



C09-AEI-306

**3216**

**BOARD DIPLOMA EXAMINATION, (C-09)  
MARCH/APRIL—2014  
DAEI—THIRD SEMESTER EXAMINATION  
PROCESS INSTRUMENTATION**

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 (a) Repeatability and (b) Precision.
2. List the different types of errors.
3. Draw the diagram of moving iron type of transducer.
4. Describe the importance of vibration monitoring.
5. Define temperature and classify different types of temperature sensors.
6. List the advantages and disadvantages of strain gauge pressure transducer.

- \* 7. Draw neat sketches of elastic transducers (a) capsules and (b) bourdon tube.
8. Draw the diagram of rota meter.
9. Define relative humidity and moisture.
10. Draw the diagram of condensation type 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. Define transducer and explain the basic requirements of transducers. 10
12. (a) Explain the principle of operation of toothed rotor variable reluctance tachometer. 5  
 (b) Explain the principle of operation of inductive proximity sensor. 5
13. (a) Explain the principle of operation of moving coil type velocity transducer. 5  
 (b) Explain the principle of operation of thermocouple. 5
14. Explain the principle of operation of infrared pyrometer with a neat sketch. 10
15. (a) Explain the principle of operation of potentiometer pressure transducer. 5  
 (b) Explain the principle of operation of strain gauge pressure transducer. 5

- \* **16.** Explain the principle of operation of hot wire anemometer. 10
- 17.** (a) Explain the principle of operation of electromagnetic flow meter. 5
- (b) Explain the principle of operation of electrolytic hygrometer. 5
- 18.** (a) Explain the principle of operation of liquid level sight glass. 5
- (b) Explain the principle of operation of float actuated type level indicator. 5

\*\*\*