



TECHNICAL UNIVERSITY OF MOMBASA

Faculty of Engineering and Technology
Department of BUILDING & Civil engineering

UNIVERSITY EXAMINATION FOR:

DIPLOMA IN CIVIL ENGINEERING DCE 2310 : TRANSPORTATION ENGINEERING II

END OF SEMESTER EXAMINATION

SERIES: APRIL 2025

TIME: 2 HOURS

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, Scientific Calculator, examination pass and student ID

This paper consists of five questions.

Attempt any THREE questions.

Do not write on the question paper.

QUESTION ONE (20 Marks)

- (a) In regard to setting out, identify and explain THREE tools. (4 ½ Marks)
- (b) With the aid of a sketch, briefly describe setting out straight line. (8 ½ Marks)
- (c) Outline the procedure for excavation of earthworks. (7 Marks)

QUESTION TWO (20 Marks)

- (a) Outline FOUR precautions to be considered to keep erosion to a minimum during construction of subgrade. (6 Marks)
- (b) Briefly describe construction of road base using granular material. (6 Marks)

(c) In regard to design mix of rigid pavement, explain FOUR factors considered. (8 Marks)

QUESTION THREE (20 Marks)

(a) Briefly describe Guideposts (6 Marks)

(b) Briefly describe Safety barriers (6 Marks)

(c) In regard to road maintenance, identify and describe THREE treatments for a 'hungry' surface. (8 Marks)

QUESTION FOUR (20 Marks)

(a) Outline FOUR functions of railway ballast. (6 Marks)

(b) Explain FOUR features of a plate sleeper. (8 Marks)

(c) Outline FOUR points attended to while carrying out maintenance of concrete sleepers. (6 Marks)

QUESTION FIVE (20 Marks)

(a) With the aid of a sketch, outline the cycle of operation of a suction dredger. (10 Marks)

(b) Identify and briefly explain FIVE methods of depositing spoil during dredging. (10 Marks)