## SECTION-D

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

Q.23 Explain in detail classification of transducer.

Q.24 Explain construction and working principle of LVDT in detail. Also write its applications.

Q.25 Explain in detail Resistive Temperature Transducer ( RTD, Thermistor).



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**3rd Sem / Instrumentation & Control**

**Subject : Sensor & Transducers**

Time : 3 Hrs. M.M. : 60

## SECTION-A

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

Q.1 RVDT stands for

a) Rotary Voltage Differential Transducer

b) Rotary Variable Differential Transducer

c) Rotary Variable differential Transformer

d) Rotatory Variable Displacement Transformer

Q.2 The gauge factor of strain gauge is

a) $\frac{\Delta R}{R} / \frac{\Delta D}{D}$ b) $\frac{\Delta R}{R} / \frac{\Delta L}{L}$

c) $\frac{\Delta R}{R} / \frac{\Delta p}{p}$ d) $\frac{\Delta R}{R} / \frac{\Delta A}{A}$

Q.3 Which of the following transducer is active transducer

a) Strain Gauge

b) RTD

c) Piezoelectric Transducer

d) Thermistor

Q.4 Thermistor is made up of

a) Metal b) Semiconductor

c) Non metal d) Insulator

Q.5 Inductive transduction involves_____.

a) Change in capacitance

b) Change in resistance

c) Change in inductance

d) None of these

Q.6 LDR stands for

a) Linear display recorder

b) Light dependent resistor

c) Light dependent recorder

d) Linear display resistor

## SECTION-B

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

Q.7 Write one application of Humidity sensor ( DHT11).

Q.8 Expand LVDT



Q.9 Define passive transducer.

Q.10 Temperature coefficient of thermistor is_____

Q.11 Name any two materials used in piezoelectric transducers.

Q.12 Define Pick-up.

## SECTION-C

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

Q.13 Explain briefly potentiometer with diagram.

Q.14 Explain construction, working principle of Hot wire anemometer with neat and clean diagram.

Q.15 Explain construction and working of Air Quality Sensor (MQ135)

Q.16 Write a short note on LDR.

Q.17 Explain construction and working of Inductive Microphone.

Q.18 Explain working and construction of Capacitive pickup.

Q.19 Write a short note on condenser microphone.

Q.20 Write down the advantage and disadvantages of differential Capacitor pick up.

Q.21 Write down the four Advantages of LVDT.

Q.22 Explain construction and working of shaft encoder.