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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) Subtractor
 - 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.