

Technical And Vocational College

Date: 28.07.2025 10:58 AM

**071605T4AUT****AUTOMOTIVE ENGINEERING LEVEL 5****ENG/OS/AUT/CR/2/5/A****SERVICE AND REPAIR VEHICLE ENGINE PARTS****July/August 2025**Printed By Technical And Vocational College Date: 28.07.2025  
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**TVET CURRICULUM DEVELOPMENT, ASSESSMENT AND CERTIFICATION  
COUNCIL (TVET CDACC)**

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**WRITTEN ASSESSMENT****TIME: 3 HOURS**

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**INSTRUCTIONS TO THE CANDIDATE**

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.

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AM**This paper consists of FOUR (4) printed pages;**

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**Candidates should check the question paper to ascertain that all pages are printed as**

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**indicated and that no questions are missing.**

## SECTION A (40 MARKS)

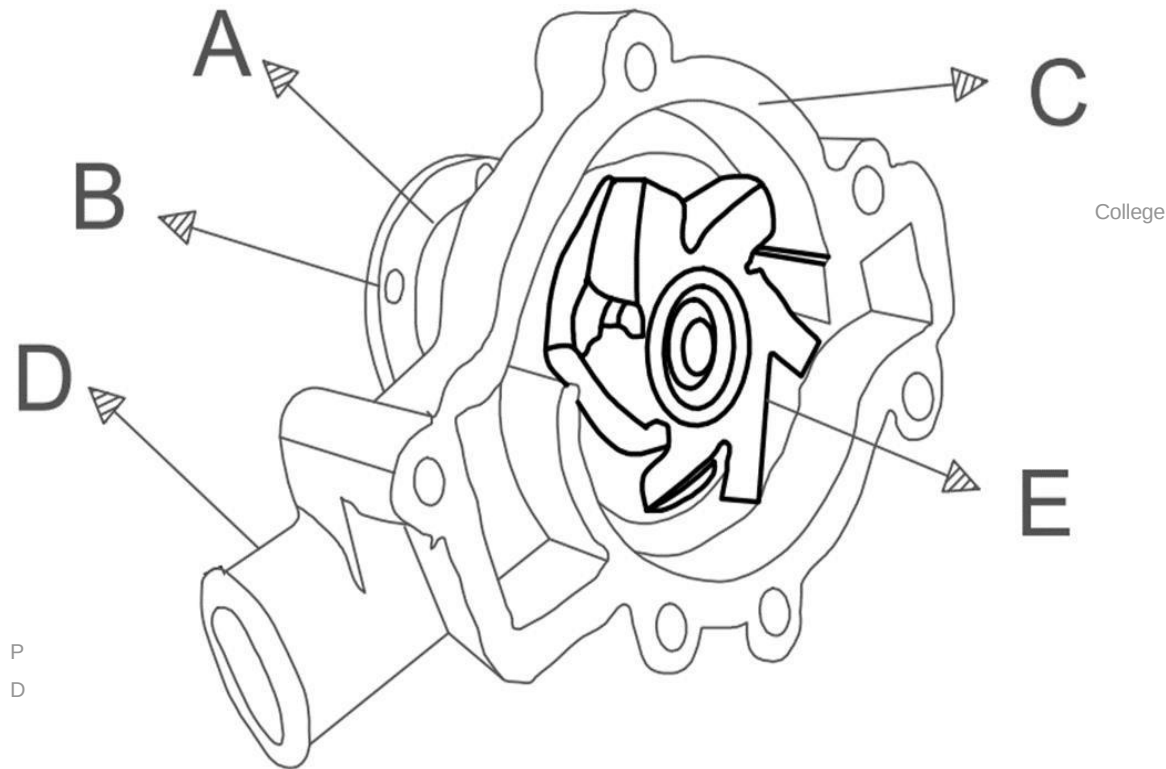
*Answer ALL the questions in this section.*

1. Safety precautions in the workshop are important for safety and ensuring the work is performed properly. List **four** safety precautions to be observed. (4 Marks)
2. A cylinder head gasket is an important part in providing proper sealing between the cylinder head and a cylinder block. State **four** signs that your vehicle's cylinder head gasket is blown. (4 Marks)
3. An exhaust system is crucial for removal of burnt gases from the combustion chamber. Name **four** components that make up the exhaust system. (4 Marks)
4. When dismantling engine from the vehicle for dismantling, auxiliaries have to be disconnected first to provide accessibility for dismantling. Name **four** examples of engine auxiliary parts. (4 Marks)
5. A vehicle has been brought to the workshop and a client is complaining that the engine is vibrating too much during drive. As a technician state **four** causes of engine vibration. (4 Marks)
6. In a workshop you have been assigned as a group a job of hoisting a dismantled engine. List **four** specific tools you are required to use. (4 Marks)
7. An engine has got many services that can be carried out according to the nature of damage or faults. State **four** services that are carried out on the cylinder. (4 Marks)
8. A crankshaft is one of the components that perform crucial function in an engine but it can be damaged because of various reasons. State **four** possible causes of the damages. (4 Marks)
9. Camshaft either in the cylinder head or in the block of the engine, they can show signs of failure and poor performance. List **four** signs of a faulty camshaft. (4 Marks)
10. Measurements in an engine are an important duty during engine parts inspections and it can be carried out in various ways or methods. As an automotive student state **four** measurements carried out in an engine. (4 Marks)

SECTION B (60 MARKS)

Answer Any **THREE** Questions in This Section

11. The diagram below shows a component found in an engine.



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a) Describe the function of the component. (2 Marks)

b) Explain the functions the parts labelled A to E (10 Marks)

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c) A customer has brought a vehicle to your workshop and is complaining of engine

overheating. You did troubleshoot and confirmed that the cooling system is not working properly.

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caused overheating. As a technician explain four possible causes of damages to the component above. (8 Marks)

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- c) When draining oil from the engine you notice that there are some debris and small metallic dent, explain **four** functions function of engine lubricant. (8 Marks)

- d) Explain the function of the following components of lubrication system. (12 Marks)

i. Oil pump

ii. Relief valve

iii. Sump

iv. Oil galleries

v. Oil filter

vi. Oil jets

12.

- a) After doing an engine overhaul, you assembled the engine components and the supervisor of the workshop, emphasized on doing engine timing properly. Explain **five** signs of bad engine timing. (10 Marks)

- b) Vehicle engine is made of different components that perform crucial function when they are in good condition. One of them is a piston and it is the major part of an engine. Using a diagram explain piston construction. (10 Marks)

13. A vehicle is brought to the workshop having Explain **four** causes of each of the engine faults

- a) Erratic idle (4 Marks)

- b) (4 Marks)

- c) Very high oil consumption. (4 Marks)

- d) Lack of power. (4 Marks)

- e) Engine rotates but does not start. (4 Marks)