CBCS SCHEME

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18SM822

Eighth Semester B.Tech. Degree Examination, June/July 2024
Non Destructive Testing and Evaluation

Time: 3 hrs. Max. Marks: 100

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

Module-1

1 a. Define Non destructive testing. Compare non destructive testing with mechanical or destructive testing. **(10 Marks)**

b. Describe the merits and limitations of Non-destructive testing. **(10 Marks)**

OR

2 a. Define aided and unaided visual inspection and explain microscope and telescope aid for visual inspection. **(10 Marks)**

b. Explain Borescope and Holography. **(10 Marks)**

Module-2

3 a. Explain the principle of liquid penetrant test with a neat sketch and types of penetrants. **(10 Marks)**

b. List the types of developers and explain water washable method of liquid pentrant testing. **(10 Marks)**

OR

4 a. Explain the principle of magnetic particle testing with a neat sketch. **(10 Marks)**

b. Write a note on principle and methods of demagnetization. **(10 Marks)**

Module-3

5 a. What is thermography testing? What are classifications of thermography testing? Explain with neat sketch any two of them. **(10 Marks)**

b. Explain Infrared radiation and infrared detectors with neat sketch. **(10 Marks)**

OR

6 a. Explain with a neat sketch principle of Eddy current testing and list its applications. **(10 Marks)**

b. Explain absolute and differential arrangement of coils used in eddy current inspection. **(10 Marks)**

Module-4

7 a. Explain A-scan, B-scan and C-scan modes of display. **(10 Marks)**

b. Explain the working principle of ultrasonic testing with a neat sketch. **(10 Marks)**

OR

8 a. Explain with sketches the following :
i) Angle beam units ii) Dual elements units iii) Immersion type unit iv) Straight beam unit. **(10 Marks)**

b. Explain with a neat sketch principle of acoustic emission technique and list its applications. **(10 Marks)**

Module-5

9 a. With a neat sketch explain the principle of radiography inspection and its applications. **(10 Marks)**

b. Write short notes with respect to radiography i) Types and use of filter and screens ii) Geometric factors iii) characteristics of films. **(10 Marks)**

OR

10 a. Explain with a neat sketch, construction and principle of Fluoroscopy testing. **(10 Marks)**

b. Explain computed tomography. **(10 Marks)**

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