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TRL308C

October/November 2011

LOGISTICS SYSTEMS (TRANSPORT ECONOMICS 308)

Duration 2 Hours

70 Marks

EXAMINERS
FIRST   MRS NJ MATSOMA
SECOND   PROF A BRITS
EXTERNAL   PROF WF POTGIETER

Use of a non-programmable pocket calculator is permissible

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and may not be removed from the examination venue

This exam question paper consists of 16 pages, including 2 pages for rough work.

INSTRUCTIONS:

1   WRITE YOUR ANSWERS IN THIS EXAMINATION SCRIPT AND HAND IT TO THE INVIGILATOR WHEN YOU HAVE FINISHED.

2.   ON THE FRONT COVER OF THIS EXAMINATION SCRIPT, DRAW A CIRCLE AROUND THE NUMBER OF THE LONG QUESTIONS THAT YOU ANSWERED.

3   READ THROUGH ALL OF THE QUESTIONS CAREFULLY.

THIS EXAMINATION PAPER CONSISTS OF TWO SECTIONS [19 PAGES]:

SECTION A: ANSWER ALL THE COMPULSORY MULTIPLE-CHOICE QUESTIONS
(20 MARKS)

SECTION B: ANSWER COMPLETE ANY TWO (2) OF THE THREE (3) LONG QUESTIONS
(50 MARKS)

PLEASE NOTE: ONLY THE FIRST TWO (2) QUESTIONS THAT YOU ANSWER WILL BE MARKED. YOU WILL NOT BENEFIT IN ANY WAY IF YOU ANSWER ALL THREE (3) LONG QUESTIONS.

TOTAL: 70 MARKS

SECTION A
ANSWER THE QUESTIONS IN THIS SECTION.
SUBTOTAL: 20 MARKS

QUESTION 1

Read each statement carefully and then choose the correct option. Indicate your answer by colouring in the letter corresponding to the correct option, for example: ▣

1.1   The supply chain information system consist of levels of functionality named   **(1)**

(i) value analysis
(ii) management control
(iii) decision analysis
(iv) transaction system

[A] (i) and (ii)
[B] (ii) and (iii)
[C] (ii),(iii) and (iv)
[D] (i),(ii), (iii) and (iv)

1.2   One of the components of enterprise planning and monitoring that describes the   **(1)**
process used in balancing the demand requirements and the supplier capabilities is
known as _____

[A] supply chain visibility and event management
[B] supply chain compliance
[C] sales and operations planning
[D] enterprise planning and monitoring

1.3   What is the stock that is captive in a transportation vehicle called?   **(1)**

[A] base stock
[B] transit stock
[C] in-transit stock
[D] safety stock

1.4   The placement of computer readable codes on items, cartons, containers, pallets   **(1)**
and even railway carriages is known as _____

[A] EDI sets
[B] electronic codes
[C] barcode
[D] scanner

1.5   Which one of the following files does not form part of the files included in the ERP   **(1)**

data files?

[A] inventory file

[B] warehouse file

[C] supplier file

[D] bill of material file

1.6 The primary determinants of the warehousing required to support manufacturing are **(1)** the specific production strategies being implemented, which are _____, _____ and _____

(i) assemble-to-stock
(ii) make-to-order
(iii) assemble-to-order
(iv) make-to-stock

[A] (i) and (ii)
[B] (ii) and (iii)
[C] (ii),(iii) and (iv)
[D] (i),(ii), (iii) and (iv)

1.7 The process of monitoring the status of inventory is known as _____ **(1)**

[A] reorder point
[B] inventory control
[C] variation in replenishment
[D] average replenishment

1.8 The make-to-plan strategy is one of the manufacturing strategies commonly known **(1)** as _____
[A] assemble-to-stock
[B] make-to-order
[C] assemble-to-order
[D] make-to-stock

1.9 The inventory related to a warehouse network consists of _____, and _____ **(1)**

(i) buffer stock
(ii) safety stock
(iii base stock
(iv) stock reorder

[A] (i) and (ii)
[B] (ii) and (iii)
[C] (ii), (iii) and (iv)
[D] (i), (ii), (iii) and (iv)

1.10 _____ is the last step in the logistics strategy where the relationship between **(1)**
alternative customer service levels and associated cost is valued

[A] Cost minimisation
[B] Service sensitivity analyses
[C] Finalising the plan
[D] Safety stock modification

1.11 _____ is the magnitude of stock-out rather than the probability thereof **(1)**

[A] Performance cycle
[B] Fill rate
[C] Safety stock
[D] Reorder point

1.12 The transport decision concerned with the allocation of long-term resource **(1)**
allocation, such as for extended time periods, is known as _____

[A] strategic transport decision
[B] tactical transport decision
[C] strategic routing decision
[D] transport analysis decision

1.13 Which one of the following categories of transport techniques utilises a rule-of- **(1)**
thumb clustering or saving technology to develop routes by sequentially adding and
deleting stops?

[A] heuristic approaches
[B] interactive approaches
[C] combination of three approaches
[D] exact approaches

1.14 When formulating a logistical strategy, it is necessary to evaluate the relationship **(1)**
between alternative customer service levels and associated cost A system that
requires to initiate network reengineering with policies regarding desired inventory
availability and capability is known as

[A] cost minimisation
[B] threshold service
[C] service sensitivity
[D] finalising strategy

1.15 Suppose you open a dairy to sell milk. Your average daily demand is 20 litres of milk **(1)** and the average performance cycle is 10 days. What is your reorder point?

[A] 20 litres
[B] 200 litres
[C] 30 litres
[D] 2 litres

1.16 Which of the following is included in the application oriented modules of the supply **(1)** chain information systems information framework?

(i) financial and operations reporting
(ii) enterprise planning and monitoring
(iii) communication technology
(iv) enterprise integration and administration

[A] (i) and (ii)
[B] (ii) and (iii)
[C] (ii), (iii) and (iv)
[D] (i), (ii), (iii) and (iv)

1.17 "To protect against stock-out when demand exceeds forecast, safety stock is added **(1)** to base inventory." To which type of uncertainty which directly affects the inventory policy, does this statement refer?

[A] demand uncertainty
[B] performance cycle uncertainty
[C] safety stock with uncertainty
[D] fill rate uncertainty

1.18 Information-sharing technology is critical to facilitate logistics and supply chain **(1)** planning and operations. Which one of the following logistics communication systems allows supply chain members to quickly track and communicate movement details with high accuracy and timeliness?

[A] barcode and scanning
[B] radio frequency exchange
[C] internet
[D] global data synchronisation

1.19 One of the major components of supply chain information systems designed to **(1)** assist in evaluating the supply chain alternatives and advise supply chain decision making, is known as _____

[A] legacy systems
[B] communication systems
[C] execution systems
[D] planning systems

1.20 What is the name of the inventory that is available as promised but cannot be **(1)**
accessed physically?

[A] base stock
[B] transit stock
[C] in-transit stock
[D] safety stock

[20]

SECTION B
ANSWER ANY TWO (2) OF THE THREE (3) QUESTIONS IN THIS SECTION.
SUBTOTAL: 50 MARKS

QUESTION 2

Facilities used for inbound materials and components are often referred to as supply-facing warehouses and warehouses used to support customer accommodation are referred to as demand-facing warehouses

2 1	Discuss the warehouse functions in a supply facing-warehouse	(10)
2 2	Discuss the warehouse functions in a demand-facing warehouse	(10)
2 3	What five (5) questions are often asked when making a decision about building a warehouse?	(5)

[25]

2 1   Discuss the warehouse functions in a supply-facing warehouse   (10)

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2 2   Discuss the warehouse functions in a demand-facing warehouse   **(10)**

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2 3   What five (5) questions are often asked when making a decision about building a   **(5)**
warehouse?

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QUESTION 3

A petroleum company is currently experiencing constant challenges regarding the supply of oil. Such challenges have resulted from changes in the price of oil following political revolution in Arab countries Advise the company how to develop a strategy to overcome these challenges, focusing on the steps involved in logistics planning
3 1   Discuss recommendations as one of the strategies to implement in **(12)** overcoming this challenge
3 2   Discuss on how they should implement the logistics plans in order to **(13)** overcome this challenges
(25)

3 1   Discuss recommendations as one of the strategies to implement in overcoming   **(12)**
these challenge

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3 2   Discuss how the company should implement the logistics plans in order to **(13)** overcome these challenges

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QUESTION 4

Inventory-carrying cost is an expense associated with maintaining inventory	
4 1 Name the expenses associated with carrying inventory	**(18)**
4.2 What will the reorder point be if the demand for 25 litres of milk for daily consumption is to be satisfied with the performance cycle of 12 days?	**(2)**
4 3 What is the economic order quantity of the annual demand for 1 000 units, costing R15 00 per unit, with an inventory carrying cost of 15% per annum and an ordering cost of R25 00 per order?	**(5)**
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4 1   Name the expenses associated with carrying inventory   **(18)**

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4 2   What will the reorder point be if the demand for 25 litres of milk for daily **(2)** consumption is to be satisfied with the performance cycle of 12 days?

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4 3   What is the economic order quantity of the annual demand for 1 000 units, **(5)** costing R15 00 per unit, with an inventory carrying cost of 15% per annum and an ordering cost of R25 00 per order?

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[25]

TOTAL [70]

ROUGH WORK