



**MASINDE MULIRO UNIVERSITY OF
SCIENCE AND TECHNOLOGY**

(MMUST)

MAIN CAMPUS

UNIVERSITY EXAMINATIONS

2021/2022 ACADEMIC YEAR

THIRD YEAR FIRST SEMESTER EXAMINATIONS

FOR THE DIPLOMA

IN

CIVIL ENGINEERING

COURSE CODE: DCE 089 E

**COURSE TITLE: CONSTRUCTION PLANNING AND
MANAGEMENT**

DATE: THURSDAY 28TH APRIL 2022 TIME: 8.00AM – 10.00AM

INSTRUCTIONS:

- Answer Question **ONE** and any **TWO** Questions
- Marks for each question are indicated in the parenthesis.
- Examination duration is **2 Hours**
- Use of Mobile phones is **NOT ALLOWED** in the examination room.

MMUST observes ZERO tolerance to examination cheating

This Paper Consists of 2 Printed Pages. Please Turn Over.

QUESTION ONE – COMPULSORY (30 MARKS)

- a) Define the following terms as applicable in water supply: (2 Marks)
 - i) Per capita consumption (2 Marks)
 - ii) Water supply system (2 Marks)
 - iii) Conjunctive use of water
- b) Explain FIVE important roles of Water Resources Authority in management and provision of water supply in Kenya (5 Marks)
- c) Discuss FOUR important considerations in selecting a water source for community water supply (8 Marks)
- d) State any FIVE requirements of a good disinfectant (5 Marks)
- e) The following data were obtained from a census report of a town in Kenya;

Year	1930	1940	1950	1960
Population	100,000	126,000	145,000	165,000

Compute the approximate population for the year 1970, 1980 and 1990 using arithmetic increase method (6 Marks)

QUESTION TWO (20 MARKS)

- a) Explain any FOUR objectives of a water supply system (4 Marks)
- b) Draw a schematic view of unit processes in conventional water treatment and explain the role of each unit (10 Marks)
- c) Highlight SIX requirements of good water distribution System (6 Marks)

QUESTION THREE (20 MARKS)

- a) Define water quality as relates to water treatment (2 Marks)
- b) Highlight FOUR considerations to be made during site selection for a river intake structure (4 Marks)
- c) With examples, explain any THREE advanced water treatment processes used for portable water. (6 Marks)
- d) Explain any FOUR factors affecting per capita water demand (8 Marks)

QUESTION FOUR (20 MARKS)

- a) State FIVE factors that govern the design period (5 Marks)
- b) List any FIVE components of a water distribution system (5 Marks)
- c) With an aid of a diagram, explain the difference between a branched network and a looped configuration in water distribution (6 Marks)
- d) Explain any TWO factors considered when positioning storage reservoirs within a distribution network (4 Marks)