

22443

22232

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) State the principle of working of RVDT.
- (b) List any four applications of load cell.
- (c) State the law of intermediate metals.
- (d) Enumerate the application of
 - (i) Rotameter
 - (ii) Pitot tube
- (e) Recite the principle of strain gauge.
- (f) Memorize the necessity of sound measurement.
- (g) Draw creep curve for force transducer.



- 2. Attempt any THREE of the following : 12**
- (a) Define transducer and classify it.
 - (b) Interpret the steps involved in selection of transducer.
 - (c) Draw a labelled sketch of optical pyrometer and cite out its principle.
 - (d) Describe the working of Dall tube with neat sketch.
- 3. Attempt any THREE of the following : 12**
- (a) Differentiate between precision and accuracy.
 - (b) Explain briefly with example about relative error, random error and systematic error.
 - (c) Describe with sketch working of FM transmitter.
 - (d) Enlist the types of thermocouples with their temperature range.
- 4. Attempt any THREE of the following : 12**
- (a) Describe with neat sketch working of force ring.
 - (b) Compare RTD with thermocouple.
 - (c) Explain with neat sketch working of ionization gauge.
 - (d) State the working principle of FFT analyzer and list its applications.
 - (e) Enlist the factors while selecting microphone and explain working of carbon microphone.
- 5. Attempt any TWO of the following : 12**
- (a) Articulate one example of each and explain.
 - (i) Threshold
 - (ii) Calibration and
 - (iii) Sensitivity
 - (b) Write down the steps involved in selection of flow meter.
 - (c) Can a human hair be used to measure humidity ? Explain with sketch.

6. Attempt any TWO of the following :**12**

- (a) Name the flow meter used for measuring volume flow rate of clean liquids. Explain its working with neat sketch.
 - (b) Draw a labelled diagram of velocity pickup & explain how the signal is obtained.
 - (c) Illustrate the principle of eddy current generation with diagram for speed measurement and list its advantages.
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