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

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech. Electronics Engg. (OE 2012 Onwards)/
(Electrical & Electronics) (OE 2013 Batch)
(Sem.–6)

TRANSDUCERS AND SIGNAL CONDITIONING

Subject Code : BTEEE-OPD
Paper ID : [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) Differentiate between measurement system using feedback.

b) Differentiate between primary and secondary transducer.

c) Define time division multiplexing and frequency division multiplexing as applied to telemetry.

d) What are thermistors? Draw resistivity vs temperature characteristics.

e) Explain different principles of working of inductive transducers.

f) What are the ideal characteristics of OPAMP?

g) Explain the functioning of a buffer amplifier.

h) Describe the advantages of digital meter over analog counterpart.

i) Explain Z-axis modulation for a CRO.

j) Describe S/H circuit with a suitable example.

SECTION-B

2. Explain the construction and principle of working of LVDT. Explain how the magnitude and direction of displacement of core of an LVDT detected.

3. Describe the construction of a seismic type vibration transducer. Derive the expression for steady state output of the transducer when a sinusoidal input is applied to it.

4. Explain with suitable example how does an OPAMP function as integrator and differentiator.

5. a) If carriers of two polarization are received at equal level (0 db difference). What is the improvement (db) over either carrier when a delivery combiner is used?

   b) Explain multichannel DAS.

6. Explain the functioning of a basic type of strip chart recorder. What are different types of a marking mechanisms used in it?

SECTION-C

7. Describe the principle of working and circuit diagram of a digital oscilloscope in detail.

8. Explain different principle of working of capacitive transducers. Explain how by using differential arrangement, a capacitive transducer which works on the principle of variation of capacitance with displacement between two plates, the response can be made linear.

9. Write short notes on the following :

   a) Multiplexer.

   b) Digital frequency meter.