Roll No. | | | | | | | | | | | | Total No. of Pages: 02

Total No. of Questions : 09

B.Tech.(EIE) (2011 & Onwards) (Sem.–6)

INSTRUMENTATION SYSTEM DESIGN

Subject Code : EI-302/401

M.Code : 58036

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 have to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.**

SECTION-A

Q1 Answer briefly :

a) Differentiate between active and passive transducers.

b) Define accuracy and precision.

c) Differentiate between band stop and band pass filter.

d) What do you understand by modulator?

e) Classify different types of flowmeter based upon restriction types and positive displacement.

f) State the working principle of optical pyrometer.

g) List different types of elastic pressure sensor.

h) What do you meant by performance characteristics?

i) Write the basic principle on which RTD is working and its material of construction.

j) Determine the absolute pressure at bottom of a lake that is 50 m deep.

SECTION-B

Q2. Explain design and performance characteristics of transducer.

Q3. Discuss different types of radiation type level sensor with suitable diagrams.

Q4. Describe the construction and working of accelerometer. List its advantages and disadvantages.

Q5. Write the basic principle of obstruction type flowmeters and drive its equation. Describe the working of orifice flowmeter with neat sketch.

Q6. Explain the construction and working of three stages instrumentation amplifier.

SECTION-C

Q7. a) Discuss the construction and working of RTD. Also explain two, three and four lead system.

b) Discuss the PC based system design for cement plant.

Q8. a) Discuss the microprocessor based system design for pressure transducer.

b) Explain the working of S/H circuit with neat diagram.

Q9. Write short note on following :

a) Reliability characteristics

b) Transducer for power measurement

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.