



TECHNICAL UNIVERSITY OF MOMBASA
**Faculty of Engineering &
Technology**

DEPARTMENT OF BUILDING & CIVIL ENGINEERING

UNIVERSITY EXAMINATION FOR:
BACHELOR OF SCIENCE IN CIVIL ENGINEERING
(BSCE – 5TH YEAR)

ECE 2507: LOGISTICS & SYSTEM ANALYSIS

END OF SEMESTER EXAMINATION

SERIES: AUGUST 2014

TIME ALLOWED: 2 HOURS

Instructions to Candidates:

You should have the following for this examination

- *Answer booklet*

This paper consists of **FIVE** questions.

Answer question **ONE (COMPULSORY)** and any other **TWO** questions

All questions carry equal marks

Maximum marks for each part of a question are as shown

This paper consists of **TWO** printed pages

Question One (COMPULSORY)

- a) With the aid of a flow chart explain the logistics functional structures. **(10 marks)**
- b) There are FIVE elements of logistics and distribution. Name them and explain the important factors that are considered for each element. **(10 marks)**

c) Describe the following equipment used in logistics operations:-

- (i) Road reiler trailers
- (ii) Swap bodies

(10 marks)

Question Two

a) Some of the physical structures used in logistics and distribution include depots and warehouses. Explain the role played by depots and warehouses in the physical distribution of commodities.

(10 marks)

b) Logistics operations consists of various subsystems which are considered as one system and therefore requires trade-offs. Name and explain the FOUR levels of trade-offs that are commonly used.

(10 marks)

Question Three

There are FOUR main problems that are encountered in vehicle routing and scheduling. Name and describe them.

(20 marks)

Question Four

a) There are various factors that affect the income from operations of logistics. In relation to this explain how the following affect logistics and support your explanation with hypothetical examples:

- (i) Vehicle capacity
- (ii) Vehicle utilization

(10 marks)

b) Describe the factors that dictate the design of warehouses and handling systems. State the factors that are considered for each element.

(10 marks)

Question Five

a) In respect to the East African countries, briefly explain FIVE policy measures that affect logistic operations across the borders such as road transportation.

(9 marks)

b) Explain the steps that are followed by a logistics company when hiring temporary staff from an employment agent.

(7 marks)

c) In relation to transport, explain the ‘total logistics concept’

(4 marks)