

--	--	--	--	--	--	--	--	--	--

## Sixth Semester B.E. Degree Examination, June/July 2019 Non-Destructive Testing

Time: 3 hrs.

Max. Marks: 80

*Note: Answer any FIVE full questions, choosing ONE full question from each module.*

### Module-1

- 1 a. What are the different optical aids used in visual inspection? Explain. (08 Marks)  
b. Briefly explain the various non destructive methods which is used for detect the material defect. (08 Marks)

OR

- 2 a. Explain the testing procedure for liquid penetrant testing with suitable sketch. (08 Marks)  
b. Summarize the characteristics and applications of liquid penetrant. (08 Marks)

### Module-2

- 3 a. Explain with suitable sketch about the working principle of magnetic particle inspection. (08 Marks)  
b. Explain briefly about magnetic hysteresis. (08 Marks)

OR

- 4 a. What are the prime advantages of radiographic examination during NDT? Draw the diagram and explain the principle and working X-Rays equipment. (08 Marks)  
b. Differentiate between X-Ray and Gamma ray radiography. (08 Marks)

### Module-3

- 5 a. Compare and discuss briefly computed tomography to other NDE methods. (08 Marks)  
b. Explain the principle of computed tomography and applications of industrial CT. (08 Marks)

OR

- 6 a. Illustrate with suitable sketch about types of thermography. (08 Marks)  
b. Describe inspection method applications in thermography. (08 Marks)

### Module-4

- 7 a. Briefly explain recording and reconstruction-infometric techniques and holography inspection. (08 Marks)  
b. Describe the techniques applications of acoustical holography. (08 Marks)

OR

- 8 a. Explain with a neat sketch about the types of eddy current instrument based on probes in eddy current non destructive testing. (08 Marks)  
b. Discuss about the various types of coils used for eddy current inspection. (08 Marks)

### Module-5

- 9 a. Briefly explain with neat sketch about the types of transducer used in ultrasonic testing method. (08 Marks)  
b. Discuss the applications and limitations of ultrasonic testing. (08 Marks)

OR

- 10 a. Illustrate with suitable sketch about working principle of pulse echo method. (08 Marks)  
b. Illustrate with neat sketch about reflection and transmission of sound waves. (08 Marks)

\*\*\*\*\*

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.