



TECHNICAL UNIVERSITY OF MOMBASA

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF MEDICAL ENGINEERING

UNIVERSITY EXAMINATION FOR:

BACHELOR OF SCIENCE IN MEDICAL ENGINEERING

EEE 4230: WORKSHOP PROCESSES AND PRACTICE II

SPECIAL/SUPPLEMENTARY EXAMINATION

SERIES: JULY 2025

TIME: 2 HOURS

DATE: July 2025

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass, and student ID, Drawing instruments, colored pens

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

Do not write on the question paper.

Question ONE (20 marks)

- a) Describe with the help of suitable diagram, the three-phase four-wire a.c system in Kenya.
(6 Marks)
- b)
- i. Describe the term final subcircuit and list FIVE general groups of final subcircuits
 - ii. Draw a typical layout for a consumer unit for domestic installation
- (14 Marks)

Question TWO [20 marks]

- a) State typical application of intermediate switching and draw an intermediate switching circuit
(6 Marks)
- a) You have been assigned the duty to inspect and test a completed Electrical Installation of a Domestic building. Outline how you will perform the task.
(14 Marks)

Question THREE [20 marks]

- a) Describe THREE ways in which Conduit bending can be achieved for electrical wiring
(6 Marks)
- b) With the help of suitable diagrams describe the construction and operation principles of the following Electric lamps and for each type, draw its schematic symbol
 - i. Filament (Incandescent) lamps
 - ii. Arc lamps
 - iii. Discharge lamps

(14 Marks)

Question FOUR [20 marks]

- a) State and describe any FIVE types of cables
(10 Marks)
- b) Describe the THREE main Categories of Maintenance and each case state a typical example
(10 Marks)

Question FIVE [20 marks]

- a) Describe FIVE basic steps in soldering
(10 Marks)
- b) Describe the FIVE categories of voltages by which Electricity supply is defined.
(10 Marks)