



MURANG'A UNIVERSITY OF TECHNOLOGY

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF BUILDING AND CIVIL ENGINEERING

UNIVERSITY ORDINARY EXAMINATION

2017/2018 ACADEMIC YEAR

THIRD YEAR FIRST SEMESTER EXAMINATION

DIPLOMA IN CIVIL ENGINEERING

CLASS 16 MAY

SEB 1329 – CIVIL ENGINEERING CONSTRUCTION

DURATION: 2 HOURS

DATE: 18-4-2018

TIME: 9: 00-11:00Am

Instructions to Candidates:

1. Answer **Question 1** 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) Distinguish between site investigation and soil investigation (2 marks)
- b) Name **four** types of foundation used in civil engineering (4 marks)
- c) Define the term load bearing capacity of the soil (2 marks)
- d) State **two** factors that necessitate a combined foundation rather than a single footing (2 marks)
- e) Define the following terms in regard to road construction, use sketches where possible:
 - i. Burrow pits
 - ii. Embankment
 - iii. Cutting
 - iv. Fill (8 marks)
- f) Explain **four** reasons why adequate compaction of fill material is required in road construction (4 marks)
- g) Explain with the aid of sketch why sub grade drains are necessary in road construction (4 marks)
- h) Give **four** consideration in the design of retaining wall (4 marks)

QUESTION TWO (20 MARKS)

- a) Explain the term tunneling giving **four** advantages over open cut method of excavation (6 marks)
- b) Explain the term shaft (2 marks)
- c) State **four** reasons for using temporary supports or timbering when making a shaft (4 marks)
- d) Explain **four** areas where tunneling is used rather than open trenches (8 marks)

QUESTION THREE (20 MARKS)

- a) Explain the term cofferdam (2 marks)
- b) List **four** functional requirements of a cofferdam (4 marks)
- c) Using neat sketches , explain the construction of a cofferdam (8 marks)
- d) Explain **three** functions of shaft in tunneling (6 marks)

QUESTION FOUR (20 MARKS)

- a) Explain the term culvert (2 marks)
- b) With the aid of sketches explain how sheet piling is used in temporary works (6 marks)
- c) Name **four** basic types of caissons

- d) Differentiate between a dry dock and wet dock (2 marks)
- e) By use of sketches, explain the following types of docks and basins
- i. Rectangular docks
 - ii. Inclined docks (6 marks)

QUESTION FIVE (20 MARKS)

- a) State **four** advantages of cladding to walls (4 marks)
- b) With the aid of sketches, illustrate **two** methods of concreting a steel column to a concrete base (8 marks)
- c) Sketch the sectional elevation for the following types of fencing with concrete post
- i. Chain link fencing
 - ii. Close boarded fencing (8 marks)