

071606T4AUT

AUTOMOTIVE ENGINEERING LEVEL 6

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

Apply Workshop Technology Principles

July/August 2024



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

WRITTEN ASSESSMENT

Time: 3 HOURS

INSTRUCTIONS TO CANDIDATES

1. *This paper consists of **TWO** sections: **A** and **B**.*
2. *Attempt **ALL** the questions in Section **A** and any **THREE** questions from Section **B**.*
3. *Marks for each question are as indicated.*
4. *You are provided with a separate answer booklet.*
5. *Do not write on the question paper.*

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)

Answer all the questions in this section.

1. There are several methods of producing machine parts in the workshop including grinding. Outline FOUR purposes of grinding. (4 Marks)
2. Brazing is a common welding technique used in metal joining. List THREE tools and equipment required for brazing. (3 Marks)
3. Thread cutting taps are supplied in sets. List THREE sets of taps. (3 Marks)
4. Safety is paramount when performing tasks in a workshop. Highlight FOUR general safety rules to be observed in an automotive workshop. (4 Marks)
5. Marking out tools are essential in workshop processes. Name THREE marking out tools used in the workshop (3 Marks)
6. Drilling machine is a workshop tool used for generating holes on work pieces. Highlight FOUR other operations that can be performed by a drilling machine. (4 Marks)
7. State the function of the following workshop tools; (4 Marks)
 - a) Surface plate
 - b) V-block
8. Work plans can be presented in form of drawings which are then interpreted and designs developed. State FOUR importance of technical drawings to an automotive technician. (4 Marks)
9. Define the following terms as used in tool specifications and accuracy of finished work.
 - a) Clearance fit
 - b) Interference fit(4 Marks)
10. Hand shears are used in the workshop for cutting sheet metal. Name THREE types of hand shears used in an automotive workshop. (3 Marks)
11. Housekeeping is one of the routines done in the workshop. Outline FOUR activities which are carried out during workshop housekeeping. (4 Marks)

SECTION B: (60 MARKS)

Answer any THREE questions in this section.

12.

- a) Describe FIVE ways through which tools and equipment are taken care of and kept in proper working conditions in any mechanical workshop. (10 Marks)
- b) Explain FIVE methods of disposing waste, giving an example of the waste material in each method. (10 Marks)

13.

- a) Lathe machine is one of the machines used in an automotive workshop. Explain FIVE operations that are performed on a lathe machine. (10 Marks)
- b) You have been appointed as an automotive workshop supervisor to induct your team on workshop processes. Explain to your team FIVE importance of housekeeping. (10 Marks)

14.

- a) Describe the procedure to follow when drilling holes on a workpiece using the drilling machine. (10 Marks)
- b) Using a well labelled sketch, explain the working principle of a lathe machine. (10 Marks)

15.

- a) Using sketches, explain TWO techniques of gas welding. (10 Marks)
- b) Explain FIVE common defects encountered during welding. (10 Marks)