

Gandhi Institute of Engineering and Technology University, Odisha, Gunupur

(GIET UNIVERSITY)

M.B.A. (Second Semester) Regular Examinations, May – 2026

25MBPC206 – Operations Management

(MBA)

Time: 3 hrs

Maximum: 60 Marks

PART – A

Q.1. Answer *ALL* questions

a. Mention any two factors that influence productivity.

b. The processing times (in hours) of 10 jobs on two machines are given below:

Job	J1	J2	J3	J4	J5	J6	J7	J8	J9	J10
Machine–1	9	4	7	3	8	6	5	2	10	1
Machine–2	5	8	6	7	4	9	3	10	2	11

Determine the optimal job sequence using Johnson’s Rule.

c. Provide a brief explanation of ABC analysis.

d. Explain the concepts of MRP-I and MRP-II

e. Describe the Kanban system.

(The figures in the right hand margin indicate marks.)

(2 x 5 = 10 Marks)

CO #	Blooms Level
CO1	K1
CO2	K4
CO4	K3
CO3	K2
CO5	K1

PART – B

Answer *all* questions

2. a. Explain the concept of a manufacturing system and describe its types.

b. A textile company employs 4 workers, each working 9 hours per day. Each worker produces an average of 12 jackets per day. The company’s total daily wage expense for the workers is ₹7,200, and the daily overhead cost is ₹4,800.

Question-

i. Compute the labour productivity.

ii. Compute the multifactor productivity, using jackets per rupee cost as the measure.

The company is planning to install a semi-automatic stitching machine. After installation, each worker will be able to produce 16 jackets per day, but the daily overhead cost will increase to ₹6,000.

Question-

iii. Compute the new labour productivity.

iv. Compute the new multifactor productivity.

v. Suggest whether the company should install the new machine.

OR

c. Big Basket experiences significant fluctuations in customer demand during festival seasons, flash sales, and changing consumer buying patterns. The company often faces difficulties in maintaining optimum inventory levels for grocery products across its warehouses and delivery centres. To improve inventory planning, reduce shortages, and avoid excess stock, the management wants to estimate future demand more accurately using different forecasting approaches.

Assume you are the operations manager of the company. Discuss the various qualitative and quantitative methods of demand forecasting that can help the company improve its operational efficiency and decision-making.

Marks

CO #

Blooms Level

5

CO1

K1

5

CO1

K4

3. a. Define aggregate planning also explain the strategies used in aggregate planning.

b. Describe the Weighted Factor Rating Method with a suitable example.

OR

c. Discuss the internal factors influencing facility location.

d. Monginis plans to open a new branch in Odisha and has shortlisted four retail locations within the state. At present, each retail outlet prepares its own bread and pastries from scratch.

10

CO1

K3

6

CO2

K2

4

CO3

K3

5

CO3

K1

5

CO2

K5

Page 1 of 2

Store Location	Quantity of product sold	X coordinate	Y coordinate
Bhubaneswar	1250	125	100
Berhampur	3000	250	75
Rourkela	2750	450	300
Cuttack	1500	200	350

To reduce costs and ensure consistency in product quality across all outlets, the management has decided to establish a central commissary where the products will be prepared and then distributed to the four retail stores.

Determine the most suitable location for setting up the commissary by using centre of gravity method.

4. a.

A construction company has been awarded a contract to build a multi-specialty hospital within a fixed budget and a specified completion period. The project involves coordination among architects, engineers, contractors, suppliers, and government authorities. Since the project is unique in nature and involves several interrelated activities, effective planning and management are essential for its successful completion.Based on the above situation, describe the key characteristics of a project.

5

CO3

K6

- b.

Explain the Gantt chart and discuss its advantages and limitations.

5

CO4

K3

OR

- c.

A project consists of the following activities with their respective predecessor relationships and time estimates (in days).

6

CO4

K4

Activity	Predecessor Activity	Optimistic Time	Most Likely Time	Pessimistic Time
A	–	2	4	6
B	A	3	6	9
C	A	8	10	12
D	B	9	12	15
E	C	8	9	10
F	D, E	16	21	26
G	D, E	19	22	25
H	F	2	5	8
I	G	1	3	5

Questions:

- I.

Draw the network diagram for the project using PERT technique.
- II.

Calculate the expected project duration.
- III.

Calculate the project variance and project standard deviation.
- d.

Explain the importance of Production Planning and Control.

4

CO4

K3
5. a.

A company uses 10,000 units of a raw material annually. The cost of placing an order is ₹200 per order, and the carrying cost per unit per year is ₹5.

6

CO5

K4

Questions

- I.

Calculate the Economic Order Quantity (EOQ).
- II.

Determine the number of orders placed per year.
- III.

Find the total annual ordering cost.
- b.

Explain the objectives of material handling.

4

CO6

K2

OR

- c.

Describe inventory management and explain its purpose.

5

CO5

K3
- d.

Discuss the P-system and Q-system of inventory control.

5

CO6

K2
6. a.

Explain the advantages and limitations of Total Quality Management (TQM).

5

CO6

K1
- b.

Describe the concept of KAIZEN with an example and discuss its key features.

5

CO5

K2

OR

- c.

Discuss the different costs of quality in detail with suitable examples.

10

CO5

K3

End of Paper