



**JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY**  
**SCHOOL OF ENGINEERING AND TECHNOLOGY**

**UNIVERSITY EXAMINATIONS FOR THE DIPLOMA IN CIVIL ENGINEERING  
(TVET)**

**1<sup>ST</sup> YEAR 2<sup>ND</sup> SEMESTER 2023/2024 ACADEMIC YEAR**

**CENTRE: MAIN CAMPUS**

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**COURSE CODE: TDE 2127**

**COURSE TITLE: WATER AND WASTEWATER TECHNOLOGY**

**EXAM VENUE: STREAM: Dip CIVIL ENGINEERING**

**DATE: ../04/2024 EXAM SESSION:**

**DURATION: 2 HOURS**

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**Instructions**

- 1. Answer ALL questions in Section A (Compulsory) and ANY other three questions in Section B**
- 2. Candidates are advised not to write on question paper**
- 3. Candidates must hand in their answer booklets to the invigilator while in the examination room**

### **SECTION A (30 MARKS)**

1. a) State three main sources of water. (3 Marks)
- b) Define waste water and list three sources of wastewater. (3 Marks)
- c) List the two types of water and state their differences. (4 Marks)
- d) Define; (6 Marks)
  - i. Sedimentation
  - ii. Screening
  - iii. Infiltration
- e) State four diverse effects of wastewater. (4 Marks)
- f) State three advantages of ground water source. (3 Marks)
- g) List two irrigation methods. (2 Marks)
- h) State two soil-water relationship in irrigation and drainage. (2 Marks)
- i) List three types of sewage system. (3 Marks)

### **SECTION B (40 MARKS)**

2. a) Define; (6 Marks)
  - i. Sewer
  - ii. Sewage
  - iii. Sewerage
- b) Distinguish between sewage treatment and sewage disposal. (2 Marks)
- c) List and describe four types of sewers. (8 Marks)
- d) Describe sewage treatment works. (4 Marks)
3. a) List and describe the two main water management techniques. (4 Marks)
- b) State five reasons for water demand management. (5 Marks)
- c) List six aims of water demand management. (6 Marks)
- d) Briefly discuss water abstraction (5 Marks)
4. a) Discuss the extensive steps in land preparation. (10 Marks)
- b) State and describe five factors influencing the quality of irrigation water. (10 Marks.)
5. a) List seven factors to consider when laying out a treatment plant. (7 Marks)
- b) State three reasons for treating water and wastewater. (3 Marks)
- c) Highlight and describe the water treatment process. (10 Marks)