

22443

24225

3 Hours / 70 Marks

Seat No.

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- Instructions :**
- (1) All Questions are *compulsory*.
  - (2) Answer each next main Question on a new page.
  - (3) Illustrate your answers with neat sketches wherever necessary.
  - (4) Figures to the right indicate full marks.
  - (5) Assume suitable data, if necessary.
  - (6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

**Marks**

**1. Attempt any FIVE of the following :**

**10**

- (a) Name different Torque Measuring Instruments.
- (b) Enlist the applications of load cell.
- (c) State the law of intermediate metal.
- (d) Enlist types of flow meters.
- (e) List the types of strain gauges.
- (f) State the principle of working of slipping clutch tachometer.
- (g) State the working principle of LVDT.

**2. Attempt any THREE of the following :**

**12**

- (a) Explain term – Fidelity and Overshoot.
- (b) Explain with neat sketch working of Eddy current dynamometer.
- (c) Describe construction and working of radiation pyrometer with neat sketch.
- (d) Explain the working of Rotameter with neat sketch.



- 3. Attempt any THREE of the following : 12**
- (a) Explain Hysteresis and Dead Zone.
  - (b) Differentiate between 'Accuracy' and 'Precision'.
  - (c) Draw a creep curve for force transducer. State significance.
  - (d) Describe the working principle of RTD. Explain with neat sketch.
- 4. Attempt any THREE of the following : 12**
- (a) Explain the working of slip ring sensor with neat sketch.
  - (b) Explain working principle of photo-electric pressure transducer with sketch.
  - (c) Explain Bimetallic Thermometer with neat sketch.
  - (d) Explain the working of bonded strain gauge with neat sketch.
  - (e) Explain with neat sketch carbon microphone.
- 5. Attempt any TWO of the following : 12**
- (a) Classify errors and explain any two types of errors.
  - (b) Draw and explain the working of Coriolis Flowmeter.
  - (c) Explain the construction and working of hair hygrometer with neat sketch. Enlist disadvantages.
- 6. Attempt any TWO of the following : 12**
- (a) What is ultrasonic flow measurement ? Describe working principle of Doppler flow meter with neat sketch. State its two advantages.
  - (b) Draw a labelled block diagram of FFT analyzer. State advantages and applications.
  - (c) Draw the sketch of photoelectric tachometer and explain speed measurement process with it.
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