

VPM's Advanced Study Centre
C/o. B. N. Bhandarkar College of Science, Thane.
Post Graduate Diploma in Applied Analytical Chemistry
Final Examination 2007-2008

23.04.2008

Paper – II (100 Marks)

5.00 – 8.00 p.m.

SECTION – I

- Note: 1) Answers to the two sections are to be written in separate answer sheet.
2) Solve any 5 (five) questions from each section.
3) Each section carries 50 Marks.

- Q.1) ANSWER ANY TWO BRIEFLY 10
a) Explain briefly various components used in IR spectroscopy.
b) What is meant by finger print region, what are its uses?
c) Define Chromatography, what is meant by GC and HPLC.
- Q.2) Explain briefly various modes of vibrations in IT Spectroscopy. 10
- Q.3) Explain basic principle and working of GC with neat diagram. 10
- Q.4) Explain applications of IT spectroscopy; How will you do qualitative and quantitative analysis by IT spectroscopy. 10
- Q.5) What is band broadening in Chromatography? How it affects number of theoretical plates? How it can be minimized. 10
- Q.6) Explain briefly basic principle of HPLC with the help of neat diagram. 10
- Q.7) Write Notes on ANY TWO of the following 10
a) Detections used in GC. b) Detections used in HPLC.
c) Advantages of HPLC over GC. d) Applications of GC.
e) Sampling techniques in IT spectroscopy.

SECTION II

- Q.1) Answer Any One Briefly : 10
1. Explain the Principle, working of double beam spectrophotometer.
2. Describe in brief NUCLEAR MAGNETIC RESONANCE SPECTROPHOTOMETER.
3. What information can be obtained from NMR absorption peaks?
- Q.2) Discuss Principle & working of AAS with schematic diagram. 10
- Q.3) What are DSC and TGA? Explain working of DSC with neat diagram. 10
- Q.4) Attempt Any Three: 10
a) Write Principal and series of events taking place in flame.
b) Write important applications of uv visible spectroscopy.
c) Hollow cathode lamp.
d) Burners in flame photometry.
- Q.5) What is FINGER PRINT REGION.? Describe the SHIELDING AND DE-SHIELDING effect involved in NMR spectroscopy. 10
- Q.6) WRITE NOTES ON ANY TWO 10
a) Interferences in flame photometry.
b) Various detectors in uv visible spectroscopy.
c) Applications of AAS.
- Q.7) Write the position of peaks of NMR spectroscopy for the following: 10
a) p-nitrophenol b) p-nitrobenzoic acid