



JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF ENGINEERING AND TECHNOLOGY

**UNIVERSITY EXAMINATIONS FOR THE DIPLOMA IN CONSTRUCTION
MANAGEMENT (TVET)**

1ST YEAR 2ND SEMESTER 2023/2024 ACADEMIC YEAR

CENTRE: MAIN CAMPUS

COURSE CODE: TDC 2129

COURSE TITLE: WORKSHOP TECHNOLOGY I

EXAM VENUE: STREAM: Dip CONSTRUCTION MGT

DATE: ../04/2024 EXAM SESSION:

DURATION: 2 HOURS

Instructions

- i. Answer question 1 (Compulsory) and ANY other three questions**
- ii. Candidates are advised not to write on question paper**
- iii. Candidates must hand in their answer booklets to the invigilator while in the examination room**

QUESTION ONE (40 Marks)

- a) Highlight any five general safety rules you would observe in a fabrication workshop.
(5 Marks)
- b) Safety of workers in a construction site is key to ensure smooth running of construction of activities. Name and describe uses of four different PPEs used in a construction site.
(8 Marks)
- c) Name five physical hazards that are present in a construction site. **(5 Marks)**
- d) Explain five basic formwork requirements during fresh concrete works. **(5 Marks)**
- e) Describe four pipe materials used in plumbing works stating their advantages and disadvantages. **(8 Marks)**
- f) Describe any four main functional requirements of all roofs. **(4 Marks)**
- g) List and explain the functions of FIVE plumbing fixtures you would expect to have in a residential building. **(5 Marks)**

QUESTION TWO (20 Marks)

- a) In a carpentry workshop name and explain the function of any four basic tools that you would use when fabricating a timber truss **(8 Marks)**
- b) Identify any two tools used for each of the following processes. **(8 Marks)**
 - i. Measuring
 - ii. Cutting
 - iii. Striking
 - iv. Holding
- c) Sketch any four roof shapes that are common in construction of residential buildings.
(4 Marks)

QUESTION THREE (20 Marks)

- a) With the aid of neat sketches describe any four basic timber joints that are commonly used in a construction site. **(4 Marks)**
- b) With the aid of neat sketches describe the two main types of welding joints used in arc welding. **(4 Marks)**
- c) Describe four of the main components of arc welding set up. **(4 Marks)**

- d) Name the basic components of welding equipment for a successful oxy acetylene gas welding process. **(8 Marks)**

QUESTION FOUR (20 Marks)

- a) What is a bird's mouth as applied in fabrication and installation of timber roof trusses? **(2 Marks)**
- b) Sketch a neat timber roof structure showing the main components of the roof. Describe the function of these components. **(18 Marks)**

QUESTION FIVE (20 Marks)

- a) As the clerk of works in charge of a construction of a proposed residential one storey building, describe any five building materials that you would use in the construction process. **(10 Marks)**
- b) Describe the use of any four basic tools that you would use in brick laying. **(4 marks)**
- c) With the aid of neat sketches describe the following types of bonds used in brick laying. **(6 Marks)**
- i. Stretcher bond
 - ii. Header bond
 - iii. English Bond
 - iv. Flemish bond

QUESTION SIX (20 Marks)

- a) Using neat sketches describe any four basic plumbing fittings and their applications. **(8 Marks)**
- b) Explain the advantages and disadvantages of shielded arc welding and oxyacetylene welding. **(12 Marks)**