CBCS SCHEME

18AE36

USN

Third Semester B.E. Degree Examination, Jan./Feb. 2021
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. With a neat sketch, explain international prototype meter. (10 Marks)

b. Using M112 slip gauge set build the following dimensions with minimum number of slip gauge: (i) 49.3115 (ii) 78.3665 (10 Marks)

OR

2 a. Write the comparison between line standard and end standard. (10 Marks)

b. Write short notes on: (i) Imperial standard yard (ii) Slip gauge (10 Marks)

Module-2

3 a. Name the types of fit and explain any two. (10 Marks)

b. Write short notes on: (i) Interchangeability (ii) Selective assembly (10 Marks)

OR

4 a. Explain positional tolerance with neat diagram. (10 Marks)

b. Explain Taylor's principle for design of gauges. (10 Marks)

Module-3

5 a. With a neat diagram, explain Solex comparator. (10 Marks)

b. With a neat diagram, explain Sigma comparator. (10 Marks)

OR

6 a. With a neat diagram, explain the principle and working of line bar. (10 Marks)

b. Derive the equation for measurement of effective diameter using two wire method. (10 Marks)

Module-4

7 a. Define: (i) Accuracy (ii) Precision (iii) Calibration (iv) Threshold (v) Sensitivity (10 Marks)

b. Define error, classification of error and explain the briefly. (10 Marks)

OR

8 a. Name different types of mechanical transducer and with neat diagram, explain any one. (10 Marks)

b. With a neat diagram, explain piezo-electric transducer. (10 Marks)

Module-5

9 a. With a neat diagram, explain analytical balance. (10 Marks)

b. With a neat diagram, explain Prony brake dynamometer. (10 Marks)

OR

10 a. With a neat sketch, explain optical pyrometer. (10 Marks)

b. With a neat sketch, explain thermocouple. (10 Marks)