



TECHNICAL UNIVERSITY OF MOMBASA

SCHOOL OF ENGINEERING AND TECHNOLOGY
Department of BUILDING & Civil engineering
UNIVERSITY EXAMINATION FOR:

BACHELOR OF SCIENCE IN CIVIL ENGINEERING

ECV 4502: TRANSPORT ENGINEERING II

END OF SEMESTER EXAMINATION

SERIES: JANUARY 2025

TIME: 2 HOURS

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.

Do not write on the question paper.

QUESTION ONE (COMPULSORY) 30 Marks

- a) Mobility and accessibility are terms used in transportation planning. Define these two terms (4 marks)
- b) State **FOUR** factors that govern the issue of centralization versus decentralization (4 marks)
- c) Differentiate between Formal land use and Functional land use (4 marks)
- d) Briefly explain how transportation affect economic development of an area (6 marks)



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e) State the basic assumptions made in the Von Thunen's Regional Land Use Model
(3 marks)

f) What is the meaning of the term "transfer effects" as used in transportation development? (2 marks)

g) Mention the uses of desire paths in transportation planning (2 marks)

h) Using appropriate examples, differentiate between "Urban form" and "Urban (spatial) structure" (5 marks)

ANSWER ANY TWO QUESTIONS FROM THIS SECTION

QUESTION TWO (20 marks)

a) i) State the **THREE** essential components of transportation. (3 marks)

ii) With the aid of a sketch, explain the interaction between the **THREE** components in a(i) above. (7 marks)

b) Discuss briefly **THREE** typologies of decentralization (6 marks)

c) Mention **FOUR** Merits of centralization (4 marks)

QUESTION THREE (20 Marks)

a) There are various factors that affect land development process. Using a diagram explain clearly the role of Transportation in Land Use (9 marks)

b) Explain clearly the role of Transport in Regional Development (8 marks)

c) Using appropriate examples, define "Transportation planning" (3 marks)

QUESTION FOUR (20 Marks)

a) Discuss the major components of spatial imprint of urban transportation (10 marks)

b) Explain clearly the Emerging Land Use Concerns about urban sprawls (6 marks)

c) Discuss the State Roles in Land use/transportation planning requirements
(4 marks)

QUESTION FIVE (20 Marks)



- a) Discuss the following **THREE** New approaches to development:
- i) Neo-traditional Design
 - ii) Cluster Development
 - iii) Transfer or purchase of development rights (9 marks)
- b) With the aid of a flow chart explain the bond between transportation and land-use. (8 marks)
- c) What are the main causes of urbanization? List **TWO** basic elements of urbanization (3 marks)