



MURANG'A UNIVERSITY OF TECHNOLOGY

SCHOOL OF ENGINEERING AND TECHNOLOGY

**DEPARTMENT OF ELECTRICAL AND ELECTRONICS
ENGINEERING**

UNIVERSITY ORDINARY EXAMINATION

2023/2024 ACADEMIC YEAR

..... YEAR SECOND SEMESTER EXAMINATION

.....

EMT 101 – WORKSHOP TECHNOLOGY 1

DURATION: 2 HOURS

INSTRUCTIONS TO CANDIDATES:

1. Answer question one and any other two questions.
2. Mobile phones are not allowed in the examination room.
3. You are not allowed to write on this examination question paper.

SECTION A: ANSWER ALL QUESTIONS IN THIS SECTION

QUESTION ONE (30 MARKS)

- i. Briefly any five causes of accidents at the work place. (5marks)
- ii. List five reasons why safety regulations should be followed in the workshop. (5marks)
- iii. With the aid of a well labelled diagram, illustrate the following parts of an engineer's file:
Tang, Edge, Point and Length. (4marks)
- iv. List and explain the standard grades of cut in common use when filing. (6marks)
- v. With the aid of clear sketches, illustrate the following types of screw heads.
 - a. Raised countersunk
 - b. Cheese
 - c. Pan
 - d. Grub screw (4marks)
- vi. Briefly describe the following locking devices.
 - a. Self-locking screws
 - b. Blind rivets
 - c. Locking washers (6marks)

SECTION B – ANSWER ANY TWO QUESTIONS IN THIS SECTION

QUESTION TWO (20 MARKS)

- i. List five safety rules in the workshop. (5marks)
- ii. State any five types of Personal Protective Equipment (PPE) used in the workshop. (5marks)
- iii. List and explain the three types of hack saw blades. (6marks)
- iv. With the aid of a well labelled diagram, illustrate the following types of chisels. (4marks)
 - a. Cross-cut
 - b. Flat

QUESTION THREE (20 MARKS)

- i. Distinguish the following:
 - a. Soldering and brazing (5marks)
 - b. Active flux and passive flux (5marks)

ii. Using clear sketches illustrate the following tools.

- a. Engineer's square
- b. Square head
- c. Centre head
- d. Hermaphrodite calliper's
- e. G-clamp

(10marks)

QUESTION FOUR (20 MARKS)

- i. List the precautions taken when using micrometres. (5marks)
- ii. With the help of a sketch, show the parts of a micrometre. (5marks)
- iii. State six uses of slip gauge blocks (6marks)
- iv. List the four requirements of gauge blocks. (4marks)