



C14-AEI-306

4219

BOARD DIPLOMA EXAMINATION, (C-14)
MARCH/APRIL—2016
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 linearity and hysteresis.
2. List the basic requirements of transducer.
3. Define sensor.
4. State the principle of capacitive proximity sensors.
5. Explain the principle of bimetallic strip.
6. Draw the diagram of infrared pyrometer.
7. State the principle of pH measurement.
8. List the specifications of digital pH meter.
9. Define (a) conductivity and (b) relative humidity.
10. Draw the diagram of electrolytic hygrometer.

*

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) Define transducer and give the classification of transducers with examples. 2+3
(b) Explain the concept of calibration. 5
12. Explain the principle of resistive strain gauge and derive the expression for gauge factor. 5+5
13. (a) Explain the principle of operation of linear potentiometer. 5
(b) Explain the principle of operation of toothed rotor variable reluctance tachometer. 5
14. Explain the principle of operation of thermistor. 10
15. Explain the principle of operation of infrared pyrometer with neat diagram. 6+4
16. Explain the working of measuring electrode and reference electrode. 6+4
17. Explain the construction and working principle of conductivity meter with a diagram. 3+4+3
18. Explain the principle and operation of condensation-type hygrometer with a diagram. 3+4+3
