



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

DEPARTMENT OF BUILDING & CIVIL ENGINEERING

UNIVERSITY EXAMINATION FOR:
BACHELOR OF SCIENCE IN CIVIL ENGINEERING

ECE 2521: TRANSPORTATION & LAND USE, URBAN & REGIONAL PLANNING

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) (i) Briefly explain 'planning' in relation to transportation and land use. **(8 marks)**
- (ii) There are various classes in which land use models are divided into. Name and explain them **(8 marks)**
- b) Describe the following concepts used in land use and transportation:
- (i) Urban form
 - (ii) Comprehensive plan
 - (iii) Codes
 - (iv) Subdivision regulations **(8 marks)**

- c) In relation to transportation and land use explain the nature of transportation demand. **(6 marks)**

Answer any TWO questions

Question Two

- a) Land use models are broadly classified into TWO categories. Name and briefly describe them. **(10 marks)**
- b) In relation to land use explain the relationship between transportation and land development **(8 marks)**
- c) Briefly explain the following terminologies as used in land-use:
- (i) Supply
 - (ii) Demand **(2 marks)**

Question Three

- a) In relation to land use and transportation systems describe the urban system components **(15 marks)**
- b) In real life urban areas grow and decline. Explain why this happens **(5 marks)**

Question Four

- a) There are TWO broad options used to reduce congestion and other traffic related problems. Name and describe them. **(10 marks)**
- b) Differentiate between centrally controlled and individually controlled modes of transport **(6 marks)**
- c) Briefly describe the field of transportation **(4 marks)**

Question Five

- a) (i) Describe the THREE essential components of transportation **(4 ½ marks)**
(ii) With the aid of a sketch, explain the interaction between three components in (a) (i) above **(8 ½ marks)**
- b) There are various steps that are followed in “density saturation gradient method” to estimate land use. Name and explain them. **(7 marks)**