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

M.Code : 58048

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 / Fill in the blank :

a) Range of UV rays is _____.

b) List four radiation sources.

c) Explain automatic and faithful sampling.

d) State Beer-Lambert's law.

e) What is meant by redox potential?

f) Define electrical conductivity.

g) List the applications of mass spectrometers.

h) Discuss the advantages of online measurement methods as compared to laboratory measurement methods.

i) Discuss the area of application of conductivity cell.

j) Differentiate newtonian and non- newtonian fluid.

SECTION-B

2. Differentiate analytical instruments and other instruments.

3. With neat sketch, explain, the Ion Selective Electrode (ISE).

4. Discuss the humidity measurement technique.

5. What are the non-dispersive techniques for chemical analysis?

6. Explain the basic principle and applications of an analytical electron microscope.

SECTION-C

7. Explain the laboratory and online methods of viscosity measurement with neat diagrams.

8. Discuss atomic absorption spectrometry with suitable diagram.

9. Write short notes on :

   a) X-ray analyzers

   b) Mass spectroscopy

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.