



TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF BUILDING & CIVIL ENGINEERING

UNIVERSITY EXAMINATION FOR:

BACHELOR OF TECHNOLOGY IN CIVIL ENGINEERING

(INSTITUTION BASED EXAMINATION)

ECE 2308 : TRANSPORTATION PLANNING & DEVELOPMENT

END OF SEMESTER EXAMINATION

SERIES: MARCH 2017

TIME: 2 HOURS

DATE: 29 Mar 2017

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of five questions.

Attempt question ONE (Compulsory) and any other TWO questions.

Question one is compulsory and carries a maximum of 30 marks.

Do not write on the question paper.

QUESTION ONE (Compulsory)

- a) Transportation is referred to as the **'lifeblood'** of urban and rural areas because it provides essential links among various activities which in the long run and to a large extent help to shape those areas : Based on this, explain how the following elements help to shape it:-
- Mode of transport
 - The transport users
 - Land use in the area
 - Domain where all elements of transport interact

(10marks)



- b) Draw a schematic diagram of the transportation planning process that illustrates how the various stages of the planning process work. (10marks)
- c) Name and explain in detail the two main planning scales. (5 marks)
- d) Generally a trip materializes after the trip-maker makes certain decisions. Highlight the four decisions that can be used to classify trips. (5 marks)

Attempt any TWO questions

QUESTION TWO

With the aid of sketches explain the following types of transportation networks:-

- i. Radial networks
- ii. Circumferential networks
- iii. Grid networks
- iv. Territorial

(20marks)

QUESTION THREE

- a) Name and explain the measures that can be used by transport authorities to minimize accidents on Kenyan roads. (10marks)
- b) Explain in detail what transport networks are and give examples of each. (10marks)

QUESTION FOUR

- a) Explain in detail how the impacts of transportation affect the following factors:-
 - i. Climate change
 - ii. Air quality
 - iii. Natural Habitat
 - iv. Waste disposal
 - v. Noise

(10marks)

- b) Highlight the two categories of data collection techniques that are commonly used in transportation studies and briefly explain two methods in each category. (10 marks)

QUESTION FIVE

Assume that in your city (or town) it has been stated that the objective of the government is to reduce the congestion on the city /town streets. Go through the steps of the rational transportation planning process in order to develop a workable solution. (20marks)