

Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(EIE) (2011 Onwards) (Sem.-7,8)

ANALYTICAL INSTRUMENTATION

Subject Code : EI-406

Paper ID : [A0378]

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTION TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students has to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students has to attempt any TWO questions.

SECTION-A**1. Answer briefly :**

- i. Name two analytical instruments.
- ii. List the sampling components.
- iii. State Beer-Lambert's law.
- iv. Define pH.
- v. List the applications of mass spectrometers.
- vi. What is total internal reflection in spectrometry?
- vii. What is the basic principle of NMR?
- viii. List the applications of conductivity cell.
- ix. What are the advantages of online measurement method?
- x. Where is absorption spectroscopy used?

SECTION-B

2. Explain the construction and working principle of hydrogen electrode used to measure pH.
3. Differentiate automatic and faithful sampling.
4. Explain in brief the principle of density measurement in solids.
5. What are the non-dispersive techniques for chemical analysis?
6. Distinguish between glass electrode and reference electrode.

SECTION-C

7. Explain the working of gas chromatography with neat diagrams.
8. Discuss the calibration method adopted for IR spectrometer.
9. Write short notes on analytical electron microscope.