

Code No: 154BC

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech II Year II Semester Examinations, November/December - 2020

INSTRUMENTATION AND CONTROL SYSTEMS

(Mechanical Engineering)

Time: 2 Hours

Max. Marks: 75

Answer any Five Questions  
All Questions Carry Equal Marks

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- 1.a) Classify theory and construction of various transducers.
- b) What do you mean by static calibration? Give the steps which are necessary in performing a calibration. [7+8]
2. Categorize different types of errors in measurements and measuring instruments? Explain them. [15]
3. Describe the construction and working of a Bourdon tube. Describe the C type, spiral type and helical type bourdon gauges with neat diagrams. [15]
- 4.a) Explain the working of ionization pressure gauge with a neat sketch.
- b) What are the different laws involved in thermocouples? Explain the working principle of thermocouple in measurement of temperature. [7+8]
- 5.a) Explain the working principle of operation of turbine flowmeter with neat sketch and also list out its advantages and disadvantages.
- b) Explain the construction and working of a vibrating reed tachometer for measuring speed. [8+7]
- 6.a) Explain the working principle of operation of hot wire anemometer with neat sketch.
- b) Explain about cryogenic fuel level indicators. [8+7]
- 7.a) Explain the principle on which working of resistance strain-gauge with neat sketch.
- b) What is meant by load cell? How the load-cells are used for the measurement of force in a member. [7+8]
8. Distinguish the temperature, speed and position control systems with suitable examples. [15]

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