

NATIONAL CERTIFICATE (VOCATIONAL)

**AUTOMOTIVE REPAIR AND MAINTENANCE
NQF LEVEL 3**

JUNE 2018 EXAMINATION

**TIME: 1.5 HOURS
MARKS: 50**

**TOPIC 1 S.O - ALL
TOPIC 2 S.O - ALL
TOPIC 3 S.O - ALL
TOPIC 4 S.O - ALL
TOPIC 5 S.O - ALL
TOPIC 6 S.O - ALL**

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MODERATOR : S. WILLIAMS**

This question paper consists of 5 pages.

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1. Answer ALL the questions.
 2. Read ALL the questions carefully.
 3. Number the answers according to the numbering system used in this question paper.
 4. Start each question on a NEW page.
 5. Label ALL the sketches.
 6. Write neatly and legibly.
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QUESTION 1

- 1.1 Name FIVE additives that can be added to fuel to enhance it. (5)
- 1.2 What is the function of a choke on a carburettor? (2)
- 1.3 Name THREE methods that are used to de-activate an automatic choke as the engine reaches operating temperature. (3)
- 1.4 Choose a description from COLUMN B that matches with an item in COLUMN A. Write only the letter (A–E) next to the question number (1.4.1–1.4.5) in the ANSWER BOOK.

COLUMN A		COLUMN B	
1.4.1	Cetane rating	A	regulates fuel supply to the carburetor
1.4.2	Needle and seat	B	controls the air flow through the carburetor
1.4.3	Venturi	C	heats up the air in the combustion chamber
1.4.4	Glow plug	D	diesel's tendency to ignite
1.4.5	Butterfly valve	E	narrowing inside a carburetor that increases the flow of air

(5 x 1) (5)

[15]**QUESTION 2**

- 2.1. State THREE functions of a shock absorber. (3)
- 2.2 Make a neat labelled sketch of a positive camber angle of a wheel. (4)
- 2.3 Give THREE reasons why proper wheel alignment settings are important on a vehicle. (3)
- 2.4 Explain what is meant by the following terms and name TWO components that form part of each term:
- 2.4.1 Sprung mass
- 2.4.2 Unsprung mass (2 x 3) (6)
- 2.5 Label the tools marked (A–B) for balancing a wheel in FIGURE 1 below.

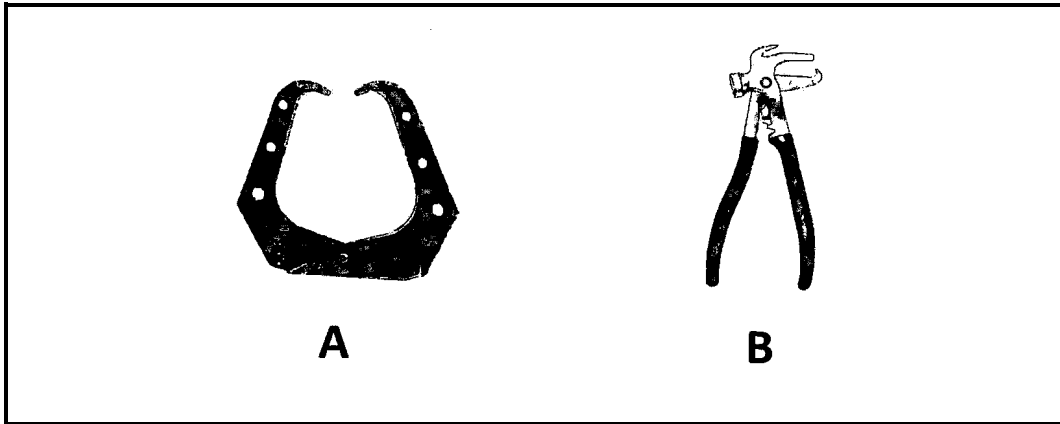


FIGURE 1

(2)

2.6 What THREE important data must be loaded into the wheel-balancing machine before a wheel can be balanced?

(3)
[21]**QUESTION 3**

3.1 Label the parts of a starter marked (A–F) in FIGURE 2 below in the answer book.

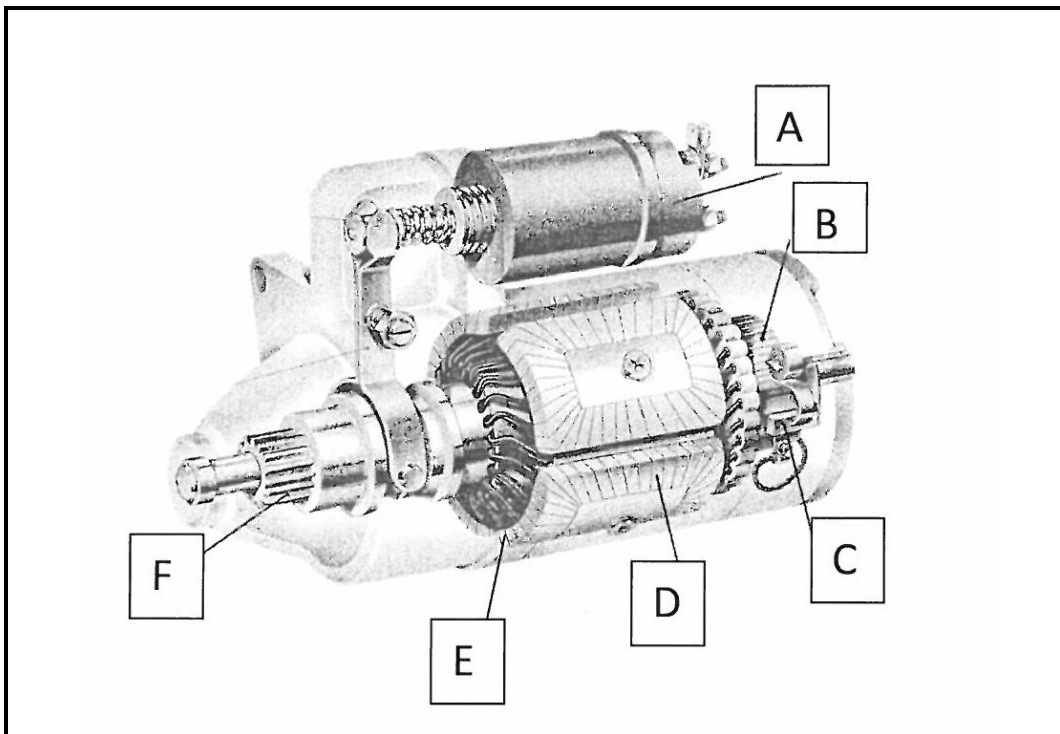


FIGURE 2

(6)

- 3.2 Choose a description from COLUMN B that matches a word in COLUMN A. Write only the letter (A–D) next to the question number (2.2.1–2.2.4) in the ANSWER BOOK.

COLUMN A		COLUMN B	
3.2.1	Stator	A	responsible for turning alternating current (AC) into direct current (DC)
3.2.2	Rotor	B	responsible for adjusting the load on the system in order to keep the voltage at the correct value for the battery to be charged
3.2.3	Rectifier	C	consists of the field windings, which generate the magnetic field and rotates
3.2.4	Regulator	D	consists of a set of stationary windings in which the generated current will start to flow

(4 × 1) (4)

- 3.3 Give a detailed explanation of the steps that must be followed when removing an alternator from an engine.

(4)
[14]

TOTAL [50]