



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)