

2016

**MBA**

**PAPER : MBA 2.3**

**PRODUCTION AND OPERATION MANAGEMENT**

Full Mark : 70

Time : 3 Hrs

*The figures in the margin indicate full marks for the questions*

**SECTION A**

All questions are compulsory.

2X5=10

1. What do you mean by productivity? 2
2. Briefly describe the term production/operations management. 2
3. What is reactive maintenance? 2
4. What are the objectives of inventory control? 2
5. What is service quality? What are the internal and external measures of service quality? 2

**SECTION B**

Answer any five from the following.

4X5=20

1. Discuss the factors influencing productivity 4
2. Describe the operations functions and the nature of operation manager's jobs 4

( 1 )

**P.T.O.**

3. Distinguish between manufacturing operations and service operations. 4

4. A toy manufacturer produces toys in five locations throughout the country. Raw

materials (primarily barrels of powdered plastics) will be shipped from a new, centralized warehouse whose location is to be determined. The monthly quantities to be shipped to each location are the same. A coordinate system has been established, and the coordinates of each location have been determined as shown. Determine the coordinates of the centralized warehouse 4

| Location | (x,y) |
|----------|-------|
| A        | 3,7   |
| B        | 8,2   |
| C        | 4,6   |
| D        | 4,1   |
| E        | 6,4   |

5. Discuss the similarities and differences between TQM and TPM 4

6. Explain the term 'Just in time' manufacturing 4

7. What is product life cycle and how does it impact operations. 4

### SECTION C

Answer any five from the following. 8X5=40

1. The following information regarding the output produced and inputs consumed for a particular time period for a

particular company is given below:

Output – Rs. 10,000

Human input – Rs. 3,000

Material input – Rs. 2,000

Capital input – Rs. 3,000

Energy input – Rs. 1,000

Other misc. input – Rs. 500

The values are in terms of base year rupee value.

Compute various productivity indices 8

2. Explain in brief the objectives of operations management. 8

3. The new Health-care facility is targeted to serve seven census tracts in Delhi. The table given below shows the coordinates for the centre of each census tract, along with the projected populations, measured in thousands. Customers will travel from the seven census tract centres to the new facility when they need health-care. Two locations being considered for the new facility are at (5.5, 4.5) and (7, 2), which are the centres of census tracts C and F. Details of seven census tract centres, co-ordinate distances along with the population for each centre are given below. If we use the population as the loads and use rectilinear distance, which location is better in terms of its total load distance score? 8

| <i>Census tract</i> | $(x, y)$   | <i>Population (I)</i> |
|---------------------|------------|-----------------------|
| A                   | (2.5, 4.5) | 2                     |
| B                   | (2.5, 2.5) | 5                     |
| C                   | (5.5, 4.5) | 10                    |
| D                   | (5, 2)     | 7                     |
| E                   | (8, 5)     | 10                    |
| F                   | (7, 2)     | 20                    |
| G                   | (9, 2.5)   | 14                    |

4. Discuss the different types of maintenance. 8
5. Annual demand for an item is 4800 units. Ordering cost is Rs.300.00 per order. Inventory carrying cost is 24% of the purchase price per unit per year. The price breaks are shown as

| Quantity                  | Price(Rs) |
|---------------------------|-----------|
| $0 \leq Q_1 \leq 1200$    | 10        |
| $1200 \leq Q_2 \leq 2000$ | 9         |
| $2000 \leq Q_3$           | 8         |

- Find the optimal order size. 8
6. Discuss the concepts involved in product design. 8
7. Discuss the differences between high contact and low contact service. 8