

## BP701T: Instrumental Methods of Analysis (Theory) Question Bank

### 2. Unit II: IR Spectroscopy, Flame Photometry, Atomic Absorption Spectroscopy, Nepheloturbidometry (10 Hours)

#### 2.1 10-Mark Questions

1. Explain the principle and instrumentation involved in Flame Emission Spectroscopy with a neat diagram.\* [Mar 2023, May 2024, Dec 2023]
2. Describe the principle, instrumentation, and applications of Atomic Absorption Spectroscopy.\* [Aug 2023]
3. Explain the principle, instrumentation, and applications of Nepheloturbidometry.\* [Oct 2022, Oct 2024]
4. Discuss the fundamental modes of vibrations in polyatomic molecules and the applications of IR spectroscopy.\* [Dec 2023]
5. Explain the interferences in Flame Photometry and Atomic Absorption Spectroscopy and their mitigation strategies.

#### 2.2 5-Mark Questions

1. Discuss the different regions of the IR spectrum and types of stretching and bending vibrations.\* [Dec 2021, Oct 2022, May 2024]
2. Explain the principle and instrumentation of Nepheloturbidometry.\* [Dec 2021, May 2022, Mar 2023]
3. Describe the construction and working of a hollow cathode lamp with a neat diagram.\* [May 2022, Dec 2023]
4. Write a note on interferences in Flame Photometry and their control methods.\* [Dec 2023, Oct 2024]
5. Explain the sampling techniques for solids in IR spectroscopy.\* [May 2022, Aug 2023]
6. Write a note on the applications of Atomic Absorption Spectroscopy.\* [Dec 2021]
7. Explain the principle and instrumentation of Flame Photometry.\* [Dec 2021]

#### 2.3 2-Mark Questions

1. What is the fingerprint region in IR spectroscopy?\* [Oct 2022, Mar 2023, Oct 2024]
2. Mention two light sources used in IR spectroscopy.\* [May 2022]
3. Name two detectors used in IR spectroscopy.\* [Dec 2023]
4. List two applications of Flame Photometry.\* [Aug 2023, Oct 2024]
5. What is the light source used in Atomic Absorption Spectroscopy?\* [Dec 2021]
6. Define phosphorescence. [Oct 2022]
7. What are the two main types of interferences in Atomic Absorption Spectroscopy? [Oct 2022]
8. What is the principle of Nepheloturbidometry? [Dec 2021]
9. Name two factors affecting vibrational frequencies in IR spectroscopy. [Mar 2023]
10. What is a Golay cell? [Aug 2023]