

Code No: 783AA

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

MBA III Semester Examinations, February - 2025

PRODUCTION AND OPERATIONS MANAGEMENT

Time: 3 Hours

Max.Marks:60

Note: This question paper contains parts A and B. (i) **Part- A** for 10 marks, (ii) **Part - B** for 50 marks.

- Part A is a compulsory question that consists of ten sub-questions from all units carrying equal marks.
- Part B consists of **ten questions** (numbered from 2 to 11) **carrying 10 marks each**. Each of these questions is from each unit and may contain sub-questions. For each question, there will be an “either” “or” choice, which means that there will be two questions from each unit and the student should answer either.

PART – A**(10 Marks)**

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|------|--|-----|
| 1.a) | Define Operations Management. | [1] |
| b) | Brief on Corporate Strategy importance in POM. | [1] |
| c) | Describe the Flow production system. | [1] |
| d) | What is Value Engineering? | [1] |
| e) | Illustrate the Plant Layout. | [1] |
| f) | What is Break-even Point? | [1] |
| g) | Brief on Job-shop scheduling. | [1] |
| h) | Define Quality Control concepts. | [1] |
| i) | Brief on FSN Analysis. | [1] |
| j) | Describe the concept of Green purchasing. | [1] |

PART - B**(50 Marks)**

2. Describe the different types of production systems with suitable examples and their suitability for the Indian industries. [10]
- OR**
3. What is Industry 4.0, and how does it impact operations management? And brief on the concept of sustainable operations management. [10]

- 4.a) What are the key considerations in selecting a manufacturing process?
- b) Brief on the responsibilities of process planning engineer. [5+5]

OR

- 5.a) Discuss the concept of capacity planning and its optimization for enhanced production.
- b) Examine the role of value analysis in POM. [5+5]

6. Explain the difference between single-facility and multi-facility location problems. [10]

OR

- 7.a) Describe the application of break-even analysis in plant location decisions.
- b) Illustrate the classification of layout. [5+5]

- 8.a) Describe different types of job shop schedules and their applications.
 b) Describe the priority dispatching rules. [5+5]

OR

9. Consider the following problem with the job-processing times as given below:

Job	Processing time on	
	M ₁	M ₂
1	6	3
2	2	9
3	4	3
4	1	8
5	7	1
6	4	5
7	7	6

- a) Find the optimal sequence of the jobs.
 b) What is the minimum idle time of machine M₂?
 c) What is the minimum make span? [4+3+3]
10. What are the methods for managing obsolete, surplus, and scrap materials? [10]

OR

11. A company manufactures a product from raw material, which is purchased at Rs. 80 per kg. The company incurs a handling cost of Rs. 370 plus freight of Rs. 380 per order. The incremental carrying cost of inventory of raw materials is Rs. 0.25 per kg per month. In addition, the cost of working capital finance on the investment in the inventory of raw materials is Rs. 12 per kg per annum. The annual production of the product is 1,00,000 units and 2.5 units are obtained from one kg. of raw material.
- a) Calculate the economic order quantity of raw materials.
 b) Advice on how frequently the company should order for procurement be placed. [5+5]

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