



TECHNICAL UNIVERSITY OF MOMBASA

SCHOOL OF ENGINEERING AND TECHNOLOGY

ELECTRICAL ENGINEERING DEPARTMENT

UNIVERSITY EXAMINATION FOR:

DIPLOMA IN TECHNOLOGY ELECTRICAL ENGINEERING

EEP 2106 (DTEE): ELECTRICAL INSTALLATION TECHNOLOGY AND PRACTICE

END OF SEMESTER EXAMINATION

SERIES: JULY 2025

TIME: 2 HOURS

DATE: Pick DateSelect MonthPick Year

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of **FIVE** Questions; Attempt any **THREE** Questions.

Do not write on the question paper.

Question ONE

- (a) List three types of power generating stations found in Kenya and for each name one site location. (3 marks)
- (b) Draw a labelled diagram of a typical supply system from generating station to consumer terminals (9 marks)

- (c) (i) Using a block diagram, show the sequence of the control at the consumer's intake point.
- (ii) State three IEE regulations requirements regarding final circuit (8 marks)

Question TWO

- (a) (i) define the term cable
- (ii) State three characteristics of each of the following:
- (I) Conductor
 - (II) Insulator (8 marks)
- (b) Describe the following cable jointing methods
- (i) Clamping
 - (ii) Crimping (4 marks)
- (c) (i) sketch a ball hangers joint
- (ii) Outline the procedure of making the joint in (c) ii. (8 marks)

Question THREE

- (a) (i) Define the term wiring system
- (ii) Explain two factors considered when selecting a particular wiring systems (6 marks)
- (b) Draw a labelled diagram of a 6-way consumer unit and indicate the ratings and cable sizes of each of the following final circuits.
- (i) Lighting circuit
 - (ii) Ring circuit
 - (iii) Water heater
 - (iv) Cooker unit (8 marks)
- (c) With the aid of a circuit diagram describe the procedure for carrying out polarity test on a dead circuit. (6 marks)

Question FOUR

- (a) (i) State two advantages of the grid system (2 marks)
- (ii) Draw the preferred graphical symbols for the following:
- Lighting point
 - Single Socket outlet
 - Consumer control unit
 - Alarm (4 marks)
- (b) With aid of a labelled diagram explain how a hydro-electric power station operates (8 marks)
- (c) Draw labelled circuits diagram of power distribution system
- (i) DC three wire

(ii) AC three phase- 4 wire system

(6 marks)

Question FIVE

(a) Explain the functions of the following authorities for power production in Kenya

(i) EPRA

(ii) KENGEN

(iii) KPLC

(6 marks)

(b) Table 1. shows the tests carried out in a completed installation. Complete the table by filling the test instrument and the expected reading in the spaces provided for each type of test.

Test	Instrument	Reading
polarity		
Insulation resistance		
continuity		
Earthing		

(8 marks)

(c) (i) State two IEE regulation requirements regarding cables and conductors

(ii) Outline two main reasons for carrying out insulation test in electrical installation

(4 marks)