

# 22420

**11920**

**3 Hours / 70 Marks**

Seat No.

--	--	--	--	--	--	--	--

- 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) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

**Marks**

- 1. Attempt any FIVE of the following:** **10**
- State necessity of instrument callibration.
  - Give classification of transducer on any two factors
  - List any two specifications of electrical pressure transducer.
  - Define Atmospheric pressure and Absolute pressure.
  - Define laminar flow and turbulent flow.
  - Give classification of level measurement methods.
  - Convert 45°C into Farhenite.
- 2. Attempt any THREE of the following:** **12**
- Draw symbol and characteristic of LDR. Give material used for it.
  - Compare Bellows and diaphragm w.r.to construction, sensitivity, working principle and application.
  - Draw and explain Doppler type flow measurement.
  - Explain callibration of capacitive type level measurement.

P.T.O.

- 3. Attempt any THREE of the following:** **12**
- a) Give one application each of following transducer.
    - (i) LVDT
    - (ii) RVDT
    - (iii) Capacitive
    - (iv) Piezoelectric
  - b) Compare U tube manometer and well type manometer on any four points.
  - c) Compare Nuclear Radiation type and Ultrasonic level measurement.
  - d) Draw and explain filled system thermometer.
- 4. Attempt any THREE of the following:** **12**
- a) List any two advantages and two applications of Bellows.
  - b) State Seeback effect and Petlier effect.
  - c) List any two advantages and applications of RADAR type level measurement.
  - d) Name the material used and the sensitivity of following thermocouple type.
    - (i) J
    - (ii) K
    - (iii) R
    - (iv) S
  - e) Explain with neat labelled diagram measurement of flow using venturimeter.

- 5. Attempt any TWO of the following:** **12**
- a) Draw neat sketch of Rotameter and explain its working principle.
  - b) Draw optical type pyrometer and list its advantages.
  - c) State function of strain gauge. Give its types and explain working of any one type of it.
- 6. Attempt any TWO of the following:** **12**
- a) Draw and explain the construction and working of Dead Weight Tester.
  - b) List any two direct methods of level measurement. Explain Hydrostatic method of level measurement. Give one advantage and one disadvantage of it.
  - c) Related to ultrasonic flow meter:
    - (i) Give any two types of it.
    - (ii) Write any two specifications.
    - (iii) Write two advantages over rotameter.
-