

R15
Code No: 723AA
JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
MBA III Semester Examinations, June/July-2018
PRODUCTION AND OPERATIONS MANAGEMENT
Time: 3hours
Max.Marks:75
Note: This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A.

Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART - A
5 × 5 Marks = 25

- 1.a) What is 'Process Characteristics Matrix'? [5]
- b) Discuss the various causes that require value analysis. [5]
- c) What are the Limitations of Product Layout? [5]
- d) Explain briefly about Palmer's Heuristic procedure. [5]
- e) Write a short note on VED Analysis. [5]

PART - B
5 × 10 Marks = 50

2. What are the characteristics of a service system? Explain different types of Production systems and mention suitable examples. [10]
- OR**
3. Define 'Productivity'. Explain different strategies for improving overall productivity in an organization. [10]
4. Explain different ergonomic considerations while designing products. [10]
- OR**
5. Alpha Industry is planning for expanding its production operation. It has identified three different technologies for meeting the goal. The initial outlay and annual revenues with respect to each of the technologies are summarized in the following table. Suggest the best technology which has to be implemented based on present worth method of comparison assuming 20% interest rate compounded annually. [10]

	Initial Outlay (Rs.)	Annual Revenue (Rs)	Life (Years)
Technology 1	12,00,000	4,00,000	15
Technology 2	20,00,000	6,00,000	15
Technology 3	18,00,000	5,00,000	15

6. The coordinates of the three existing facilities are (4,3) (6,8) and (9,5). Two new facilities are added along with the three existing facilities and flow between the new facilities is 10 tones of materials/ day. The flows of material from the new facilities to the different existing facilities are shown as below:

New Facility	Existing Facility		
	1	2	3
	10	12	19
	8	13	11

Formulate a linear programming model to find the coordinates of the new facilities such that the total material handling cost is minimized. Solve the model. [10]

OR

7. How do you classify Layouts? Illustrate. Discuss in detail the advantages and limitations of group technology Layout. [10]
8. Consider the following three machines and 5 jobs flow shop problem. Apply Johnson's Rule. [10]

Job	Processing Time		
	Machine 1	Machine 2	Machine 3
1	8	5	4
2	10	6	9
3	6	2	8
4	7	3	6
5	11	4	5

OR

9. What is Job shop scheduling Problem? Discuss different types of schedules in detail. [10]
10. What is Analytic Hierarchy Process (AHP)? Explain the steps of Analytic Hierarchy Process (AHP). [10]

OR

- 11.a) Distinguish between P and Q systems of Inventory.
- b) Ram Industry needs 5400units/year of a bought out component which will be in its main product. The ordering cost is Rs.250 per order and the carrying cost per unit per year is Rs.30. Find out Economic Order Quantity, Number of orders per year, Time between successive orders. [5+5]

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