



THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

((A Constituent College of JKUAT)

(A Centre of Excellence)

Faculty of Engineering & Technology

DEPARTMENT OF BUILDING & CIVIL ENGINEERING

UNIVERSITY EXAMINATION FOR DEGREE IN BACHELOR OF SCIENCE IN
BUILDING & CIVIL ENGINEERING

ECE 2308: TRANSPORTATION PLANNING & DEVELOPMENT

SPECIAL/SUPPLEMENTARY EXAMINATION

SERIES: OCTOBER 2012

TIME: 2 HOURS

Instructions to Candidates:

You should have the following for this examination

- *Answer Booklet*
- *Pocket Calculator*

This paper consists of **FIVE** questions. Answer question **ONE (COMPULSORY)** any other **TWO** questions

Maximum marks for each part of a question are as shown

This paper consists of **TWO** printed pages

Question One (Compulsory - 30 Marks)

- a) Explain the following trip generation modeling methods and state **TWO** merits and **TWO** demerits of each method:-
- i) Regression Analysis
 - ii) Category Analysis **(8 marks)**
- b) Describe the following human factors that affect the design of transportation facilities:
- i) Perception-reaction time
 - ii) Comfort
 - iii) Safety **(15 marks)**
- c) Explain the **FIVE** steps followed in a rational transport planning process. **(8 marks)**
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Question Two (20 marks)

- a) Briefly describe the quality factors that affect a commuters' choice of a given transport mode. **(7 marks)**
- b) Briefly describe the impacts of transport on the following:-
i) Climate
ii) Natural habitats
iii) Pollution
iv) Loss of income **(10 marks)**
- c) Briefly explain 'captivity' as used in transport planning and give an example to justify the explanation. **(3 marks)**

Question Three (20 marks)

One of the major tasks in transport planning is the evaluation of the alternative plans. In relation to this, briefly explain the following:-

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

Question Four (20 marks)

- a) With the aid of a sketch, explain 'bundling' in the context of public transport. **(5 marks)**
- b) Briefly describe the **THREE** main objectives of public transport. **(3 marks)**
- c) Briefly explain:
i) Three properties of a good route set
ii) Three properties of a good schedule **(7 marks)**
- d) Explain what 'para-transits' are and give a local example of paratransits **(5 marks)**

Question Five (20 marks)

- a) In transport planning evaluation of the alternative plans is considered as one of the major tasks. In relation to this, briefly explain the following:-
i) Financial feasibility analysis
ii) Technical implication analysis
iii) Land use impact analysis **(18 marks)**
- b) List **TWO** factors that influence trip generation and **TWO** factors that influence trip attraction. **(2 marks)**