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Seventh Semester B.E. Degree Examination, Dec.2019/Jan.2020
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. What is Non-destructive testing? Mention the advantages and disadvantages of NDT over DT. (05 Marks)
- b. Explain any one optical aid used in visual inspection. (05 Marks)
- c. With a neat sketch explain important steps in Liquid Penetration Test (LPT). (10 Marks)
- 2 a. With the help of neat sketches explain the following with respect to Magnetic Particle Inspection (MPI):
 - (i) Contact current flow method (using Prods) (10 Marks)
 - (ii) Electromagnetic Yolk method. (10 Marks)
- b. Mention advantages, disadvantages and applications of Magnetic Particle Inspection (MPI). (10 Marks)
- 3 a. Explain the principle of Eddy Current Inspection (ECI) and mention the advantages and applications. (10 Marks)
- b. Explain the effect of following parameters on Eddy Current Inspection (i) Test frequency (ii) Lift off (iii) Conductivity (iv) Permeability (v) Geometrical complexity. (10 Marks)
- 4 a. With a neat sketch, explain the microwave holography. (10 Marks)
- b. Write detailed applications of microwave holography and mention their advantages and disadvantages. (10 Marks)

PART – B

- 5 a. Write a short note on basic equipments used in Ultra Sonic Testing (UST). (10 Marks)
- b. Explain general characteristics of Ultra sonic sound waves. (10 Marks)
- 6 a. With a neat sketch, explain Pulse echo method used in ultra sonic inspection. (10 Marks)
- b. Discuss about advantages, disadvantages and applications of Ultra sonic inspection. (10 Marks)
- 7 a. With a help of neat diagram, explain the working of x-ray radiographic equipments. (08 Marks)
- b. With a neat sketch explain Radiographic film. (06 Marks)
- c. Write a note on : (i) Radio graphic sensitivity (ii) Image quality indicator. (06 Marks)
- 8 a. Draw a neat sketch of Optical holography. Explain the procedures of inspection and typical applications. (10 Marks)
- b. With the help of a neat sketch explain the systems and techniques of Acoustical holography. Mention its applications. (10 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.