

071606T4MCT

MECHATRONICS TECHNICIAN LEVEL 6

ENG/OS/MC/CC/03/6/A

Perform Workshop Processes and Practices

July/Aug 2023



**TVET CURRICULUM DEVELOPMENT, ASSESSMENT AND CERTIFICATION
COUNCIL (TVET CDACC)**

**WRITTEN
TEST**

INSTRUCTION TO THE CANDIDATE:

1. This paper consists of **TWO** sections: **A** and **B**.
2. Answer **ALL** questions in section **A** and any **THREE** questions in section **B**.
3. Marks for each question are indicated in brackets.
4. Do not write on this question paper.
5. Write your answers in the answer booklet provided.

This paper consists of FOUR printed pages.

Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.

SECTION A (40 MARKS)

*Attempt **all** questions in this section.*

1. List THREE types of taps used for generating internal threads in mechanical workshops. (3 Marks)
2. Enumerate FOUR causes of accidents in a workshop. (4 Marks)
3. As a technician highlight TWO reasons for marking out work pieces before machining. (2 Marks)
4. Name FOUR tools used to mark out work pieces in a workshop. (4 Marks)
5. After segregation of wastes, highlight FOUR waste disposal methods used by technicians during housekeeping. (4 Marks)
6. In lathe operations, identify FOUR functions of cutting fluids. (4 Marks)
7. Sketch the following hand tools. (4 Marks)
 - a. Hacksaw
 - b. Scriber
8. Outline FOUR classifications of work their functions. (4 Marks)
9. Highlight THREE safety precautions bserved in the workshop. (3 Marks)
10. Differentiate between the operating p he machine and a milling machine. (4 Marks)
11. In lathe work, list TWO tools you would use to make different profiles on cylindrical work pieces. (2 Marks)
12. Mention TWO advantages of welding over other metal joining techniques. (2 marks)

SECTION B (60 MARKS)

Attempt any THREE questions in this section

13.

- a. Discuss in detail the following surface finishing and decorative processes. (8 Marks)
 - i. Pickling
 - ii. Polishing
 - iii. Enamelling
 - iv. Etching
- b. Explain FIVE types of maintenance you would perform in the workshop to ensure that tools and equipment are in proper working conditions. (10 Marks)
- c. Discuss TWO importance of a technical drawing in a workshop. (2 Marks)

14.

- a. Using sketches, describe SIX operations performed on a lathe machine. (16 Marks)
- b. Mention FOUR methods you would work piece from corrosion in the workshop. (4 Marks)

15.

- a. Explain the following milling operat (6 Marks)
 - i. Plain Milling
 - ii. Face Milling
 - iii. End Milling
- b. Using sketches, distinguish between up milling and down milling. (6 Marks)
- c. Using a well labelled sketch, show a pillar drilling machine and label FOUR main parts. (8 Marks)

16.

- a. Discuss THREE reasons why machine maintenance inspection is essential. (6 Marks)
- b. Safety can be improved while reducing operation costs in a workshop by ensuring long tool and equipment life. Discuss FOUR ways in which you can ensure long tool and equipment life in a workshop. (8 Marks)
- c. You are a technician in a mechanical workshop. Discuss THREE work holding devices you would use your day-to-day tasks. (6 Marks)