



# TECHNICAL UNIVERSITY OF MOMBASA

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SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF MEDICAL ENGINEERING

## UNIVERSITY EXAMINATION FOR:

BACHELOR OF TECHNOLOGY IN MEDICAL ENGINEERING

TEE 4130: WORKSHOP TECHNOLOGY AND PRACTICE II

## END OF SEMESTER 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*

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

**Do not write on the question paper.**

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### Question ONE [20 Marks]

a) Describe the FIVE categories of voltages by which Electricity supply is defined.

**(10 Marks)**

i. A capacitor has the following colour code: red, brown, green, silver. Determine its nominal, minimum and maximum value.

ii. Determine the colour code of a resistor whose value is given as 5M2J

**(5 Marks)**

b) Draw a typical layout of a consumer unit for domestic installation

**(5 Marks)**

### Question TWO [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 THREE [20 marks]**

- a) State any FIVE Electrical wiring accessories for a domestic building  
(4 Marks)
- b) In general, FOUR types of Faults may occur in an electrical circuit.
  - i) List the the four faults
  - ii) Describe their symptoms and possible remedy.(16 Marks)

**Question FOUR [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 FIVE [20 marks]**

- a) Describe FIVE basic steps in soldering  
(10 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 (Indcandescent) lamps
  - ii. Arc lamps
  - iii. Discharge lamps(10 Marks)