BP701T: Instrumental Methods of Analysis (Theory) Question Bank

4. Unit IV: Gas Chromatography, HPLC (8 Hours)

4.1 10-Mark Questions

1. Explain the principle and instrumentation of Gas Chromatography with a neat diagram.* [Dec 2021]
2. Describe the principle and instrumentation of High-Performance Liquid Chromatography (HPLC) with a neat diagram.* [Oct 2022, May 2024]
3. Discuss the theory, instrumentation, and applications of Gas Chromatography.
4. Explain the system suitability parameters and their significance in HPLC analysis.
5. Describe the role of derivatization and temperature programming in Gas Chromatography and their applications.

4.2 5-Mark Questions

1. Explain the principle and applications of Gas Chromatography.* [May 2022]
2. Discuss the different types of columns used in Gas Chromatography.* [Aug 2023]
3. Explain the detectors used in Gas Chromatography, with a focus on the Electron Capture Detector.* [Oct 2022, Dec 2023]
4. Write a note on the theory and advantages of HPLC.* [Dec 2023]
5. Explain the various pumps used in HPLC and the working principle of any two.* [Aug 2023]
6. Discuss the derivatization techniques in Gas Chromatography.* [Oct 2022]
7. Write a note on the applications of HPLC in pharmaceutical analysis.

4.3 2-Mark Questions

1. What is retention time?* [Aug 2023, Dec 2023]
2. What is isocratic elution?* [Aug 2023, Oct 2024]
3. Name two detectors used in Gas Chromatography.* [Mar 2023, May 2024]
4. What is derivatization in Gas Chromatography? [May 2022]
5. Write two applications of HPLC.* [Mar 2023, Oct 2024]
6. What is the capacity factor? [May 2022, Oct 2022, Mar 2023]
7. What is a guard column in HPLC? [May 2024]
8. What is tailing and fronting peak? [Dec 2021]
9. What is ODS in HPLC? [May 2022]
10. Define HETP in chromatography.* [Dec 2021, Aug 2023, Dec 2023, Oct 2024]