

16397(J) 5-16

**B. Pharmacy 8th Semester Examination**

**Instrumental Methods of Analysis (NS)**

**BP-481**

**Time : 3 Hours**

**Max. Marks : 70**

*The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.*

- Note :** (i) The question paper consists of three sections A, B and C.  
(ii) Attempt any two questions from section A and any eight questions from section B.  
(iii) Section C is compulsory.

**SECTION - A**

1. What is spectroscopy? Explain the principle, instrumentation and applications of UV spectroscopy.
2. Discuss the principle, instrumentation and applications of Infra-red spectroscopy.
3. Discuss the principle and applications of the following (a) Mass spectrometry (b) NMR spectroscopy. (2×10=20)

**SECTION - B**

4. Write a brief note on radio immuno assay.
5. Discuss the TQM.
6. Write a note on validation of analytical procedures.
7. Explain the principle of X-ray diffraction.

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8. Discuss the pharmaceutical applications of flame photometry.
9. Discuss the principle of fluorimetry.
10. Draw the block diagram of an atomic absorption spectrophotometer.
11. Write the applications of atomic absorption spectroscopy.
12. Discuss the shielding and desheilding effects in NMR.
13. Draw the block diagram of mass spectrometer. (5×8=40)

**SECTION - C**

14. Sketch the infrared spectrum.
15. How many NMR signal are observed in acetone?
16. Sketch the mass spectrum.
17. What is Bragg's law?
18. What is colorimetry? (2×5=10)