



[3956] – 47

Fourth Year B. Pharm. Examination, 2011
PHARMACEUTICAL ANALYSIS – III
(2004 Course)

Time : 3 Hours

Max. Marks : 80

- Instructions :** 1) *Question No. 1 and 5 are compulsory.*
2) *Out of the remaining, attempt two questions from Section I and two questions from Section II.*
3) *Answers to the two Sections should be written in separate answer books.*
4) *Figures to the right indicate full marks.*
5) *Draw well labeled diagrams wherever necessary.*

SECTION – I

1. a) Explain spin-spin coupling and chemical shift. **4**
b) Explain how spin-spin coupling is useful in structural elucidation. **6**
2. a) Explain in brief, 'Analytical Method Validation' as per ICH guidelines. **9**
b) Explain the terms ENDOR and ELDOR. **6**
3. a) Describe various sample handling techniques for solid samples in IR. **8**
b) Discuss various types of mass analyser in mass spectroscopy. **7**
4. Write short notes on **any three** : **15**
 - a) Raman spectroscopy
 - b) X-ray diffraction methods
 - c) Difference between atomic absorption and flame emission spectroscopy
 - d) FTIR.

P.T.O.



SECTION – II

5. a) Write in brief theory of Gas Chromatography. **5**
b) Explain band broadening and HETP in gas chromatography. **5**
6. a) Discuss various types of pumps used in HPLC. **8**
b) Write in brief about trouble shooting and quantitation technique in HPLC. **7**
7. a) Give the application of HPTLC. **6**
b) Explain simulated moving bed technology and principle of super critical fluid extraction. **9**
8. Write short notes on **any three** : **15**
a) Different modes of electrophoresis
b) Nuclear reaction and radiation
c) Detectors in gas chromatography
d) Horizontal TLC.