

071606T4AMT

AUTOMOTIVE MECHATRONICS TECHNOLOGY LEVEL 6

ENG/OS/AMT/CC/04/6/A

APPLY WORKSHOP TECHNOLOGY PRINCIPLES

July/Aug 2023



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

CANDIDATES

ENT TOOL

WRITT

ENT

TIME: 3 HOURS.

INSTRUCTIONS TO CANDIDATE

1. This paper has two sections **A** and **B**.
2. Attempt questions in each section as per instructions given in the section.
3. You are provided with a separate answer booklet.
4. Write your name and identification number on the answer booklet
5. Marks for each question are indicated in the brackets.
6. Do not write on the question paper provided.

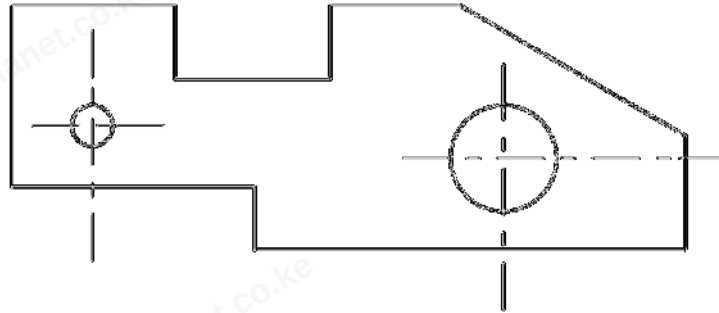
This paper consists of THREE (3) printed pages.

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

Turn over

SECTION A: (40 MARKS)*Attempt ALL questions in this section*

1. The figure below shows a sheet metal cut into size. Using appropriate measurements of your choice dimension the figure fully showing the dimension lines, arrow heads, projection lines radius and diameter. (5 Marks)



2. State any **three** safety regulations observed while working with tools and equipment. (4 Marks)
3. List **five** safety working procedures observed in a workshop. (5 Marks)
4. Mention the **five** classifications of hand tools used in sheet metal work giving examples of each. (5 Marks)
5. Explain **four** types of sheet metal joints used in sheet metal works. (8 Marks)
6. Describe the **two** classifications of electrodes used in arc welding. (4 Marks)
7. Explain any **four** housekeeping processes in a workplace. (4 Marks)
8. State steps involved in metal casting. (5 Marks)
9. Describe the uses of the following power tools in a workshop. (4 Marks)
- Disc Grinder
 - Cut off machine
10. Describe the principle of arc welding. (5 Marks)

SECTION B: (60 MARKS)

Attempt ANY three questions from this section.

11. Differentiate between the following operations:

- a) Measuring and marking. (4 Marks)
- b) Using neat sketches illustrate the following measuring instruments giving their use; (8 Marks)
 - i. Vernier calliper.
 - ii. Micro meter.
 - iii. Steel rule.
 - iv. Divider.
- c) Describe the procedure of marking out a work piece. (8 Marks)

12.

- a) Using neat diagram show any **five** parts of lathe machine giving function of each part. (10 Marks)
- b) With aid of neat sketches describe any **five** lathe operations. (10 Marks)

13.

- a) Most form of boring tools consists if bits used for drilling operation. State at least **five** types of drilling bits used in mechanical workshops. (5 Marks)
- b) List any **five** tools safety guide and PPEs needed when carrying out welding and drilling operation. (5 Marks)
- c) With aid of neat sketches describes **five** drilling operations. (10 Marks)

14. (a) Highlight any **four** precautions to be observed during welding. (4 Marks)

(b) Briefly describe any **four** metals used in sheet metal work. (8 Marks)

(c) Briefly explain **four** common defects that may result in welding. (8 Marks)