Code No: 5421AH

R17

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

M. Tech I Semester Examinations, June/July - 2018

THERMAL MEASUREMENTS AND PROCESS CONTROLS

(Thermal Engineering)

Time: 3hrs **Max.Marks:75**

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART - A

5 × 5 Marks = 25

1.a) List the Seismic instruments. [5]
b) What is a bourdon tube? [5]
c) Examine how flow in a draft is measured? [5]
d) Give any four methods by which surface finish can be measured. [5]
e) What is transfer function? [5]

PART - B

5 × 10 Marks = 50

2. Explain the dynamic performance characteristics of measuring instruments. [10]

OR

3. Explain the various static characteristics of a measurement system. [10]

4.a) Explain the working principle of manometers for pressure measurement.
b) List out various types of manometers used for pressure measurement and discuss their specific characteristics. [5+5]

OR

5. How do you measure the pressure with the help of U-tube manometer and micro-manometer? [10]

6. With neat sketch explain different types of torque measurement techniques and explain any two. [10]

OR

7. Explain the working of a bimetallic strip type temperature measurement system. [10]

8.a) Explain Absolute Humidity Sensors with a line sketch.
b) Explain with a line diagram the measurement of moisture content and humidity. [5+5]

OR

9. Explain the working principle of Ultrasonic level measurement devices. [10]

10. Differentiate between open and closed loop control systems. [10]

OR

11. What is a block diagram? Explain the steps involved in the preparation of block diagrams. [10]

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