



**TECHNICAL UNIVERSITY OF MOMBASA**  
***Faculty of Engineering & Technology***  
DEPARTMENT OF BUILDING & CIVIL ENGINEERING

UNIVERSITY EXAMINATIONS FOR DEGREE IN  
BACHELOR OF SCIENCE IN CIVIL ENGINEERING

**EMG 2106: WORKSHOP PRACTICE**

END OF SEMESTER EXAMINATIONS

**SERIES: APRIL 2015**

**TIME: 2 HOURS**

**INSTRUCTIONS:**

- You should have: Answer booklet, scientific calculator and drawing instrument
- The paper consist of **FIVE** questions.
- Answer any **THREE** questions.

***This paper consists of Two printed pages***

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**QUESTION 1**

- a) Distinguish between soft and hard wood and give atleast **TWO** examples of each. **(4 marks)**
- b) With the aid of a diagram describe the structure of a tree. **(10 marks)**
- c) Describe any **FOUR** characteristics of a good timber. **(6 marks)**

**QUESTION 2**

- a) Identify any **THREE** sources of water. **(3 marks)**
- b) Explain the **FOUR** methods employed to treat water. **(8 marks)**
- c) Briefly explain water distribution from the main to individual customers. **(7 marks)**
- d) List any **FOUR** measures that are taken to economize wastage of water. **(2 marks)**

### QUESTION 3

- a) List any **FOUR** general causes of accidents in the workshop. **(2 marks)**
- b) Name the **TWO** acts of Parliament that regulates the safety, health, and environmental protection at work place. **(2 marks)**
- c) Explain the following with respect to safety health at workplace.  
i) Dust and fumes  
ii) Toxic substance  
iii) Good house keeping  
iv) Machines **(10 marks)**
- d) Outline the precautions related to fire that should be observed at workplaces. **(6 marks)**

### QUESTION 4

- a) With the aid of a sketch explain the use of:  
i) Vernier height gauge  
ii) Hack saw  
iii) Angle plate **(12 marks)**
- b) Show a reading of 15.28mm on a vernier height gauge. **(2 marks)**
- c) Briefly explain the following metal joining processes:  
i) Soldering  
ii) Brazing **(6 marks)**

### QUESTION 5

- a) State kirchhoff's first and second law. **(2 marks)**
- b) In the circuit shown in Figure Q. 5 determine:  
i) The current in each resistor  
ii) The p.d across each resistor. **(11 marks)**
- c) i) Explain the basic construction of an off-hand grinding machine.  
ii) List any **FOUR** applications of an-off-hand grinding machine. **(7 marks)**