



STRATHMORE BUSINESS SCHOOL
BACHELOR OF SCIENCE IN SUPPLY CHAIN & OPERATIONS MANAGEMENT
END OF SEMESTER EXAMINATION
SCM 3103: ADVANCED LOGISTICS AND TRANSPORTATION MANAGEMENT

DATE: Monday, 24th July 2023

TIME: 2 Hours

Instructions

1. This examination consists of **FIVE** questions.
2. Answer **Question ONE (COMPULSORY)** and any other **TWO** questions.

QUESTION ONE (30 MARKS)

Case Study - Dashboard assembly shortage

M/S Exotic Dashboard Private Limited (EDPL) is situated in Industrial Area, Nairobi. The company supplies dashboard assembly as a 4 PL supplier to Maruti Private Limited (MPL) since the past four years. There are several components in the dashboard such as speedometer, fuel level gauge etc. EDPL purchases these individual components from various suppliers and assembles them at their factory. It then supplies the finished product to MPL.

One of the major components, namely the “starter switch” has always been a cause of problems. EDPL does not observe any systematic inventory control methods in purchasing of various items of inventory. They order the required items of inventory as and when the demand for those inventories arise.

At EDPL, dashboards are not available off the shelf. Hence, many times delays occur in arranging for supply of required quantity of assembled dashboards to MPL. This in turn, results in a substantial financial loss to EDPL since as per the agreement signed between EDPL and MPL, MPL can levy penalties towards delays in the supply of the required quantity of dashboard assembly.

Read the case study above and respond to the following questions.

- a) Explain the role of fourth party logistics in the above case. (4 marks)
- b) Discuss **THREE** logistical ways in which EDPL can avoid penalties imposed by MPL. (6 marks)
- c) EDPL is considering introducing load planning to reduce their expenses. Propose **FOUR** components they need to keep in mind as they introduce the same. (8 marks)
- d) For EDPL to develop a supply chain model they will require a supply chain infrastructure, movement requirements and a transport network. Explain **THREE** aspects to consider in supply chain infrastructure. (6 marks)
- e) EDPL is considering the use of smart logistics in its operations. Propose **THREE** intelligent smart systems they can implement in logistics to ensure maximum, nonstop operational throughput. (6 marks)

QUESTION TWO (20 MARKS)

- a) Urban transportation planners have a critical role to play in developing our cities. Outline **TWO** challenges experienced in urban transportation. (4 marks)
- b) Explain the difference between the following terms used in logistics and transportation management. (6 marks)
 - i. Outsourcing and vertical integration (2 marks)
 - ii. Freight forwarding and clearing agent. (2 marks)
 - iii. Inbound and outbound logistics (2 marks)

- c) A school is preparing a trip for 400 students. The company who is providing the transportation has 10 buses of 50 seats each and 8 buses of 40 seats, but only has 9 drivers available. The rental cost for a large bus is \$800 and \$600 for the small bus. Calculate how many buses of each type should be used for the trip for the least possible cost. (10 marks)

QUESTION THREE (20 MARKS)

- a) Discuss **TWO** reasons for outsourcing the logistics and transport function to a third party. (4 marks)
- b) You have been invited as a facilitator to a Chartered Institute of Logistics and Transport (CILT) workshop on “Risk Management in the Transportation Sector.” Explain **THREE** risks you will present and how to mitigate them. (6 marks)
- c) A company has a choice of buying two trucks. Truck A costs \$18,000 and truck B costs \$ 10,000. Truck A costs \$1,400 per year to run. With truck B there is a 30% chance that it will have running costs of \$1,000 per year and a 70% chance that it will have running costs of \$2,000. Using a decision tree, calculate the likely costs of the two alternatives scenarios and recommend to the company which truck they should choose. (10 marks)

QUESTION FOUR (20 MARKS)

- a) Transport represents one of the most important human activities worldwide as it allows us to mitigate the constraint of geography. List the **FOUR** core components of transportation. (4 marks)
- b) Explain **THREE** contemporary logistics strategies that a supply chain director can formulate for the transport and logistics department. (6 marks)
- c) Construct the network for the following project:
Activities:
 A is the first activity in the project
 B starts when A is complete
 C follows B
 D starts at the same time as B
 E follows all other jobs.
 Number the nodes, starting at one.

Using the following activity timings, add the EST and LFT for each node and determine the critical path for this project.

Activity	A	B	C	D	E
Duration (days)	2	5	3	2	6

(10 marks)

QUESTION FIVE (20 MARKS)

- a) Discuss **TWO** vehicle security solutions for application in transport and logistics sector. (4 marks)
- b) According to the latest statistics, the importance of transportation is increasing. What has caused this increase? Elaborate **THREE** points. (6 marks)
- c) Maritime logistics is the backbone of international trade and the global economy. Examine **FIVE** of its benefits to a country. (10 marks)

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