QUESTION BANK OF PHARMACEUTICAL ANALYSISIII [BOP- 475]

UNIT I

Short answer question.

1 The range of wavelength h of U.V. visible spectrometer.
2 Define lambda max.
3 Law governs absorption in U.V. spectroscopy.
4 Detector used in U.V. spectrometer
5 Light source used in U.V. and visible spectroscopy.
6 Define auxochrome and chromophore with example.
7 Bathochromic shift and hypsochromic shift.
8 Which material Sample cell is made up of?
9 The value of lambda max for homoannular and hetroannular ring according to woodward-fieser rule.
10 Define beer -lambert law and give formula of beer lambert law.
11 Write the name of different transition used in U.V. spectrometer.
12 Give the example of π-π* transition and n-π transition.
13 Which transition has lowest energy in U.V. spectrometer?
14 Write the name of filter used in visible spectrometer.
15 Range of mid I.R.spectroscopy in (wave number cm^{-1})
16 Infrared spectroscopy provides valuable information about.
17 A strong signal at 1700 c m^{-1} in an IR spectrum indicates the presence of group.
18 A strong signal at 3400 c m^{-1} in an IR spectrum indicates the presence of group
19 Define scissoring. Rocking, wagging, and twisting.
20 Effect of hydrogen bonding in I.R. absorption.
21 Define Fermi resonance, coupled vibration. Asymmetrical stretching.
22 What is finger print region and functional group region?
23 How aldehyde and ketone Stretching differentiated from I.R.
24 Solvent used in I.R. Spectroscopy.
25 Detector used in I.R. Spectroscopy.
26 Which material Sample cell is made up in I.R.?
27 Sample handling technique used in I.R. Spectroscopy.
28 Light source used in I.R. Spectroscopy.
29- How can you differentiated acid from alcohol AND primary secondary amine and tertiary amine from I.R.?
30. Deviation from beer and lamberts law.

Long answer question.

1 Discus the type of electronic transition in U.V. spectroscopy.

2-Explain different law governing to absorption.

3- Define auxochrome and chromophore, bathochromic shift, hypsochromic shift.

4-Instrumentation in U.V. spectroscopy.

5- Draw labelled diagram double beam U.V. spectrophotometer.

6- Describe the sample handling in I.R. spectroscopy.

7-Difference between dispersive I.R and F.T.I.R.

8-Explain different mode of molecular vibration.

9-Discus F.T.I.R. (interferometer) and application of infra-red spectroscopy.

UNIT II

Short answer question

1-Define chemical shift. and unit of chemical shift.

2- What is shielding and deshielding.

3- The value of chemical shift is lies in between.

4-Write the name of internal standard used in NMR spectroscopy.

5- What is α spin state β spin state?

6-Define spin-spin coupling and spin-spin splitting.

7- Effect of electronegative atom in chemical shift.

8- Solvent used in N.M.R. Spectroscopy.

9- N.M.R and C-13 spectroscopy provides valuable information about.

10- Which nuclei show NMR spectroscopy?

11- What is processional frequency?

12- Define coupling constant. And gyromagnetic ration.

13. What is anisotropic effect, chemical equivalence proton and magnetically equivalence proton?

14- Unit of magnetic field and applied magnetics value and radiofrequency value in NMR.

Long answer question

1- Discus the theory and Pharmaceutical application of 1_H-NMR spectroscopy.
2- EXPLAIN the process of chemical shift with example. What is shielding and deshielding.
3- Write a note on C-13 spectroscopy. And role of solvent in NMR.
4- Discus the Parameter of NMR Spectra.
5- Instrumentation in N.M. R. spectroscopy.
6- Write a note on spin-spin coupling with suitable example. Given the nature, type and no. of peaks in NMR Spectra of Ethanol and benzaldehyde.
7- Discuss the reason behind taking a TMS as reference compound.

UNIT III

Short answer question

1 What is base peak?

2- What is parent peak?

3- What is (M+1) and (M+2) peak.

4-What is the different type of peak obtained in mass spectrometer.

5- How is mass and radius of ion path related?

6- What is the different type of ionization technique in mass spectrometer?

7-Define Mac. Leferty rearrangement.

8- Different technique of mass ionization. Which technique used for fragmentation of macromolecules.

9- What value of base peak of ethanol and benzaldehyde.

10- Which type of cleavage occurs during mass fragmentation?

11- Importance of metastable ion in mass spectroscopy.

Long answer question

1- Discus the various molecular fragmentation patterns of molecules with mass spectrometer.

2- What is principle behind mass spectrometry?

3- Discuss the instrumentation and application of Mass spectroscopy

4- Give the following answer in short:

(i) Mc-Lafferty rearrangement

(ii) Molecular ion peak

(iii) Fragmentation pattern of ethanol and bezaldehyde.

(iv) Formation of tropylium ion in mass.

5- Explain MALDI and FAB.

UNIT IV

Short answer question

1-What is singlet state, doublet and triplet state.

2-Difference between fluorescence and phosphorescence.

3-What is the use of primary and secondary filter.

4 What is quenching.

5- Which is the source of light in fluorimeter?

6- What is self-quenching? Give example.

7- Which is the source of light used in atomic absorption spectroscopy..

8- Flame photometer based on the principle of absorption/emission.

9- Which burner used in flame photometer.

10- Difference between atomic absorption spectroscopy and atomic emission spectroscopy.

11- Which combination used for obtained maximum temperature in flame.

12- Which of electron microscope which is used to study internal structure of cells is? (**TEM)**

13- Electrons of Scanning Electron Microscope are reflected through.(**metal plate)**

14- Object can be magnified under electron microscope about.(**300000 times**)

15- Scanning electron microscopy (SEM) is best used to study (**Surface Morphology**)

16- The technique used for the separation of charged molecules.

17- In gel electrophoresis DNA molecules migrates towards. (**ANODE)**

18- The most commonly gel used in gel electrophoresis.

19- Explain the term luminance.

20-SEM is done for nonliving object. T/F.

21- Part of SEM and TEM.

Long answer question

1 Write about the Theory and Application of Flame photometry.

2 Discuss about the detectors used in Emission Photometry.

3 What are the advantages and disadvantages of Absorption Spectroscopy?

4 Explain the effect of intermolecular and intermolecular hydrogen bonding on fluorescence intensity.

5 Discuss the theory of Fluorimetry in brief.

6 Describe quenching effect. Explain the various factor for quenching.

7 Explain the role of Atomizers. And describe the limitations of AAS.

8 Discus the Theory and instrumentation of Atomic absorption spectroscopy.

9 Explain the principle of fluorescence and phosphorescence.

10 .write a notes on gel electrophoresis.

11 Principle and instrumentation of scanning electron microscope.

12 Describe the construction and working of transmission electron microscope.

13-What are the interference in AAS.

UNIT V

Short answer question

1- Define quality control.

2- Type of validation.

3- ISO stands for.

4- What is BMR and master formula record?

5-What is audit? AND their type.

Long answer question

1 Basic difference between quality control and quality assurance.

2- Describe audit and their type.

3- Write notes On ISO 9000 series.

4- Write notes On BMR and master formula record.

5- Discus validation parameter and protocol for process validation.