

22227

11920

3 Hours / 70 Marks

Seat No.

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- Instructions :**
- (1) All Questions are *compulsory*.
 - (2) Illustrate your answers with neat sketches wherever necessary.
 - (3) Figures to the right indicate full marks.
 - (4) Assume suitable data, if necessary.
 - (5) Use of Non-programmable Electronic Pocket Calculator is permissible.
 - (6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Attempt any FIVE :

10

- (a) List any four static characteristics of instrument.
- (b) Define :
 - (i) Dynamic error
 - (ii) Fidelity
- (c) List the transducer used for vacuum measurement.
- (d) State any four applications of potentiometer.
- (e) List the non-electrical type of temperature measuring devices.
- (f) Draw labelled diagram of turbine flowmeter.
- (g) State the principle of eddy current dynamometer

2. Attempt any THREE :

12

- (a) Explain with neat sketch any one of the direct liquid level measurement technique.

- (b) State the principle of bimetallic thermometer. State its any two limitations.
- (c) Define gauge pressure and atmospheric pressure. State the relationship between them.
- (d) Suggest and explain any two measurement errors in any type of instrument.
- 3. Attempt any THREE : 12**
- (a) Describe with neat sketch bourdon tube pressure gauge.
- (b) Compare RTD and thermistor (any four points).
- (c) Explain the working of ultrasonic flowmeter with the help of neat diagram.
- (d) How speed measurement is done by inductive pick up method, explain in brief.
- 4. Attempt any THREE : 12**
- (a) Suggest the vacuum measuring devices. Explain any one of them in brief.
- (b) Explain pressure measurement using piezoelectric transducer.
- (c) Define humidity. Explain humidity measurement using sling psychomotor with neat figure.
- (d) Explain flow measurement using anemometer with neat figure.
- (e) Draw bonded and unbonded strain gauge and state the difference between them.
- 5. Attempt any TWO : 12**
- (a) Draw a neat labelled diagram of LVDT and explain its working.
- (b) State and explain different laws of thermocouple.
- (c) Explain the speed measurement using stroboscope with neat figure. State its any two advantages.
- 6. Attempt any TWO : 12**
- (a) Select the instrument for high temperature measurement. Explain its working with the help of neat diagram.
- (b) Explain the working of semiconductor strain gauge with neat figure. State the material used in semiconductor strain gauge.
- (c) Explain construction and working of contact less electrical tachometer with neat figure.
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