

Analytical Inst.

INST / 19.12.15

Sem-VI

QP Code : 6482

(3 Hours)



[ Total Marks : 80

- N.B. : (1) Question no. 1 is compulsory  
(2) Attempt any three questions from the remaining.  
(3) Figures to the right indicate full marks.  
(4) Draw neat labelled diagrams, wherever necessary.  
(5) Assume suitable data if necessary.

1. Attempt any four questions from the following : 20
- (a) Explain working of photomultiplier tube.
  - (b) Explain the basic principle of mass spectroscopy.
  - (c) Draw and explain working of pulse height analyser.
  - (d) What is temperature programming in Gas Chromatography?
  - (e) A solution containing the complex formed between Bi (III) and thiourea has a molar absorptivity of  $9.32 \times 10^3 \text{ Lcm}^{-1}$  at 470 nm. What is the absorbance of a  $6.24 \times 10^{-5} \text{ M}$  solution of the complex at 470 nm in a 1.00 cm cell. What is the percent transmittance of the solution.
2. (a) Draw and explain double beam uv visible spectrophotometer. 10  
(b) What is Raman effect? Draw and explain Raman Spectroscopy. 10
3. (a) List four detectors used in Gas Chromatography and explain any one in detail. 10  
(b) Explain working of any one type of mass spectrometer in detail. 10
4. (a) Explain one type of source used in the uv-visible region of the EMR Spectrum. 5  
(b) Explain working of any one type of monochromator. 5  
(c) Explain the basic principle of NMR. Explain the working of a NMR Spectrometer. 10
5. (a) Draw and explain working of a x-ray absorption meter. 10  
(b) Explain the working of any one type of Ion Source used in mass spectrometer. 10
6. (a) Draw and explain working of Atomic Absorption spectrometer. 10  
(b) Draw and explain working of a carbondioxide analyzer. 10
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Course: T.E. (SEM.-VI) (REV. -2012) (CBSGS) (INSTRUMENTATION ENGG.) (Prog 6482)

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Correction:

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Q1(e) A solution.....

.....absorptivity of  $9.32 \times 10^3 \text{ L mol}^{-1} \text{ cm}^{-1}$  at.....

$6.24 \times 10^{-5} \text{ mol per litre}$ .....

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Query Update time: 19/12/2015 03:55PM

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