C14–AEI–**306**

4219

BOARD DIPLOMA EXAMINATION, (C–14)
MARCH/APRIL—2018
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 active and passive transducers with example.

　2. List the basic requirements of transducer.

　3. State the principle of resistance strain gauge.

　4. Explain the importance of vibration monitoring.

　5. Draw the neat diagram of liquid-filled thermometer.

　6. List out the applications of pyrometers.

*　**7.** State the principle of pH measurement.

　8. Draw the neat diagram of measuring and reference electrodes.

　9. Define *(a)* conductivity and *(b)* relative humidity.

　10. Explain the necessity of conductivity cell.

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 the following :

(a) Accuracy

(b) Precision

(c) Linearity

(d) Sensitivity

(e) Repeatability

12. Explain the principle, construction and operation of RVDT with neat diagram. 2+3+3+2=10

13. (a) Explain the principle of operation of linear variable reluctance transducer. 5

(b) Explain the principle of operation of AC tachogenerator. 5

14. Explain the principle, construction and operation of resistance temperature detector and list its applications. 2+3+3+2=10

15. Explain the principle of operation of infrared radiational pyrometer with neat diagram. 6+4=10

16. Explain the block diagram of digital pH meter with neat diagram. 6+4=10

17. Explain construction and working principle of conductivity meter. 3+4+3=10

18. Explain principle and operation of electrolytic hygrometer. 3+4+3=10

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