

071505T4MTP

MECHANICAL PRODUCTION TECHNICIAN LEVEL 5

ENG/OS/ME/CC/3/05/A

PERFORM BENCH WORK OPERATIONS

March/April 2025



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

WRITTEN ASSESSMENT

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 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.

SECTION A: (40 MARKS)

Answer ALL the questions in this section.

1. When it comes to carrying out bench work operations, you need various hand tools that will enable you to execute the work. List FOUR classifications of these tools.
(4 Marks)
2. There are incidents that may result into minor injuries if the worker is not adhering to all safety measures in a mechanical workshop. Identify FOUR minor injuries that one may be subjected to.
(3 Marks)
3. You are carrying out bench work operation in a mechanical workshop where you are required to adhere to all the laid down safety measures. Name FOUR measures to be observed.
(4 Marks)
4. Accidents do not occur on their own in any workplace, but rather caused. Outline FOUR of its common causes.
(4 Marks)
5. Screw threads are great mechanisms that play various crucial roles in mechanical engineering. List FOUR functions they serve.
(4 Marks)
6. Brazing and soldering are related thermal methods of metal joining process. State FOUR reasons why brazing is preferred over soldering.
(4 Marks)
7. There are various types of drilling machines used in bench work operations. List THREE of these types.
(3 Marks)
8. Taps and dies are tools used for manual thread cutting. List FOUR ways of taking care of them.
(4 Marks)
9. Your workshop technician asked you to join some body parts of the school bus by use of rivets. Identify FOUR types of the rivets that you would use.
(4 Marks)
10. When selecting a brazing filler rod, there are various factors to be considered. State THREE of these factors.
(3 Marks)
11. Work bench is a sturdy table at which manual work is done. They cut a wide range of designs depending on the work before the operator. Apart from design, identify THREE other factors that should be considered when choosing one.
(3 Marks)

SECTION B: (60 MARKS)***Answer any THREE questions in this section***

12.

- a. All mechanical engineering works requires the use of both hand tools and machine tools. Discuss FIVE Care and maintenance practices for these tools. (10 Marks)
- b. A rivet is a small piece of mechanical component used in mechanical joining process. Illustrate its THREE parts. (6 Marks)
- c. Distinguish between the term 'fitting work' and 'bench work' as applied in mechanical workshop giving one example of each. (4 Marks)

13.

- a. You got a job at Madaraka Mema fabricators. The supervisor requested you to purchase the following taps; Taper hand tap, Bottoming hand tap, Plug/pipe hand tap and Boiler hand taps. Describe each of the FOUR taps. (8 Marks)
- b. Brazing and soldering are thermal joining methods used in joining components in fabrication. Discuss FOUR Advantages of these two over the other thermal joining methods. (8 Marks)
- c. A fellow colleague at your placed along the gangways and got injured. The technician recorded the incident on the occurrence book. Explain TWO reasons why the incidence was recorded. (4 Marks)

14.

- a. You are tasked to perform: counter boring, countersink and spot face drilling on three different work pieces. With the aid of a sketch, describe the THREE operations. (9 Marks)
- b. When it comes to cutting metallic work pieces, you can use either hand saw or power saw. Explain THREE advantages of power saws over hand saws. (6 Marks)
- c. You are requested to perform filing operation on a rectangular block work piece. Describe FIVE steps you would follow. (5 Marks)

15.

- a. Welding is one of the thermal joining methods in mechanical engineering. Describe FOUR areas where it is applied. (8 Marks)
- b. A working drawing is a document that is mandatory when carrying out bench work operations. Describe THREE importance of this document. (6 Marks)
- c. With aid of sketches, illustrate THREE types of hammers that you can use in a bench work process specifying where each is applied. (6 Marks)