

M. Prod . E 1st year 2nd semester examination 2025

Subject: Supply Chain Analytics

Ref no:Ex/Prod/PC/T/121A

Marks : 100

Time : 3 hours

Use separate answer sheets for each group

Group- A (60 marks

(answer any three question)

- 1) Elucidate the principle of theory of constraints (TOC) with a suitable example known to you. (20)
- 2) (a) Expound the different types of supply chain analytics. (10)
(b) What is RFM analysis? Explain. (10)
- 3) (a) Differentiate between business analysis and business analytics. (10)
(b) Also make comparisons between Supply Chain Management and Logistics Management. (10)
- 4) Use Euclidean distance and draw dendrogram for the following data set.

Sample No	X	Y
P1	0.40	0.53
P2	0.22	0.38
P3	0.35	0.32
P4	0.26	0.19
P5	0.08	0.41
P6	0.45	0.30

(20)

- 5) Explicate the different forecasting methods and techniques along with measures of forecast errors and tracking signal.

(20)

- 6) Write short notes on any two:
 - a) Cohort analysis
 - b) K-means clustering
 - c) PCA
 - d) Big data analytics
 - e) Green SCM
 - f) Resilient supply chain framework

(10×2 = 20)

[Turn over

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M.E. PRODUCTION ENGINEERING FIRST YEAR SECOND SEMESTER EXAM 2025

Subject: SUPPLY CHAIN ANALYTICS

Time: Three Hours

Part-II (40 Marks)

Full Marks: 100

(Use Separate Answer Sheet for each Part)

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Answer Any Two Questions

Instruction: Use appropriate schematic / flow diagrams and figures wherever possible / applicable

1. (a) Explain the Push & Pull views for a Supply Chain. How can a supply chain be recognised as “Efficient” or “Responsive”? Distinguish & compare based on important aspects. (10)

(c) What do you mean by circular economy? Explain with comparisons for Traditional Supply Chain, Sustainable Supply Chain and Circular Supply Chain. (10)

2. (a) Explain & establish a Supply Chain Decision-Making framework by structuring the supply chain drivers. (10)

(b) What is Bull-Whip effect in a supply chain? Mention the causes in detail. How can you tackle it? (10)

3. (a) What is “Service Level”? Explain the effects of the increase and the decrease of service level. (10)

(b) Identify the major factors influencing network design decisions. (10)

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