



TECHNICAL UNIVERSITY OF MOMBASA

DEPARTMENT OF BUILDING AND CIVIL ENGINEERING

UNIVERSITY EXAMINATION

FOR

DIPLOMA IN BUILDING AND CIVIL ENGINEERING

EBC 2201: WORKSHOP TECHNOLOGY AND PRACTICE III THEORY

END OF SEMESTER EXAMINATION

SERIES: APRIL

TIME: 2HOURS

DATE: APRIL 2016

Instructions to candidates

You should have the following for this examination

- **Answer booklet, examination pass and student ID**
- **This paper consist of five questions**
- **Question ONE is compulsory**
- **Attempt any ONE question from each section A and B**
- **All questions carry equal marks**
- **Do not write on the question paper.**

QUESTION ONE

- a) Explain any **FOUR** Health Safety and regulations at work mandated to the employer.
(4marks)

- b) i. State and describe any **FOUR** causes of accidents in the workshops.

ii. State any **FOUR** health hazards **(6marks)**

c) State

i. The hazards resulting from electrical faults

ii. Four dangerous effects of noise and the factors determining the degree of danger in factories

iii. Explain class “c” fire and how it is extinguished

iv. The stages of control for rotating electric machines **(10marks)**

SECTION A

QUESTION TWO

a) i. Define hand tools and state their maintenance. **(4marks)**

ii. Describe the following tools with their construction features and materials used

i) files

ii) hacksaw

iii) taps and dies

iv) engineers vices **(6marks)**

b) i. Discuss when it is extremely necessary to use powered hand tools. **(4marks)**

ii. Differentiate between the **TWO** classifications of heat engines.

iii. State **FOUR** main classifications of internal combustion engine giving ONE example of each. **(10marks)**

QUESTION THREE

a) i. State **FOUR** applications of internal combustion engines and any **TWO** parts common to each petrol and diesel engine only. **(6marks)**

ii. State and discuss **FOUR** qualities and importance characteristics a contractor must take into consideration when acquiring wales pumps. **(8marks)**

b) i. Describe with suitable illustrations the role of atmosphere pressure.

ii. Define a diffuse and explain why a pump must be pruned

iii. State any **THREE** important pump storage tips that must be adhered to always.

(12marks)

SECTION B

QUESTION FOUR

- a) i. State the supply control switchgear required at the supply intake to an electrical installation. **(3marks)**
- b) i) State **FOUR** likely faults in electrical installations.
- ii. Explain **FOUR** attributes required of an electrical protective device. **(12marks)**
- c) Define the following terms.
- i) Current rating
 - ii) Fusing current
 - iii) Fusing factor
 - iv) Discrimination **(5marks)**

QUESTION FIVE

- a) Define a wiring system
- b) Explain **THREE** considerations to determine the installation system to adopt.
- c) State **FOUR**
- i. Insulating materials
 - ii. Sheathing materials **(8marks)**
- d) i. State the limitations of use of PVC insulation.
- ii. Explain the use of catenary wiring system **(4marks)**