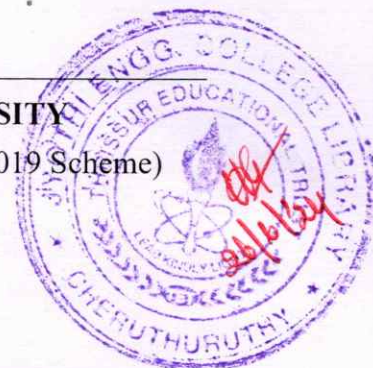


Reg No.: \_\_\_\_\_

Name: \_\_\_\_\_

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**  
Fifth Semester B.Tech Degree (S, FE) Examination June 2024 (2019 Scheme)



**Course Code: MET 305**

**Course Name: INDUSTRIAL & SYSTEMS ENGINEERING**

Max. Marks: 100

Duration: 3 Hours

**PART A**

*(Answer all questions; each question carries 3 marks)*

		Marks
1	List any six application areas of Industrial Engineering.	3
2	What are the human factors to be considered while designing a new product?	3
3	Describe the objectives of materials management.	3
4	Explain the concept of JIT manufacturing system.	3
5	Define industrial psychology. What are its aims and objectives?	3
6	What do you understand by the term workers participation in management?	3
7	What is 5s methodology in lean manufacturing?	3
8	Describe the characteristics of agile manufacturing.	3
9	List any six advantages of implementing ERP.	3
10	What do you mean by Business Process Reengineering?	3

**PART B**

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

**Module -1**

- |    |   |   |
|----|---|---|
| 11 | a) Explain briefly the evolution of modern Concepts in Industrial Engineering.        | 7 |
|    | b) With a neat sketch explain "break- even analysis "and define each term used in it. | 7 |
| 12 | a) Explain the product development techniques Standardization and Simplification.     | 7 |
|    | b) What are the essential principles of good product design?                          | 7 |

**Module -2**

- |    |  |   |
|----|--|---|
| 13 | a) A company requires 16,000 units of raw material costing Rs.2 per unit. The cost of placing an order is Rs.45 and the carrying costs are 10% per year per unit of the average inventory. Determine (i) EOQ (ii) Number of orders per year (iii) Cycle time (iv) Total variable cost of managing the inventory. | 7 |
|----|--|---|

- b) Describe the various material handling principles. 7
- 14 a) Explain the important factors need to be considered while selecting material handling equipment. 7
- b) Using clear illustrations, distinguish between the P and Q system in inventory models. 7

**Module -3**

- 15 a) Explain the types of communication in industry and how it affects productivity. 7
- b) Describe the causes and effects of industrial disputes and how it can be eliminated. 7
- 16 a) Explain conditions to be met for maintaining good industrial relations. 7
- b) What is meant by industrial fatigue? What are the methods of eliminating fatigue? 7

**Module -4**

- 17 a) Name and explain the seven main wastes being dealt with in lean manufacturing. 7
- b) Explain the conceptual frame work of agile manufacturing. 7
- 18 a) Compare the concepts of lean and conventional manufacturing. 7
- b) List and describe any *four* components of agile manufacturing system. 7

**Module -5**

- 19 a) Explain the evolution of ERP technology. 7
- b) Define the term "business intelligence" and explain it. 7
- 20 a) Describe the success and failure factors of ERP implementation 7
- b) What is Online Analytical Processing (OLAP)? What are its uses? 7

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