



TECHNICAL UNIVERSITY OF MOMBASA  
**Faculty of Engineering &  
Technology**

DEPARTMENT OF BUILDING & CIVIL ENGINEERING  
**DIPLOMA IN BUILDING & CIVIL ENGINEERING (DBCE Y2 S1)**

EBC 2201: WORKSHOP TECHNOLOGY & PRACTICE III

**END OF SEMESTER EXAMINATION**

**SERIES: APRIL 2015**

**TIME ALLOWED: 2 HOURS**

**Instructions to Candidates:**

You should have the following for this examination

- *Answer Booklet*

This paper consists of **FIVE** questions. Answer any **THREE** questions of the **FIVE** questions

Maximum marks for each part of a question are as shown

Use neat, large and well labeled diagrams where required

This paper consists of **THREE** printed pages

### Question One

- a) Explain the responsibilities of all employees according to Operational Health and Safety Act. **(3 marks)**
- b) Briefly discuss the safety precautions observed when using a hand grinder **(3 marks)**
- c) Explain briefly the precautionary measures taken when filing **(3 marks)**
- d) Explain measures taken in the proper care of hand cutting tools **(4 marks)**
- e) Most of the accidents in the workshop are caused through the worker, explain **(3 marks)**
- f) Explain the role of priming in pump operation and how it is carried out **(4 marks)**

### Question Two

- a) Explain the difference between a reamer and a drill **(2 marks)**
- b) Briefly explain the difference between the **THREE** common types of hacksaw blades **(6 marks)**
- c) State **TWO** applications of screw threads in Engineering **(2 marks)**
- d) Explain using sketches, where the following files are applied:
  - (i) Flat hand file
  - (ii) Three square file
  - (iii) Half round file
  - (iv) Round file**(6 marks)**
- e) Explain **FOUR** factors to consider in the proper use of hacksaw **(4 marks)**

### Question Three

- a) Explain how a spark ignition Engine operating on Four strokes work **(13 marks)**
- b) Explain the role of cutting fluids in machining operations **(7 marks)**

### Question Four

- a) Explain the procedure of installing a multistage centrifugal pump (submersible) in a bore hole **(8 marks)**
- b) Explain **FOUR** application of Engines in Civil Engineering works **(6 marks)**
- c) Explain the application of chisels in the workshop **(4 marks)**
- d) Differentiate between **TWO** main types of snips **(2 marks)**

### Question Five

- a) Briefly explain the difference between parallel and series circuits **(6 marks)**

- b) Explain the following terms:**
- (i) Current**
  - (ii) Resistance**
  - (iii) Electromotive force**
  - (iv) Potential difference**
  - (v) Electric charge**
- (5 marks)**
- c) Describe an electrical power supply system**
- (4 marks)**
- d) Describe using a well labeled diagram a 2-wire D.C supply system**
- (5 marks)**