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Date: 25.07.2025 08:18 AM

071606T4AUT

AUTOMOTIVE TECHNICIAN LEVEL 6

ENG/OS/AUT/CR/1/6/A

PERFORM VEHICLE BASIC MAINTENANCE

July/Aug 2025

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

WRITTEN ASSESSMENT

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TIME: 3 HOURS

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INSTRUCTIONS TO THE CANDIDATE

1. This paper consists of **TWO** sections: **A** and **B**.

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2. Attempt **ALL** questions in Section **A** and any **THREE** questions from Section **B**.

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3. Marks for each question are as indicated.

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4. You are provided with a separate answer booklet.

5. Do not write on the question paper.

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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. Safety is a critical element in automotive workshop. Identify FOUR personal protective equipment that you would wear when working in such a workshop. (4 Marks)
2. Understanding the reasons for frequent engine oil changes is critical for maintaining engine performance. Reasons for regularly changing engine oil (4 Marks)
3. A vehicle's lighting system requires regular maintenance checks. Name FOUR reasons why this is necessary. (4 Marks)
4. For an accurate and efficient vehicle troubleshooting, a service technician requires to refer to specific technical documents for specific repair guidelines. Identify FOUR such documents. (4 Marks)
5. Proper tire inflation is one of the factors that should be considered in tire maintenance. Identify FOUR reasons for maintaining proper tyre inflation. (4 Marks)
6. Safety procedures during vehicle repair help to prevent accidents and injuries in the workshop. List FOUR safety measures to follow when handling tools during repairs. (4 Marks)
7. Automotive workshops generate a lot of waste materials. List FOUR ways of managing and disposing the various types of wastes. (4 Marks)
8. Engine lubrication system performs critical function in a motor vehicle. Name FOUR of these functions. (4 Marks)
9. Proper understanding of vehicle systems is critical in carrying out vehicle maintenance. Outline FOUR major components of a transmission system. (4 Marks)
10. Suspension is a very essential system in a vehicle. Identify FOUR functions of a suspension system. (2 Marks)
11. There are various types of steering systems used in vehicles based on manufacturers preferences. Name TWO types of steering systems commonly used. (2 Marks)

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

12. Regular maintenance of vehicles components is very essential in ensuring efficient output and minimizing cost of repairs.

a) Describe the maintenance practices carried out on the following components of the vehicle. (10 Marks)

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i) Charging system.

iv) Stater motor.

ii) Drive belts

v) Seals and Gaskets.

iii) Automatic transmission.

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b) Identify FIVE maintenance checks carried out on the car battery. (5 Marks)

c) Identify FIVE maintenance practices carried out on a motor vehicle lighting system. (5 Marks)

13. a) Brake fluid is a hydraulic fluid used in braking and clutch applications in motor vehicles. State FIVE characteristics of brake fluid. (5 Marks)

b) Understanding the mechanical process of fitting a tyre onto a rim requires knowledge of tools, safety procedures, and equipment handling. Describe the step-by-step procedure for performing tyre fitting on a rim. (6 Marks)

c) Describe the procedure for road testing and handing over a vehicle after brake adjustment. (9 Marks)

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14. a) Define the following terms as used in engines cycles of operation. (3 Marks)

i) Stroke

iii) Swept Volume

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ii) Top Dead Centre

b) With aid of diagrams explain the operation of a four-stroke cycle compression ignition engine. (12 Marks)

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c) Identify FIVE major components of an engine's liquid cooling system. (5 Marks)

15. As an automotive technician with in-depth knowledge and skills in maintaining engine ignition system;

a) Explain the function of an ignition system. (2 Marks)

b) Illustrate and label SIX major parts of a conventional coil ignition system. (6 Marks)

c) Explain the function of each of the SIX components labeled in (b) above. (12 Marks)