



C14-AEI-306

4219

**BOARD DIPLOMA EXAMINATION, (C-14)**  
**OCT/NOV—2015**  
**DAEI—THIRD SEMESTER EXAMINATION**  
**PROCESS INSTRUMENTATION—I**

Time : 3 hours ]

[ Total Marks : 80

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**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 'accuracy'.
2. Define transducer.
3. Define sensor.
4. State the principle of AC tacho generator.
5. Classify the temperature transducers.
6. State the principle of bi-metal strip.
7. Define pH.

- \* 8. List the electrodes used for pH measurement.
- 9. Define conductivity.
- 10. Define relative humidity.

**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. Explain the following terms :
  - (a) Precision
  - (b) Error
  - (c) Linearity
  - (d) Span
- 12. Explain the toothed rotor variable reluctance tachometer for angular speed measurement with diagram.
- 13. Explain the capacitive proximity sensor for position measurement with diagram.
- 14. Explain the principle of operation, range and application of thermistor with diagram.
- 15. Explain the principle of operation, range and application of radiation pyrometer with diagram.
- 16. Explain construction and principle of operation of digital type of pH meter with diagram.
- \* 17. Explain the principle of operation of conductivity meter with diagram.
- 18. Explain the principle of operation of condensation type hygrometer with diagram.

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