



MURANG'A UNIVERSITY OF TECHNOLOGY
SCHOOL OF ENGINEERING AND TECHNOLOGY
DEPARTMENT OF MECHANICAL ENGINEERING

UNIVERSITY ORDINARY EXAMINATION

2024/2025 ACADEMIC YEAR

**SECOND YEAR FIRST SEMESTER EXAMINATION FOR BACHELOR
OF SCIENCE IN MECHANICAL ENGINEERING**

EMT 200 - WORKSHOP TECHNOLOGY II

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)

- a) Identify **FOUR** areas in a workshop that are prone to mechanical hazards. (4 marks)
- b) Outline **THREE** main causes of accidents in a workshop. (3 marks)
- c) With the aid of a neat labeled sketch describe the table feed mechanism of a shaping machine. (6 marks)
- d) List **FOUR** means of specifying a Lathe machine. (4 marks)
- e) List **FOUR** operations performed on a Lathe machine. (4 marks)
- f) Explain one cause and one remedy for each of the following defect in a twist drill:
 - Splitting of web
 - Hole too large
 - Chipped cutting Lips(6 marks)
- g) List **THREE** types of mandrels used in a Lathe machine. (3 marks)

SECTION B – ANSWER ANY TWO QUESTIONS IN THIS SECTION

QUESTION TWO (20 MARKS)

- a) With the aid of a neat labelled sketch illustrate a twist drill. (8 marks)
- b) State **FOUR** rules to be observed in grinding twist drills to ensure correct cutting. (4 marks)
- c) List **FIVE** parts of a drilling machine. (5 marks)
- d) With the aid of sketch illustrate trepanning operation in drilling machine. (3 marks)

QUESTION THREE (20 MARKS)

- a) Stage **FIVE** advantages of milling machine. (5 marks)
- b) With the aid of neat sketches illustrate the following operations:
 - Straddle milling
 - Gang milling(6 marks)
- c) Differentiate between up milling and down milling. (4 marks)
- d) List **FIVE** operations performed on milling machine. (5 marks)

QUESTION FOUR (20 MARKS)

- a) State **FOUR** indexing methods used in milling machine. (4 marks)
- b) With the aid of a neat labelled sketch, describe the driving mechanism of a shaping machine. (7 marks)
- c) Outline **FOUR** methods used in Taper turning. (4 marks)
- d) Describe **FIVE** factors that are to be considered during selection of a grinding wheel. (5 marks)