



TECHNICAL UNIVERSITY OF MOMBASA

SCHOOL OF ENGINEERING AND TECHNOLOGY

ELECTRICAL ENGINEERING DEPARTMENT

UNIVERSITY EXAMINATION FOR:

CRAFT CERTIFICATE IN TECHNOLOGY ELECTRICAL ENGINEERING

EEP 1105 (CTEE): ELECTRICAL INSTALLATION TECHNOLOGY AND PRACTICE (II)

END OF SEMESTER EXAMINATION

SERIES: APRIL 2025

TIME: 2 HOURS

DATE: Pick DateSelect Month Pick 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. Sketch using BS 3939 electrical symbols of the following; -

- (i) One-way switch
- (ii) Lamp (general)
- (iii) Socket outlet (general)
- (iv) Distribution board

(v) Fuse. (5 marks)

b. A long corridor is illuminated by two lamps connected in parallel, controlled independently from three switches.

(i) State the type of switches used.

(ii) Sketch a labeled circuit diagram for the above.

c. Adjacent bathroom and a toilet have each a light, sketch a labeled circuit diagram controlling the lights from a two-gang-one-way switch. (6 marks)

Question TWO

a. With an aid of a labeled circuit diagram, describe the power final sub-circuit for FOUR 13-amp socket outlets of the following: -

(i) Ring and,

(ii) Radial circuits. (16 marks)

b. State any other **FOUR** power final sub-circuits in a domestic electric installation. (4 marks)

Question THREE

a. With reference to electrical installations state: -

(i) Two commonly used instruments.

(ii) Four tests to be carried out and their sequence. (6 marks)

b. Explain the procedure to be followed when carrying out:

(i) Insulation resistance for a new domestic electrical installation.

(ii) Continuity test of a ring final sub-circuit. (14 marks)

Question FOUR

a. State six factors: -

(i) To be considered when selecting the type of electrical wiring system to be used.

(ii) Affecting the current rating of cables. (12 marks)

b. With reference to an electrical installation earth, define the following: -

(i) Bonded.

(ii) "Resistance area" For an earth electrode.

(iii) Earth Electrode.

(iv) Earthed (4 marks)

c. State the minimum mounting heights of the following reference to a finished floor level: -

- (i) Lighting switch
- (ii) Power socket outlet
- (iii) Consumer unit
- (v) Kwh energy meter

(4 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)