



STRATHMORE BUSINESS SCHOOL
BACHELOR OF SCIENCE IN SUPPLY CHAIN AND OPERATIONS
MANAGEMENT
END OF SEMESTER EXAMINATION
SCM 2205: TEXTILE, APPAREL AND FOOTWEAR SUPPLY CHAIN

DATE: Friday, 13th December 2024

TIME: 10:30 – 12:30

Instructions

1. This examination consists of **FIVE** questions.
2. Answer **Question ONE (COMPULSORY)** and any other **TWO** questions.
3. **Question ONE** is based on the article “*How firm got a leg-up in shoe-making business*”

Question One

- a) “*Sourcing leather from outside suppliers was also a challenge that hurt their competitiveness due to added costs*”

As a supply chain practitioner, what factors should be considered in sourcing leather in Kenya. **[10 marks]**

- b) Explain **five** key points highlighting the role of technology e.g. introduction of vulcanization machine on footwear manufacturing. **[10 marks]**

- c) African Leather Industrials Limited must consider sustainability in footwear supply chain for future operations. How? **[10 marks]**

Question Two

- a) You are working as a demand planner for KenFab Ltd, an apparel company based in Nairobi, Kenya, that sells five key SKUs (Stock Keeping Units). The company experiences seasonal demand due to school holidays, festive seasons, and fashion trends in the region. Based on historical sales data, you are required to forecast demand for the next quarter for each SKU.

KenFab Ltd has provided you with the following data for the past year:

SKU	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Seasonal Index
1	1000	800	1200	1500	1.25
2	500	300	700	900	1.20

3	1200	1100	1500	2000	1.30
4	800	700	1000	1300	1.15
5	400	350	600	700	1.10

KenFab expects a 10% growth in total demand in the upcoming year due to increased marketing efforts and new product launches.

Question:

- i) Using the seasonal index method, forecast the demand for each SKU for Quarter 1 of the next year, considering the 10% growth. **[4 marks]**
 - ii) Calculate the total demand for Quarter 1 for all SKUs combined. **[4marks]**
 - iii) If KenFab Ltd's production capacity allows for a maximum of 4,500 units in Quarter 1, will the company be able to meet the forecasted demand? If not, by how much will the production capacity fall short or exceed the demand? **[3 marks]**
- b) Using examples, discuss the role of consumer use and maintenance in the footwear supply chain and explain how it impacts the durability and sustainability of footwear products. **[9 marks]**

Question Three

- a) Natural fibres, such as silk, cotton, and wool, are gaining attention in the textile and apparel supply chain due to their biodegradable properties. Discuss the key properties of each of these fibres and their relevance to the supply chain. **[10 marks]**
- b) Discuss the negative effects of "mtumba" (second-hand clothing) on the textile and apparel supply chain in East Africa. **[10 marks]**

Question Four

- a) E-commerce and online retail is being embraced locally. However, it can be challenging for footwear supply chain in Kenya. Explain **five** challenges. **[10 marks]**
- b) Explain **five** elements of apparel design that are applicable in East Africa. **[10 marks]**

Question Five

- a) Define weaving and explain the differences between the **three** types of weaving explaining why its relevant to a supply chain practitioner. **[11 marks]**
- b) A footwear company in Kenya sells a particular shoe model and estimates that the annual demand for this shoe is 20,000 pairs. The ordering cost is KES 500 per order, and the holding cost per shoe per year is KES 50.
 - i) Calculate the Economic Order Quantity (EOQ). **[3 marks]**
 - ii) What is the total cost of managing the inventory (ordering and holding costs combined)? **[3 marks]**
 - iii) The footwear company wants to determine its reorder point for the shoe model. The lead time for replenishment is 12 days, and the daily demand is estimated to be 55 pairs. Calculate the Reorder Point (ROP). **[3marks]**