



C09-AEI-306

3216

**BOARD DIPLOMA EXAMINATION, (C-09)
APRIL/MAY—2015
DAEI—THIRD SEMESTER EXAMINATION
PROCESS INSTRUMENTATION**

Time : 3 hours]

[Total Marks : 80

PART—A

3×10=30

- Instructions :** (1) Answer **all** questions.
(2) Each question carries **three** marks.
(3) Answers should be brief and straight to the point and shall not exceed *five* simple sentences.

1. Define the following : 1½+1½
 - (a) Linearity
 - (b) Threshold
2. Define the following : 1½+1½
 - (a) Transducer
 - (b) Sensor
3. State the principle of linear potentiometer.
4. Draw the diagram of DC tachogenerator.
5. State two laws of thermocouple. 1½+1½
6. State the principle of operation of capsule.
7. Draw the diagram of bellows.
8. List the classification of flowmeters.

- * 9. List the applications of strain gauge load cell.
10. Define the following : 1½+1½
 (a) Relative humidity
 (b) Moisture

PART—B

10×5=50

Instructions : (1) Answer *any five* questions.
 (2) Each question carries **ten** marks.
 (3) Answers should be comprehensive and the criterion for valuation is the content but not the length of the answer.

11. (a) Explain the concept of calibration. 5
 (b) Define active transducer and passive transducer. Give two examples of each. 5
12. (a) Explain the principle of operation of Linear Variable Differential Transformer (LVDT) type transducer. 7
 (b) List the advantages and disadvantages of LVDT type transducer. 3
13. (a) Explain the principle of operation of photoelectric type tachometer. 5
 (b) Explain the principle of operation of liquid-filled thermometer. 5
14. (a) Explain the principle of operation of optical pyrometer. 7
 (b) List the applications of thermistor. 3
15. Explain the principle of operation of force balanced pressure transducer. 10
16. Explain the principle of operation of rotameter. 10
- * 17. (a) Explain the principle of operation of electromagnetic flow-meter. 5
 (b) Explain the principle of operation of float activated level indicator. 5
18. Explain the principle of operation of condensation hygrometer. 10
