



III B.Tech I Sem Regular End Examination, December 2022

Non Destructive Testing

(Mechanical)

Time: 3 Hours.**Max. Marks: 70**

Note: 1. Question paper consists: Part-A and Part-B.

2. In Part – A, answer all questions which carries 20 marks.

3. In Part – B, answer any one question from each unit.

Each question carries 10 marks and may have a, b as sub questions.

PART- A**(10*2 Marks = 20 Marks)**

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|-------|--|----|-----|-----|
| 1. a) | Define the non- destructive testing | 2M | C01 | BL1 |
| b) | What are the advantages of non- destructive testing? | 2M | C01 | BL1 |
| c) | What is the principle of liquid penetrant testing? | 2M | C02 | BL1 |
| d) | What types of defects can be detected in a liquid penetrant test? | 2M | C02 | BL1 |
| e) | What are the various properties of eddy current? | 2M | C03 | BL1 |
| f) | What are the Tools Used For Thermography Testing? | 2M | C03 | BL2 |
| g) | List out the stages in Acoustic Emission Testing. | 2M | C04 | BL1 |
| h) | Define Acoustic Emission Test in non-destructive evaluation | 2M | C04 | BL1 |
| i) | Define the term density and film speed, with respect to radiography testing. | 2M | C05 | BL1 |
| j) | What are the advantages of computed radiography over film radiography? | 2M | C05 | BL1 |

PART- B**(10*5 Marks = 50 Marks)**

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|------|---|----|-----|-----|
| 2 a) | Explain various physical characteristics of materials and their applications in NDT | 5M | C01 | BL4 |
| b) | Differentiate between NDT and mechanical testing | 5M | C01 | BL2 |

OR

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|------|--|-----|-----|-----|
| 3 | Explain Visual inspection Procedure and how NDT Is Useful For Quality Control. | 10M | C01 | BL4 |
| 4 a) | Explain the principle of liquid penetrant test. | 5M | C02 | BL2 |
| b) | What are the advantages, and disadvantages of liquid penetrant test. | 5M | C02 | BL1 |

OR

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|------|--|----|-----|-----|
| 5 a) | Explain the principle of magnetic particle inspection with a neat sketch | 5M | C02 | BL4 |
| b) | What is magnetic rubber inspection? Explain with neat sketch | 5M | C02 | BL4 |

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|-----------|--|-----|-----|-----|
| 6 | Explain Instrumentation and methods used for Evaluation Procedure For Thermography Testing | 10M | C03 | BL4 |
| OR | | | | |
| 7 | Explain the Working Principle Of Eddy Current Testing With Its Limitation and advantages. | 10M | C03 | BL4 |
| 8 | Explain various components involved in ultrasonic testing equipment with block diagram | 10M | C04 | BL4 |
| OR | | | | |
| 9 | Discuss the stages and source of acoustic emission testing in non-destructive testing | 10M | C04 | BL2 |
| 10 | a) How do you find defects of materials using radiography? | 5M | C05 | BL1 |
| | b) Explain the production of X-rays. | 5M | C05 | BL4 |
| OR | | | | |
| 11 | What are the different radiography techniques? Explain any one technique with neat sketch | 10M | C05 | BL4 |

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CO - Course Outcome

BL - Blooms Taxonomy Levels