



**MASINDE MULIRO UNIVERSITY OF
SCIENCE AND TECHNOLOGY
(MMUST)**

MAIN CAMPUS

**UNIVERSITY MAIN EXAMINATIONS
2023/2024 ACADEMIC YEAR**

FOURTH YEAR FIRST SEMESTER EXAMINATIONS

**FOR THE DEGREE
OF
BACHELOR OF SCIENCE IN CIVIL AND STRUCTURAL
ENGINEERING**

COURSE CODE: CSE 441

COURSE TITLE: TRANSPORTATION ENGINEERING

DATE: 20TH DECEMBER 2023 TIME: 8 A.M – 10 A.M

INSTRUCTIONS:

1. This paper contains **Four** questions
2. Answer Question 1 and **any other** TWO questions
3. Marks for each question are indicated in the parenthesis.
4. Examination duration is **2 Hours**

MMUST observes ZERO tolerance to examination cheating

This Paper Consists of 2 Printed Pages. Please Turn Over.

QUESTION ONE (30 Marks): COMPULSORY

- a) Outline the multi-dimensional significance of transportation. **(10 marks)**
- b) What approaches are employed in preliminary route location survey, and when are they most appropriate? **(6 marks)**
- c) Explain why road maintenance is essential. **(4 marks)**
- d) You have been appointed as the highway Engineer of a major road project. Explain how you will incorporate the needs of older adults, children and persons with disabilities in your designs. **(10 marks)**

QUESTION TWO (20 Marks)

- a) Highlight the five requirements that a perfect new railway line alignment must meet. **(10 marks)**
- b) Describe four reasons why road transportation is still the preferred option for many users despite competition from other modes. **(4 marks)**
- c) Highlight the different kinds of road maintenance operations with examples. **(6 marks)**

QUESTION THREE (20 Marks)

- a) Traffic accidents are a chain of events involving several elements. Describe any 5 road user factors that contribute to accidents. **(10 marks)**
- b) Prior experience develops into a set of expectancies that guide the driver in responding to common situations. Discuss the three types of driver expectancy. **(6 marks)**
- c) List the social benefits of highway projects that are taken into account in project appraisals. **(4 marks)**

QUESTION FOUR (20 Marks)

- a) Discuss Route location in relation to selection of highway location in urban or rural areas.