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

Total No. of Questions : 09

B.Tech.(Electronics & Electrical) (2011 Onwards OE) (Sem.–6)

TRANSDUCER AND SIGNAL CONDITIONING

Subject Code : BTEEE-OPD

M.Code : 71136

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

1. Answer briefly :

a) Classify transducers based upon their working principle.

b) Define strain gauge and gauge factor.

c) What are the basic components of a tape recorder?

d) Classify the transducers based upon working principle.

e) Differentiate between inverting and non-inverting amplifier.

f) How A/D converter can be used as encoder?

g) Define Seeback effect.

h) Compare digital storage oscilloscope advantages over an analog CRO.

i) Draw the pin diagram of opamp and draw the circuit diagram of adder using opamp.

j) What do you meant by signal conditioning.

SECTION-B

Q2. Explain the construction and working of piezoelectric transducers.

Q3. Explain the operation of A/D converter dual slope DVMS with neat sketch.

Q4. Explain the construction and working principle of magnetic tape recorders.

Q5. Explain with circuit diagram, how does an OP-Amp act as :

i) Integrator

ii) Differentiator

iii) Substractor

iv) a multiplier

v) a divisor

Q6. Describe in detail about single channel and multichannel DAS.

SECTION-C

Q7. What are the selection criteria for the transducer? Explain the working principle of thermocouples, its types and laws of thermocouples.

Q8. a) List the types of telemetry system. Give the principle of FM Telemetry System. And identify the advantages of FM over AM?

b) Explain the working of sample and hold circuit with appropriate diagram. What is the need for sample and hold circuit in A/D converter?

Q9. Write short note on following :

a) Torque Measurement

b) Digital Frequency meter

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.