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10AU761

Seventh Semester B.E. Degree Examination, June/July 2016
Non – Destructive Testing

Time: 3 hrs. Max. Marks:100

Note: ***Answer any FIVE full questions, selecting atleast TWO questions from each part.***

PART – A

1 a. State the different NDE (Non-destructive evaluation) methods for different areas, and also explain briefly. **(10 Marks)**

b. Write short notes on the following :
i) Penetrant ii) Emulsifier iii) Developer. **(10 Marks)**

2 a. Explain the general procedure for magnetic particle inspection. **(10 Marks)**

b. Explain different methods of generating magnetic fields with suitable sketches. **(10 Marks)**

3 a. Explain the different operating variables affecting performance in eddy current inspection. **(10 Marks)**

b. Explain different inspection coils used in Eddy current inspection with suitable sketches. **(10 Marks)**

4 a. Explain microwave holography with a neat sketch. **(10 Marks)**

b. State the different applications and limitations of microwave inspection. **(10 Marks)**

PART – B

5 a. Explain the basic equipments used in ultrasonic inspection and also state the advantages of ultrasonic inspection. **(10 Marks)**

b. Explain the general characteristics of ultrasonic waves and also explain different types of ultrasonic waves with suitable sketches. **(10 Marks)**

6 a. Explain the following with neat sketches with respect to pulse echo data :
A – scan system
B – Scan system
C – scan system. **(10 Marks)**

b. Explain the detail procedure for flows detection for the following products :
i) Casting ii) extrusion iii) rolled products iv) weld set
v) corrosion monitoring vi) stress measurement vii) crack monitoring. **(10 Marks)**

7 a. Explain the basic principle of radiographic inspection, and also state the advantages and limitations of the same. **(10 Marks)**

b. Explain with suitable sketch the application of radio-graphy :
i) Weldments ii) Tubular structures iii) Complex shapes. **(10 Marks)**

8 a. Explain the following wit neat sketch :
i) Holographic recording ii) holographic re-construction. **(10 Marks)**

b. What is optical–holography? Also sate its advantages and limitations along with its applications. **(10 Marks)**

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