



Even Semester End Term Examination, May / June 2026

Date: 19/05/2026

Time: 01.00 PM - 04.00 PM

Course Code: MBA3143

Course Name: Digital Operations Management

Semester: Fourth Semester

Max. Marks: 100

Weightage: 50%

CO - Levels	CO1	CO2	CO3
Marks	32	64	44

Part A: Answer Following Questions. 30 M

Qn.No	Questions	M	CO	BT
1	Illustrate the concept of digital twin in operations management	3	CO1	BT3
2	Illustrate the three views of operations (transformation, value chain, and process view).	3	CO1	BT3
3	Use cycle time and determine how digital tools reduce it.	3	CO1	BT3
4	Illustrate the role of cloud-based ERP systems in operations	3	CO1	BT3
5	Examine the role of big data analytics in demand forecasting.	3	CO2	BT4
6	Analyse how digital Kanban systems improve production flow.	3	CO2	BT4
7	Examine the concept of throughput efficiency and identify the ways to improve it digitally.	3	CO2	BT4
8	Explain the impact of IoT sensors on quality assurance.	3	CO3	BT5
9	Explain strategic inventory classification (ABC analysis) with digital support.	3	CO3	BT5
10	Evaluate how automation and AI improve supplier performance.	3	CO3	BT5

Part B: Answer Any 1 Following Questions. 10 M

Qn.No	Questions	M	CO	BT
11	A machine produces 500 units/day. Defect rate = 4%. Using a digital twin, defects are predicted and reduced to 1%. Calculate: (a) units saved from defects, (b) efficiency improvement in %, (c) one recommendation for further improvement.	10	CO1	BT3

12	Cloud-based ERP systems improve operational efficiency. Illustrate the statement using a practical example.	10	CO1	BT3
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Part C: Answer Any 1 Following Questions. 10 M

Qn.No	Questions	M	CO	BT
13	A production line has stages: Cutting (2h), Assembly (3h), Painting (5h), Packaging (2h). Examine the bottleneck, total flow time, and three most efficient digital interventions which can be used to improve throughput .	10	CO2	BT4
14	A retail company experiences frequent stockouts during peak seasons and excess inventory during off-seasons. The management is considering adopting digital tools such as AI-based analytics and data-driven forecasting systems. Analyse how digitization in demand forecasting can address these issues and improve overall operational efficiency.	10	CO2	BT4

Part D: Answer Any 1 Following Questions. 10 M

Qn.No	Questions	M	CO	BT
15	Inventory value = ₹60 lakh, holding cost = 18%. Digital system reduces inventory by 20%. Evaluate new holding cost, savings, and operational benefit.	10	CO3	BT5
16	Automated material handling system will help logistics in a big way. Evaluate the criteria for selecting an automated material handling system. Assess the benefits by providing one practical example.	10	CO3	BT5

Part E: Answer Any 1 Following Questions. 10 M

Qn.No	Questions	M	CO	BT
17	A consumer electronics company introduces IoT-enabled sensors and digital monitoring systems in its production process. After implementation, the firm observes improved consistency in product output and reduced downtime, but employees feel less involved in decision-making. Analyse how digitization influences both operational autonomy and the various dimensions of quality. Also examine the trade-offs involved in increased automation.	10	CO2	BT4
18	Digital dashboards improve service quality monitoring in logistics. Examine the statement with examples and also identify two key metrics.	10	CO2	BT4

Part F: Answer Following Questions. 30 M

Qn.No	Questions	M	CO	BT
19	AutoParts Ltd. supplies components to 50 auto manufacturers across India. Each component batch must meet strict quality standards. The company faces: Frequent delays in supplier deliveries High scrap rate in machining operations (~6%) Limited real-time visibility of inventory and production Manual scheduling and physical inspections cause delays of 1-2 days in shipments. Management wants to implement digital solutions to reduce scrap, improve production scheduling, and increase supply chain visibility. Operational Challenges: Delayed supplier deliveries → disrupted production High scrap rate → increased cost and reduced throughput No real-time data → slow decision-making Proposed Digital Solutions: IoT-enabled machine sensors to monitor production quality in real-time Supplier portal with predictive analytics for delivery performance Digital dashboards for production and inventory visibility Student Task: Evaluate the case using teaching framework.	15	CO3	BT5
20	ePharma delivers medicines online across Bengaluru with 5,000 orders/week. Average delay = 2.5 hours due to manual sorting, traffic congestion, and peak hour surges. Customer complaints have increased. Operational Challenges: Manual sorting → bottlenecks Delivery scheduling not optimized No visibility for customers or managers Proposed Digital Solutions: Predictive analytics for demand and peak hour planning IoT tracking devices for delivery vans Digital dashboards for monitoring sorting and dispatch Objectives: Reduce average delivery delay <30 minutes Increase throughput by 20% without adding staff Improve customer satisfaction Analyse using case teaching framework.	15	CO2	BT4