



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: APRIL 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 Other **THREE** Questions.

Do not write on the question paper.

Question ONE

1. (a) Define the term “wiring system” (2 marks)
- (b) Explain how the following factors affect the selection of a wiring system
 - i. Environmental conditions
 - ii. Appearance
 - iii. Safety
- (c) State three
 - i. Precautions necessary to be observed when installing a sheathed wiring system

- ii. Advantages of trunking wiring system over pvc conduits (6 marks)
- (d) Briefly describe the following types of wiring system
 - i. PVC sheathed wiring system
 - ii. Trunking wiring system (6 marks)

Question TWO

- (a) (i) State three merits of hydro-electric generating plant
- (ii) Explain the function of a water turbine in the hydro-electric power plant (5 marks)
- (b) Outline the stages of a typical power system from a generating station to the consumer and for each case state the voltage levels. (6 marks)
- (c) Draw a labelled diagram of a three point 4-wire system and indicate both single phase loads and three phase loads. (5 marks)
- (d) State four advantages of A.C over D.C system (4 marks)

Question THREE

- (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)

Question FOUR

- (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 FIVE

- (a) (i) Define the term final circuit
 - (ii) Explain four IEE regulation requirements regarding final circuits
- (2 marks)
- (6 marks)
- (b) Draw the wiring diagram for a final circuit serving
 - (i) Three lights each controlled from two positions by two way switches gang one-way switch.
 - (ii) Four sockets outlets connected in radial. Indicate the color of cables and the appropriate fuse
- (8 marks)
- (c) Draw the preferred graphical symbol for the following.
 - i. Bell
 - ii. Consumer control unit
 - iii. Twin socket outlet
 - iv. Single fluorescent lamp
- (4 marks)