

TED (15/19)-3214
(Revision-2015/19)

N21-08633

Reg.No.....
Signature.

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/
COMMERCIAL PRACTICE –NOVEMBER -2021.

INSTRUMENT TRANSDUCERS

(Maximum Marks : 75)

[Time : 2.15 hours]

PART-A

Marks

I. Answer **any three** questions in one or two sentences. Each question carries 2 marks.

1. Define transducer.
2. Define hall effect.
3. Define magnetostriction.
4. Define photo electric effect.
5. Describe smart sensor.

(3x2=6)

PART - B

II Answer **any four** of the following questions . Each question carries 6 marks.

1. Compare electrical and mechanical transducer with examples.
2. Explain the working of magneto resistive transducer.
3. Describe the working of variable reluctance type inductive transducer.
4. Explain the working principle of photo multiplier tube.
5. Describe the working principle of photo conductive cell.
6. Explain the principle of operation of scintillation counter.
7. Describe the working principle of ultrasonic transducer.

(4x6 =24)

PART - C

(Answer **any of the three units** from the following. Each full question carries 15 marks)

UNIT I

- III** (a) Explain the principle of operation of strain gauge. (8)
(b) Explain strain gauge bridge circuit. (7)

OR

- IV** (a) Explain the loading effect in potentiometer. (8)
(b) Compare active and passive transducer with examples. (7)

UNIT- II

- V** (a) Describe the construction and working of LVDT. (10)
(b) Explain the weight measurement using LVDT. (5)

OR

- VI** (a) Explain the principle of operation of hall effect transducer. (8)
(b) Explain the working principle of magneto strictive transducer. (7)

UNIT- III

- VII** (a) Explain the principle of operation of piezoelectric transducer. (10)
(b) Describe the equivalent circuit of piezoelectric transducer. (5)

OR

- VIII** (a) Explain the variable area capacitive transducer for angular displacement. (5)
(b) Explain differential capacitive transducer for linear displacement. (10)

UNIT – IV

- IX** (a) Explain the working of capacitive proximity sensor. (8)
(b) Describe about MEMS. (7)

OR

- X** (a) Explain the construction and operation of Geiger muller tube. (8)
(b) Describe the principle of operation of proportional counter. (7)
