



**MODERN PHARMACEUTICAL ANALYSIS**

**(RS2 & RS3)**

**Q.P. CODE : 9201**

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. Explain rate theory of gas chromatography and give detailed account on detectors used in gas chromatography (any four).
2. a) Explain in detail about Miller Indices and Bravais lattices.  
b) Explain any one method for generation of X-ray.
3. Discuss the principle of NMR spectroscopy. What do you mean by chemical shift? Elaborate on the interpretation of proton NMR by giving examples.

**SHORT ESSAY (Answer any FIVE)**

**5 X 10 = 50 Marks**

4. Discuss Woodward-Fischer rules and add note on significance of these rules with examples.
5. Give the theory of mass spectrometry.
6. Describe instrumentation for FTIR spectroscopy.
7. Discuss octane rule and its application with examples.
8. Elaborate on different terms used in the statistical analysis. Which tests are, carried out to get significant data?
9. Add note on isotachopheresis and isoelectric focusing.

**SHORT NOTES**

**2 X 5 = 10 Marks**

10. Spin-lattice relaxation
11. Solvent effects in UV spectroscopy

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