

MBSC 3001

M.B.A. DEGREE EXAMINATION,
JANUARY 2022.

Third Semester

Operations and Supply Chain Management

PRODUCTION AND OPERATIONS MANAGEMENT

Time : Three hours

Maximum : 100 marks

PART A — (5 × 6 = 30 marks)

Answer any FIVE questions.

1. Explain the key issues to be considered for managing global operations.
2. Describe the objectives of operation management.
3. Explain the objectives of quality control.
4. What are the benefits of using control charts?
5. What is mass production? What are its characteristics and advantages?
6. Explain the main principles of plant layout.

7. Discuss different types of charts used in method study.
8. Compare and contrast the method of time study to the method of work sampling. What are strengths and limitations of each, and for which applications are they best suited?

PART B — (5 × 10 = 50 marks)

Answer any FIVE questions.

9. With illustration from India and international context enumerate the recent trends in production and operation management.
10. Discuss the trade operation and supply network applications with suitable example.
11. Describe the aggregate plan and master schedule.
12. Discuss the 9M's of quality of product or service.
13. Explain the cause of variation in quality.
14. Discuss the phases of production planning and control.
15. Describe the factors influencing productivity.
16. Discuss the recording technique of motion study.

PART C — (1 × 20 = 20 marks)

Case study

Compulsory

17. Workers and management at Whirlpool Appliance's Benton Harbor plant in Michigan have set an example of how to achieve productivity gains, which has benefited not only the company and its stockholders, but also Whirlpool customers, and the workers themselves. Things weren't always rosy at the plant. Productivity and quality weren't good. Neither were labor-management relations. Workers hid defective parts so management wouldn't find them, and when machines broke down, workers would simply sit down until sooner or later someone came to fix it. All that changed in the late 1980s. Faced with the possibility that the plant would be shut down, management and Labor worked together to find a way to keep the plant open. The way was to increase productivity producing more without using more resources. Interestingly, the improvement in productivity didn't come by spending money on fancy machines. Rather, it was accomplished by placing more emphasis on quality. That was a shift from the old way, which emphasized volume, often at the expense of quality. To motivate workers, the company agreed to gain sharing, a plan that rewarded workers by increasing their pay for productivity increases.

The company overhauled the manufacturing process, and taught its workers how to improve quality. As quality improved, productivity went up because more of the output was good and costs went down because of fewer defective parts that had to be scrapped or reworked. Costs of inventory also decreased, because fewer spare parts were needed to replace defective output both at the factory and for warranty repairs. And workers have been able to see the connection between their efforts to improve quality and productivity. Not only was Whirlpool able to use the productivity gains to increase workers' pay, it was also able to hold that lid on price increases and to funnel some of the savings into research.

Questions:

- (a) What were the two key things that Whirlpool management did to achieve productivity gains?
- (b) Who has benefited from the productivity gains?
- (c) How are productivity and quality related?

MBSC 3002

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Third Semester

Operations and Supply Chain Management

LOGISTICS MANAGEMENT

Time : Three hours

Maximum : 100 marks

PART A — (5 × 6 = 30 marks)

Answer any FIVE questions.

All questions carry equal marks.

1. Explain the objectives and scope of Logistics Management.
2. How do you explain customer service relationship results from managing all activities in the Logistics?
3. What are the different cost associated with inventory?
4. Explain the different types of warehouses.

5. Explain Pipeline as a mode of transport.
6. What are the advantages and constraints of containerization?
7. Write a short note on CONCOR
8. What do you mean by 3PL and 4PL?

PART B — (5 × 10 = 50 marks)

Answer any FIVE questions.

9. Explain Internal and External performance measurements of logistics.
10. Explain briefly the various elements of logistics management.
11. Explain in detail about customer services in logistics.
12. Explain with examples, factors to be considered while selecting material handling equipments.
13. Explain the role and importance of warehousing in the logistics system and cost and customer service issues associated with warehouse management.

14. Explain in detail the role and functions of Inland Container Depot (ICD).
15. Explain the challenges and mean to overcome in ocean and air transportation for effective logistics operation.
16. Explain the structure and operations of e-logistics.

PART C — (1 × 20 = 20 marks)

Compulsory

17. One of the best known examples of how an organization can use its supply chain to achieve a competitive advantage is the Benetton Group. Founded by the Benetton family in the 1960s, the company is now one of the largest garment retailers, with stores which bear its name located in almost all parts of the world. Part of the reason for its success has been the way it has organized both the supply side and the demand side of its supply chain.

Although Benetton does manufacture much of its production itself, on its supply side, the company

relies heavily on 'contractors'. Contractors are companies (many of which are owned, or part-owned, by Benetton employees) that provide services to the Benetton factories by knitting and assembling Benetton's garments. These contractors, in turn, use the services of sub-contractors to perform some of the manufacturing tasks. Benetton's manufacturing operations gain two advantages from this. First, its production costs for woollen items are significantly below some of its competitors because the small supply companies have lower costs themselves. Second, the arrangement allows Benetton to absorb fluctuation in demand by adjusting its supply arrangements, without it feeling the full effect of demand fluctuations.

On the demand side of the chain, Benetton operates through a number of agents, each of whom is responsible for their own geographical area. These agents are responsible for developing the stores in their area. Indeed, many of the agents actually own some stores in their area. Products are shipped from Italy to the individual

stores where they are often put directly onto the shelves. Benetton stores have always been designed with relatively limited storage space so that the garments (which, typically, are brightly coloured) can be stored in the shop itself, adding colour and ambience to the appearance of the store.

Because there is such limited space for inventory in the stores, store owners require that deliveries of garments are fast and dependable. Benetton factories achieve this partly through their famous policy of manufacturing garments, where possible, in greggio, or in grey, and then dyeing them only when demand for particular colors is evident. This is a slightly more expensive process than knitting directly from colored yarn, but their supply-side economies allow them to absorb the cost of this extra flexibility, which in turn allows them to achieve relatively fast deliveries to the stores.

Questions:

- (a) Brief your understanding about Benetton Supply Chain operations.

- (b) In your understanding, what is the specialty of Benetton's contractors?
 - (c) Do this method provide Benetton competitive advantage over their competitors? Is this method sustainable in the long term?
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MBSC 3003

M.B.A. DEGREE EXAMINATION, JANUARY 2022.

Third Semester

Operations and Supply Chain Management

SUPPLY CHAIN MANAGEMENT

Time : Three hours

Maximum : 100 marks

PART A — (5 × 6 = 30 marks)

Answer any FIVE questions.

1. What are the importance of Supply Chain Management?
2. What are the factors influencing distribution network design?
3. Explain about the role of information technology in Supply Chain Management.
4. Explain the role of Transportation in Supply Management.
5. What do you mean by bullwhip effect? What are the consequences of bullwhip effect?
6. Explain in detail about supply chain obstacles.

7. What is vendor–managed inventory? With a neat sketch explain a VMI business model and list out its benefits.
8. What are the information required by an aggregate planner.

PART B — (5 × 10 = 50 marks)

Answer any FIVE questions.

9. What are the drivers of supply chain performance with a neat diagram, describe the framework for structuring drivers.
10. Explain network design in supply chain management in detail.
11. Explain the role of collaborative planning and forecasting for efficient execution of supply chain.
12. Write about the various steps involved in the process of sourcing decisions.
13. Examine the significance of coordination in supply chain. What are the obstacles to coordination? How would you overcome these obstacles?
14. Explain briefly the process views of supply chain.

15. Explain the 3PL and 4PL briefly explain the technology component of 4PL.
16. Discuss the role of forecasting in supply chain. Brief the forecasting methods.

PART C — (1 × 20 = 20 marks)

Compulsory.

17. Discuss the role of e-business in supply chain and explain the impact e-business can have on supply chain performance.

MBSC 3004

M.B.A. DEGREE EXAMINATION, JANUARY 2022.

Third Semester

Operations and Supply Chain Management

MATERIALS AND STORE MANAGEMENT

Time : Three hours

Maximum : 100 marks

PART A — (5 × 6 = 30 marks)

Answer any FIVE of the following questions.

1. State the factors influencing customer expectations.
2. Enumerate the need for variety reduction and standardization.
3. Write short notes on Kanban Approach.
4. Describe the methods of store layout in optimizing the usage of space.
5. Explain the usage of simulation techniques in health and safety at work.
6. Distinguish between MRP and MRP-II.

7. Write short notes on ABC analysis.
8. Explain the methods of avoiding the carriage of stock.

PART B — (5 × 10 = 50 marks)

Answer any FIVE of the following questions.

9. Elucidate the different categories of risk and evaluation methods of risk.
10. Explain the various forecasting techniques in relation to demand and lead times.
11. Describe the Just in time philosophy in coping with uncertainties.
12. Explain the selection and operation of appropriate storage and materials equipment.
13. Enumerate the metrics used in measuring the performance of health and safety at work.
14. Explain the internal and external factors that influences the customer expectations.
15. Illuminate the role and function in determining the stock range.
16. Explain the control of slow moving, obsolete and redundant stock.

PART C — (1 × 20 = 20 marks)

Case Study

(Compulsory)

17. Menara engaged Global Supply Chain Solutions to streamline their supply chain. The results allowed Menara to quickly enjoy the benefits; materials management and inventory control improved with 24/7 supply chain visibility through SystaiNet™; component costs were reduced through large volume purchasing Menara's ability to scale and speed to market enhanced; seamless execution across multiple Contract Manufacturers; high levels of quality control and accuracy maintained.

Menara's supply chain became more complicated as its business expanded to five products: optical networking systems, transceivers, transponders and silicon chips for electronic dispersion. Adding to the complexity, Menara also integrates various products to offer five solutions for protocol-agnostic DWDM transport, Ethernet transport and Ethernet services demarcation. The technical sophistication of its products requires hundreds of parts – some highly customized and each with its own SKU to track.

Menara was using a large Contract Manufacturer (CM), which insisted on procurement control. For Menara, that meant limited visibility into its inventory management. It also shifted Menara's supply chain to a network of commodity buyers, requiring the company to spend an inordinate amount of time on maintaining relationships with dozens of buyers and continue managing countless small details. Conducting quarterly inventory reconciliation was tedious and problematic.

As Menara's business grew, the time and resources required to manage such a scattered inventory, and ensure seamless manufacturing escalated, making implementation of an enterprise resource planning (ERP) system increasingly difficult. Menara soon recognized that in order to realize its growth potential and reward its investors, it needed to sharpen its focus on R&D and find relief in supply chain management.

Suggest the strategies to be adopted by Menara to solve the issues in supply chain management.

MBSC 3005

M.B.A. DEGREE EXAMINATION,
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Third Semester

Operations and Supply Chain Management

INFORMATION SYSTEM IN SUPPLY CHAIN
MANAGEMENT

Time : Three hours

Maximum : 100 marks

PART A — (5 × 6 = 30 marks)

Answer any FIVE questions.

All questions carry equal marks.

1. Explain the role of IT in supply chain.
2. Discuss on the IT framework for supply chain.
3. List the factors responsible for better internal supply chain management.
4. Explain the functions of IT in supply relationship management.
5. How the IT infrastructures play a key role in supply chain?

6. State the goals of supply chain in standardization.
7. Discuss the various development stages in supply chain management information technology.
8. Write short note on supply chain information system design.

PART B — (5 × 10 = 50 marks)

Answer any FIVE questions.

All questions carry equal marks.

9. Discuss the transportation and facilities in a supply chain.
10. Discuss the applications of data mining in supply chain.
11. List out the future advancements of IT in the supply chain.
12. Discuss how the communicative devices are utilized in the supply chain management.
13. Explain the integration of supply chain management and information technology in business.

14. Discuss the process, involved in implementation of ERP and DSS in supply chain management.
15. Discuss the process involved in the planning and design of supply chain information system.
16. Explain the scope and advantages of supply chain in the E-business.

PART C — (1 × 20 = 20 marks)

Compulsory

17. Give a detail analysis in the strategies, plans and implementation of supply chain management in the business of modern era.
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