(*University of Choice*)

MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY (MMUST)

MAIN CAMPUS

UNIVERSITY EXAMINATIONS 2023/2024 ACADEMIC YEAR

THIRD YEAR FIRST SEMESTER EXAMINATIONS

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

COURSE CODE: CSE 321

COURSE TITLE: SOIL MECHANICS II

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

INSTRUCTIONS:

1. This paper contains FOUR Questions
2. Answer ONE and any other TWO Questions
3. Marks for each question are indicated in the parenthesis.
4. It is in the best interest of the candidate to write legibly
5. Unit weight of water is 9.81 kN/m³ unless stated
6. Selected formulae is provided at the end of the Question Paper
7. Examination duration is **2 Hours**

MMUST observes ZERO tolerance to examination cheating

This Paper Consists of 4 Printed Pages. Please Turn Over.

the sand is horizontal and the water table is below the bottom of the wall.

[4 marks]

(ii) Determine the thrust on the wall if the water table rises to a level 2m below the surface of the sand. The saturated unit weight of the sand is 20 kN/m³.

[6 marks]

b) In an unconfined compression test, a sample of sandy clay 8 cm long and 4 cm in diameter fails under a load of 120 N at 10% strain. Compute the shearing resistance taking into account the effect of change in cross-section of the sample

[6 marks]

c) Briefly describe soil exploration   [4 marks]

QUESTION FOUR   [20 Marks]

a) Outline the classifications of slope failure   [8 marks]

b) Describe a method suitable to stabilise a highway fill foundation in hilly terrain with high rainfall   [6 marks]

c) Describe the stability of retaining walls   [6 marks]

----------------END OF QUESTION PAPER ---------------