



THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of JKUAT)

Ukunda Campus

Faculty of Engineering and Technology

DEPARTMENT OF ELECTRICAL & ELECTRONIC ENGINEERING

CERTIFICATE IN ELECTRICAL POWER ENGINEERING

EEP 1106: ELECTRICAL INSTALLATION TECHNOLOGY

END OF SEMESTER EXAMINATION

SERIES: APRIL 2012

TIME: 2 HOURS

Instructions to Candidates:

This paper consists of **FIVE** questions

- *Answer Booklet*

Answer question **ONE (COMPULSORY)** and any other **TWO** questions

Marks are indicated for each part of the question

This paper consists of **THREE** printed pages

Question One

- a) With reference to workshops and factories:
- (i) State **FOUR** behavioral causes of accidents (4 marks)
 - (ii) Explain Fire classes A, B and C and the method of extinction of each class (9 marks)
 - (iii) Explain **FIVE** general factors to be considered in the selection of a wiring system for an electrical installation (10 marks)
 - (iv) State the materials used in sheathed wiring as
 - (a) Insulators (2 marks)
 - (b) Sheathing (2 marks)
 - (v) Define a wiring system (3 marks)

Question Two

- a) State
- (i) Faults that occur in electrical circuits (4 marks)
 - (ii) Installations required to undergo testing and inspection (3 marks)
- b) (i) Explain the purpose of visual inspection (4 marks)
- (ii) State:-
- The tests to be carried out on all electrical installations (6 marks)
 - The certification after inspection and testing (3 marks)

Question Three

- a) Define the following terms with respect to fuses
- (i) Current rating
 - (ii) Fusing factor
 - (iii) Breaking capacity (6 marks)
- b) State **FOUR**
- (i) Advantages of HBC fuses (4 marks)
 - (ii) Disadvantages of a rewirable fuse (4 marks)
- c) List **THREE** advantages of a grid system (6 marks)

Question Four

- a) List **FOUR** advantages of alternating current (a.c) over direct current (d.c) (8 marks)
- b) What are the essential features required by regulation in the intake point (4 marks)
- c) Explain the reasons as to why energy is transmitted at high voltage (8 marks)

Question Five

- a) State **THREE** areas in electrical installations where the following area used: (6 marks)
- (i) Bare conductors
 - (ii) Flexible steel conduits
- b) With reference to PILC SWA underground cable, explain the functions of the following. (8 marks)
- (i) Lead sheathing
 - (ii) PVC overall serving
 - (iii) Sute bedding
 - (iv) Steel wire armour
- c) With the aid of a labeled diagram, explain the operation of a fluorescent lamp circuit (6 marks)