December 2023

B.Tech. (ME) Vth SEMESTER

Industrial Engineering (PCC-ME-505-21)

Time : 3 Hours] [Max. Marks : 75

Instructions :

1. *It is compulsory to answer all the questions (1.5 marks each) of Part-A in short.*
2. *Answer any four questions from Part-B in detail.*
3. *Different sub-parts of a question are to be attempted adjacent to each other.*

PART–A

1. (a) State the strategies for improving productivity. (1.5)

(b) "Mere increase in production may or may not contribute to increase in productivity." Comment. (1.5)

(c) What do you mean by standard costing? (1.5)

(d) State the objectives of work study. (1.5)

(e) What is work sampling? (1.5)

(f) What are the objectives of inventory control? (1.5)

(g) What is the purpose of keeping safety stocks? (1.5)

(h) What is difference between prediction and forecasting? (1.5)

(i) What do you mean by aggregate planning? (1.5)

(j) Define quality. (1.5)

PART–B

2. (a) Discuss different types of production systems. (10)

(b) Compare product layout and process layout. (5)

3. (a) Pepsi company produces a single article. Following cost data is given about its product : (10)

Selling price per unit : ₹ 40

Marginal cost per unit : ₹ 24

Fixed cost per annum : ₹ 16000

Calculate :

(i) P/V ratio.

(ii) Break even sales.

(iii) Sales to earn a profit of ₹ 2000.

(iv) Profit at sales of ₹ 60000.

(b) Write short note on lean manufacturing. (5)

4. (a) Explain the various steps involved in time study. (10)

(b) Differentiate between work measurement and method study. (5)

5. (a) ABC corporation has got a demand for particular part at 10000 units per year. The cost per unit is ₹ 2 and it costs ₹ 36 to place an order and to process the delivery. The inventory carrying cost is estimated at 9 percent of average inventory investment. Determine: (10)

(i) Economic order quantity.

(ii) Optimum number of orders to be placed per annum.

(iii) Minimum total cost of inventory per annum.

(b) Discuss the following selective inventory control techniques :

(i) SDE.

(ii) VED. (5)

6. (a) Discuss the various methods of forecasting. (10)

(b) Discuss forecast errors. (5)

7. (a) There are seven jobs which are to be pressed first on Machine I and then on Machine II. Processing time in hours are given below : (10)

Job	A	B	C	D	E	F	G
Machine I	6	24	30	12	20	22	18
Machine II	16	20	20	13	24	2	6

Find the optimal sequence and total elapsed time. Compute the idle time on Machine II.

(b) What is Gantt chart? How it is constructed? (5)
