



C14-AEI-306

4219

BOARD DIPLOMA EXAMINATION, (C-14)
MARCH/APRIL—2017
DAEI—THIRD SEMESTER EXAMINATION
PROCESS INSTRUMENTATION—I

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 term reliability.
2. Define the term maintainability.
3. State the principle of linear potentiometer.
4. Write the principle of inductive proximity sensor.
5. List any three applications of thermocouple.
6. State the principle of resistance temperature detector (RTD).
7. State the principle of pH measurement.

- * 8. Define pH.
- 9. Define conductivity.
- 10. State necessity of conductivity cells.

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) Give the classification of the transducers. 5
(b) Explain the active and passive transducers with examples. 5
- 12. Explain the principle of resistance strain gauge and write the expression for gauge factor.
- 13. Explain the rotary variable differential transformer (RVDT) with diagram.
- 14. Explain the principle of operation range and application of liquid filled thermometer with diagram.
- 15. Explain the principle of operation of solid state sensor with diagram.
- 16. Explain the reference and measuring electrodes used for pH measurement with diagram.
- * 17. Explain the principle of operation of condensation-type hygrometer with diagram.
- 18. Explain the principle of operation of electrolytic hygrometer with diagram.
