

17528

21718

3 Hours / 100 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.

Marks

1. Attempt any FIVE of the following :

5 × 4 = 20

- (a) What is measurement ? Explain its significance.
- (b) What are specifications of LVDT ?
- (c) Explain Bimetallic thermometer with neat sketch.
- (d) Explain Rotameter with neat sketch.
- (e) What are the sound characteristics ?
- (f) Explain open loop control system.
- (g) Explain with block diagram of PID control.

2. Attempt any FOUR of the following :**4 × 4 = 16**

- (a) Define Range, Span, Accuracy & Precision.
- (b) Explain construction and working of RVDT.
- (c) Explain working of pressure thermometer with sketch.
- (d) With neat diagram, explain Hot Wire anemometer.
- (e) Explain construction & working of hair hygrometer.
- (f) Differentiate between open loop & closed loop system.

3. Attempt any FOUR of the following :**4 × 4 = 16**

- (a) Define Speed of Response, Fidelity Dynamic error and overshoot.
- (b) What is scale & encoders ?
- (c) Explain the working of RTD.
- (d) Explain construction & working of electromagnetic flow meter.
- (e) Explain with sketch Bubbler & purge system for liquid level measurement system.
- (f) Compare hydraulic & pneumatic control system.

4. Attempt any FOUR of the following :**4 × 4 = 16**

- (a) What is transducer ? Classify transducers in detail with examples.
- (b) Explain McLeod gauge with neat diagram.
- (c) What are thermistors ? Draw its various shapes.
- (d) Explain construction & working of turbine meter.
- (e) Explain working of eddy current generation Tachometer.
- (f) Explain servo motor mechanism with sketch.

5. Attempt any FOUR of the following :**4 × 4 = 16**

- (a) Differentiate between active transducer & passive transducer.
- (b) Explain thermal conductivity gauge.
- (c) Explain with sketch photoelectric pressure transducer.
- (d) Explain law of intermediate temperature & metal.
- (e) Explain construction & working of stroboscope.
- (f) Explain control system used for boilers.

6. Attempt any FOUR of the following :**4 × 4 = 16**

- (a) What is error ? Explain observational error.
 - (b) Explain with diagram capacitive type transducer.
 - (c) Explain construction & working of pirani gauge.
 - (d) Compare optical pyrometer with radiation pyrometer.
 - (e) Explain with neat sketch load cell.
 - (f) Explain feed forward control system with block diagram.
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