



C14-AEI-306

4219

**BOARD DIPLOMA EXAMINATION, (C-14)**  
**OCT/NOV—2016**  
**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 (a) resolution and (b) threshold.
2. Explain the need of calibration.
3. State the principle of linear potentiometer.
4. Draw the diagram of a.c. tachogenerator.
5. Classify different types of temperature transducers.
6. List the applications of thermistors.
7. State the effect of temperature on pH measurement.
8. List the specifications of digital pH meter.
9. State the necessity of conductivity measurement.
10. Draw the neat diagram of electrolytic hygrometer.

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**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. 5  
(b) List the basic requirements of transducer. 5
12. Explain the principle, construction and operation of LVDT with neat diagram. 2+3+3+2
13. (a) Explain the principle of operation of moving iron-type velocity transducer. 5  
(b) Explain the principle of operation of photoelectric tachometer. 5
14. (a) Explain the principle and operation of liquid filled thermometer. 5  
(b) Explain the principle of operation of solid-state temperature sensor. 5
15. Explain the principle of operation of radiational pyrometer with neat diagram. 3+4+3
16. Describe the working of measuring and reference electrodes used for pH measurement. 5+5
17. Explain construction and working principle of conductivity meter. 3+4+3
18. Explain principle and operation of condensation-type hygrometer. 3+4+3

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