

(6).

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(e) Building is not being utilised efficiently

(i) Height is wasted

(ii) Doors not being used to best effect

Before the company came under pressure from the high demand, it made sense to create a lean, safe, and scaleable layout which can be replicated as STS grows.

Question :

With the above challenges in mind, considering yourself a warehouse manager, develop a streamlined and optimised new facility layout for STS which would maximise the investment in the new warehouse, significantly reduce costs and mitigate the risks from the unsafe racking.

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Roll No.

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**M. B. A. (SECOND SEMESTER)
END SEMESTER EXAMINATION,
June, 2023**

**WAREHOUSING AND INVENTORY
MANAGEMENT**

Time : Three Hours

Maximum Marks : 100

- Note :** (i) This question paper contains two Sections—Section A and Section B.
- (ii) Both Sections are compulsory.
- (iii) Answer any *two* sub-questions among (a), (b) and (c) in each main question of Section A. Each sub-question carries 10 marks.
- (iv) Section B consisting of case study is compulsory. Section B is of 20 marks.

P. T. O.

Section-A

1. (a) Explain the role of inventory in various organizational settings e.g., retail stores such as Shoppers Stop, grocery stores such as Jio Mart, automobile manufacturers such as Ford, and electronics manufacturers such as Phillips. (CO1)
- (b) Explain how the EOQ model can be utilized to determine the optimal order quantity. What are the necessary assumptions of the EOQ model? (CO1)
- (c) ABC Co. requires 1500 units of a material per month, each unit costing ₹ 27. Cost per order is ₹ 150 and the inventory carrying charges work out to 20% of the average inventory. Find out the economic order quantity and the number of orders per year. (CO2)
2. (a) Explain the different basic Warehouse Operations also discuss the pros and cons of the different types of warehouses. (CO2)

- (b) Discuss how a warehouse management system (WMS) can be applied to eliminate order fulfilment errors, enhance labor productivity, and utilize given warehouse space. Also, explain the key functionality of WMS. (CO3)
- (c) Distinguish between independent demand and dependent demand inventory and provide an example of each from the same company, same product line. (CO3)
3. (a) What is an Automated Storage and Retrieval System? Describe its applications. (CO5)
- (b) Define material handling. Explain the principles of effective material handling. (CO4)
- (c) What are the different performance measures used in design and analysis of material handling systems? (CO3)
4. (a) What makes RFID different from barcoding technology? What does the future hold for barcoding technology with the emergence of RFID? (CO5)

(b) How does IT transform a supply chain ?
How does IT change the business model
and supply chain management practices ?

(CO4)

(c) Define the materials management and
explain its functions.

(CO4)

Section-B

5. Case study : (CO5)

STS Ltd is a leading supplier of building board solutions for applications across construction, fire protection, tile backing, water proofing, ceiling boards, and floor boards based in Leeds, UK.

Having grown rapidly, the company moved into new premises several years ago. However, the temporary layout of the warehouse was beginning to be a concern. If the demand rose to expected levels, they would struggle to deliver on customer expectations without damaging profitability and risks to health and safety.

The Challenge

Having made the significant investment in moving to a new site, STS quickly moved

racking and stock into with a temporary layout to keep the business running and minimise disruption.

However, the following problems were beginning to challenge the company :

(a) Congestion from stock in working areas and main aisles

(i) Slowing down movement and creates work

(ii) Multiple handing of goods causing damage

(b) Long overseas supply chain means sudden increases in stock level

Lack of space to process and deliver on priority orders

(c) No flow in the warehouse

Increasing transport and movement and "work filling the day"

(d) Unsafe storage of stock e.g. pyramids of boards

Major risks of an incident due to collapsing rack or pallets