



**Advanced Instrumental Analysis -II**

**Q.P. CODE: 5149**

Your answers should be specific to the questions asked.

Draw neat, labeled diagrams wherever necessary.

**LONG ESSAY (Answer any Three)**

**3 X 10 = 30 Marks**

1. Explain Woodward-Fieser rule for  $\alpha, \beta$ -carbonyl compounds.
2. Explain McLafferty rearrangement, metastable ions and Ring rule.
3. Explain the principle, instrumentation and applications of ICP-MS.
4. Discuss principle and instrumentation and applications of Thermo Gravimetric Analysis.

**SHORT ESSAY (Answer any Nine)**

**9 X 5 = 45 Marks**

5. Describe in detail super critical fluid chromatography.
6. Write a note on Flash Chromatography.
7. Explain in detail importance of Radio immune assay.
8. Explain principle and instrumentation of DTA.
9. Discuss circular dichroism and its applications.
10. Short note on COSY and INADEQUATE.
11. Explain fragmentation of alcohols and alkanes.
12. Interpret the following compounds by IR.  
1.  $\text{CH}_3\text{CH}_2\text{-Cl}$ , 2.  $\text{CH}_3\text{-O-CH}_3$ , 3.  $\text{CH}_3\text{-CH}_2\text{CH}_2\text{-OH}$
13. Short note on 2-D NMR.
14. Explain in detail about EC-MS with applications.

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