



MURANG'A UNIVERSITY OF TECHNOLOGY

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF ENGINEERING AND TECHNOLOGY

UNIVERSITY ORDINARY EXAMINATION

2020/2021 ACADEMIC YEAR

**THIRD YEAR FIRST SEMESTER EXAMINATION FOR, DIPLOMA IN CIVIL
ENGINEERING**

UNIT CODE: SEB 1328

UNIT TITLE: TRANSPORTATION ENGINEERING I

DURATION: 2 HOURS

Instructions to candidates:

1. Answer question One and Any Other Two questions.
2. Mobile phones are not allowed in the examination room.
3. You are not allowed to write on this examination question paper.

SECTION A: ANSWER ALL QUESTIONS IN THIS SECTION

QUESTION ONE (30 MARKS)

- (a) Define the following terms as used in transportation engineering.
 - (i) Roads margins
 - (ii) Road shoulders
 - (iii) Bus- Bays
 - (iv) Guard rails (8 marks)
- (b) Using a well-illustrated sketches describe **two** types of camber. (4 marks)
- (c) Highlight **four** factors that affect overtaking sight distance. (4 marks)
- (d) Differentiate between summit curve and valley curve using well illustrated sketches. (4 marks)
- (e) State **four** objective of highway planning. (4 marks)
- (f) Outline the stages that are involved in highway planning. (4 marks)

SECTION B – ANSWER ANY TWO QUESTIONS IN THIS SECTION

QUESTION TWO (20 MARKS)

- (a) Describe the following types of low cost roads.
 - (i) Earth roads
 - (ii) Murram Roads
 - (iii) Gravel Roads. (9 marks)
- (b) State the factors that govern the thickness of road metal. (4 marks)
- (c) Discuss the various types of sight distances stating the importance of each type. (7 marks)

QUESTION THREE (20 MARKS)

- (a) Explain different types of traffic signs giving two examples under each. (12 marks)
- (b) State **four** objectives for providing transition curves. (4 marks)
- (c) Highlight factors that affect the width of carriage way. (4 marks)

QUESTION FOUR (20 MARKS)

- (a) Using a well -illustrated sketches, describe the components of a flexible pavement. (10marks)
- (b) State **four** types of road kerbs. (4 marks)
- (c) Road marking are defined as lines, pattern, words or other devices, except signs that are applied on to the carriage way. Explain the various road markings that are used on carriage. (6 marks)