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NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA
(An Autonomous Institute Affiliated to AKTU, Lucknow)

MBA

SEM: IV - THEORY EXAMINATION (2025 - 2026)

Subject: Analytics in Logistics and Supply Chain

Time: 3 Hours

Max. Marks: 100

General Instructions:

IMP: Verify that you have received the question paper with the correct course, code, branch etc.

1. This Question paper comprises of **three Sections -A, B, & C**. It consists of Multiple Choice Questions (MCQ's) & Subjective type questions.

2. Maximum marks for each question are indicated on right -hand side of each question.

3. Illustrate your answers with neat sketches wherever necessary.

4. Assume suitable data if necessary.

5. Preferably, write the answers in sequential order.

6. No sheet should be left blank. Any written material after a blank sheet will not be evaluated/checked.

SECTION-A

20

1. Attempt all parts:-

(1.1) "Make" process represent in the SCOR model means (CO1, K1)

1

- (a) Transport
- (b) Store
- (c) Produce
- (d) Sell

(1.2) Order accuracy means? (CO1,K1)

1

- (a) Wrong order
- (b) Correct order
- (c) Slow order
- (d) Big order

(1.3) Business Intelligence means (CO2,K1)

1

- (a) Data extraction
- (b) Data Visualisation
- (c) Information analysis
- (d) Report making

(1.4) Chart is a form of _____ representation. (CO2,K1)

1

- (a) Text
- (b) Visual
- (c) Sound
- (d) Code

(1.5) Simulation example (CO3,K1)

1

- (a) Reading
 - (b) Writing
 - (c) Watching
 - (d) Trying scenarios
- (1.6) Trend analysis helps (CO3,K1) 1
- (a) Guessing about future trend
 - (b) Understand pattern
 - (c) Increasing errors
 - (d) Reducing forecast accuracy
- (1.7) Optimization problem with respect to supply chain analysis means (CO4,K1) 1
- (a) Behavioural problem
 - (b) Financial issue
 - (c) Raw material issues
 - (d) Business related problem in mathematical form
- (1.8) Decision variables means (CO4, K1) 1
- (a) Unknown values
 - (b) Known values
 - (c) Random
 - (d) None
- (1.9) Production planning includes (CO5,K1) 1
- (a) Deciding what, how much, and when to produce
 - (b) Only marketing activities
 - (c) Employee hiring only
 - (d) Customer feedback analysis only
- (1.10) Sourcing includes (CO5,K1) 1
- (a) Selling finished products to customers
 - (b) Producing goods in factories only
 - (c) Selecting suppliers and purchasing materials
 - (d) Advertising products in media

2. Attempt all parts:-

- (2.1) Define inventory. (CO1,K2) 2
- (2.2) Define structured report. (CO2,K1) 2
- (2.3) Explain simulation model. (CO3,K2) 2
- (2.4) Define feasible solution. (CO4,K2) 2
- (2.5) Define production schedule. (CO5,K2) 2

SECTION-B 30

Answer any one of the following:-

- (3.1) Explain the concept of service level and its importance in inventory and supply chain management. (CO1, K2) 6
- (3.2) Explain the process of decision making in supply chain management and discuss 6

various factors affecting the decision making process. Also discuss how to overcome those factors for effective decisions. (CO1, K3)

Answer any one of the following:-

- (3.3) Describe real-time dashboards and their role in monitoring business performance. (CO2, K2) 6
- (3.4) Describe the data analysis process used for transforming raw data into meaningful information. (CO2, K2) 6

Answer any one of the following:-

- (3.5) Compare graphical representation and moving average as methods for identifying trends in time series data. (CO3, K3) 6
- (3.6) Explain time series data and its application in forecasting with a suitable example. (CO3, K2) 6

Answer any one of the following:-

- (3.7) Describe linear programming and its role in optimization problems in operations research. (CO4, K2) 6
- (3.8) Discuss scheduling in operations management and its importance in efficient utilization of resources. (CO4, K2) 6

Answer any one of the following:-

- (3.9) Explain the production planning process and its role in ensuring efficient operations and resource utilization. (CO5, K2) 6
- (3.10) Explain logistics network design and its importance in optimizing the flow of goods and services in supply chains. (CO5, K3) 6

SECTION-C 50

4. Answer any one of the following:-

- (4.1) Analyze the major challenges in supply chain management and their impact on organizational performance. (CO1, K4) 10
- (4.2) Analyze the impact of technology on supply chain management and its role in improving efficiency, visibility, and decision-making. (CO1, K4) 10

5. Answer any one of the following:-

- (5.1) Analyze the use of Business Intelligence (BI) in enabling data-driven decision-making in organizations. (CO2, K4) 10
- (5.2) Analyze suitable analytics approaches for performance tracking in a business and their role in improving decision-making. (CO2, K4) 10

6. Answer any one of the following:-

- (6.1) Explain simulation models in analytics and their application in decision-making and problem-solving. (CO3, K3) 10
- (6.2) Analyze the use of predictive analytics in supporting data-based decision-making in a company. (CO3, K4) 10

7. Answer any one of the following:-

- (7.1) Explain the model building process in operations research and its role in solving decision-making problems. (CO4, K3) 10
- (7.2) Explain the future scope of prescriptive analytics in improving optimization and 10

decision-making in organizations. (CO4, K3)

8. Answer any one of the following:-

- | | | |
|-------|---|----|
| (8.1) | Analyze suitable location models for determining the best facility location in a company. (CO5, K4) | 10 |
| (8.2) | Analyze the use of the Analytic Hierarchy Process (AHP) for supplier selection in a firm. (CO5, K4) | 10 |

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