



CBCS SCHEME

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17AU35

Third Semester B.E. Degree Examination, June/July 2023 Mechanical Measurement and Metrology

Time: 3 hrs.

Max. Marks: 100

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

Module-1

- 1 a. Draw a block diagram of a generalized measurement system. Explain function performed by each element with example. (10 Marks)
b. Define the following : i) Accuracy ii) Precision iii) Calibration iv) Sensitivity v) Repeatability. (10 Marks)

OR

- 2 a. Differentiate line standard and end standard. (10 Marks)
b. Sketch and explain imperial standard Yard and also explain airy points. (10 Marks)

Module-2

- 3 a. Sketch and explain Sigma comparator. (10 Marks)
b. Sketch and explain LVDT. (10 Marks)

OR

- 4 a. Explain with neat sketch the use of sine bar for measuring known and unknown angles. (10 Marks)
b. Sketch and explain Bevel protractor. (10 Marks)

Module-3

- 5 a. Define transducer, with the help of example, explain primary and secondary transducer. (10 Marks)
b. State advantages of electrical transducers over other transducers. (06 Marks)
c. Write a note on Input circuitry. (04 Marks)

OR

- 6 a. Explain the different types of mechanical detector – transducer elements in brief. (10 Marks)
b. Sketch and explain clinometer. (10 Marks)

Module-4

- 7 a. Sketch and explain un-equal arm balance. (10 Marks)
b. Sketch and explain hydraulic dynamometer. (10 Marks)

OR

- 8 a. Sketch and explain cathode Ray oscilloscope. (10 Marks)
b. Sketch and explain x – y plotter. (10 Marks)

Module-5

- 9 a. Discuss the following with necessary diagrams.
i) Compound tolerance ii) Accumulation of tolerance iii) Build – up tolerance. (10 Marks)
b. Explain the concept of “Universal Interchangeability” and “Selective assembly”. (10 Marks)

OR

- 10 a. Sketch and explain McLeod Gauge. (10 Marks)
b. Sketch and explain optical pyrometer. (10 Marks)

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.