**JAIPURIA INSTITUTE OF MANAGEMENT, INDORE**

**PGDM**

**FOURTH TRIMESTER (Batch 2020-22)**

**END TERM EXAMINATION, OCT-2021**

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| Course Name | **Supply Chain Management** | Course Code | **OM 401** |
| Max. Time | **2 hours** | Max. Marks | **40** |

**INSTRUCTIONS:**

***Students can use the IT LAB computers during the exam which will be restricted to the use of excel sheets only. Use of any other material or internet is prohibited during the exam.***

***Students have to write the step-wise excel calculations in the answer sheet only for evaluation purpose.***

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**Questions.1 (5 + 5= 10 Marks)**

A company is examining two alternate choices for moving goods from its plant in Thane to its depot in Chennai. It has been traditionally shipping goods in the FT mode so as to save transportation costs. Its finance department has been complaining about high inventories at Chennai. Full truck load results in shipment size of 160 units, while LTL shipments would allow the firm to get lots of 40 units each. Average demand at Chennai depot is 80 units per month. Cost of product is 500 Rs per unit and the firm works with inventory carrying cost of 20%. Shipping through FT mode results in transport cost of Rs 40 per unit while LTL mode shipment results in transport cost of Rs 50 per unit.

a) Express whether the company should shift to LTL shipments and why?

b) Currently the firm is going through serious working capital problems and the finance department has informed marketing that inventory would be charged at inventory carrying cost of 30%. Simulate its effect on the transportation mode decision?

**Questions.2 (5+5= 10 Marks)**

Weekly demand for paper towels at a Target store is normally distributed, with a mean of 1000 and a standard deviation of 300. The supplier takes two weeks to supply a target order, which is for a batch size of 5000. Target is aiming for a fill rate of 99% and monitors its inventory continuously. Report how much safety inventory of paper towels should Target carry? Determine its ROP.

**Questions.3 (5+5= 10 Marks)**

Overproduction by fashion brands has created extreme product surplus to the point that luxury brand Burberry burnt $37.8 million worth of its 2018 season’s leftovers to avoid offering a discount on unsold wares. Furthermore, as new trends emerge rapidly due to the Internet and social media, consumers are constantly purchasing new clothing items and disposing of old, out-of-trend items that ultimately end up in landfills and contribute to pollution.

Express the concept of “tragedy of the commons” in the context of above example. What are some “mutually coercive” mechanisms that could be implemented to encourage supply chain sustainability?

**Questions.4 (5+5= 10 Marks)**

Amazon sells books, music, and many other items over the Internet and is one of the pioneers of online consumer sales. Amazon, based in Seattle, started by filling all orders using books purchased from a distributor in response to customer orders. As it grew, the company added warehouses, allowing it to react more quickly to customer orders. In 2013, Amazon had about 40 warehouses in the United States and another 40 in the rest of the world. It uses the U.S. Postal Service and other package carriers, such as UPS and FedEx, to send products to customers. Outbound shipping-related costs at Amazon in 2012 were over $5 billion.

Illustrate how do the location and size of warehouses affect the performance of a firm such as Amazon? Demonstrate what factors should Amazon take into account when deciding where and how big its warehouses should be?