DEPTH OF BIOLOGY

B. PHARMACY

7 SEM IMPORTANT QUESTIONS

INSTRUMENTAL METHOD OF ANALYSIS

UNIT –I **10 Hours**

UV Visible spectroscopy

Electronic transitions, chromophores, auxochromes, spectral shifts, solvent effect on absorption spectra, Beer and Lambert's law, Derivation and deviations.

Instrumentation - Sources of radiation, wavelength selectors, sample cells, detectors- Photo tube, Photomultiplier tube, Photo voltaic cell, Silicon Photodiode.

Applications - Spectrophotometric titrations, Single component and multi component analysis

Fluorimetry

Theory, Concepts of singlet, doublet and triplet electronic states, internal and external conversions, factors affecting fluorescence, quenching, instrumentation and applications

DEPTH OF BIOLOGY

10 MARKS

Q1. Describe various Electronic transition with the help of energy orbital diagram ?

Q2. Describe flourimetry it's Theory , concept and factor affecting fluorescence?

Q3. Explain spectrophotometry Titration and also describe single / multicomponent analysis .

5 MARKS

Q1. Explain Beer and Lambert 's law (derivation)

Q2. Explain fluorimetry and factor affecting fluorescence.

DEPTH OF BIOLOGY

Q3. Describe the effect of solvent on absorption spectra ?

2 MARKS

Q1. Explain Beer's Law .
Q2. Explain Lambert's Law .
Q3. What is chromophores ?
Q4. Define Auxochromes ?
Q5. Role of silicon photodiode ?
Q6. Define Fluorimetry ?
Q7. What is PMT in UV – Visible spectroscops ?
Q8. Define Quenching ?

UNIT –II **10 Hours**

IR spectroscopy

Introduction, fundamental modes of vibrations in poly atomic molecules, sample handling, factors affecting vibrations

Instrumentation - Sources of radiation, wavelength selectors, detectors - Golay cell, Bolometer, Thermocouple, Thermister, Pyroelectric detector and applications

Flame Photometry-Principle, interferences, instrumentation and applications

Atomic absorption spectroscopy- Principle, interferences, instrumentation and applications

Nepheloturbidometry- Principle, instrumentation and applications

DEPTH OF BIOLOGY

10 MARKS

Q1. Describe I.R. Spectroscopy and also explain fundamental mode of vibration in polyatomic molecule and its factor affecting .

Q2. Give a detail note on principle , Instrumentation and application of AAS and Nepheloturbidometry .

5 MARKS

Q1. Explain Principle , Instrument and application of Flame Photometry / Nepheloturbidometry .

DEPTH OF BIOLOGY

2 MARKS

Q1. Explain IR Spectroscopy .

Q2. Define sample handling

Q3. What are the various factor which affect the vibrational frequency in I.R.

Q4. Define Flame Photometry ?

Q5. Write down the principle of Atomic Absorbtion spectroscopy (AAS) ?

Q6. Define Nepheloturbidometry ?

Q7. Name the diluents used for solid – sample in IR – Spectroscopy ?

UNIT –III **10 Hours**

Introduction to chromatography

Adsorption and partition column chromatography-Methodology, advantages, disadvantages and applications.

Thin layer chromatography- Introduction, Principle, Methodology, Rf values, advantages, disadvantages and applications.

Paper chromatography-Introduction, methodology, development techniques, advantages, disadvantages and applications

Electrophoresis– Introduction, factors affecting electrophoretic mobility, Techniques of paper, gel, capillary electrophoresis, applications

DEPTH OF BIOLOGY

10 MARKS

Q1. Define Electrophoresis it's factor affecting and application .

Q2. Explain different type of chromatography (Gas , Thin layer , paper and partition Column) .

5 MARKS

Q1. Give a detailed account on paper chromatography ?

Q2. Give a detailed note on partition Column Chromatography ?

DEPTH OF BIOLOGY

2 MARKS

Q1. Define chromatography ?

Q2. Explain Electrophoresis .

Q3. What are the application of chromatography .

Q4. Define Adsorption and Partition Column Chromatography ?

Q5. Define R.F. Values .

UNIT –IV **08 Hours**

Gas chromatography - Introduction, theory, instrumentation, derivatization, temperature programming, advantages, disadvantages and applications

High performance liquid chromatography (HPLC)-Introduction, theory, instrumentation, advantages and applications.

DEPTH OF BIOLOGY

10 MARKS

Q1. Give a detail note on Gas Chromatography .

Q2. Explain HPLC it's theory Instrumentation and application .

5 MARKS

Q1. Write a note on HPLC ?

Q2. Explain Gas Chromatography ?

2 MARKS

Q1. Application of HPLC ?

Q2. Application of Gas chromatography ?

UNIT –V **07 Hours**

Ion exchange chromatography- Introduction, classification, ion exchange resins, properties, mechanism of ion exchange process, factors affecting ion exchange, methodology and applications

Gel chromatography- Introduction, theory, instrumentation and applications

Affinity chromatography- Introduction, theory, instrumentation and applications

DEPTH OF BIOLOGY

10 MARKS

Q1. Define Ion Exchange Chromatography It's classification , Application and factor affecting

5 MARKS

Q1. Explain Ion exchange resins It's properties and mechanism ?

Q2. Write a short note on Gel Chromatography

2 MARKS

Q1. Define Affinity Chromatography .

Q2. Application of Ion – Exchange resin .

Q3. Define Gel chromatography .