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

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

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**

Eighth Semester B.Tech Degree Supplementary Examination October 2022 (2015 Scheme)

**Course Code: ME404**

**Course Name: INDUSTRIAL ENGINEERING**

Max. Marks: 100

Duration: 3 Hours

**PART A**

*Answer any three full questions, each carries 10 marks.*

Marks

- 1 a) Distinguish between modular design and production design. (4)
- b) Explain any six areas of application of Industrial engineering. (6)
- 2 a) What is C-V-P analysis? How it is helpful in arriving at economic decisions? (5)
- b) What are the different stages in Value analysis technique (5)
- 3 a) Differentiate between Group technology layout and Product layout. (5)
- b) What are the different factors to be considered while selecting a material handling equipment? (5)
- 4 a) Explain any two methods for calculating depreciation of items. (4)
- b) The initial cost of an equipment is Rs.4600/-. The installation charge is Rs.1500/- and resale value is Rs.100/-. The maintenance costs over a period of 8 years are given below. (6)

Year	1	2	3	4	5	6	7	8
Maintenance Cost (Rs.)	100	250	400	600	900	1250	1600	2000

When should the machine be replaced?

**PART B**

*Answer any three full questions, each carries 10 marks.*

- 5 a) What is SIMO chart? Explain the construction of SIMO chart for a general micro motion study. (6)
- b) List and explain at least four rules associated with Principles of motion economy. (4)
- 6 a) Describe any two techniques used for merit rating in industries. (5)
- b) Explain the Halsey wage incentive plan. How it is different from Rowan plan? (5)

- 7 a) Discuss the various barriers that are hindering the effective communication in industries (6)  
b) List and explain the various personal protection devices used in industries (4)
- 8 a) What are the various causes of industrial disputes? (5)  
b) Explain the different forms of worker participation in management (5)

**PART C**

*Answer any four full questions, each carries 10 marks.*

- 9 a) Distinguish between loading and scheduling in production control. (4)  
b) Briefly explain any six characteristics of mass production (6)
- 10 a) Distinguish between centralized and decentralized dispatching methods. (4)  
b) Explain briefly any two selective inventory control techniques. (6)
- 11 a) What are the different costs associated with inventory control (5)  
b) The inventory purchase of a company is in lots of 500 boxes which is a 3 months' supply. The cost per box is Rs.125 and the ordering cost is Rs.150 per order. The inventory carrying cost is estimated at 20% of unit value. i) Find the total annual inventory cost of the existing policy ii) What is the saving obtained by adopting EOQ policy? (5)
- 12 a) Write down the differences between inspection and quality control (5)  
b) Briefly describe the concept of process capability. (5)
- 13 a) Explain how the system reliability varies when systems are connected in various configurations. (6)  
b) Describe the implementation of Six sigma standards in Indian industries. (4)
- 14 a) Discuss the characteristic features of quality circles (5)  
b) Briefly explain the concept of TQM (5)

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