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**5th Sem / Elect, Eltx
Subject:- Instrumentation**

Time : 3Hrs.

M.M. : 100

SECTION-A

Note: Multiple choice questions. All questions are compulsory (10x1=10)

- Q.1 Which of the following is active Transducer
a) LVDT
b) Wire wound Potentiometer
c) Thermocouple
d) Thermistor
- Q.2 Thermocouple is used to measure
a) Temperature b) Displacement
c) Level of liquid d) Pressure
- Q.3 In which of the categories be thin plate diaphragm included
a) Primary Transducer
b) Secondary Transducer
c) Voltage measuring system
d) Spring balance systems
- Q.4 Which of the following conversion take place in bourdon tubes?
a) Pressure to displacement
b) Pressure to voltage
c) Pressure to strain
d) Pressure to force

- Q.5 Which transducer is known as self generating transducer?
a) Analog Transducer
b) Secondary Transducer
c) Active Transducer
d) Passive Transducer
- Q.6 What is the principle of operation of LVDT?
a) Self inductance b) Mutual Inductance
c) Permanence d) Reluctance
- Q.7 Which of the following can be measured using piezo-electric Transducer
a) Velocity b) Static Displacement
c) Sound d) Force
- Q.8 Capacitive Transducer is used for?
a) Static measurement
b) Dynamic measurement
c) Transient measurement
d) Both static and Dynamic
- Q.9 The output of a bimetallic element in Bimetallic thermometer is
a) Strain b) Pressure
c) Voltage d) Displacement
- Q.10 Inverse Transducer is system which converts
a) Electrical quantity into non Electrical quantity
b) Non Electrical quantity into Electricity quantity
c) Electrical quantity into Electrical quantity itself
d) Non Electrical quantity into Non Electrical quantity itself

(1)

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(2)

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SECTION-B

Note: Objective type questions. All questions are compulsory. $(10 \times 1 = 10)$

Q.11 Define Active Transducer

Q.12 What is Load cell.

Q.13 Name any one Force measuring device.

Q.14 What is pyrometer.

Q.15 What is Seebeck effect?

Q.16 Define Absolute Humidity?

Q.17 Expand LVDT?

Q.18 Name any two display devices?

Q.19 Name any one combination of metals used in thermocouple?

Q.20 What is strain Gauge?

SECTION-C

Note: Short answer type questions. Attempt any twelve questions out of fifteen questions. $(12 \times 5 = 60)$

Q.21 Draw the block diagram and explain basic instrumentation system.

Q.22 Explain the working of LED. Give its advantages and disadvantages.

Q.23 Explain the working of electromagnetic transducer.

Q.24 Mention any five advantages of Electrical Transducer.

Q.25 Explain the working of wire wound potentiometer?

Q.26 Explain various factors affecting of choice of Gauge Material?

Q.27 Explain the measurement to Torque by brake method.

Q.28 Explain Hydraulic Load cell?

Q.29 Explain the use of pressure cell?

Q.30 Explain the measurement of pressure using bourdon tube and LVDT?

Q.31 Explain the working of electromagnetic flow meter?

Q.32 Explain the measurement of temperature using Resistance thermometer?

Q.33 Explain the construction of thermistors?

Q.34 Explain any one method of measurement of vibration?

Q.35 Explain various factors on which pH value depends?

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. $(2 \times 10 = 20)$

Q.36 Explain any one Electrical method of Level measurement? What are its advantages and disadvantages.

Q.37 Explain various Display devices used in measurement system?

Q.38 Explain various Digital method of speed measurement?