

Register No.: Name:

SAINTGITS COLLEGE OF ENGINEERING (AUTONOMOUS)

(AFFILIATED TO APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY, THIRUVANANTHAPURAM)

SECOND SEMESTER M.TECH DEGREE EXAMINATION (Regular), JULY 2022**MACHINE DESIGN****(2021 Scheme)****Course Code: 21MD206-C****Course Name: Experimental Stress Analysis****Max. Marks: 60****Duration: 3 Hours****PART A***(Answer all questions. Each question carries 3 marks)*

1. How would you obtain stresses from Airy's stress function?
2. How are semiconductor materials classified?
3. Define the terms Frequency, Velocity and Wavelength.
4. List the limitations of Photoelastic Coatings.
5. List a few applications of Brittle Lacquer.
6. What are the advantages of brittle coating techniques?
7. What are the different Radiographic inspection methods?
8. What are the advantages of Ultrasonic testing methods?

PART B*(Answer one full question from each module, each question carries 6 marks)***MODULE I**

9. What are the various types of mechanical strain gauges? Explain any one type with a neat sketch. (6)

OR

10. Write short notes on temperature compensation in semi-conductor strain gauges. (6)

MODULE II

11. What are the different materials used for semiconductor strain gauges? How these gauges are manufactured? (6)

OR

12. Describe the working of piezoelectric strain gauges. What are the advantages of these gauges? (6)

MODULE III

13. With the help of a neat sketch explain the Circular Polariscope technique. (6)

OR

14. What are the methods used to produce plane-polarised light? (6)

MODULE IV

15. What are the properties of an ideal Photoelastic Coating material? (6)

OR

16. What are the applications of Photoelastic Coatings? (6)

MODULE V

17. Explain any one brittle coating method in detail. (6)

OR

18. What are the steps involved in brittle lacquer techniques? (6)

MODULE VI

19. Explain in detail about Magnetic Particle Testing. (6)

OR

20. Write short notes on Liquid Penetrant testing. (6)
