

Code No: 6401AD**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****M. Pharmacy I Semester Examinations, April-2022****MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES****(Pharmacology)****Time: 3 hours****Max.Marks:75**

Answer any five questions
All questions carry equal marks

1. Write the theory, procedure of detection of compounds of thin layer chromatography. [15]
2. Discuss about Solid-phase extraction techniques. [15]
3. Write the principle and instrumentation of HPLC with a neat block diagram and describe the functions of various parts of it. [15]
4. Explain the pumps and detectors used in HPLC. [15]
5. Write a note on
 - a) Single beam UV-visible spectroscopy.
 - b) Chromophore and Auxochrome.
 - c) Wood-fishers rule.[5+5+5]
6. Explain the Instrumentation of IR-Spectroscopy with a neat labeled diagram. [15]
7. Explain the fragmentation process involved in mass spectroscopy. Write about interpretation of Mass spectra. [15]
- 8.a) Explain spin-spin coupling reactions and splitting of signals with examples.
b) Explain about 2D-NMR. [9+6]

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Code No: 6403AA**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****M. Pharmacy I Semester Examinations, April-2022****ADVANCED PHYSICAL PHARMACEUTICS****(Pharmaceutics)****Time: 3hours****Max.Marks:75****Answer any five questions****All questions carry equal marks****- - -**

- 1.a) Explain the characterization of polymers for their mechanical properties.
- b) Write about mechanisms of biodegradation of polymers and give suitable examples of biodegradable polymers and their applications. [7+8]
- 2.a) Discuss the role of polymers in the design of transdermal drug delivery systems with suitable examples.
- b) Explain the thermodynamics of polymer solutions. [8+7]
- 3.a) Give the differences between compression and consolidation and decompression.
- b) Explain the distribution of forces during compaction. [6+9]
- 4.a) Discuss the significance of force-volume relationship.
- b) Explain the working of strain gauges. [8+7]
- 5.a) Enumerate the factors influencing the stability of drug products with suitable examples.
- b) Write about physical stability testing of disperse systems. [9+6]
- 6.a) Explain the prediction of shelf life using temperature as stress condition. Mention its limitations.
- b) Give the differences between zero and first order kinetics. [9+6]
- 7.a) Define dilatant and thixotropic systems. Explain their applications in disperse systems with suitable examples.
- b) Give the principle and applications of differential scanning calorimetry. [8+7]
- 8.a) Discuss the role of surfactants and complexation in solubility with suitable examples and give their applications in formulation development.
- b) With the help of suitable mathematical models explain diffusion mechanism. [8+7]

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

M. Pharmacy I Semester Examinations, April-2022

DRUG REGULATORY AFFAIRS

(Pharmaceutics)

Time: 3hours

Max.Marks:75

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

1. Write a detailed note on the regulatory aspects that affect drug product design. Add a note on its importance. [15]
2. Write a detailed note on the regulatory aspects that affect distribution of drugs in India. Add a note on its role and importance. [15]
3. Explain in detail the objectives, scope, importance and role of Drug and cosmetics Act. [15]
4. Write a detailed note on the following:
a) Recent amendments to Drug and Cosmetic Act and other relevant rules.
b) Loan licensing [10+5]
5. Explain the following:
a) Hatch Waxmann Act
b) Bolar Provisions [8+7]
6. Write a detailed study of regulatory aspects that affect drug product design, manufacture and distribution in a developed country such as USA. [15]
7. Write a detailed note on the quality, safety and legislation for cosmetic products and herbal products. [15]
8. Write a detailed note on the following:
a) U.S. Food and Drug administration USDMF
b) Canada Therapeutic Product Directorate DMF. [7+8]

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Code No: 6401AA**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****M. Pharmacy I Semester Examinations, April-2022****ADVANCED PHARMACOLOGY-I****(Pharmacology)****Time: 3hours****Max.Marks:75**

Answer any five questions
All questions carry equal marks

1. Classify receptor families. Describe their structure and signal transduction mechanisms? Write a note on linear compartment models. [15]
2. Define bioavailability and bioequivalence. Describe the factors affecting drug absorption, distribution and metabolism. [15]
3. Mention the difference between autonomic and somatic nerves. Describe the preganglionic and postganglionic neurotransmitters in autonomic nervous system. Write a note on parasympathomimetics. [15]
4. Describe various neurotransmitters of CNS. Write a note on Non-adrenergic and non-cholinergic neuro transmission. [15]
5. Classify and describe the pharmacology of general and local anesthetics. [15]
6. Classify narcotic and non-narcotic analgesic. Write their mechanism of actions, adverse effects and therapeutic uses. [15]
7. Classify diuretics. Write their mechanism of actions, adverse effects and therapeutic uses. Write a note on fibrinolytic agents. [15]
8. Describe the pharmacology of histamine and serotonin. Write a note on opioid autacoids. [15]

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Code No: 6402AJ**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****M. Pharmacy I Semester Examinations, January - 2020****DRUG DISCOVERY AND DESIGN****(Pharmaceutical Chemistry)****Time: 3hours****Max.Marks:75****Note:** This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A.

Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART - A**5 × 5 Marks = 25**

- 1.a) Discuss about the automated methods of conformational search. [5]
- b) Write in detail about Pharmacophore mapping. [5]
- c) Explain about different designs of drugs for the HIV-protease. [5]
- d) Write about the advantages and disadvantages of Flex-X and Flex-S. [5]
- e) Explain about the design techniques used in predicting the functional components of cavities. [5]

PART - B**5 ×10 Marks = 50**

2. Discuss in detail about Molecular graphics. [10]
- OR**
3. Explain about the different softwares which are used in the molecular modeling. [10]
4. Discuss about the methods of conformational search used in pharmacophore mapping. [10]
- OR**
5. Explain about the GASP with practical examples. [10]
6. Discuss about concept of enzymes in drug design. [10]
- OR**
7. Discuss about concept of receptors in drug design. [10]
- 8.a) Explain about the Autodock with successful examples. [10]
- b) Write about the dynamics of drugs. [10]
- OR**
9. Describe about the molecular dynamics in performing docking. [10]
10. Discuss about Informatics methods in drug design. [10]
- OR**
11. Write a note on
 - a) Chemoinformatics
 - b) Active site analysis structure. [10]

Code No: 6402AB**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****M. Pharmacy I Semester Examinations, October/November-2020****ADVANCED MEDICINAL CHEMISTRY-I****(Pharmaceutical Chemistry)****Time: 2hours****Max.Marks:75**

Answer any five questions.
All questions carry equal marks

1. Explain in detail target structures. [15]
2. Explain the modern methods of Drug Discovery. [15]
3. Explain in detail Free Wilson Analysis. [15]
4. Write about lipophilic and steric parameter involved in QSAR. [15]
5. Comment on structure based drug design with suitable example. [15]
6. Explain homology modeling. [15]
7. Explain the natural leads for development in antibiotics. [15]
8. Write notes on Phosphorylase inhibitors, and Aldose Reductase Inhibitors with examples. [15]

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