

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Fifth Semester B.Tech Degree Regular and Supplementary Examination December 2022 (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

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| 1 | What do you mean by Design Function? | (3) |
| 2 | Explain the term Concurrent Engineering. | (3) |
| 3 | What is the principle of unit load in material handling? | (3) |
| 4 | Explain the P-system used in inventory management | (3) |
| 5 | Describe any three functions of trade unions. | (3) |
| 6 | What is Collective bargaining? | (3) |
| 7 | Why industries are implementing Lean manufacturing in their firms? | (3) |
| 8 | Explain how an organization can improve its agility. | (3) |
| 9 | Write down a few myths identified with respect to ERP | (3) |
| 10 | What is Customer relationship Management (CRM) | (3) |

PART B**(Answer one full question from each module, each question carries 14 marks)****Module -1**

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| 11 | a) Briefly explain any <i>eight</i> different fields of application of Industrial Engineering. | (8) |
| | b) For a dairy product firm, the annual fixed charge is Rs.64,000/-. The variable cost per unit of item produced is Rs.3.75. The selling price is 7.75 per unit. Find
i) The breakeven point ii) The contribution per unit. If the expected sales are 20,000 units, iii) Is the price fixed acceptable iv) What is the expected margin of safety? | (6) |
| 12 | a) How will you design the work place for a computer operator with due consideration to human factors in design? | (10) |
| | b) Explain the term product life cycle. | (4) |

Module -2

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| 13 | a) Describe any <i>five</i> different types of material handling equipments. | (10) |
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- b) Explain any *four* important factors need to be considered while selecting material handling equipments. (4)
- 14 a) A company needs 1500 units of an item per month, each costing Rs.27. The cost per order is Rs.150 and inventory carrying charges are 20% of the average inventory. Find out i) Economic Order Quantity ii) The number of orders per year iii) The time between two consecutive orders iv) Total optimal cost including purchase cost. (6)
- b) Explain the concept of JIT manufacturing system. (8)

Module -3

- 15 a) What is industrial fatigue? How it can be eliminated? (7)
- b) Describe any *seven* types of personal protective devices used in industries to prevent accidents. (7)
- 16 a) What are the different types of communications existing in industries? Also describe any *three* barriers that are hindering effective communications. (7)
- b) Explain the different forms of worker's participation in management. (7)

Module -4

- 17 a) Compare and contrast Lean manufacturing (LM) and Conventional manufacturing. (8)
- b) Describe any *three* lean manufacturing tools used in industries practising LM. (6)
- 18 a) Explain the characteristics and generic features of agile manufacturing. (8)
- b) Describe the conceptual frame work of agile manufacturing. (6)

Module -5

- 19 a) Point out any *six* benefits of implementation of ERP. (6)
- b) Explain the different success and failure factors of ERP implementation. (8)
- 20 a) Briefly explain the term Business Process Reengineering (6)
- b) What is Online Analytical Processing (OLAP)? What are its uses? (8)
