



**THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE**

***Faculty of Engineering & Technology***

**DEPARTMENT OF CIVIL AND BUILDING ENGINEERING**

**DIPLOMA IN BUILDING AND CIVIL ENGINEERING  
DIPLOMA IN CIVIL AND COMPUTER AIDED DESIGN  
CERTIFICATE IN ARCHITECTURE**

**SEMESTER EXAMINATIONS**

**APRIL/MAY 2010 SERIES**

**EB 2128 :      WORKSHOP TECHNOLOGY II**

**TIME: 2 HOURS**

**Instructions to Candidates**

You should have the following for this examination:

- Answer booklet
- Scientific calculator

This paper consists of **TWO** sections: Mechanical and Electrical.

Answer **THREE** Questions.

Question **ONE** is **COMPULSORY**.

### **Question ONE (COMPULSORY)**

- (a). Describe **THREE** major causes of accidents in an Electrical Workshop. **(3 Marks)**
- (b). State **THREE** ways of Raising an alarm incase of fire outbreak. **(3 Marks)**
- (c). Describe **THREE** classes of fire and their methods of Extinction. **(6 Marks)**
- (d). List the classification of tools, giving examples in each class and how they are used in the Electrical workshop. **(6 Marks)**
- (e). Define the following terms as used in Electrical Power Principles:
- (i). Current **(1 Mark)**
  - (ii). Resistance **(1 Mark)**
  - (iii). Electromotive force **(1 Mark)**
  - (iv). Potential difference **(1 Mark)**
  - (v). Electric charge **(1 Mark)**
- (f). Describe an Electrical supply system. **(4 Marks)**
- (g). Describe using a well labeled diagram, a 2 wire DC supply system. **(3 Marks)**

### **Question TWO**

- (a). Define an electrical circuit. **(2 Marks)**
- (b). List **TWO** types (major) of electrical circuit connections. **(2 Marks)**
- (c). Derive the equation of Total Resistance of Resistors (two) connected in parallel. **(3 Marks)**
- (d). Explain **THREE** dangers associated with Electrical workshop. **(3 Marks)**
- (e). WRITE the procedure to be carried out to a Patient who has received an Electrical shock. **(4 Marks)**
- (f). List **THREE** precautionary measures to be undertaken by one working in the Electrical workshop. **(3 Marks)**
- (g). Describe the term 'Starvation' giving example, as used in fires. **(2 Marks)**

### **Question THREE**

- (a). State **THREE** major factors to consider while choosing a wiring system. **(3 Marks)**
- (b). Define the term 'EARTHING' and how it's achieved. **(3 Marks)**
- (c). List types of consumer circuits; cable their cable sizes and current rating of their protective devices. **(6 Marks)**
- (d). Give **THREE** main sources of Electrical power in our country. **(3 Marks)**
- (e). State **THREE** types of consumer installations. **(3 Marks)**
- (f). State atleast **TWO** relevant IEE Regulations regarding consumer circuits. **(2 Marks)**

### **Question FOUR**

- (a). Explain the difference between the **TWO** types of hacksaw blades
- (i). All hard blade
  - (ii). Flexible blade
- (4 Marks)**
- (b). By use of sketches illustrate where the following types of files are applied:
- (i). Flat hand file
  - (ii). Three square file
  - (iii). Half round file
  - (iv). Round file
- (6 Marks)**
- (c). You are provided with a workpiece measuring 25cm x 15cm and 2cm thick (mild steel). Using appropriate workshop tools explain how you can produce the workpiece shown in figure 1 over leaf. **(10 Marks)**

### **Question FIVE**

Explain the operation of a **FOUR** stroke diesel engine. **(20 Marks)**