

**B.E. PRODUCTION ENGINEERING FOURTH YEAR FIRST SEMESTER – 2024**

**Subject: LOGISTICS AND SUPPLY CHAIN MANAGEMENT**

**Time: Three Hours**

**Full Marks: 100**

**Answer Question No. 1 any Four from the rest**

**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. (5 + 5)  
(b) Prepare & present a case study based on a company of your own choice to show the Push/Pull boundary and line of demarcation for efficiency & responsiveness. (Ensure that your chosen company should not be the same with other.) (10 + 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.  
(b) Now scan how these drivers are aligned to achieve the successful supply chain of the company you have studied in question no. 1(b). (10 + 5)
3. (a) What is Bull-Whip effect in a supply chain? Mention the causes in detail. How can you tackle it?  
(b) What is “Service Level”? Explain the effects of the increase and the decrease of service level. (10 + 5)
4. (a) Identify the major factors influencing network design decisions.  
(b) Mention & Analyse the possible Design Options for Distribution Networks with suitable diagrams. (5 + 10)
5. (a) Explain the various metrics of supply chains for (i) Facility(ii) Inventory (iii) Transportation & (iv) Information.  
(b) How has IT enabled Customer Relationship Management (CRM)? (10 + 5)
6. (a) Elucidate Aggregate Planning Strategies in a supply chain.  
(b) What is the role of IT in Aggregate Planning? Analyse. (10 + 5)
7. (a) On which basis, would you prefer to outsource the production? How do the third parties increase the supply chain surplus?  
(b) Elaborate the services provided by third party logistics (3PLs). (10 + 5)