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Fifth Semester B.E. Degree Examination, June/July 2023
Operation Management

Time: 3 hrs.   Max. Marks: 100

Note: *Answer any FIVE full questions, choosing ONE full question from each module.*

Module-1

1 a. Define the terms :
      i) Production   ii) Production System. **(04 Marks)**
   b. What is Decision Making? Is decision making a Science? Justify. Explain steps involved in Decision Making. **(10 Marks)**
   c. Explain the functions of any Business Organization. **(06 Marks)**

OR

2 a. Explain the distinguishing characteristics of Products versus Services. **(06 Marks)**
   b. Explain factors affecting Productivity. **(06 Marks)**
   c. A Company manufactures and sells a product at Rs 320 each. The fixed cost was Rs 3,00,000 and the variables cost per product was Rs 20. What is the contribution per product? What is the Break – even Quantity? **(08 Marks)**

Module-2

3 a. What is Forecasting? Show the classification of Forecasting. **(06 Marks)**
   b. The demand of a product of a certain company is shown below :
      Using a time period value of $n = 3$ and use simple Moving Average method, determine the following :
      i) Forecasts for each period.
      ii) Deviations, Mean Deviation.
      iii) Absolute Deviation, Mean Absolute Deviation.

Week :	1	2	3	4	5	6	7
Demand / units	180	190	210	195	205	215	210

(14 Marks)

OR

4 a. What is Forecasting? Explain the steps in Forecasting process. **(08 Marks)**
   b. A firm believes that its annual profit depends on its expenditures for research. The following datas are given. Estimate the profit when expenditure is 6 units.
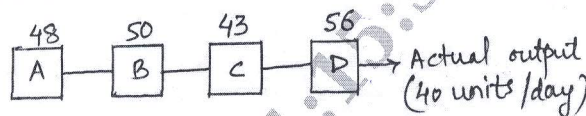
Year :	1989	1990	1991	1992	1993	1994
Expenditure :	2	3	5	4	11	5
Annual profit :	20	25	34	30	40	31

(12 Marks)

Module-3

5 a. Define the terms :
      i) Design capacity   ii) System capacity   iii) System efficiency. **(06 Marks)**
   b. Explain the Long term and Short term strategies of Capacity planning. **(08 Marks)**

c. A plastics firm has four work centres A, B, C, D in series with individual capacities (units / day) and actual output as shown below :

Determine : i) System Capacity   ii) System Efficiency.   (06 Marks)

OR

6 a. What is the need and importance of Factory Location Decision? (10 Marks)
    b. Explain the systematic process in finding a good Location. (10 Marks)

Module-4

7 a. Explain the flow chart of Aggregate planning and Master Production Schedule. (10 Marks)
    b. Define Master Scheduling. Explain. (05 Marks)
    c. A Chemical Company has developed a forecast as shown below. It uses a K factor of 0.8. if the actual demand is 11500 units in April, what modified scheduled quantity should be scheduled for June.

Month	Forecaste	Actual
April	12000	11500
May	16000	-
June	14000	-

(05 Marks)

OR

8 a. Explain the strategies of Aggregate Planning. (10 Marks)
    b. Explain Master Scheduling Methods. (10 Marks)

Module-5

9 a. What is MRP? Explain the structure of MRP. (10 Marks)
    b. The projected requirements of a Company are given below. The Economic Order Quantity (EOQ) is 300 units and the Lead time is 2 weeks. The material available in hand is 100 units. Prepare a detail Materials requirement plant.

Week :	1	2	3	4	5	6	7	8
Required :	80	-	-	120	-	120	-	100

(10 Marks)

OR

10 a. Explain the difference between Purchasing , Procurement and Supply Chain Management. (10 Marks)

    b. What is a Vendor? Explain the process of Vendor development. (10 Marks)

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