

Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary. Answer all questions

LONG ESSAY (Answer any TWO)**2 X 20 = 40 Marks**

1. Write about basic principle and instrumentation in mass spectrometry. Write in detail about different types of ionizer used in mass spectrometry. Comment on time of flight analyzers.
2. Define chemical shift outline with a neat sketch about NMR instrumentation. Explain about FT-NMR
3. What are the different types of columns used in HPLC. Explain HPTLC

SHORT ESSAY (Answer any FIVE)**5 X 10 = 50 Marks**

4. Write in detail about double beam UV spectroscopy
5. Explain construction and working of different types of detectors in IR spectrometers
6. Write mass fragmentation patterns and PMR spectral features for Benzyl Benzoate
7. Write factors affecting migration of ions in electrophoresis
8. State Bragg's law. Explain the application of X-ray diffraction
9. Explain the theory and application of GC

SHORT NOTES**2 X 5 = 10 Marks**

10. Test of significance
11. Thesis writing

* * * * *

Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary. Answer all questions

LONG ESSAY (Answer any TWO)**2 X 20 = 40 Marks**

1.
 - a) Write in detail about Inductive effect with its applications
 - b) Distinguish between SN1 and SN2 reaction in all aspects with reaction mechanism
2.
 - a) Define catalysis. Explain the importance of homogenous catalysis in the manufacture of drugs
 - b) Write the phase transfer catalysis in epoxide formation from aldehyde
3. Write the mechanism and synthetic applications for the followings:
 - a) Oppenauer oxidation
 - b) Claisen condensation

SHORT ESSAY (Answer any FIVE)**5 X 10 = 50 Marks**

4. Give the synthesis and an example of medicinal molecule belonging to the following heterocyclic ring system
 - a) Morpholine (b) Phenothiazine (c) Thiazoles (d) Benzthiadiazole
5. Add a note on resolution of racemic modifications
6. Formulate the reaction of hydrogen bromide with propane both in absence and in presence of peroxides. Justify the formation of the products in each case
7. Write the mechanism and any two synthetic applications of active methylene groups
8. How tetrazole is prepared? Name two drugs with structures possessing purine ring and indicate their therapeutic use
9. Add a note on carbonium ions as reactive intermediates

SHORT NOTES**2 X 5 = 10 Marks**

10. Enzymatic separation
11. Intra molecular nucleophilic attack in chiral drugs

* * * * *

Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary. Answer all questions

LONG ESSAY (Answer any TWO)**2 X 20 = 40 Marks**

1.
 - a) Name the drugs produced by semi synthetic method with examples
 - b) Describe the Fermentation process for the production of a drug
 - c) Explain the Tissue culture technique with example
2.
 - a) Explain in detail the capital venture
 - b) Describe the plant design, layout and Construction of a Bulk drug plant
3.
 - a) Explain the terms "Loan License" and "Repacking on Demand" and the requirements to get the license
 - b) Give the structure of National Drug authority and describe it functions.

SHORT ESSAY (Answer any FIVE)**5 X 10 = 50 Marks**

4. Add note on Import and Export policies for Bulk drugs
5. Explain the concept of Multipurpose Bulk drug production plant
6. Describe the safe operating procedures of the chemical plant
7. Write the flow sheet and reaction sequences for the production of Diazepam
8. Write the reaction flow diagram and production of Metoprolol
9. Explain the commercial production of Vincristine

SHORT NOTES**2 X 5 = 10 Marks**

10. Explain the term "Exim policy"
11. Write a short note on "Combinatorial chemistry"

* * * * *

Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary. Answer all questions

LONG ESSAY (Answer any TWO)**2 X 20 = 40 Marks**

1. a) How do you handle the complaints received? Detail its evolution and discuss the rectification,
b) Quality audit of manufacturing plant
c) Discuss the phases of certification of ISO 9000 series.
2. Explain in detail about the responsibilities and work discipline of the personnel working in an industry. Illustrate with a neat diagram the layout of a bulk drug plant.
3. Explain in detail about the importance of validation in a pharmaceutical industry. Briefly describe the purpose of documentation to get US FDA approval.

SHORT ESSAY (Answer any FIVE)**5 X 10 = 50 Marks**

4. Describe requirements for animal testing facility
5. What are the differences present between FDA guidelines and schedule M proposed by Govt. of India?
6. Explain about Good ware housing practice.
7. Briefly explain the following
a) Patent act b) Monopoly restriction act.
8. Explain about the application of computer in GMP and GLP.
9. What is statutory certificate of suitability? Explain the trade mark act.

SHORT NOTES**2 X 5 = 10 Marks**

10. Write short notes on auditing.
11. Briefly describe about ISO 9000-9004 certifications

* * * * *