

R16

Code No: 137DN

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech IV Year I Semester Examinations, March - 2021

INSTRUMENTATION AND CONTROL SYSTEMS

(Common to ME, AME)

Time: 3 Hours

Max. Marks: 75

Answer any Five Questions
All Questions Carry Equal Marks

- 1.a) What are the different sources of errors in measuring instruments? Suggest the measures to minimize them.
- b) Give the constructional details and principle of working of piezoelectric transducer with a suitable diagram. [7+8]
- 2.a) Compare and contrast metal based and liquid based expansion type temperature measuring instruments.
- b) Suggest and explain the working of any one instrument used for the measurement of low pressure. [7+8]
- 3.a) What is the principle of working of thermistor? Explain with a suitable diagram.
- b) Explain the methods to measure the thermal conductivity of gauges. [7+8]
- 4.a) Compare and contrast the mechanical and electrical tachometers.
- b) With the help of a suitable diagram explain the working of turbine flow meter. [7+8]
- 5.a) Explain different applications and limitations of cryogenic level indicator.
- b) Describe the principle of working of seismic instruments. [7+8]
- 6.a) What factors are to be considered for the selection of materials for strain gauges? Discuss them.
- b) Comment about the temperature compensation techniques used in strain gauges. [7+8]
- 7.a) Explain the construction and working of sling psychrometer and describe principle of operator.
- b) What is load cell? Explain its working principle. [7+8]
- 8.a) What is servomechanism? Explain its applications.
- b) Describe the significance of transfer function? Explain its uses in control system. [7+8]

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