

JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF ENGINEERING AND TECHNOLOGY

UNIVERSITY EXAMINATIONS FOR DIPLOMA IN CONSTRUCTION MANAGEMENT

2ND YEAR 1ST SEMESTER 2024/2025 ACADEMIC YEAR

CENTRE: MAIN CAMPUS

COURSE CODE: TDC 2228

COURSE TITLE: WORKSHOP TECHNOLOGY II

EXAM VENUE: STREAM: DIP CONST. MANAGEMENT

DATE: EXAM SESSION:

DURATION: 2 HOURS

Instructions

- 1. Answer question 1 (Compulsory) and ANY other three 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 1 (40 marks)

- a) Explain any five common causes of work place accidents. **(5 Marks)**
- b) As a Clerk of Works in a multi-story building construction site, describe any five PPEs, and their uses, that you would recommend for use in your site. **(5 Marks)**
- c) Enumerate five safety precautions you would observe in an electrical workshop. **(5 Marks)**
- d) Briefly describe the importance of the IEE standard wiring regulations **(2 Marks)**
- e) Explain the purpose of Earthing in Electrical Installation **(2 Marks)**
- f) Describe four types of metals used in sheet metal work **(8 Marks)**
- g) Describe two tools you would use in the following sheet metal processes **(6 Marks)**
 - i. Measuring
 - ii. Marking
 - iii. Forming
- e) Define the following terms in Electrical Installation **(5 Marks)**
 - i) Live
 - ii) Neutral conductor
 - iii) Earth
 - iv) iv) Fuse
 - v) Switch
- f) Describe two measuring tools used during bench work **(2 Marks)**

QUESTION TWO

- a) Explain Trunking as applied in electrical installations **(2 Marks)**
- b) Describe two types of Trunking in electrical installation **(6 Marks)**
- c) Identify the colors of the following cables in Electrical Distribution and Installation **(6 marks)**
 - i) Single phase
 - Live
 - Neutral
 - Earth ii) Three Phase
 - L1
 - L2
 - L3
 - Neutral
- d) Describe three types of conduits used in Electrical Installations. **(6 Marks)**

QUESTION THREE

- a) Draw and detail a simple surface installation of one lamp controlled by two, two- way switches. **(15 Marks)**
- b) State the functions of the following components of electrical supply and distribution system to premises. **(5 Marks)**
- i) Miniature Circuit Breaker (MCB)
 - ii) Fuses
 - iii) Meter
 - iv) Distribution Board
 - v) Ground Earth

QUESTION FOUR

- a) Name 4 tools commonly used to determine dimensions in sheet metal workshops. **(4 Marks)**
- b) With the aid of neat sketches describe the following sections of steel and their application in construction. **(8 Marks)**
- i) Square Hollow Sections (SHS)
 - ii) Flat bars
 - iii) Round bars
 - iv) I – beam
- c) Describe four types of metal commonly used in sheet metal fabrication shop. **(8 Marks)**

QUESTION FIVE

- a) Sketch a neat site plan of an electrical installation for a one-bedroom house **(8 Marks)**
- b) Describe the following types of materials as used in electrical wiring. **(2 Marks)**
- i) Conducting materials
 - ii) Insulating Materials
- c) State and describe how electricity is generated from five naturally occurring sources **(10 Marks)**

QUESTION SIX

- a) Explain the use of the following tools in bench work. **(5 Marks)**
- i) Mallets
 - ii) Chisels
 - iii) Scriber
 - iv) Snips
 - v) Drills
- b) Differentiate between soldering and brazing as methods of joining metals stating their advantages and disadvantages. **(10 Marks)**
- c) Enumerate the advantages of using portable power tools over manual ones. **(5 Marks)**