
8. Write note on Tyrosine Kinase Receptors
9. Define pharmacovigilance.
10. Write short notes on drug receptor interaction.

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Unit-3 Pharmacology of peripheral nervous system.

LONG ESSAY 10 marks

1. Describe the neurohumoral transmission with examples.
2. Describe the neurohumoral transmission of adrenergic system.
3. Describe the neurohumoral transmission of cholinergic system
4. Write the classification of neurotransmitters with their functions.
5. Write the classification of parasympathomimetics. Explain the pharmacological actions, side effects and uses of acetylcholine.
6. Write the classification of parasympathomimetics. Explain the pharmacological actions, side effects and uses of atropine.
7. Write the classification of sympathomimetics. Explain the pharmacological actions, side effects and uses of adrenaline
8. Write the classification of sympathomimetics. Explain the pharmacological actions, side effects and uses of catecholamines
9. What are the non-selective beta blockers? Explain the pharmacological actions, side effects and uses of Non-selective beta- blockers.
10. What are the selective ß blockers? Explain the pharmacological actions, side effects and uses of any one selective beta blockers.
11. What are the ß1 blockers? Explain the pharmacological actions, side effects and uses of any one selective Beta1 blockers.
12. What are the beta 2 blocker? Explain the pharmacological actions, side effects and uses of any one selective B1 blockers.
13. What are the beta2 blocker. Explain the pharmacological actions, side effects and uses of any one selective Beta1 blockers.
14. Write the classification of neuromuscular blocking agents. Write the pharmacology of tubocurarine.
15. Explain the steps involved in neurohumoral transmission of ANS.

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SHORT ESSAY 05 marks

1. Write any five are the functions of the autonomic nervous system
2. Explain the organization of the autonomic nervous system?
3. Explain different neurotransmitters in peripheral nervous system.
4. Explain the pharmacology of MAO inhibitors.
5. Explain the pharmacology of COMT inhibitors.
6. Explain the pharmacology of indirectly -acting sympathomimetics.
7. Write the pharmacology of any one ß adrenergic antagonist.
8. Write the pharmacology of any one a adrenergic agonist
9. Write the pharmacology of dopamine.
10. Write the pharmacology of any one ß adrenergic antagonist.
11. Write the pharmacology of any one a adrenergic antagonist
12. Write the pharmacology of any one dopaminergic antagonist.
13. Write the pharmacology of norademnaline.
14. Write the pharmacology of physostigmin.
15. Write the pharmacology of pancuronium.
16. Write the pharmacology of succinylcholine.
17. Write a note on acetylcholinesterase inhibitors.
18. Write a note on skeletal muscle relaxants.
19. What are the local anesthetic agents. Write the pharmacology of any one local anesthetic agent.
20. Explain the pharmacological actions, side effects and uses of reserpine.
21. Explain the pharmacological actions, side effects and uses of propranolol.
22. Explain the pharmacological actions, side effects and uses of atenolol.
23. Explain the Dales principle and supersensitivity theory.

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SHORT ANSWERS 02 marks

1. Enlist the neurotransmitters.
2. Write the classification of sympathomimetics
3. Write the classification of sympatholytic agent.
4. Write the classification of parasympathomimetics agents.
5. Write the classification of parasympathetic agents.
6. Write the classification of skeletal muscle relaxants.
7. Write about the functions of ANS.
8. What are the drugs used in myasthenia gravis?
9. What are the drugs used in glaucoma?
10. What is the difference between men depolarization and depolarization types of neuromuscular blocker?
11. What is the use of epidural anesthesia?
12. What is the use of conduction block?
13. Explain the mechanism of action of local anesthetic agents
14. Explain the pharmacology of Procaine

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UNIT-IV Pharmacology of central nervous system

LONG ESSAY 10 marks

1. What are the different stages of general anesthetics
2. Write the Classification of Barbiturates. Explain the mechanism of action, pharmacology and uses of barbiturates.
3. Write the classification of skeletal muscle relaxant. Explain the pharmacology and uses of any one of Centraly acting muscle relaxant.
4. Write the classification of anti epileptics with examples. Explain the pharmacology, side effects and uses Of phenytoine.
5. Explain the steps involved in the neurohumoral transmission in the CNS
6. Explain the steps involved in the neurohumoral transmission of GABA
7. What are the stages of general anesthetics.
8. Explain the pharmacology, side effects and uses of alcohol
9. Write the Classification of Barbiturates. Explain the mechanisum of action pharmacology and uses of any one benzodiazepine..

SHORT ESSAY 05 marks

1. Write the mechanism of action and pharmacology of sodium valproate.
2. Write the pharmacology of gabapentin
3. What is the therapeutic application of Disulfiram.
4. What is the role of GABA in central nervous system.
5. What is the role of glycine in central nervous system.
6. Write the classification of antiepleptics with examples.
7. Write the classification of general anesthetics with examples. Explain the pharmacology of ketamine.

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UNIT-V Pharmacology of central nervous system

LONG ESSAY 10 marks

1. Write the classify of antidepressant drugs. Explain the pharmacology of Imipramine.
2. Write the pharmacology of chlorpromazine
3. Write about the pharmacology of morphine.
4. Write the classify opioid analgesics. Write the Pharmacology and adverse effects morphine
5. Write the classify CNS stimulants with examples. Explain the pharmacology amephetamine.

SHORT ESSAY 05 marks

1. Write brief notes on morphine antagonistic drugs
2. Write notes on morphine poisoning
3. Write notes on nootropic agents
4. Write note on drugs used in Alzheimers disease
5. Write about the pharmacology of 1-dopa
6. Write the classify of psychopharmacological agents with examples.
7. Explain about drug tolerance
8. What are the advantages of selective serotonin reuptake inhibitors
9. What is difference between Alzhermer's diseases and dementia
10. Describe the mechanism of action, therapeutic uses and adverse effect of benzodiazepins.
11. Write the classification of anti-parkinsonism drugs. Explain the pharmacology of L-Dopa.

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SHORT ANSWERS 02 marks

1. Define drug tolerance
2. What are the withdrawal symptoms of antidepressants
3. What is the therapeutic uses of Nalorphine
4. Define drug abuse
5. Define drug addiction
6. What is the therapeutic uses Naloxone
7. Write the classify opioid analgesics with examples
8. Write the classify CNS stimulant drugs with examples
9. Write the classify anti-Parkinson's agents with examples
10. Write the classify hallucinogenic agents with examples
11. Write the classify anti-anxiety agents with examples
12. Write the classify antidepressant drugs with examples

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Pharmacognosy and Phytochemistry-1

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UNIT-1

LONG ESSAYS 10 marks

1. Explain the exentric factors affecting the cultivation of Medicinal plants.
2. Define the terms ‘polyploidy’ and ‘mutation’. Explain their applications.
3. Define polyploidy and Hybridization. Explain their applications.

SHORT ESSAYS 5 marks

1. Mention the plant hormones and give their applications.
2. Conservation of medicinal plants.
3. Collection and processing of crude drugs with examples.
4. Types of soil and soil fertility.
5. Explain different types of pests and methods used to control them.
6. Storage of crude drugs.
7. Drying methods for crude drugs
8. Define Mutation and give its significance.
9. Explain the methods of cultivation with merits and demerits.

SHORT ANSWERS 2marks

1. Define Garbling in processing of crude drugs.
2. Uses of Gibberllic acid.
3. Types and uses of Auxins as plant growth regulators.
4. Role of Cytokinins as plant growth regulator.
5. What is mulching.
6. Define hybridization and mutation,
7. Define mutation and polyploidy.
8. Coppicing and felling method.
9. Drying methods of crude drugs.
10. Methods of collection of barks.
11. Edaphic factors.
12. What is budding and layering.
13. Biofertilizers.

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Unit-II

Long essays 10 marks

1. Explain the exentric factors affecting the cultivation of Medicinal plants.
2. Define the terms ‘polyploidy’ and ‘mutation’. Explain their applications.
3. Define polyploidy and Hybridization. Explain their applications.

Short essays 5 marks

1. Mention the plant hormones and give their applications.
2. Conservation of medicinal plants.
3. Collection and processing of crude drugs with examples.
4. Types of soil and soil fertility.
5. Explain different types of pests and methods used to control them.
6. Storage of crude drugs.
7. Drying methods for crude drugs
8. Define Mutation and give its significance.
9. Explain the methods of cultivation with merits and demerits.

Short Answers.

1. Define Garbling in processing of crude drugs.
2. Uses of Gibberllic acid.
3. Types and uses of Auxins as plant growth regulators.
4. Role of Cytokinins as plant growth regulator.
5. What is mulching.
6. Define hybridization and mutation,
7. Define mutation and polyploidy.
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13. Biofertilizers

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UNIT III

LONG ESSAYS 10 marks

1. Applications of Plant tissue culture for production of secondary metabolites.
2. General nutritional requirements of Plant tissue culture.
3. Different types plant tissue cultures.
4. Write a note on edible vaccines.
5. Explain the growth curve of Plant tissue culture.

SHORT ESSAYS

1. Define totipotency.
2. Organogenesis.
3. Surface sterilization of explant.
4. Growth index.
5. Micro nutritional requirements of PTC.
6. Advantages of PTC.
7. Types of cell suspension cultures.
8. Applications of cell suspension cultures.
10. What are edible vaccines.
11. What is micropropagation.
12. Define explan
13. What is callus?
14. What are the sources of Carbon and Nitrogen in PTC?

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UNIT IV

LONG ESSAYS 10 marks

1. Elaborate on Ayurveda and Homeopathic system of Medicine.
2. Explain the Unani, Siddha and Chinese System of Medicine.
3. Elaborate on Ayurveda and Unani system of Medicine.
4. Define, classify and general chemical tests for Alkaloids.
5. Define, classify and give the properties for Glycosides.
6. Define, classify and write the chemical tests for Tannins.
7. Define, classify and write the Properties of Volatile oils.
8. Define and Classify Resins and Volatile oils.

LONG ANSWERS 05 marks

1. Classify Resins with examples.
2. Explain the chemical test for Anthraquinone and Cardiac glycosides.
3. Short note on flavonoids.
4. Discuss the principle involved in Ayurvedic system of Medicine.
5. Short note on Homeopathic system of medicine.
6. Short note on siddha and Unani System of medicine.
7. Classify Volatile oils.

SHORT ANSWERS 02 marks

1. Citrus bioflavonoids.
2. Shinoda test.
3. Keller killiani test.
4. Test for tropane alkaloids.
5. Resin combinations.
6. Gold beater’s skin fest.
7. General test for alkaloids.
8. Borntrager’s test.
9. Test for Steroids.
10. Terpeneless volatile oils.
11. Differentiate Cardenólides from Bufadienolides.
12. General chemical tests for tannins.

UNIT- V

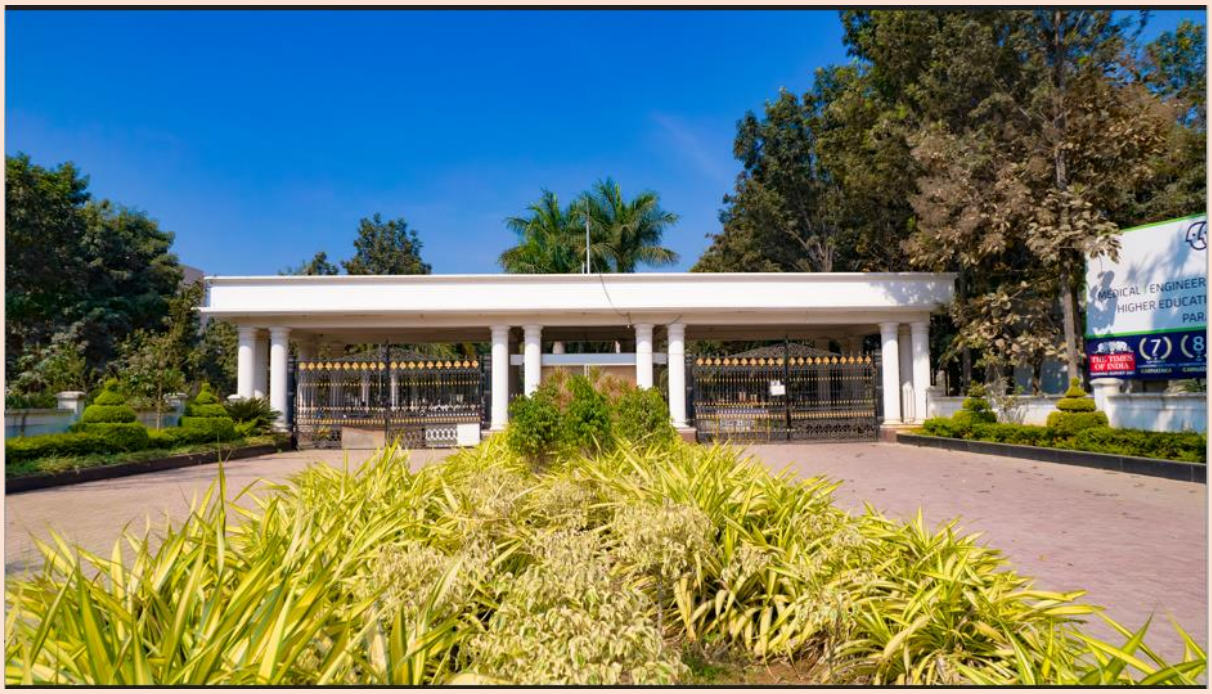
SHORTS ESSAYS 05 marks

1. Give the B.S, Chemical nature and uses of Cotton and Jute.
2. Write the B.S, Chemical nature and uses of Jute and Hemp.
3. Write the short note on Natural allergens.
4. Hallucinogens and teratogens.
5. Give the Biological source, Chemistry and method of preparation of Agar.
6. Describe the chemistry of Lipids.
7. Give the Biological source, Chemistry and method of preparation of Beeswax.
8. Give the Biological source, Chemistry and method of preparation of Urokinase.
9. Write the preparation, storage and therapeutic uses of Castor oil.
10. Classify medicinal agents from Marine sources with examples.
11. Give the chemical tests for Acacia and Agar.
12. Give the chemical tests for Gelatin and Tragacanth.
13. Give the Biological source, Chemistry and method of preparation of Papain.
14. Give the Biological source, Chemistry and method of preparation of Bromelain
15. Give the Biological source, Chemistry and method of preparation of streptokinase.
16. Give the Biological source, Chemistry and method of preparation of seratiopeptidase.
17. Give the Biological source, Chemistry and method of preparation of casein.
18. Write a short note on Chaulmoogra oil and wool fat
19. Give the Biological source, Preparation and uses of Honey.
20. Quantitative analysis of fixed oils.

SHORT ANSWERS 02 marks

1. Feih's test.
2. Give the Biological source, chemistry of an antileprotic drug.
3. Differentiate Agar from Acacia by chemical tests.
4. Define Primary and secondary metabolites.
5. Mention four proteolytic enzymes.
6. Confirmatory tests for Tragacanth.
7. Confirmatory tests for Gelatin.

8. Tests for Castor oil.
9. Teraiogens.
10. Hallucinogens.
11. Name any four anticancer marine drugs.
12. Define proteins and enzymes.
13. Structure of Chaulmoogric acid.
14. Define Acid value.
15. Define Saponification value.
16. Define Rancidity.
17. Name any four anti-inflammatory agents from Marine source.
18. Biological source and uses of Papain.
19. Method of detection of Honey.
20. Tests for Mucilage.
21. Differentiate fats and fixed oils.



Vision and Mission of the Institution

Vision

The East Point College of Pharmacy aspires to be a globally acclaimed institution, **recognized** for **excellence in** pharmaceutical education, research and nurturing students for **holistic development.**

Mission

M1 Create pharmacy graduates through **quality education**

M2 Promote innovation, **creativity**, and excellence **in teaching**, learning, and **research**

M3 **Inspire** integrity, teamwork, critical thinking**, personal** development, and ethics in **students** and lay **the** foundation for lifelong learning

M4 **Serve** the **healthcare, technological, scientific**, and **economic** needs of then **society**.