Roll No. | | | | | | | | | | | | |

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech. (Electrical & Electronics Engg.) (OE 2013 Onwards Batch)
(Sem.–6)

TRANSDUCERS AND SIGNAL CONDITIONING

Subject Code : BTEEE-OPD
M.Code : 72841

Time : 3 Hrs. Max. Marks : 60

INSTRUCTIONS 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. Discuss the principle of electromechanical transducers.

b. Explain the principle of Piezo electric transducer.

c. What do you mean by humidity? Explain.

d. What do you mean by CMRR? Explain.

e. List the disadvantages of Op-amp amplifier.

f. What is the significance of phase shifter? Explain.

g. What do you mean by multiplexing? Explain.

h. What is the importance of A/D convenor? Explain.

i. List the advantages of magnetic tape recording.

j. What do you mean by data acquisition system? Explain.

SECTION-B

2. What do you mean by an electrical transducer? Explain the principles of photoelectric and thermoelectric transducers.

3. Explain with suitable diagrams how does an QPAMP function as :

   a. a peak detector

   b. zero crossing detector

4. Describe the different types of channels used for telemetry. Explain their advantages and disadvantages.

5. Explain the functioning of CRO with the help of a block diagram.

6. Discuss the importance of signal conditioning of inputs and explain in detail the Sample and hold circuit.

SECTION-C

7. Discuss the need of a data acquisition system. Explain single channel and multi-channel data acquisition system in detail.

8. a. Describe the circuit of a 3 amplifier configuration of an Instrumentation amplifier and Derive the expression for output voltage in terms of the two input voltages.

   b. Discuss frequency division multiplexing and its characteristics as applied to telemetry.

9. Explain the following :

   a. Digital transducer

   b. Digital voltmeter

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.