

22227

11819

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) Use of Non-programmable Electronic Pocket Calculator is permissible.
 - (7) 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) Enlist any four types of methods of measurements. (U-I, L-R)
 - (b) List any four types of displacement transducers with their applications (U-II, L-R)
 - (c) State Seeback effect. (U-III, L-R)
 - (d) State the law of intermediate materials. (U-III, L-R)
 - (e) State any two applications of Pitot tube. (U-IV, L-R)
 - (f) State the any four merits of turbine meter. (U-IV, L-R)
 - (g) State any four speed measuring instruments.

2. **Attempt any THREE of the following :** **12**
 - (a) Explain the various dynamic characteristics of measurement system in brief. (U-I, L-U)
 - (b) Explain the working principle of Mcleod gauge with neat sketch. (U-II, L-R)
 - (c) Explain with neat figure the construction and working of liquid in glass thermometer.
 - (d) Explain the construction and working of any device required for measurement of speed of air. (U-IV, L-A)

- 3. Attempt any THREE of the following : 12**
- (a) Give the classification of transducers. (U-I, L-U)
 - (b) Describe the LVDT with suitable diagram for measurement of displacement. (U-II, L-U)
 - (c) Explain the construction and working of Drag Cup tachometer with neat sketch. (U-V, L-U)
 - (d) Describe the working of Ultrasonic flow meter with neat sketch. (U-IV, L-U)
- 4. Attempt any THREE of the following : 12**
- (a) Explain the construction and working of the pressure gauge with neat sketch needed for checking the air pressure required for blow moulding. (U-I, L-A)
 - (b) Name the various strain gauge materials. Give its composition. (U-V, L-U)
 - (c) Explain with neat figure the construction and working of sight glass method for liquid level measurement.
 - (d) Explain the construction and working of eddy current dynamometer with neat sketch. (U-V, L-U)
 - (e) Draw the various shapes of thermistors. State its advantages. (U-III, L-U)
- 5. Attempt any TWO of the following : 12**
- (a) Draw neat labelled diagram of Pirani gauge for vacuum measurement. Describe its construction and working. (U-II, L-U)
 - (b) Explain the concept of humidity. Describe the construction and working of hair hygrometer with neat sketch. (U-III, L-A)
 - (c) Describe the unbounded strain gauge with neat sketch. State its advantages. (U-V, L-U)
- 6. Attempt any TWO of the following : 12**
- (a) Explain the stroboscope with neat sketch. State its advantages and disadvantages. (U-V, L-R)
 - (b) Explain construction and working of Radiation Pyrometer with neat sketch. State its advantages and disadvantages. (U-III, L-U)
 - (c) Describe the bellows pressure gauge with neat sketch. State its any two applications. (U-II, L-U)
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