



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

DEPARTMENT OF BUILDING & CIVIL ENGINEERING

UNIVERSITY EXAMINATION FOR:
BACHELOR OF SCIENCE IN CIVIL ENGINEERING

ECE 2308: TRANSPORT PLANNING & DEVELOPMENT

END OF SEMESTER EXAMINATION

SERIES: DECEMBER 2013

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 **TWO** questions

Maximum marks for each part of a question are as shown

This paper consists of **TWO** printed pages

Question One (Compulsory)

- a) There are **TWO** approaches used in transport planning. Name and describe them. **(7 marks)**
- b) Describe the following trip generation approaches and give **TWO** merits and **TWO** demerits of each method.
- (i) Regression analysis
 - (ii) Category analysis **(10 marks)**
- c) (I) Transportation is one of the major contributors to environmental pollution. In relation to this describe the impacts of transportation on the following:
- (i) Loss of living space
 - (ii) Natural habitats
 - (iii) Climate
 - (iv) Waste Disposal **(10 marks)**

(II) Name and briefly explain the TWO types of planning scales used in transportation
(3 marks)

Question Two

Transportation planning involves various major tasks. One of the major one is the evaluation of the alternative plans. In relation to this briefly explain the following:

- (i) Land use impact analysis
 - (ii) Economic impact analysis
 - (iii) Financial feasibility analysis
 - (iv) Technical implications analysis
- (20 marks)

Question Three

- a) Name and briefly describe the FOUR methods used to assign trips to the various transport networks in a given zone.
(16 marks)
- b) State THREE factors that influences trip generation and THREE factors that influence trip attraction
(4 marks)

Question Four

- a) Public transit systems are divided into **THREE** main categories. Name and describe them.
(10 marks)
- b) Briefly describe the ‘evolution of transportation systems’
(10 marks)

Question Five

- a) In the design of transportation facilities, various human factors are considered. Based on this describe how the following human factors affect the design of transportation facilities:
 - (i) Comfort
 - (ii) Perception – reaction time
 - (iii) Safety considerations

(15 marks)
- b) In relation to public transport, explain “bundling” Use a sketch to support your explanation
(5 marks)