CBCS SCHEME

18AU35

Third Semester B.E. Degree Examination, June/July 2024
Mechanical Measurements 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 block diagram, explain the generalized measuring system. (12 Marks)
    b. With neat block diagram, explain the Imperial Standard Yard. (08 Marks)

OR

2   a. Give a detailed classification of errors in measurement. (12 Marks)
    b. State the characteristics of end standards. (08 Marks)

Module-2

3   a. State the characteristics of a comparator. (08 Marks)
    b. With diagram explain the construction and working principle of a sine bar. (12 Marks)

OR

4   a. With diagram explain the construction and working of a simple dial indicator. (12 Marks)
    b. State the advantages and disadvantages of Pneumatic comparator. (08 Marks)

Module-3

5   a. With a neat sketch explain an Ionization Transducer. (10 Marks)
    b. State the advantages and disadvantages of capacitive transducers. (10 Marks)

OR

6   With neat diagram, explain the important parts of a Cathode-Ray-tube. (20 Marks)

Module-4

7   a. With diagram explain the how a prony brake dynamometer is used to measure torque. (10 Marks)
    b. Explain with sketches wire type and foil type resistance strain gauges. (10 Marks)

OR

8   a. With diagram explain proving ring. (10 Marks)
    b. State the requirement for accurate strain measurement. (10 Marks)

Module-5

9   a. Explain "Hole basis system" and SHAFT Basis System of fit. Also explain the significance of hole basis system. (10 Marks)
    b. State and explain the laws of thermocouples. (10 Marks)

OR

10 a. With neat sketch explain Lens type total radiation pyrometer. (10 Marks)
    b. With sketch explain the 'Go' and No-Go type plug guages. (10 Marks)

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