



JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF ENGINEERING AND TECHNOLOGY

**UNIVERSITY EXAMINATION FOR THE DEGREE IN SCIENCE IN CONSTRUCTION
MANAGEMENT**

2nd YEAR 1st SEMESTER 2024/2025 ACADEMIC YEAR

CENTRE: MAIN CAMPUS

COURSE CODE: TCB 1211
COURSE TITLE: CIVIL ENGINEERING CONSTRUCTION I
EXAM VENUE: STREAM: BSc. CONSTRUCTION MGT
DATE: 16/1/2025 EXAM SESSION: 9-11.00 AM
DURATION: 2 HOURS

Instructions

- 1. Answer question 1 (Compulsory) and ANY other two questions**
- 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.**

QUESTION ONE (30 Marks)

- a. Construction equipment can be categorized in to FOUR main sections based on purpose and use. List these sections? (4 Marks).
- b. List and describe SIX stages of a construction process? (12 Marks).
- c. There are different types of column to beam connection which are selected based on the type of loads imposed on the column to beam joint. Using sketches, List and sketch THREE (3) types of these connections? (6 Marks).
- d. There are various types of floor systems which can be used in the steel frame structure construction. Briefly describe and sketch THREE (3)? (6 Marks).
- e. List TWO (2) of the SEVEN (7) basic components of a Water Storage Tank)? (2 Marks).

QUESTION TWO (20 Marks)

- a. Present-day admixtures may be classified as chemical and mineral admixtures. List and describe FIVE (5) common types of admixtures? (5 Marks).
- b. Concrete has been used in a variety of applications. List FOUR (4) Advantages and Disadvantages of Concrete application? (8 Marks).
- c. For the physical and mechanical properties of Reinforcement Steel, Name THREE (3) different types of these bars? (3 Marks).
- d. List FOUR (4) Steel frame structure construction procedures? (4 Marks).

QUESTION THREE (20 Marks)

- a. List ONE advantage and ONE disadvantage of non-composite beams? (4 Marks)
- b. The compressive strength of concrete is affected by the various important factors. List SIX of these factors? (6 Marks).
- c. The suitability of material for construction is assessed on the basis of its geotechnical qualities. Unsuitable material may include several materials. Name FIVE? (5 Marks)
- d. The need for pre-stressing in concrete can be justified by various issues. Describe FIVE? (5 Marks).

QUESTION FOUR (20 Marks)

- a. A compactor is a machine or mechanism used to material soil through compaction in construction industry. There are TWO main types of compactor. List and describe them? (4 Marks).
- b. List FOUR bulk earthworks steps that will need to be carried out before a major construction? (4 Marks).
- c. Filling or embankment construction should include several activities. Name and describe FIVE of these activities? (5 Marks)
- d. List FIVE types of pile foundations based on Function or Use. Briefly describe TWO of these pile foundations? (7 Marks).