MURANG'A UNIVERSITY OF TECHNOLOGY

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF TECHNOLOGY CIVIL ENGINEERING

UNIVERSITY ORDINARY EXAMINATION

2021/2022 ACADEMIC YEAR

YEAR SEMESTER EXAMINATION FOR DIPLOMA IN CIVIL ENGINEERING

SEB1329– CIVIL ENGINEERING CONSTRUCTION

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.

QUESTION ONE (30 MARKS)

a) Define the following terms.
   i. Site investigation. (2 mks)
   ii. Soil investigation. (2 mks)

b) Name four types of foundations. (4 mks)

c) By use of neat sketches explain, the following.
   i. A trapezoidal combined base. (2 mks)
   ii. A rectangular combined base. (2 mks)
   iii. Drained county system of water proofing basements. (6 mks)

d) a) Explain why subgrade drains are provided on a road (2 mks)
   b) By use of a diagram, show how sub grade drain are provided. (4 mks)

e) By use of well labelled sketched, describe the following
   i. Railway sleepers
   ii. Clamps
   iii. Dolleys (6 mks)

QUESTION TWO (20 MARKS)

a) By the use of well labelled sketches, explain the method of an embankment widening procedure for a road. (10 mks)

b) Explain three reasons why compaction is required in road construction. (6 mks)

c) Explain two reasons why graded materials are used for making embankments in road construction. (4 mks)

QUESTION THREE (20 MARKS)

a) Explain the procedure of laying pavements layers on a newly build road. (6 mks)

b) By use of a diagram explain the following types of particles.
   i. Rounded
   ii. Angular
   iii. Flaky.
   iv. Elongated. (8 mks)

c) Explain the purpose of the following in road construction
   i. Bituminous prime coat.
   ii. Bituminous tack coat.
   iii. Primer seal. (6 mks)

QUESTION FOUR (20 MARKS)

a) Explain the following terms (add sketched where possible).
   i. Retaining wall.
   ii. Storm water drainage.
   iii. Foul water discharge.
   iv. Wet dock. (12 mks)

b) By use of neat sketched explain the following water front structures.
   i. Dry docks.
   ii. Jetties
   iii. Break water.
   iv. Sea walls. (8 mks)