

(THEORY - 4)

Full Marks : 80

Time: 3 hours

*Answer any five questions including Q. No.1 and 2
Figures in the right-hand margin indicate marks :*

GROUP - A

- 1. Answer all questions: 2 × 10**
- (i) Why LVDT is used ?
 - (ii) Write the name of two elastic type
 - (iii) Write the mathematical expression only for gauge factor of a semiconductor strain gauge.
 - (iv) Name the advantages of load cell.
 - (v) Define piezo-electric effect.
 - (vi) Name the instruments used for measure alternating current.
 - (vii) Why triggering is used in CRO ?
 - (viii) Name the different types of focusing systems used in CRO.
 - (ix) Define reproducibility.

GROUP - B

- 2. Answer any five questions : 6×5**
- (a) Explain the dynamic response of 2nd order instrument.
 - (b) Define transducer. Give the different classification of transducers.
 - (c) Derive the expression for deflecting torque of a PMMC instrument.
 - (d) Explain different types of errors of dynamometer type wattmeter and give its advantages and disadvantages.
 - (e) Explain the principle of bonding techniques of strain gauge and define Rostles strain gauge.
 - (f) Define time base and explain the working principle of time base generator.
 - (g) Explain the working principle of thermistor and derive its characteristics.

GROUP - C

- Answer any three questions : [3 × 10**
- 3. Explain the working principle of a pneumatic pressure meter with neat sketch and write its advantages. <https://www.sctevtonline.com>
 - 4. Explain concept of deflection, derive expression for deflection sensitivity of electrostatic deflection.
 - 5. Explain the working principle of LVDT with a neat circuit diagram and explain its different characteristics.
 - 6. Explain the neat sketch the function of moving iron attraction and repulsion type instruments.
 - 7. Write short notes on any two :
 - (i) Photovoltaic cells
 - (ii) Instrumentation amplifier
 - (iii) Digital storage oscilloscope.