

- Q.32 Describe L.V.D.T.  
Q.33 Describe working of carbon microphone.  
Q.34 Explain working of Thermistors and give two applications.  
Q.35 Explain working of thermistors and give two applications.

#### SECTION-D

**Note:** Long Answer type question. Attempt any two questions. (2x10=20)

- Q.36 Write short note on any two:  
a) Piezoelectric Transducer  
b) Photo Diode  
c) Strain Gauge  
Q.37 Explain the working of synchro Transmitter and Receiver also write one application.  
Q.38 Explain the principle of working, constructional details and applications of photo transistor.

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#### 4th Sem / Instrumentation and Control Subject : Transducer & Signal Conditioning

**Time : 3 Hrs.**

**M.M. : 100**

#### SECTION-A

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

- Q.1 LVDT is \_\_\_\_\_ type of Transducer.  
a) Mechanical                      b) Digital  
c) Electrical                        d) Capacitive  
Q.2 Self-generating types transducer are \_\_\_\_ transducer.  
a) Active                              b) Passive  
c) Inverse                            d) Secondary  
Q.3 Function of Transducer is to convert.  
a) Electrical signal into non Electrical quantity  
b) Non electrical quantity into electrical signal  
c) Electrical signal into mechanical quantity  
d) All of these  
Q.4 Which of the following is a digital transducer?  
a) Strain Gauge                      b) Encoder  
c) Thermistor                        d) LVDT  
Q.5 Shaft encoder is a \_\_\_\_\_ type of transducer.  
a) Electrical                          b) Analog  
c) Digital                              d) None of these

- Q.6 Hot wire Anemometer is used to measure flow rate of thermally material.  
 a) conductive                      b) Non-Conductive  
 c) Both A and B                      d) None of these
- Q.7 Potentiometer transducers are used for the measurement of  
 a) Pressure                      b) Force  
 c) Both A & B                      d) None of the above
- Q.8 An inverse transducer converts  
 a) Electrical energy to any other form of energy.  
 b) Electrical energy to Nonelectrical energy  
 c) Mechanical displacement into electrical energy  
 d) None of these
- Q.9 What is the frequency of the supplied alternating current in India.  
 a) 70 khz                      b) 30 khz  
 c) 50 hz                      d) 60 hz
- Q.10 Resolution of a transducer depends on  
 a) Material of wire                      b) Length of wire  
 c) Diameter of wire                      d) Excitation voltage

### SECTION-B

**Note:** Objective type questions. All questions are compulsory. (10x1=10)

- Q.11 Write the formula of gauge factor.  
 Q.12 Define Linearity.

- Q.13 Define Primary Transducer.  
 Q.14 Define Gauge Factor.  
 Q.15 Seismic pickup is used to measure vibration. (True/False)  
 Q.16 Electromagnetic pickup is a resistive type of transducer. (True/False)  
 Q.17 Thermocouple is based on \_\_\_\_\_ effect.  
 Q.18 RTD have \_\_\_\_\_ temperature coefficient.  
 Q.19 Expand R.V.D.T.  
 Q.20 Define Calibration.

### SECTION-C

**Note:** Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

- Q.21 Explain differential capacitor pickup.  
 Q.22 Write a short note on impedance matching.  
 Q.23 Write a short note on linearization.  
 Q.24 Explain Hot Wire Anemometers with diagram.  
 Q.25 Describe working of carbon microphone.  
 Q.26 Write short note on Techo generator.  
 Q.27 Write a short note on characteristics of transducer.  
 Q.28 Define pickup explain the working of electromagnetic pickup.  
 Q.29 Explain Hall's Effect Transducer.  
 Q.30 Explain working and construction of R.T.D.  
 Q.31 Describe Seismic Transducer with diagram.