



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

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) What is the importance and necessity of a transportation plan for a city or town? (5 marks)
- (b) Briefly explain 10 guidelines for final alignment of a transport facility such as a highway after route location surveys have been carried out and the general location decided. (4 marks)
- (c) What are four advantages of each of the following modes of transport:
 - i. Road Transport and
 - ii. Rail Transport modes (4 marks)
- (d) Distinguish between fixed cost and variable costs for each of the two modes in Q1 (c) above: (7 marks)
- (e) Draw a schematic diagram of the transportation planning process that illustrates how the various stages of the planning process work. (10marks)

QUESTION TWO

- (a) Bulk petroleum products are transported through pipeline transport. Justify the significance. (5 marks)
- (b) A route location study for a transport facility such as a road includes as a necessity assessment of economic management and financial aspects of the proposed facility. This covers facility (or road) user costs and induced benefits. Discuss these costs and benefits. (3 marks)
- (c) Mention the social benefits that are realized from an efficient transport system. (2 marks)
- (d) Name and explain in detail the two main planning scales. (5 marks)
- (e) Generally a trip materializes after the trip-maker makes certain decisions. Highlight the four decisions that can be used to classify trips. (5 marks)

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) Mention the social benefits that are realized from an efficient transport system. (2 marks)
- (b) Explain the aircraft attributes used in the design of an airport (3 marks)
- (c) Clearly explain the importance and necessity of a transportation plan for a city or town. (5 marks)
- (d) Briefly explain 10 guidelines for final alignment of a transport facility such as a highway after route location surveys has been carried out and the general location decided. (5marks)
- (e) Justify the significance of pipeline transport in the transportation of petroleum products. (5 marks)

QUESTION FIVE

- (a) As you discuss the vehicle / driver characteristics, explain why and how they play an important role in road safety. (10 marks)
- (b) Outline six basic steps that may be recommended for any detailed accident studies at selected locations in the communities in Kenya. (3 marks)
- (c) Discuss the general trends currently affecting legal structures of transportation project finance transactions? (4 marks)
- (d) Explain the term “BOT” and discuss its application in road infrastructure development. (3 marks)