

Code No: 244AB

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**B. Pharmacy II Year II Semester Examinations, March- 2022****MEDICINAL CHEMISTRY – I****Time: 3hours****Max.Marks:75****Answer any five questions****All questions carry equal marks**

- - -

1. Explain the role of hydrogen binding, partition coefficient, ionization and chelation in drug action. [15]
2. Explain the importance of phase I and phase II reactions in drug metabolism with example. [15]
- 3.a) What are beta receptor agonists? Give their clinical applications.
b) Explain the structure activity relationship (SAR) of sympathomimetics.
c) Outline the biosynthesis and catabolism of adrenergic neurotransmitters. [5+5+5]
4. Classify adrenergic antagonists with examples. Explain the structure activity relationship of beta blockers. Outline the synthesis of tolazoline. [15]
- 5.a) Explain the structure activity relationship (SAR) of parasympathomimetic agents
b) Outline the biosynthesis and catabolism of acetylcholine.
c) Explain the synthesis of Dicyclomine hydrochloride. [5+5+5]
6. Define and classify sedatives and hypnotics with examples. Explain the SAR of benzothiazepines. Write the structure, uses and synthesis of chlordiazepoxide. [15]
- 7.a) Give the synthesis and mechanisms of action of barbital.
b) Explain the synthesis of Diazepam.
c) Explain the SAR of barbiturates. [5+5+5]
- 8.a) Classify NSAIDS with examples. Write the synthesis of ibuprofen.
b) Write a note on narcotic antagonists with examples
c) Explain the SAR of morphine analogues. [5+5+5]

--ooOoo--

R17

Code No: 244AD

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Pharmacy II Year II Semester Examinations, March- 2022

PHARMACOLOGY - I

Time: 3hours

Max.Marks:75

**Answer any five questions
All questions carry equal marks**

1. Define metabolism. Explain in detail about enzyme induction and enzyme inhibition with suitable examples. [15]
2. Mention different routes of administration. Explain about advantages and disadvantages of parenteral routes of administration. [15]
3. Illustrate the mechanism of action of drugs acting on G – Protein Coupled receptors. [15]
4. Describe dose response relationship. Add a note on combined effects of drugs. [15]
5. Classify antiadrenergic drugs. Describe in detail pharmacology of Beta blockers. [15]
6. Enumerate the steps involved in neurohumoral transmission. Add a note on cholinergic neurotransmission. [15]
7. Write short notes on:
a) Neurotransmission of serotonin
b) Pre-anesthetic medication. [8+7]
8. Explain in brief mechanism of action, adverse effects and drug interactions of Levodopa. [15]

--ooOoo--

Code No: 244AA

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Pharmacy II Year II Semester Examinations, March- 2022

PHARMACEUTICAL ORGANIC CHEMISTRY – III

Time: 3hours

Max.Marks:75

Answer any five questions

All questions carry equal marks

- 1.a) Explain the terms diastereoisomer, mesomers and tautomers with examples.
b) How is the configuration of geometric isomers determined?
c) Define the terms racemic mixture and resolution. Write a note on resolution. [5+5+5]
- 2.a) Define optical isomerism. Explain elements of symmetry in molecules with examples.
b) Write a note on relative configuration. [9+6]
3. Explain the isomers of Ethane, n-Butane and Cyclohexane with energy level diagram. Add a note on their stability. [15]
- 4.a) Explain E and Z system of naming geometrical isomers and determination of their configuration
b) Differentiate between stereoselective and stereospecific reactions with examples. [8+7]
- 5.a) Name some important commonly seen heterocyclic rings. Draw their structures.
b) Outline any two synthesis and chemical reactions of pyrrole. [8+7]
6. Outline the synthesis, reactions, and medicinal uses of furan and thiophene. [15]
- 7.a) Explain the synthesis, chemical reaction and uses imidazole and thiazole.
b) Illustrate the synthesis and medicinal uses of pyrimidine. [8+7]
8. Mention the mechanism of reaction and applications of Oppenauer-oxidation reaction, Beckmann's rearrangement, and Claisen-Schmidt condensation. [15]

--ooOoo--

Code No: 244AC

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Pharmacy II Year II Semester Examinations, March- 2022

PHYSICAL PHARMACEUTICS - II

Time: 3hours

Max.Marks:75

Answer any five questions
All questions carry equal marks

- - -

- 1.a) Define oxidation and list out four antioxidants used in pharmaceutical products?
b) List out the various factors influencing the chemical degradation of pharmaceutical products. Discuss about the dielectric constant and temperature.
c) Write the Arrhenius equation and elaborate the terms therein. [4+8+3]
- 2.a) Give the reasons for the following with reference to degradation and stability:
i) Preservation of drugs in air tight containers.
ii) Storing medicines in colored/ambered bottles.
b) Write role of ionic strength on reaction rate.
c) Discuss in brief about specific acid base catalysis. [6+4+5]
- 3.a) What are the limitations of cup and bob viscometer? Suggest alternative method for preventing the same along with its principle and working.
b) Write the pharmaceutical applications of a thixotropic substances.
c) Write a note on viscoelastic measurement based on the mechanical properties of materials. [7+3+5]
- 4.a) Define kinematic viscosity and rheopexy?
b) Discuss the principle and working of falling sphere viscometer.
c) A formulation scientist has developed a new pain killer ointment and subjected the same to rheological analysis at 25 degrees using a cone and plate viscometer. The instrument has a constant of 'C' of 6.277 cm^{-3} . AT a cone velocity of 100rpm the torque reading was 1285.0d7nes.cm. The torque (Tf) at the shearing stress was found to be 65 dynes.cm. Calculate the plastic viscosity at 25 degrees. [4+7+4]
- 5.a) Define emulsion? Discuss in detail about the formulation of the same.
b) With the help of a diagram discuss in detail about the DLVO theory.
c) What do you understand by Brownian movement? [5+8+2]
- 6.a) Discuss about the various sedimentation parameters along with the equations.
b) Calculate the sedimentation volume of 7%(w/v) antacid suspension in water. The initial volume is 100 ml and the final volume is 42 ml. If the degree of flocculation is 1.4, calculate the deflocculated sedimentation volume.
c) Write a note on Coalescences and phase inversion with reference to emulsions. [6+4+5]

- 7.a) Write a note on surface free energy.
b) Discuss one method for used for the determination of surface tension along with its advantages and disadvantages.
c) What do you understand about the concept of insoluble monolayer and film balance? [3+6+6]
- 8.a) How colloidal dispersion differ from coarse dispersions.
b) Discuss in detail about the association colloids.
c) List out the various optical properties of colloids. Write about light scattering. [4+6+5]

--ooOoo--

Used papers March 22

R17

Code No: 243AB

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Pharmacy II Year I Semester Examinations, September-2021

PHYSICAL PHARMACEUTICS - I

Time: 3hours

Max.Marks:75

**Answer any five questions
All questions carry equal marks**

- 1.a) Discuss the determination of dissociation constant.
- b) Discuss the applications of dissociation constant. [8+7]

- 2.a) Discuss the determination of optical rotation.
- b) Discuss the applications of optical rotation. [8+7]

- 3.a) Discuss quantitative approach to the factors influencing solubility of drugs.
- b) Write notes on fractional distillation. [8+7]

- 4.a) Write notes on solubility of gas in liquids.
- b) Discuss azeotropic mixtures in detail. [8+7]

- 5.a) Write notes on angle of repose.
- b) Write notes on compressibility index. [7+8]

- 6.a) Write notes on adsorption.
- b) Write notes on bulkiness. [8+7]

- 7.a) Write notes on inclusion complexation.
- b) Discuss the applications of complexation. [8+7]

- 8.a) Discuss pH determination.
- b) Write applications of buffers. [7+8]

--ooOoo--