



Q.P.Code: 50717

03 Hours

Total Marks: 80

- Note:** 1) Question No. 1 is compulsory.
2) Answer any **three questions** from the remaining **five questions**.
3) Illustrate answers with **sketches** wherever **required**.
4) **Figures** to the right indicate **marks**.

- Q1. Answer the following: 20
- a) Draw the general block diagram of analytical Instrument and explain.
 - b) Define chemical shift and explain its significance in NMR Spectrometry.
 - c) Explain interference filters used in the absorption instruments.
 - d) What are the units of Radioactivity? Explain half-life period.
- Q2. a) What is meant by Raman Effect? List the characteristic properties of Raman lines. 10
- Draw and explain the constructional detail of Raman spectrometer. 10
- b) Explain differences between atomic absorption and atomic emission spectroscopy. 10
- Q3. a) Explain Magnetic deflection type Mass spectrometer with neat diagram. 10
- b) When does magnetic resonance occur? Explain working of NMR Spectrometer. 10
- Q4. a) Give classification of chromatograph. List the parts of GC. Draw and explain the working of GC. 10
- b) With a neat schematic diagram, explain Scintillation counter. 10
- Q5. a) Explain the basic components of Instrumentation for x-ray spectroscopy with a neat diagram. 10
- b) With a neat diagram, explain Double beam spectrometer. 10
- Q6. Write short note on: 20
- a) Photomultiplier tube
 - b) GC-MS
 - c) Oxygen analyzer
 - d) GM counter