



CBCS SCHEME

15MT662

Sixth Semester B.E. Degree Examination, June/July 2019 Process Instrumentation

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Define a measurement system. With a neat diagram explain the functional element of a measurement system. (08 Marks)
b. Explain generalized input – output configuration with neat block diagram. (08 Marks)

OR

- 2 a. What is Resistive potentiometer? Explain potentiometer loading effect with neat diagram. (08 Marks)
b. Explain with a neat sketch
i) Variable inductance
ii) Variable reluctance. (08 Marks)

Module-2

- 3 a. Define a dynamometer. Explain with a neat sketch the working of dynamometer. (08 Marks)
b. Explain basic methods of force measurement with neat diagram. (08 Marks)

OR

- 4 a. Using strain gauge load cell explain bonded strain gauge transducer. (08 Marks)
b. With neat diagram explain variable reluctance /FM Oscillator. (08 Marks)

Module-3

- 5 a. With a neat diagram explain reference junction. (08 Marks)
b. Explain pressure thermometer with neat sketch. (08 Marks)

OR

- 6 a. With relevant equations and diagrams explain bulk semi conductor. (08 Marks)
b. With relevant equations and diagram explain thermo electric sensors. (08 Marks)

Module-4

- 7 a. Explain ionization gauge with neat diagram and equation. (08 Marks)
b. Explain dead weight gauges with neat diagram and equation for gauge pressure. (08 Marks)

OR

- 8 a. With relevant equations and diagram explain McLead gauge. (08 Marks)
b. Explain thermal conductivity gauge taking thermocouple gauge as one of its type with neat diagram. (08 Marks)

Module-5

- 9 a. With a neat sketch and equation explain velocity magnitude from pilot static tube. (08 Marks)
b. Explain hot wire and hot film anemometer with diagram and equation. (08 Marks)

OR

- 10 a. Explain hot film shock tube velocity sensor with diagram. (08 Marks)
b. Explain wind vector indicator with neat diagram and equations. (08 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.