



C09-AEI-306

3216

BOARD DIPLOMA EXAMINATION, (C-09)
OCT/NOV—2013
DAEI—THIRD SEMESTER EXAMINATION
PROCESS INSTRUMENTATION

Time : 3 hours]

[Total Marks : 80

PART—A

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

1. Define the following :
 - (a) Linearity
 - (b) Repeatability
2. Define the following :
 - (a) Systematic errors
 - (b) Installation errors
3. State the principle of LVDT.
4. State the principle of Hall probe.
5. State the principle of solid-state sensor.
6. Draw neat sketches of (a) diaphragms and (b) Bourdon tubes.
7. State the principle of pneumatic transmitter.

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8. Draw a neat sketch of Pitot tube.
9. State the principle of nucleonic level gauge.
10. State the principle of strain gauge load cell.

PART—B

- 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 types of errors. 10
12. Explain the principle of resistance strain gauge. 10
13. Explain the principle of infrared pyrometer. 10
14. Explain the principle of the following :
 - (a) RVDT-type transducer 5
 - (b) Thin film pressure transducer 5
15. Explain the principle of operation of the following :
 - (a) Electromagnetic flowmeter 5
 - (b) Laser-type anemometer 5
16. Explain the principle of operation of electrolytic hygrometer. 10
17. Explain the principle of operation of the following :
 - (a) Toothed rotor variable reluctance transducer 5
 - (b) Thermocouple 5
18. Explain the following :
 - (a) Turbine flowmeter 5
 - (b) Resistance-type level indicator 5

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