



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

DEPARTMENT OF BUILDING & CIVIL ENGINEERING
DIPLOMA IN BUILDING & CIVIL ENGINEERING (DBC)

EBC 2205: WORKSHOP TECHNOLOGY III

END OF SEMESTER EXAMINATION

SERIES: AUGUST 2013

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

Maximum marks for each part of a question are as shown

This paper consists of **THREE** printed pages

Question One

- a) (i) State **THREE** classes of fire. **(3 marks)**
- (ii) State the causes of each of the above fires.
- (iii) State **ONE** method of extinguishing each of the above fires **(6 marks)**
- b) State the **THREE** obligations of an employee as in the Health and Safety at Work Act. **(6 marks)**
- c) (i) Define what first aid is **(2 marks)**
- (ii) Explain under what conditions are splinters used in first aid. **(3 marks)**

Question Two

- a) Name **FIVE** tools used in electrical installations and state their functions. **(10 marks)**
- b) Explain briefly how power is generated in:
- (i) Fuel/diesel generating plant
- (ii) Geothermal generating plant **(6 marks)**
- c) State **FOUR** advantages of the Grid system **(4 marks)**

Question Three

- a) Draw a labeled diagram of a light in a corridor of a Swahili house being controlled by three switches independently **(6 marks)**
- b) Define the following tests as applied in electrical installations:
- (i) Continuity
- (ii) Polarity
- (iii) Insulation **(9 marks)**
- c) Define the following tests as applied in electrical installations:
- (i) Fuse
- (ii) Earth leakage circuit breaker **(4 marks)**
- d) Name the tool used to test whether a circuit is live. **(1 mark)**

Question Four

- a) Briefly explain the principles of operation of:
- (i) Two-stroke petrol engine (clerk engine)
- (ii) Four stroke petrol engine (otto cycle) **(16 marks)**

- b) Give **TWO** advantages and **TWO** disadvantages of two stroke engine as compared to four stroke cycle engine. **(4 marks)**

Question Five

- a) Give **ONE** suitable tool used for the following operations:
- (i) Remove high spots to produce a good surface finish on filed or machined metal pieces.
 - (ii) Open out a previously drilled hole to an accurate size and give it a smooth finish
 - (iii) Cutting tool which produces an external thread
 - (iv) Cutting tool which is used for cutting sheet metal quickly and easier than hacksaw. **(10 marks)**
- b) (i) Give **TWO** precautions to be taken before starting a pump **(4 marks)**
(ii) Give **THREE** requirements to be considered when selecting a pump to do a particular task. **(6 marks)**