

- c) Both A & B d) None of this
- (viii) What is the linear radiation wavelength at a low-pressure mercury lamp?
a) 254nm b) 700nm
c) 800nm d) 600nm
- (ix) Select the correct option, sample cell shape generally used in UV spectrophotometry is _____.
a) Cylindrical b) Quadrangular
c) Both A&B d) None of this
- (x) Identify from the followings, Modern UV sample cell or Cuvette is made up of _____.
a) Glass b) Plastic
c) Quartz d) Cobalt
- (xi) Predict the correct option, para substituted aromatic compound increases the fluorescence because of _____.
a) Electron donation b) Electron withdrawing
c) Confirm planarity to ring d) Confirm rigidity
- (xii) Select the correct option, the primary filter in spectrofluorometer placed in between _____.
a) Source and Cell b) Cell & Detector
c) Source & Detector d) Anywhere
- (xiii) From which of following cannot be done by flame photometry?
a) To estimate sodium, magnesium, calcium b) Assay of metformin
c) Used to determine magnesium and calcium in cement d) To detect metallic ions in sample.
- (xiv) Choose the correct sequence of flame photometry.
a) Sample residue > excited state atoms > Return in ground state > Emission of radiation
b) Sample residue > Ground state > Excited state > Emission of radiation
c) Emission of Radiation > Excited state > Ground state > Sample residue.
d) all of the statements are incorrect
- (xv) Choose the correct option: atomic emission spectroscopy is _____.
a) The measurement of the intensity of emitted light at a particular wavelength from the atoms that are excited thermally
b) The measurement of absorbance of emitted light at a particular wavelength from the atoms that are excited thermally
c) The measurement of intensity of absorbed light at a particular wavelength from the atoms that are excited thermally
d) None of these
- (xvi) Choose the most useful detector used in UV-Vis spectrophotometer
a) PMT b) Photo voltaic cell
c) Photo emissive tube d) None of these
- (xvii) Determine the type of filter that can be used to convert UV radiation to Visible Radiation.
a) Primary Filter b) Secondary Filter
c) Both A & B d) None of this
- (xviii) Select the correct option, the modern UV sample cell or Cuvette is made up of _____.
a) Glass b) Plastic
c) Quartz d) Cobalt
- (xix) Identify the function of secondary filter in fluorescence spectroscopy.
a) Allows only excitation radiation b) Allows only emission radiation
c) Allows both excitation and emission radiations d) Allows transmitted radiation
- (xx) Relate which of the following, can cause a quenching effect in Florescence activity?
a) Structure rigidity b) Dissolved oxygen
c) PH of the medium d) Both B & C

Group-B
(Short Answer Type Questions)

5 x 7=35

2. Describe about Retention factor (Rf) and Development Chamber. (5)
3. Discuss the activation of TLC plates and its importance, along with the applications of Thin Layer Chromatography (TLC). (5)
4. Differentiate about gas chromatography and thin layer chromatography. (5)
5. Distinguish between UV-Vis spectroscopy and fluorimetry. (5)
6. Explain the principles behind phosphorescence and fluorescence. (5)
7. Explain the different types of resins used in ion exchange chromatography, including examples. (5)

OR

- Explain the theory of turbidimetry and nephelometry, and include a neat and clean schematic representation of a nephelo-turbidometer. (5)
8. Explain the principle of IR Spectroscopy. (5)

OR

- Explain the factors affecting vibrational frequencies and discuss any one of them. (5)

Group-C
(Long Answer Type Questions)

10 x 2=20

9. Explain the working of an atomic absorption spectrophotometer, along with a schematic representation of the hollow cathode lamp and its functioning in AAS. (10)
10. Explain the different columns and ovens used in gas chromatography, along with their specifications in relation to their applications. (10)

OR

- Illustrate the schematic representation of the instrumentation and working of a nephelo-turbidity meter, specifying its applications. (10)
