



**Modern Pharmaceutical Analysis**

**(Revised Scheme 4)**

**Q.P. CODE: 9336**

Your answers should be specific to the questions asked.

Draw neat, labeled diagrams wherever necessary.

**LONG ESSAY (Answer any TWO)**

**2 X 20 = 40 Marks**

1. Briefly outline the instrumentation of Mass Spectrometer. Discuss in detail about interpretation of organic functional groups by IR Spectroscopy. (10+10)
2. Explain the functions of the various parts of an HPLC System. Discuss about selection of liquid stationary phases in GC. (12+8)
3. Explain the fundamental principles and instrumental arrangements of NMR. Write a detail note on Octant rule. (14+6)

**SHORT ESSAY (Answer any FIVE)**

**5 X 10 = 50 Marks**

4. Write fragmentation process in Mass spectroscopy.
5. Explain the techniques involved in Isotachopheresis. Write theoretical aspects of derivative spectroscopy.
6. Write a note on coupling and decoupling methods and its significance in NMR spectroscopy.
7. State and derive an equation for Bragg's Law. Explain the concept of Miller indices.
8. Discuss in detail about the HPTLC technique.
9. Explain the significance of 'T' test and chi-square test with suitable examples.

**SHORT NOTES**

**2 X 5 = 10 Marks**

10. Discuss about Human volunteer research – informed consent.
11. Write about FTIR technique.

\* \* \* \* \*