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**3rd Sem / Branch : Instrumentation & Control**  
**Sub.: Sensors & Transducers**

Time : 3Hrs.

M.M. : 60

**SECTION-A**

**Note:** Multiple choice questions. All questions are compulsory (6x1=6)

Q.1 Resistance of a metal is depends upon:

- a) Length
- b) Area
- c) Resistivity
- d) All of these

Q.2 Sensor is a type of transducer.

- a) True
- b) False

Q.3 Inductive transducer use one of the following principle for its working

- a) Change of self Inductance
- b) Change of mutual Inductance
- c) Production of eddy current
- d) All of these

Q.4 A microphone is an example of

- a) Ultrasonic Transducer
- b) Acoustic transducer
- c) Magnetic Transducer
- d) Inductive Transducer

(300)

(4)

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(1)

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Q.5 Smallest change which a sensor can detect is  
a) Resolution      b) Accuracy  
c) Precision      d) Scale

Q.6 Which of the following is correct for thermistor?  
a) Positive temperature co-efficient of resistance  
b) Negative temperature co-efficient of resistance  
c) Un-predictable temperature co-efficient  
d) None of the mentioned

### SECTION-B

**Note:** Objective/Completion type questions. All questions are compulsory. (6x1=6)

Q.7 Transducer converts \_\_\_\_\_ into \_\_\_\_\_.

Q.8 Semiconductor has negative temperature coefficient. (True/False)

Q.9 Expand LVDT.

Q.10 Write the unit of Capacitor.

Q.11 What is LDR?

Q.12 Define Sensor.

### SECTION-C

**Note:** Short answer type questions. Attempt any eight questions out of ten questions. (8x4=32)

Q.13 Write the various application of LVDT.

Q.14 Explain inductive transducer in brief.

Q.15 What is RTD and their application.

Q.16 Differentiate between analog and digital transducer.

Q.17 How we can measure change in capacitance due to movement of dielectric between plates.

Q.18 What are the three major components of general measurement system.

Q.19 Write atleast two advantages and disadvantage of capacitive transducer.

Q.20 What is strain gauge and also define gauge factor?

Q.21 Explain vibrometer seismic transducer.

Q.22 What are the classification of transducer?

### SECTION-D

**Note:** Long answer type questions. Attempt any two questions out of three questions. (2x8=16)

Q.23 Explain working principle of piezoelectric transducer.

Q.24 Write the principle construction and working of capacitive transducer.

Q.25 What is potentiometer? Explain its working and principle.