



C14-M-605

4755

BOARD DIPLOMA EXAMINATION, (C-14)

MARCH/APRIL—2018

DME—SIXTH SEMESTER EXAMINATION

MEASUREMENT AND CONTROL SYSTEMS

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. What are the aims of measurement?
2. Define accuracy and precision.
3. What are the various types of instrumental errors?
4. Define transducer and transduction.
5. List any three mechanical sensing elements.
6. List out the different types of tachometers.
7. Write a short note on thermocouple.
8. What are the uses of Pitot tube?
9. Define control system.
10. Mention the applications of pneumatic control system.

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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.** Explain the following characteristics of measuring instrument : 5+5  
(a) Drift  
(b) Signal to noise ratio
- 12.** Write brief notes on the following errors :  
(a) Environmental errors 4  
(b) Translation and signal transmission errors 3  
(c) Operational errors 3
- 13.** Explain briefly about resistive transducer with suitable sketches.
- 14.** What is piezoelectric effect? Explain about piezoelectric transducer.
- 15.** Explain (a) DC tachogenerator and (b) inductive pick-up tachometer. 5+5
- 16.** Explain measurement of temperature using liquid in glass thermometer.
- 17.** Explain the following : 5+5  
(a) Rotameter  
(b) Ultrasonic flowmeter
- 18.** Explain briefly about open-loop system and closed-loop system with neat diagrams.

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