

22227

23242

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) Use of Non-programmable Electronic Pocket Calculator is permissible.
 - (5) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Attempt any FIVE of the following :

2 × 5 = 10

- (a) Define Error, classify types of Error.
- (b) State application of Bourdon tube.
- (c) Write advantages of capacitive transducer.
- (d) Enlist the device used for measurement of temperature.
- (e) List four factors on which accuracy of Rotameter depends.
- (f) Name any two speed measurement sensor used in plastic manufacturing process.
- (g) Write the function of strain gauge. (minimum 2)

2. Attempt any THREE of the following :

4 × 3 = 12

- (a) Explain construction of Bourdon tube.
- (b) With sketch explain working of RTD.
- (c) Discuss the silent features of liquid measurement transducer.
- (d) How speed measurement is done by stroboscope ? Explain.



- 3. Attempt any THREE of the following :** **4 × 3 = 12**
- (a) Differentiate between atmospheric pressure and absolute pressure.
 - (b) Explain working principle of thermistor.
 - (c) Discuss with sketch rotameter, write advantages and disadvantages of it.
 - (d) Explain mechanical sensor used for measurement of speed, used in plastic industry.
- 4. Attempt any THREE of the following :** **4 × 3 = 12**
- (a) Discuss dynamic characteristics of measuring instrument.
 - (b) Draw and label the diagram of Pirani gauge.
 - (c) State Seebeck effect and Peltier effect.
 - (d) State and explain the method of liquid level measurement for corrosive fluid.
 - (e) Write application and advantages of electrical tachometer.
- 5. Attempt any TWO of the following :** **6 × 2 = 12**
- (a) (i) Discuss the terms Precision and Accuracy.
(ii) With neat sketch, explain Bellows.
 - (b) Explain construction, principle, working of Hair Hygrometer, justify advantages of Hair hygrometer over Sling hygrometer, write application of Hair Hygrometer.
 - (c) Explain with neat diagram construction and working of Eddy current dynamometer.
- 6. Attempt any TWO of the following :** **6 × 2 = 12**
- (a) Explain with neat sketch pressure transducer, write its application, advantages and disadvantages.
 - (b) Classify various types of temperature measurement sensor, with neat sketch. Explain Platinum Resistance thermometer. Write principle, working, construction of it.
 - (c) Explain with neat sketch Bonded type strain gauge, write construction and working of it.
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