



JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF ENGINEERING AND TECHNOLOGY

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

2ND YEAR 1ST SEMESTER 2017/2018 ACADEMIC YEAR

CENTRE: MAIN CAMPUS

COURSE CODE: TCM3216.

COURSE TITLE: CIVIL ENGINEERING CONSTRUCTION I

EXAM VENUE: WS

STREAM: BSc CONSTRUCTION MGT

DATE: 20/12/2017

EXAM SESSION: 9.00 – 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)

Construction Industry plays a major role of the world economy.

- a. Explain how Civil engineering construction differ from general building construction
5marks
- b. Describe any 5 types of Contracts commonly used in the civil engineering construction
10marks
- c. Explain the importance of Occupational, Health & Safety is in construction management.
5marks
- d. Describe any **5 major** equipment used in road pavement placing
10marks

QUESTION TWO (20 Marks)

- a) Define the term **retaining walls** as used in, and state their need, in Civil engineering construction. 3marks
- b) With the aid of clearly labelled diagrams, differentiate between buttress walls and the counterfort walls
6marks
- c) Explain why the design and construction of Reinforced Concrete Water storage tanks is special in civil engineering construction. 6marks
- d) Define the terms:
 - i. Pre-tensioned Concrete
 - ii. Over-reinforced concrete section
 - iii. Rock evaluation

QUESTION THREE (20 Marks)

Reinforced Concrete is an important composite material used in most Civil Engineering Construction.

- i) Explain any 4 advantages of Reinforced Concrete and 3 of its disadvantages
7marks
- ii) With the aid of diagrams, differentiate between Over-reinforced and under-reinforced concrete.
6marks
- iii) Discuss common factors affecting failures in Reinforced Concrete.
7marks

QUESTION FOUR (20 Marks)

Project management is distinct from general management. As a Project manager, discuss the following:

- a) The role of Project manager.
- b) Project planning
- c) Leadership
- d) Cost Control
- e) Occupational, Health and safety

QUESTION FIVE (20 Marks)

- a) Differentiate **foundation** from **foundation failure** as used in civil engineering construction.
4marks
- b) Outline the three steps of foundation design
6marks

- c) Using well-labelled diagrams, differentiate Isolated footing, combined footing, mat (raft) footing and wall footing 4marks
- d) With the aid of sketch, define pile foundation and state conditions under which pile foundation can be used 6marks