

071606T4AUT

AUTOMOTIVE TECHNICIAN LEVEL 6

ENG/OS/AUT/CR/06/6/A

Service Vehicle Suspension System

March/April 2025



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

**WRITTEN ASSESSMENT
Time: 3 HOURS**

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 FIVE (5) 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. A vehicle with a problem with the suspension system is brought to the workshop for service. The vehicle is leaning on one side. Explain TWO possible causes of this problem. (4 Marks)
2. A vehicle fitted with air suspension is reported to have uneven ride height. Describe TWO common causes of this air suspension system problem. (4 Marks)
3. A customer complains that his vehicle exhibits excessive body roll during cornering. Outline TWO possible suspension system issues related to this problem. (4 Marks)
4. You are required to inspect vehicle suspension system. You noticed an unusual noise coming from the shock absorbers. Describe THREE potential causes of the noise. (3 Marks)
5. A Vehicle is brought to the workshop with a problem of the front end feeling unstable while driving at high speeds.
 - a. Identify TWO possible causes of this issue. (2 Marks)
 - b. Outline two solutions to the problem (2 Marks)
6. Vehicle suspension performance can be affected by many factors. Explain THREE such effects. (3 Marks)
7. A customer complains about a rough ride despite the vehicle suspension components having been recently replaced. Recommend THREE maintenance checks to be carried to solve the problem. (3 Marks)
8. Describe the function of the following components in the suspension system.
 - a. Control Arms
 - b. Anti-roll Bar (4 Marks)
9. List THREE advantages of air suspension system in comparison with the coil spring system (3 Marks)
10. The table below shows common suspension system symptoms. Identify ONE possible fault for each symptom: (4 Marks)

Symptom	Possible Faults
Steering wheel vibration at high speed	
Excessive bouncing after bumps	
Vehicle leans to one side	
Unusual noise when driving over bumps	

11. You are required to inspect the undercarriage of a customer's vehicle fitted with a hydrolastic suspension system. Identify FOUR main components of this suspension system. (4 Marks)

SECTION B: (60 MARKS)

Any THREE questions are attempted in this section

12. Figure 1 below shows the layout of a suspension system.
- a. Identify components numbered 1,2,3 and 4. (2 Marks)
 - b. Outline TWO advantages and TWO disadvantages of part numbered 3. (4 Marks)
 - c. Describe TWO key maintenance practices for the suspension system. (4 Marks)
 - d. Explain THREE functions of part numbered 1. (6 Marks)
 - e. Explain TWO faults associated with part numbered 2. (4 Marks)

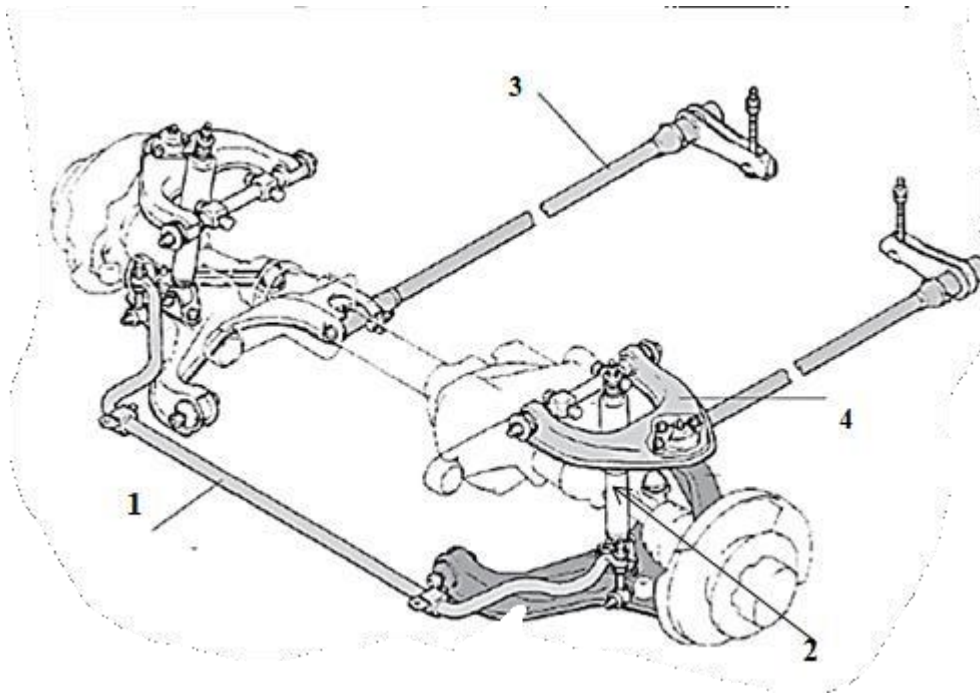


Figure 1

13. You are tasked with inspecting a double wishbone suspension system. You noted that this suspension system is commonly used in sports cars and luxury vehicles.
- a. Outline FOUR advantages of the double wishbone suspension system. (4 Marks)
 - b. Using a well-labeled sketch, explain the operation of the double wishbone suspension system. (12 Marks)
 - c. Outline THREE key areas to check when servicing this suspension system. (6 Marks)

14. Figure 2 below shows a layout of a vehicle suspension system
- Identify the parts numbered 1,2,3 and 4. (2 Marks)
 - Describe FOUR common faults associated with this suspension systems (4 Marks)
 - Outline TWO advantages of this suspension system compared to a torsion bar suspension system. (4 Marks)
 - Describe the operation of the suspension system (6 Marks)
 - Describe TWO common faults associated with part labeled 2 (4 Marks)

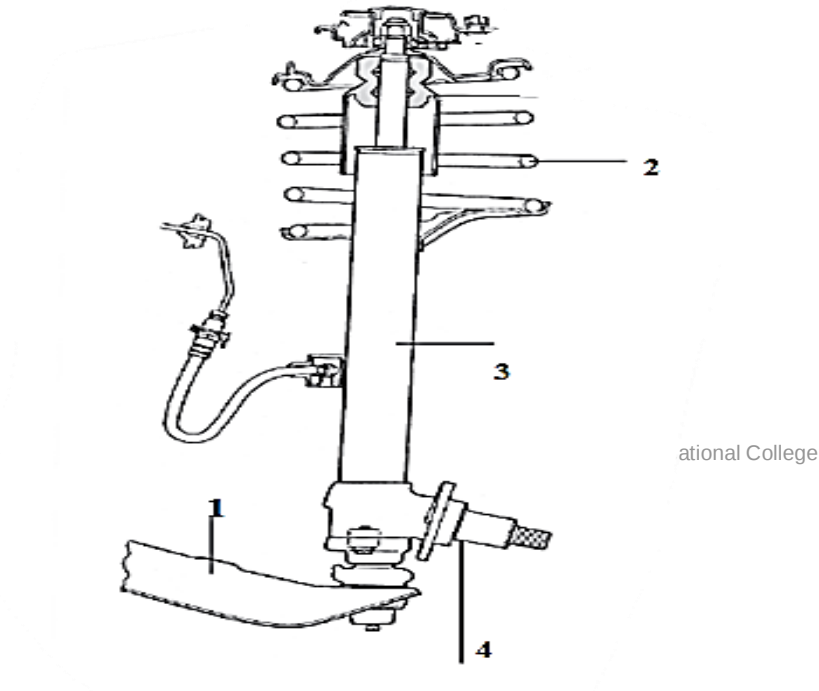


Figure 2

15. You are required to inspect a leaf spring suspension system of a vehicle.
- Sketch the layout of this system and explain the function of the main components (10 Marks)
 - Explain how a leaf spring suspension system operates to support vehicle weight and absorb shocks. (6 Marks)
 - Outline TWO maintenance practices to prevent premature wear of the leaf springs. (4 Marks)