

Reg No.: \_\_\_\_\_

Name: \_\_\_\_\_

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**  
**FIFTH SEMESTER B.TECH DEGREE EXAMINATION(S), MAY 2019**

**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) What are the advantages of NDT over destructive testing?                    | (5) |
|   | b) Clearly mention the areas of applications of NDT?                           | (5) |
| 2 | a) What are the factors that affect visual testing?                            | (3) |
|   | b) What are the differences between endoscope and boroscope?                   | (3) |
|   | c) What are the different special lighting methods used for visual inspection? | (4) |
| 3 | a) What are the properties of a good developer?                                | (5) |
|   | b) Explain different types of developers and how it is being applied?          | (5) |
| 4 | a) Explain the process of liquid penetrant testing.                            | (8) |
|   | b) What are the advantages of LPI?   | (2) |

**PART B**

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

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|---|--|-----|
| 5 | a) Explain permeability, magnetizing force, coercive force, retentivity, residual magnetism. | (5) |
|   | b) What is the principle of MPI?   | (5) |
| 6 | a) What are the differences between dry continuous and wet continuous MPI?                   | (5) |
|   | b) What are the advantages of MPI?   | (5) |
| 7 | a) With a sketch explain the procedure of through transmission method of ultrasonic testing? | (5) |
|   | b) Explain resonance testing technique.  | (5) |
| 8 | a) Explain any two ultrasonic transducers.   | (5) |
|   | b) What are the characteristics of ultrasonic waves  | (5) |

**PART C**

*Answer any four full questions, each carries 10 marks.*

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|---|--|-----|
| 9 | a) Explain the principle of radiography testing. | (5) |
|---|--|-----|

- b) What are the properties of X rays and gamma rays? (5)
- 10 a) Explain various techniques used in the radiography of pipe line welding joints inspection. (10)
- 11 How do we interpret defects in welding by radiographic method? Explain with two examples. (10)
- 12 What are the factors affecting eddy current testing? (10)
- 13 Explain in detail any two probes used for eddy current testing. (10)
- 14 a) Explain lift off effect, edge effect and end effect (5)
- b) Explain any two applications of ECT. (5)

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