



TECHNICAL UNIVERSITY OF MOMBASA

SCHOOL OF ENGINEERING AND TECHNOLOGY

Department of BUILDING & Civil engineering

UNIVERSITY EXAMINATION FOR:

BACHELOR OF TECHNOLOGY IN CIVIL ENGINEERING

ECM 4421 : INTRODUCTION TO PHYSICAL PLANNING

END OF SEMESTER EXAMINATION

SERIES: May 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 **four** questions.

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

Do not write on the question paper.

QUESTION ONE (COMPULSORY 20 MARKS)

- i. Define transportation planning. **(2 marks)**
- ii. Explain briefly the various stages involved in Transportation Planning process for any county government. **(10 marks)**
- iii. Briefly explain the advantages and limitations of growth factor model. **(8 marks)**

ANSWER ANY TWO QUESTIONS

QUESTION TWO

- a) Briefly explain land-use transport interaction. **(10 marks)**
- b) Briefly explain FIVE factors that govern trip generation. **(10 marks)**

QUESTION THREE

- a) Briefly explain the purpose of trip generation. **(8 marks)**
- b) Briefly explain the importance of undertaking inventory of existing transport facilities before coming up with a transport intervention mechanism. **(4 marks)**

- c) Briefly explain the purpose of a regional transportation network. **(2 marks)**
- d) Briefly explain ANY THREE factors that are taken into account when selecting a transport model. **(6 marks)**

QUESTION FOUR

- a) Define zoning. **(2 marks)**
- b) Briefly explain ANY FOUR points to consider when dividing an area into zones. **(8 marks)**
- c) The first stage in the formulation of a transportation plan is collecting data addressing all factors that will influence travel patterns. Briefly explain these THREE (3) surveys undertaken. **(10 marks)**

QUESTION FIVE

- a) Discuss the interaction between land use and transportation planning using ANY theory on urban planning. **(10 marks)**
- b) Define and differentiate the following terms used in physical planning;
 - i. Strategic urban planning
 - ii. Land use planning
 - iii. Master planning
 - iv. Urban revitalization
 - v. Infrastructure planning **(10 marks)**