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071605T4AUT**AUTOMOTIVE ENGINEERING LEVEL 5****ENG/OS/AUT/CR/2/5/A**

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SERVICE AND REPAIR VEHICLE ENGINE PARTS**July/August 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 of TWO sections: A and B**

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2. Attempt ALL the 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 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.

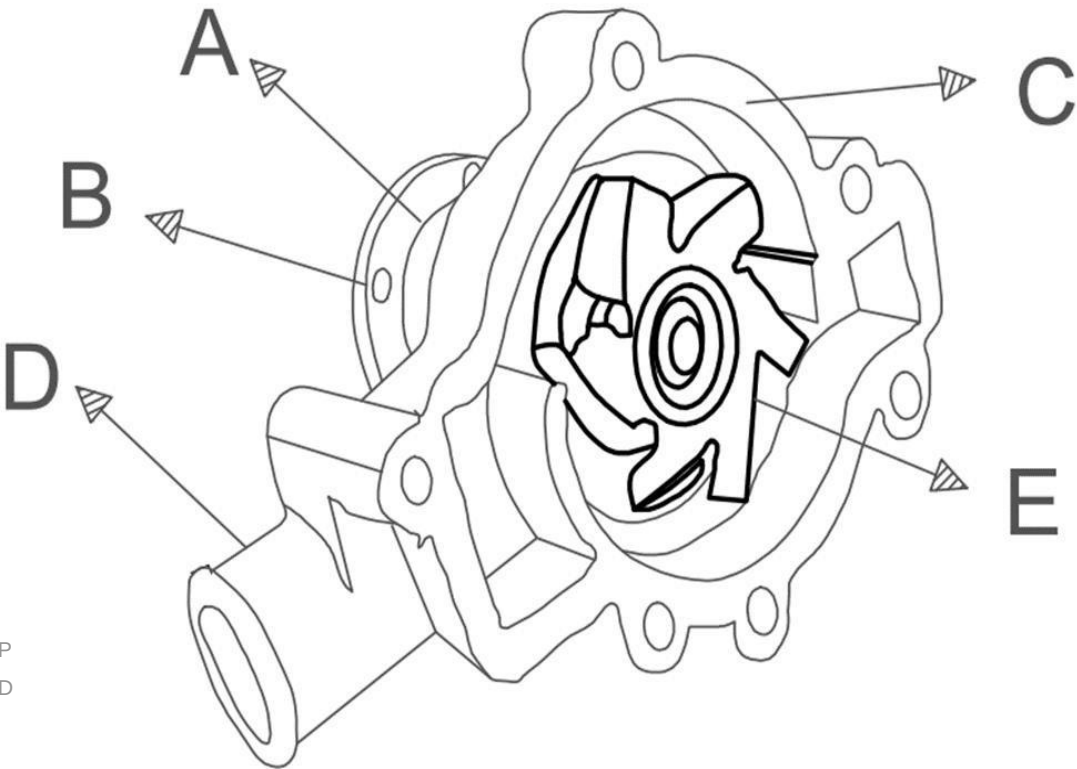
SECTION A (40 MARKS)

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)
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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)
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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)
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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)
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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)
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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)
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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)
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9. Camshafted 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 camshaft failure. (4 Marks)
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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)
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SECTION B (60 MARKS)

Answer Any *THREE* Questions in This Section



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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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r. has brought a vehicle to your workshop and is complaining of engine overheating. You did troubleshoot and confirmed tent above that

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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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12.

a) When draining oil from the engine you notice that there are some debris and small metallic pieces in oil. ~~Identify~~ **explain four functions** of engine lubricant. (8 Marks)

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

i. Oil pump

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ii. Relief valve

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iii. Sump

iv. Oil galleries

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v. Oil filter

vi. Oil jets

13.

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)

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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)

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

a) Erratic idle (4 Marks)

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b) (4 Marks)

c) Very high oil consumption. (4 Marks)

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d) Lack of power. (4 Marks)

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

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