

Register No.: Name:

SAINTGITS COLLEGE OF ENGINEERING (AUTONOMOUS)

(AFFILIATED TO APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY, THIRUVANANTHAPURAM)

FIRST SEMESTER M.TECH DEGREE EXAMINATION (Regular), FEBRUARY 2022**(MACHINE DESIGN)****(2021 Scheme)****Course Code : 21MD105-B****Course Name: Sensors for Industrial Applications****Max. Marks : 60****Duration: 3 Hours****PART A***(Answer all questions. Each question carries 3 marks)*

1. Explain active and passive sensors with suitable examples.
2. Explain electromechanical sensors.
3. Explain predictive maintenance with a suitable example.
4. Write a short note on sensor materials.
5. Explain laser sensors.
6. List any three applications of fiber optic networks.
7. Explain the working principle of bar code scanners.
8. Discuss the applications of OCI.

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

9. Explain the operation principles of any two different type of sensors. (6)

OR

10. Define sensor. Classify the different types of sensors. (6)

MODULE II

11. Explain the working principle of resistance strain gauge. (6)

OR

12. Define potentiometer. With the help of neat figure, explain resistive potentiometers. (6)

MODULE III

13. Enumerate the selection criteria of sensors for industrial applications. (6)

OR

14. Describe the techniques involved in condition monitoring of industrial systems. (6)

MODULE IV

15. Define thermal sensor. Classify with details of various temperature sensors. (6)

OR

16. Define pressure sensors. Describe with neat sketch, the measurement of pressure using LVDT. (6)

MODULE V

17. Explain how acoustic emission is utilized for increasing life cycle of equipment. (6)

OR

18. Enumerate how the sensor network is used to detect machinery faults. (6)

MODULE VI

19. Explain the working principle of RFID with an example. (6)

OR

20. With the help of block diagram, explain automatic identification techniques for shop floor control. (6)
