



TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF ELECTRICAL & ELECTRONIC ENGINEERING

UNIVERSITY EXAMINATION 2019/2020

**FIRST YEAR FIRST SEMESTER EXAMINATION FOR THE
DIPLOMA IN TECHNOLOGY IN ELECTRICAL & ELECTRONIC ENGINEERING**

EEE 2106: ELECTRICAL INSTALLATION TECHNOLOGY AND PRACTICE

END OF SEMESTER EXAMINATION

SERIES: AUGUST 2019

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 **Question ONE (Compulsory)** and any other **TWO Questions**

Do not write on the question paper.

Question ONE (Compulsory)

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. State: -

- (i) Two gases used for welding and their color codes.
 - (ii) **THREE** protective gears to be worn by a welder during are welding process.
- (7 marks)

b. Explain the following as a metal joining processes: -

- (i) Brazing.
 - (ii) Soldering.
- (10 marks)

c. Give **THREE** advantages of using adhesive as a joining process compared to welding or soldering.

(3 marks)