Register No   ....   Name: ....

SAINTGITS COLLEGE OF ENGINEERING (AUTONOMOUS)

(AFFILIATED TO APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY, THIRUVANANTHAPURAM)

FIFTH SEMESTER B.TECH DEGREE EXAMINATION (R,S), DECEMBER 2023
MECHANICAL ENGINEERING
(2020 SCHEME)

Course Code :   20MET305

Course Name: Industrial and Systems Engineering

Max. Marks :   100   **Duration: 3 Hours**

PART A
(Answer all questions. Each question carries 3 marks)

1. List the functions of an industrial engineer.
2. Why human factors are important while designing a product?
3. Compare between Q system and P system
4. What is quantity discount model?
5. Write short note on Collective bargaining
6. What are the various types of industrial fatigue
7. List any three advantages of agile manufacturing?
8. What is the necessity of workers participation in management?
9. Describe the concept of Online Analytical Processing (OLAP)
10. Explain the concept of Business intelligence

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

MODULE I

11. a) Explain in detail the various steps involved in product design   (10)
    b) What are the fields of application of industrial engineering?   (4)

OR

12. a) The following data are given for a company's product named "ABC":
        Fixed cost = Rs. 3,00,000, Variable cost= Rs.10 per unit and selling   (4)
        price=Rs. 30 per unit. Find the break-even point.
    b) Explain the important factors affecting product design   (10)

MODULE II

13. a) Explain any four principles of material handling.   (10)
    b) List the material handling equipment's are classified?   (4)

OR

14. a) List the various phases of value engineering   (4)
    b) Explain the concept of Just in Time Manufacturing (JIT) and what   (10)

are the principles of JIT manufacturing

MODULE III

15. Explain about different types of personal protective devices used in industries for safety of workers   (14)

OR

16. Explain the role of trade unions in increasing the productivity of Indian industries   (14)

MODULE IV

17. What are the seven types of wastes in lean manufacturing?   (14)

OR

18. a) Explain the detail stages of "5S"   (10)
    b) Describe the concept of agile manufacturing   (4)

MODULE V

19. a) Explain about data warehousing and data mining   (8)
    b) What do you mean by Product lifecycle management?   (6)

OR

20. Explain the concept of Enterprise Resources Planning (ERP) and stages and benefits of ERP implementation   (14)

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