

071606T4AUT

AUTOMOTIVE TECHNICIAN LEVEL 6

ENG/OS/AUT/CC/04/6/A

Apply Workshop Technology Principles

March/April 2025



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

WRITTEN ASSESSMENT

Time: 3 HOURS

INSTRUCTIONS TO CANDIDATE

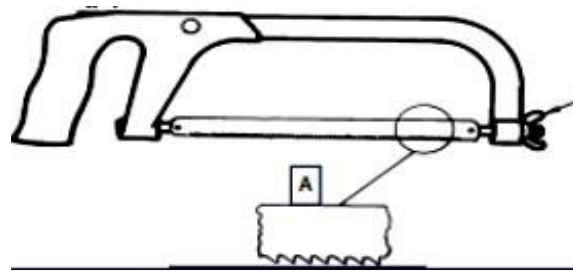
1. This paper consists of **TWO** sections: **A** and **B**.
2. Answer **ALL** questions in section A and **ANY THREE** (3) questions in section B.
3. Marks for each question are indicated in the brackets.
4. Candidates are provided with a separate answer booklet
5. Do not write on the question paper.

This paper consists of FIVE (5) printed pages

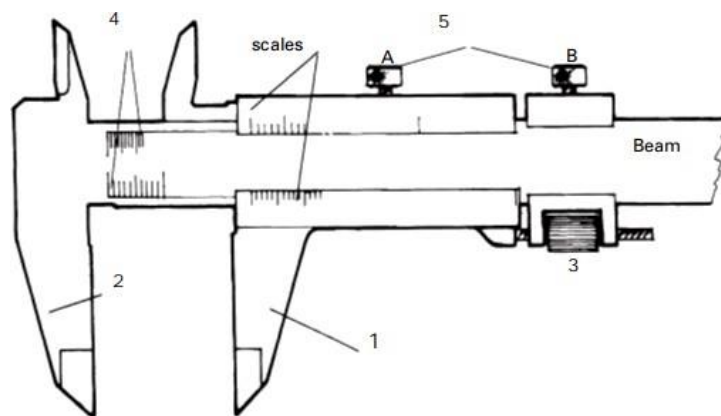
Candidates should check the question paper to ascertain that all pages are printed as indicated and that no questions are missing.

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

1. Figure 1 below shows a hand tool used in the automotive workshop
 - a. Identify the part label A (1 Mark)
 - b. Give THREE types of the part identified in (a) above (3 Marks)
 - c. List TWO maintenance that can be carried out on the tool (2 Marks)

**Figure 1**

2. Tack welding is an essential ingredient in a successful welding project, List FOUR application of these welding technique (4 Marks)
3. A good housekeeping program plans and manages the orderly storage and movement of materials Name THREE benefits of these housekeeping practice. (3 Marks)
4. Jigs and fixtures are used in FOUR application of the jigs and fixtures (4 Marks)
5. Welding is usually used on metals and thermoplastics as a joining method. List FOUR disadvantages of welding as a joining method (4 Marks)
6. Figure 2 below shows a measuring tool. Use it to answer the following question.
 - a. Identify the measuring tool (1 Marks)
 - b. Name the parts labelled 1, 2 and 3 on the measuring tool (3 Marks)
 - c. State TWO application of the tool (2 Marks)

**Figure 2**

7. Marking out tools are a wide range of equipment that complements other tools for wood and metal processing. Name THREE types of marking out tools and state their uses (6 Marks)
8. The use of a washer between the face of a nut and the part being fastened plays a critical role when joining materials. Outline FOUR function of the washers (4 Marks)
9. Taps differ in length of chamfer at the point known as the lead. Give THREE types of taps used during tapping (3 Marks)

SECTION B (60 MARKS)

Attempt any THREE questions in this section.

10. Figure 3 below shows a bench drilling machine.

a. Describe the function of each of the following labelled parts

- i. 2
- ii. 3
- iii. 4
- iv. 5
- v. 7

(10 Marks)

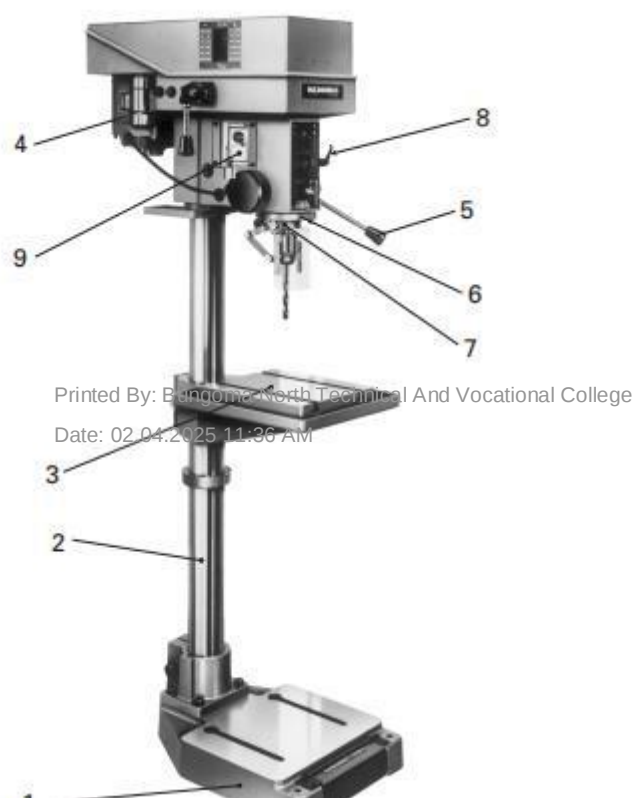


Figure 3

b. Explain the following mechanical properties of materials;

- i. Strength
- ii. Stiffness
- iii. Ductility
- iv. Malleability
- v. Brittleness

(10 Marks)

11. During a workshop technology lesson, you fabricated a component as show in figure 4 below.
- Identify any TWO tools used when fabricating the component. (2 Marks)
 - Create an operation plan explaining each step. (14 Marks)
 - Outline **FOUR** hazards associated with high power electrical when fabricating the component (4 Marks)

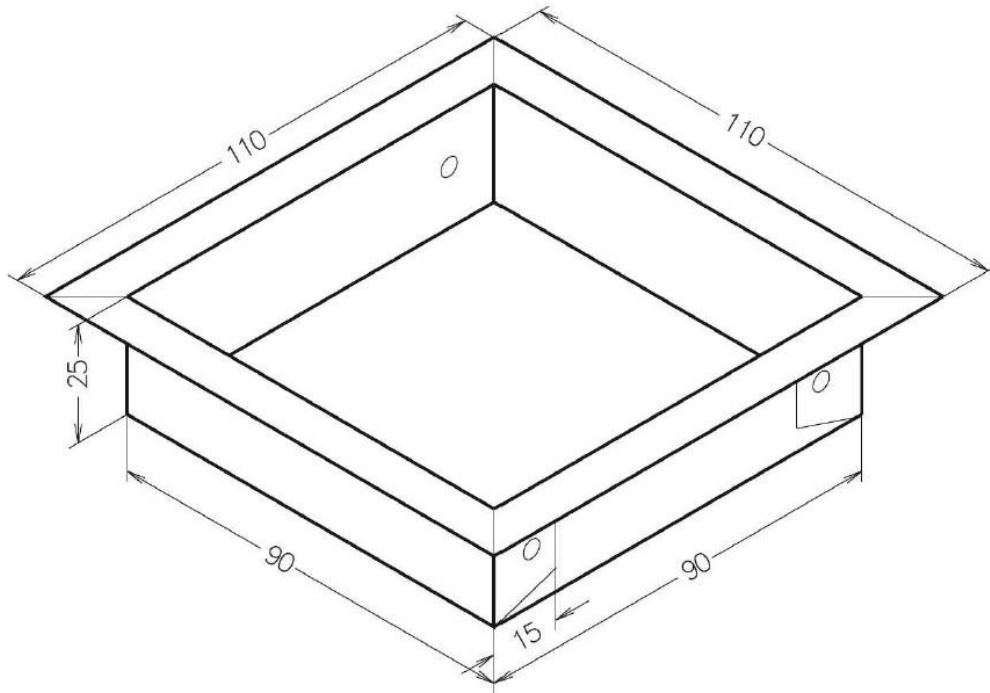


Figure 4

12. Gas welding machine can be used to weld a wide variety of metals since it is portable.
- With an aid of a sketch, explain at least Five components of the gas welding machine (14 Marks)
 - Describe THREE safety precautions to be observed when working with the gas welding machine. (6 Marks)
13. Surface grinding is used to produce flat accurate surfaces. It can be carried out on all materials, hard or soft.
- Explain SIX safety precautions to be observed when using a grinding machine (6 Marks)
 - Explain FOUR operations carried out on a drilling machine. (8 marks)
 - List SIX finishes and decorative processes used in metal finishes. (6 Marks)