

T.E (SEM-VI) Instru CBGS

Duration: 03 Hours

Total Marks: 80

19/12/18

(1)

- Note: 1) Question No. 1 is compulsory.  
2) Answer any three questions from the remaining five questions.  
3) Assume suitable data wherever necessary.

Q1. Answer any 4 from the given 5 questions:

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- Give 4 differences between classical and instrumental methods of analysis.
- Justify that Beer-Lambert's law is a limiting law.
- Define chemical shift and give its significance in NMR.
- Explain any 4 factors influencing Fluorescence or Phosphorescence.
- List the units of Radioactivity and define half-life period.

Q2. a) With a neat diagram, explain working of Double beam filter photometer.

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b) Describe Raman Effect. Explain working of Raman Spectrometer.

Q3. a) Explain working and application of Gieger Muller counter with neat diagram.

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b) Explain working of Atomic Absorption Spectrometer with neat diagram.

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Q4. a) Explain the principle and concept of Nuclear Magnetic Resonance (NMR) Spectroscopy with applications.

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b) Explain the working of any two detectors used in Gas Chromatography system.

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Q5. a) Explain principle and working of Time-of-flight type mass spectrometer with a neat diagram.

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b) Explain with a neat diagram the working of oxygen analyzer.

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Q6. Write short notes on: (any two)

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a) GC-MS

b) Monochromators

c) X-ray absorption meter

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