

QP Code : 26386

[3 Hours]

[Total Marks : 80]

Please check whether you have got the right question paper

- N.B :**
1. Question No. 1 is compulsory.
  2. Attempt any three questions from the remaining five questions.
  3. Figures to the right indicate full marks.

1. Answer the following : 20
  - (a) Explain interference filters used in absorption instruments.
  - (b) State the advantages of solid state detectors.
  - (c) Sketch a typical NMR spectrum.
  - (d) Give the list of sample handling systems in mass spectrometry.
2.
  - (a) State and prove Beer Lamberts law. 10
  - (b) Explain the different types of monochromators used in absorption instruments. 10
3.
  - (a) Explain the principle of ESR spectrometer and compare with NMR spectrometer. 10
  - (b) What is meant by Raman effect ? What are the properties of Raman lines ? 10
4.
  - (a) Explain 'Time of flight' mass spectrometer with neat diagram. 10
  - (b) With a neat schematic diagram explain the working of (Geiger Mueller) GM counter. 10
5.
  - (a) With a neat block diagram explain an atomic absorption spectrophotometer. 10
  - (b) What is chromatograph ? Explain the construction and working of Gas chromatograph. 10
6. Write short note on any two :- 20
  - (a) X-ray spectrometer
  - (b) Double beam densitometer
  - (c) Gas density analyser
  - (d) Oxygen analyser.