

071604T4AUT

AUTOMOTIVE TECHNOLOGY LEVEL 4

ENG/OS/AUT/CR/2/4/A

SERVICE AND REPAIR VEHICLE ENGINE

July/August 2024



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

WRITTEN ASSESSMENT

TIME: 2 HOURS

INSTRUCTIONS TO THE CANDIDATE

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

This paper consists of FOUR (4) printed pages
Candidates should check the question paper to ascertain that all pages are printed as
indicated and that no question is missing

Turn over

SECTION A: (10 MARKS)

Attempt ALL questions in this section.

Each question carries 1 mark.

1. What is the correct firing order for a four-stroke cycle engine?
 - A. 1-3-4-2
 - B. 1-2-3-4
 - C. 2-3-4-1
 - D. 3-2-4-1
2. The engine component that is used to cover the part of the cylinder bores is called.
 - A. Tappet cover
 - B. Cylinder head
 - C. Valves
 - D. Manifold
3. Which of the following is the **correct** order for a four-stroke cycle engine?
 - A. Induction, Power, Exhaust, Compression
 - B. Induction, Compression, Exhaust, Power
 - C. Induction, Compression, Power, Exhaust
 - D. Compression, Induction, Power, Exhaust
4. The operation of forcing additional air under pressure in the engine cylinder is known as
 - A. Scavenging
 - B. Turbulence
 - C. Supercharging
 - D. Pre-ignition
5. Which of the following tools is **not** used to measure vehicle engine components?
 - A. Vernier caliper
 - B. Tape measure
 - C. Micrometer screw gauge
 - D. Telescopic gauge

6. The probability of knocking in diesel engines is increased by.
 - A. High self-ignition temperature
 - B. Low volatility
 - C. Higher viscosity
 - D. Calorific value
7. Engines are classified according to the following categories **except**.
 - A. Location of the camshaft
 - B. Type of fuel used
 - C. Engine operating cycles
 - D. Number of cranshaft
8. What is the main function of an engine in a vehicle?
 - A. Generate electricity
 - B. Stops the vehicle
 - C. Source of power
 - D. Control steering
9. Which phase of the four-stroke combustion cycle involves compressing the air-fuel mixture in the cylinder?
 - A. 4th Stroke
 - B. 2nd Stroke
 - C. 1st Stroke
 - D. 3rd Stroke
10. Which engine component is responsible for converting reciprocating motion into rotational motion?
 - A. Piston
 - B. Connecting rod
 - C. Camshaft
 - D. Crankshaft

SECTION B: (40 MARKS)

Attempt ALL questions in this section.

11. A vehicle has been brought into your workshop. It has a high engine cylinder leakage detected by the leaking air. Outline **four** possible causes of the fault. (4 Marks)
12. Outline any **four** advantages of compression ignition engines over spark plug ignition engines. (4 Marks)
13. Outline **four** common causes engine overheating. (4 Marks)
14. State the function of the following engine components. (4 Marks)
 - a) Crankshaft;
 - b) Connecting rod.
15. State **four** advantages of two stroke engine over a four stroke. (4 Marks)
16. Describe the operation of a four-stroke cycle as applied in internal combustion engine. (4 Marks)
17. Outline any **four** safety precautions observed in an engine workshop. (4 Marks)
18. Highlight **four** symptoms of worn pistons rings. (4 Marks)
19. List any **four** parts of a piston. (4 Marks)
20. Differentiate between bore and stroke as used in engine. (4 Marks)

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