



**TECHNICAL UNIVERSITY OF MOMBASA**

**FACULTY OF ENGINEERING AND TECHNOLOGY**

**DEPARTMENT ELECTRICAL AND ELECTRONICS ENGINEERING**

**UNIVERSITY EXAMINATION FOR:**

**CERTIFICATE IN TECHNOLOGY IN ELECTRICAL POWER ENGINEERING (CEPE 1) PP 2**

**ELECTRICAL INSTALLATION TECHNOLOGY 1**

**EEP 1102**

**END OF SEMESTER EXAMINATION**

**SERIES: DECEMBER 2016**

**TIME: 2HOURS**

**DATE:**

**Instructions to Candidates**

***You should have the following for this examination***

**-Answer Booklet, examination pass and student ID**

***This paper consists of five questions. Answer ANY THREE QUESTIONS.***

***Do not write on the question paper.***

## QUESTION ONE

1. (a) State :-
- i. Two safety statutory regulations in electrical power.
  - ii. Three workshops safety practices (5 marks)
- (b) (i) Draw a diagram of a single-phase consumer's supply intake showing the sequence of equipment up to the consumers fuse box.
- (ii) State two measures to take before working on faulty electric circuit. (9 marks)
- (c) Explain three phase four wire system of supply (6 marks)

## QUESTION TWO

- (a) (i) State four types of generating stations
- (ii) Describe with the aid of a diagram the typical supply system from generating station to the domestic consumer. (8 marks)
- (b) (i) State three advantages of the grid supply system
- (ii) Describe with the aid of a diagram the single phase three wire system of supply (9 marks)
- (c) Explain why a transformer is necessary in an electrical supply system (3 marks)

## QUESTION THREE

- (a) Define the following terms:-
- i. Discrimination
  - ii. Current rating
  - iii. Fusing current (6 marks)
- (b) (i) Draw a well labeled diagram of a rewirable fuse.
- (ii) State three advantages of this type of fuse in (b) (i) (8 marks)
- (c) Describe with the aid of a diagram the operation of a voltage operated earth leakage circuit breaker. (6 marks)

## QUESTION FOUR

- (a) (i) Define a wiring system
- (ii) Explain the following wiring systems:-
- i. Trunking
  - ii. Conduit
  - iii. Cleated (8 marks)
- b (i) Explain four factors considered in determining a suitable wiring system to be adopted. (6 marks)
- (ii) State four areas where bare conductors are used in electrical installations (8 marks)
- c. State four I.E.E. regulations on cables (4 marks)

## QUESTION FIVE

- a) i. Define the following :-
- (i) Earth continuity conductor
  - (ii) Earthing lead
  - (iii) Earth loop impedance
  - (iv) Explain the purpose of Earthing (8 marks)
- (b) State:-
- i. Any four methods used for achieving earthing
  - ii. Three types of earth electrodes (7 marks)
- (c) Explain the purpose of Earth loop impedance test and how it is carried out. (5 marks)