



# THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

## *Faculty of Engineering and Technology*

DEPARTMENT OF MECHANICAL AND AUTOMOTIVE ENGINEERING

### **DIPLOMA IN AUTOMOTIVE ENGINEERING DIPLOMA IN CHEMICAL ENGINEERING DIPLOMA IN PLANT ENGINEERING**

**EME 2101 : WORKSHOP TECHNOLOGY I**

SUPPLEMENTARY/SPECIAL EXAMINATIONS

**SERIES:** APRIL 2011

**TIME:** 2 HOURS

#### **Instructions to Candidates:**

1. You should have the following for this examination:
  - Answer Booklet
  - Drawing Instruments
2. This paper consists of **FIVE** Questions attempt any **THREE** Questions.

### Question ONE

- (a) (i) State **TWO** functions of the following with respect to workshop tools:
- (I) Centre punch
  - (II) Safe edge on a flat file.
- (4 Marks)

- (b) Outline the procedure of making the tool below:

- (c) Sketch and label the following marking out tools.
- (i) Anvil
  - (ii) Swage block
  - (iii) Scribing block
- (10 Marks)

### Question TWO

- (a) (i) State the meaning of “the set of a hacksaw blade”.
- (ii) List **EIGHT** precaution to be observed when bring a hacksaw blade.(5 Marks)
- (b) Sketch an old leg calliper and illustrate **TWO** applications of the same. (6 Marks)
- (c) (i) Sketch a labelled diagram of a micrometer screw gauge.
- (ii) Illustrate with a diagram the following reading on a micrometer screw gauge.
- (I) 10.67mm
  - (II) 0.29mm
  - (III) 3.03mm
- (9 Marks)

### Question THREE

- (a) (i) Name the **THREE** types of drilling machines found in the workshop. State the application of each.
- (ii) List **FOUR** causes and remedies of the following with respect to the drilling operation.
- (I) Drill breakage
  - (II) Oversize hole
- (6 Marks)
- (iii) Sketch a labelled diagram of the pillar drilling machine. (6 Marks)
- (b) (i) Outline the general procedure for drilling. (7 Marks)
- (ii) State the uses of the following drill types.
- (I) Flat drill
  - (II) Centre drill
- (3 Marks)

### Question FOUR

- (a) (i) State and sketch **TWO** types of lathe bed. (4 Marks)
- (ii) Make a neat sketch of a centre lathe and label all the parts. (8 Marks)
- (b) Sketch labelled diagrams of the following centre lathe devices:-
- (i) **THREE** jaw self centring chuck.
  - (ii) **THREE** point steady.
- (8 Marks)

### Question FIVE

- (a) (i) State **THREE** duties of each of the following people in a factory setting with reference to safety.
- (I) Employer
  - (II) Employee
- (6 Marks)
- (ii) Describe **FIVE** classes of fire giving relevant examples in each

case. State the method(s) of extinguishing each. (10 Marks)

- (b) Highlight **FOUR** types of fire extinguishers their applications and their respective colour codes. (4 Marks)