

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 :	$2 \times 5 = 10$
(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 :	$4 \times 3 = 12$
(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 : $4 \times 3 = 12$

- (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 : $4 \times 3 = 12$

- (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 : $6 \times 2 = 12$

- (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 : $6 \times 2 = 12$

- (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.
