

Register No.: Name:

SAINTGITS COLLEGE OF ENGINEERING (AUTONOMOUS)

(AFFILIATED TO APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY, THIRUVANANTHAPURAM)

SIXTH SEMESTER B.TECH DEGREE EXAMINATION (R,S), MAY 2024**MECHANICAL ENGINEERING****(2020 SCHEME)****Course Code : 20MET312****Course Name: Non-destructive Testing****Max. Marks : 100****Duration: 3 Hours****PART A*****(Answer all questions. Each question carries 3 marks)***

1. Brief the applications of borescopes.
2. How physiological factors affects visual inspection.
3. What is the principle of liquid penetrant inspection?
4. What are the functions of developer?
5. Explain the principle of magnetic particle inspection.
6. What are the applications of magnetic particle inspection?
7. Explain the working principle of ultrasonic testing.
8. Which are the different types of transducers used in ultrasonic testing?
9. What are the benefits of radiography?
10. What is the principle of industrial radiography?

PART B***(Answer one full question from each module, each question carries 14 marks)*****MODULE I**

11. a) Explain computer aided visual inspection. What are its advantages? (7)
- b) What are the common remote visual inspection tools used in visual inspection (7)

OR

12. Explain any 4 Non-Destructive Testing methods with their applications. (14)

MODULE II

13. a) What are the properties of a good penetrant? (7)
- b) How will you classify the penetrants based on their removal technique (7)

OR

14. What are the various steps involved in liquid penetrant inspection? (14)
Explain

MODULE III

15. Differentiate direct and indirect magnetization with 2 examples (14)

OR

16. a) With suitable sketch, explain head shot and coil shot technique (7)
b) What are the advantages and limitations of magnetic particle inspection? (7)

MODULE IV

17. What are the common scanning techniques used in ultrasonic testing? (14)

OR

18. a) Differentiate pulse echo technique and transmission technique. (7)
b) Explain the various wave forms used in ultrasonic testing. (7)

MODULE V

19. With suitable diagram, explain Single Wall Single Image and Single Wall Double Image techniques. (14)

OR

20. Write short note on real time radiography. With suitable diagram, explain step by step process in radiographic film processing. (14)
