

- Q.26 Name various methods of Force measurement. Explain any one method with help of diagram?
- Q.27 Explain the measurement of Torque by dynamometer method.
- Q.28 Explain Hydraulic Load cell?
- Q.29 Explain the working principle of Bonded wire Strain Gauges?
- Q.30 Explain the process of measurement of pressure by Pirani Gauges?
- Q.31 Explain the working Principle of Electromagnetic flow meter with the help of neat diagram?
- Q.32 Explain the measurement of temperature using any one type of pyrometer?
- Q.33 Mention any five uses of pressure cells?
- Q.34 Explain any one method of measurement of vibration?
- Q.35 Mention any five applications of PH measurement.

#### Section-D

**Note: Long answer type questions. Attempt any two questions out of three Questions. (2x10=20)**

- Q.36 Draw and Explain various type of Hygrometers.
- Q.37 Explain Load measurement by using Elastic Transducer and electrical strain Gauges?
- Q.38 Explain Digital methods of speed measurement?

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Roll No. ....

**4th Sem.**

**Branch: Elect., Power Station Engg., Elect & Eltx. Engg.**

**Sub : Instrumentation**

**Time : 3 Hrs.**

**M.M : 100**

#### SECTION-A

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

- Q.1 Which of the following is Passive Transducer.
- Piezoelectric Transducer
  - Thermocouple
  - Photo Voltaic cell
  - LVDT
- Q.2 RTD is used to measure
- Temperature
  - Displacement
  - Level of liquid
  - Pressure
- Q.3 Which of the following device can be used for force measurement?
- Beams
  - Bellows
  - Capsule
  - Bourdon Tube
- Q.4 Which of the following statement is true for diaphragms?
- Used for measuring Large forces
  - Used for measuring Small forces
  - Used for measuring dynamic forces
  - None of the above

- Q.5 The transducer that converts the input signal into the output signal which is a discrete function of time is known as \_\_\_\_\_ transducer?
- a) Active                                  b) Analog  
c) Digital                                  d) Pulse
- Q.6 An inverse transducer is a device which converts?
- a) Electrical quantity into an non Electrical quantity  
b) Electrical quantity into mechanical quantity.  
c) Electrical quantity into thermal energy  
d) Electrical quantity into light energy
- Q.7 Which of the following is used to measure Torque in rotating parts in machines.
- a) Accelerometer                      b) Dynamometer  
c) Tachometer                          d) None of the above
- Q.8 Certain type of material generates an electrostatic charge or voltage when mechanical force is applied across them. Such materials are called?
- a) Piezo-electric                      b) Photo-electric  
c) Thermo-electric                      d) Photo-resistive
- Q.9 In a LVDT, the two secondary voltages
- a) Are independent of core position  
b) Vary unequally depending on the core position  
c) Vary equally depending on the core position  
d) Are always in phase quadrature.
- Q.10 LVDT is an \_\_\_\_\_ transducer?
- a) Capacitive                              b) Inductive  
c) Resistive                                  d) Eddy current

### Section-B

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

- Q.11 Define Digital Transducer?
- Q.12 Define Gauge Factor?
- Q.13 Name any one Pressure measuring Primary Transducer?
- Q.14 What is RTD?
- Q.15 What is Thermocouple?
- Q.16 Define Absolute Humidity?
- Q.17 Mention two applications of Thermistor?
- Q.18 Mention two advantages of LED?
- Q.19 Name any two methods of Level measurement?
- Q.20 What is resistance strain Gauge?

### Section-C

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

- Q.21 Draw the block diagram and explain DC signal conditioning system.
- Q.22 Explain the working of seven segmental Display.
- Q.23 Draw and explain the working of LVDT?
- Q.24 Explain the working Principle of Capacitive Transducer?
- Q.25 Explain the working of Piezoelectric Transducer?