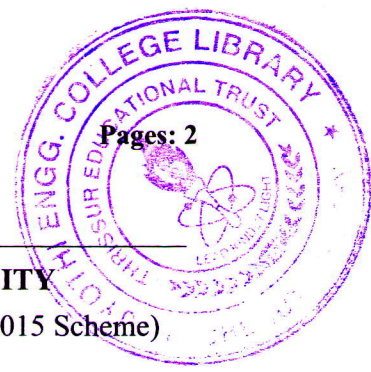


Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Fifth Semester B.Tech Degree (S,FE) Examination January 2022 (2015 Scheme)

**Course Code: ME367****Course Name: NON-DESTRUCTIVE TESTING**

Max. Marks: 100

Duration: 3 Hours

PART A*Answer any three full questions, each carries 10 marks.*

Marks

- | | | |
|---|--|-----|
| 1 | a) Compare Destructive and Non destructive testing? | (6) |
| | b) What are the types of visual inspection? Explain? | (4) |
| 2 | a) Explain visual inspection process? Also explain different optical aids used in visual inspection? | (6) |
| | b) List any four limitations of visual inspection? | (4) |
| 3 | a) How are penetrants classified based on | (6) |
| | a. Physical properties | |
| | b. Removal techniques | |
| | c. Strength of indication | |
| | b) What are the applications of LPI? | (4) |
| 4 | a) What are the properties of a good penetrant? | (4) |
| | b) Explain the commonly used penetrant testing methods? | (6) |

PART B*Answer any three full questions, each carries 10 marks.*

- | | | |
|---|---|-----|
| 5 | a) What are the basic methods of magnetisation? | (4) |
| | b) What is residual magnetism? | (2) |
| | c) Classify the continuous testing of MPI? | (4) |
| 6 | a) List the advantages and limitation of magnetic particle inspection? | (5) |
| | b) Explain the principle of MPI with neat sketch? | (5) |
| 7 | a) Explain the principle of Ultrasonic Testing with figure? | (5) |
| | b) Differentiate between contact testing technique and immersion technique used in UT with neat sketches? | (5) |
| 8 | a) Explain straight beam testing technique and angle beam testing technique with neat sketch? | (6) |

- b) Explain the use of Transducers in UT and also classify the ultrasonic transducers? (4)

PART C

Answer any four full questions, each carries 10 marks.

- 9 a) What are the safety aspects to be considered while doing an RT inspection? (5)
b) What are the advantages and disadvantages of RT? (5)
- 10 a) Explain how X- Rays can be produced with a neat sketch? (6)
b) Explain the various criteria used to assess the quality of a good radiograph? (4)
- 11 a) Explain about different types of screens used in RT. Mention the advantages also? (6)
b) Explain the working principle of Real time radiography with figure? (4)
- 12 a) List any six physics aspect of Eddy current testing? (6)
b) Write short notes about the standard depth of penetration in ECT? (4)
- 13 a) Explain various applications of Eddy current testing? (6)
b) Explain absolute probe and Differential probe used in Eddy current testing with neat sketches? (4)
- 14 a) List the advantages of Eddy current testing? (4)
b) With neat sketch explain the principle of Eddy current Testing? (6)
