



RAN-2408000704020001

S.Y.B.B.A. (NEP) (Sem. - IV) Examination October - 2025

Production and Operations Management (Major)

Time: 2 Hours]

[Total Marks: 50

સૂચના : / Instructions

- (1) ઉપરોક્ત દર્શાવેલ વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fill up strictly the above details on your answer book
- (2) Read the paper carefully and write to-the-point answers.
- (3) Figures to the right indicate marks allotted to that question.
- (4) Use of Simple Calculator is allowed. Scientific calculators are not allowed.
- (5) Show proper calculations wherever necessary.
- (6) Draw diagrams wherever necessary.

Seat No.:

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Student's Signature

Q. 1 Explain the following terms/question(s) given below. (Any Five)

10

- a. Production
- b. Production Management
- c. Ordering Cost
- d. Material Handling
- e. Inventory
- f. Bill of Material (BOM)
- g. Determine the sequence only for the following six jobs using Johnson's Rule. Time taken (in minutes) is given for all jobs for two machines.

Job	1	2	3	4	5	6
Machine 1	5	7	8	9	10	2
Machine 2	1	4	6	12	15	13

Q. 2. a. Explain the Scope of operations management giving suitable examples.

07

b. Write a note on types of material handling equipment.

07

OR

Q. 2 a. Discuss the importance (significance) of operations management.

07

b. Enlist various types of plant layouts. Write note on product layout and process layout giving examples.

07

Q. 3 a. An auto industry purchases spark plug at the rate of Rs. 25 per spark plug. Its annual demand is 18000 units, ordering cost is Rs. 250 per order, and inventory-carrying cost is 25% of the price. Find out EOQ.
If the supplier offers a discount of 5% on price per order quantity of 3000 or more units, should the order be accepted?

07

b. Write a detailed note on Master Production Schedule (MPS).

07

OR

- Q. 3 a.** Certain equipment needs four repair jobs, which must be assigned to four machines. The estimated time (in hours) that each mechanic requires to complete the repair job is given in the following table: **07**

Operators	Job 1	Job 2	Job 3	Job 4
A	42	40	51	67
B	57	42	63	58
C	49	52	48	61
D	41	45	60	55

Based on above data, determine that which job should be assigned to which operator so that total time (in hours) gets minimized?

- b.** Explain FSN analysis and VED analysis. **07**

- Q. 4 a.** Explain basic procedure of Work Study. **06**

- b.** Explain SIMO chart with its diagram. **06**

OR

- Q. 4 a.** Prepare 1 Worker X 1 Machine chart for following manufacturing operation after suggesting all possible improvements. Also, calculate cycle time. **10**

1. Worker picks up raw material from tray: 5 seconds
2. Worker checks length of raw material: 5 seconds
3. Worker loads raw material in machine: 5 seconds
4. Worker starts machine: 5 seconds
5. Machine runs automatically with auto-stop at the end: 30 seconds
6. Worker unloads finished piece from machine: 10 seconds
7. Worker inspects finished piece: 10 seconds
8. Worker packs finished piece in a box: 10 seconds

- b.** List out various types of time allowances in relation to time study. **02**
