



JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF SPATIAL PLANNING AND NATURAL RESOURCES MANAGEMENT

**UNIVERSITY EXAMINATION FOR THE DEGREE IN SCIENCE IN WATER RESOURCE
MANAGEMENT & ENVIRONMENTAL MANAGEMENT**

4TH YEAR 2ND SEMESTER 2023/2024 ACADEMIC YEAR

CENTRE: MAIN CAMPUS

COURSE CODE: PNB 1414

COURSE TITLE: CONSTRUCTION MANAGEMENT II

**EXAM VENUE: STREAM: BSc. IN WATER RESOURCE
MANAGEMENT & ENVIRONMENTAL MANAGEMENT**

DATE: /04/2024 EXAM SESSION:

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) State the main characteristics that define a construction project **(2 Marks)**
- b) Explain the FOUR main phases of a construction project **(10 Marks)**
- c) Explain any FIVE categories of sources of risks in construction projects **(10 Marks)**.
- d) As the Project Manager you are in charge of overall coordination of the entire construction program for the owner. Explain your four main duties **(6 Marks)**.
- e) Explain the statutory deductions you would expect from a Kenyan worker's salary **(2 Marks)**.

QUESTION TWO (20 Marks)

Great Seas Construction Company limited has entered into an agreement with Government of Kenya as the employer to construct a water treatment plant for water supply system for residents of Bondo. As a Project Manager:

- a) Develop a WBS to show the full scope of work for this project **(10 Marks)**.
- b) With the aid of a diagram show the relationship between inputs and outputs in the planning process **(4 Marks)**.
- c) Construct an activity on the arrow network (AOA) for the activities listed in table Q2 **(6 Marks)**

Table Q2

Activity	Predecessors
A	-
B	-
C	A, B
D	C
E	C
F	D
G	D, E

QUESTION THREE (20 Marks)

- a) Explain FOUR elements that must be present for an agreement to become a contract **(6 Marks)**.
- b) Explain the following terms in tendering and contract administration process **(4 Marks)**
 - i) Performance Bond
 - ii) Prime Cost
 - iii) Provisional Sum
 - iii) Bid Bond
- c) Explain the following project delivery methods **(10 Marks)**
 - i) Traditional Approach
 - ii) Direct Labour

- iii) Design Build
- iii) Turn Key
- iv) Build Operate Transfer

QUESTION FOUR (20 Marks)

- a. Discuss the THREE main disputes in the construction industry that are brought for arbitration **(9 Marks)**
- b. Explain the advantages and disadvantages litigation as a form of dispute resolution **(8 Marks)**
- c. State the probable causes of failure of negotiation **(3 Marks)**

QUESTION FIVE (20 Marks)

- a. Giving examples, explain the following terms with regard to project construction costs and cash flow **(10 Marks)**.
 - i) Project Direct Costs
 - ii) Project Indirect Costs
 - iii) Present Value
 - iv) Net Present Value
 - v) Internal Rate of Return
- b. With the aid of a well labelled figure explain a typical project cash flow **(10 Marks)**.