



**higher education
& training**

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

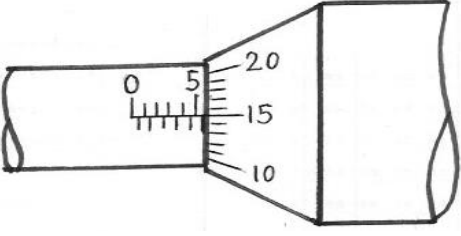
**NATIONAL CERTIFICATE
MOTOR TRADE THEORY N1**

31 JULY 2018

This marking guideline consists of 6 pages.

QUESTION 1

- 1.1
- warning signs
 - information signs
 - firefighting signs
 - personal protective equipment/compulsory signs
 - prohibitive signs
- (Any 3 × 1) (3)
- 1.2 red (1)
- 1.3 The sign is round ✓ in shape with a diagonal line across ✓ the face. (2)
- 1.4
- first aid equipment
 - general direction
 - escape route
- (3 × 1) (3)
- 1.5
- four-post hoist
 - two-post hoist
 - scissors hoist
 - floor/hydraulic jack
- (Any 3 × 1) (3)
- 1.6
- They are more compact/smaller
 - They are more powerful than electric power tools
 - It is easier and cheaper to maintain
- (3 × 1) (3)
- 1.7 feeler gauge (1)

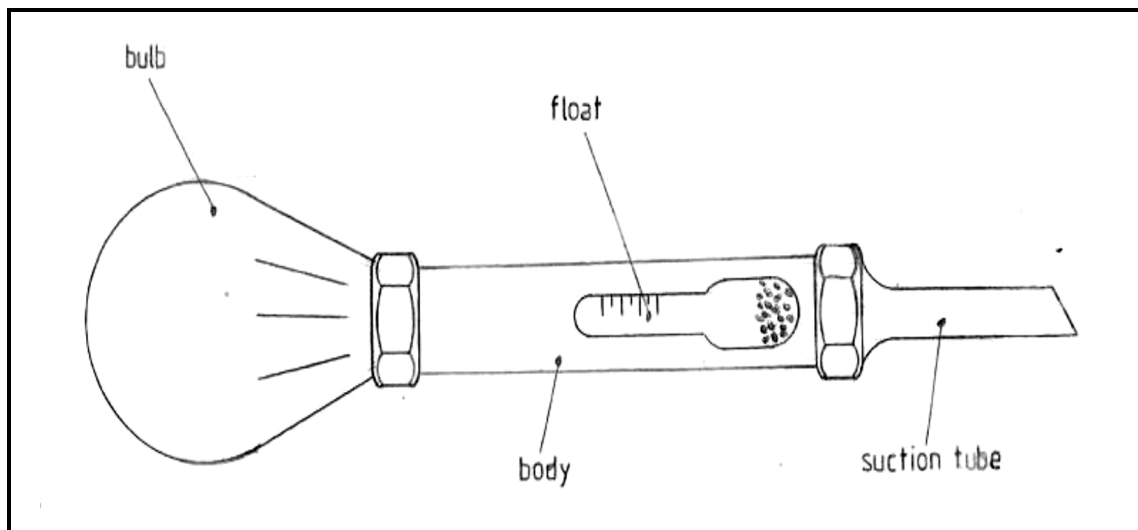
- 1.8
- 
- (4)

- 1.9
- | | | |
|-------|-------|--|
| 1.9.1 | False | |
| 1.9.2 | True | |
| 1.9.3 | True | |
| 1.9.4 | False | |
| 1.9.5 | True | |
- (5 × 1) (5)
[25]

QUESTION 2

- 2.1
- Two-piece rim
 - three-piece rim
- (2 × 1) (2)
- 2.2
- In the drop centre rim, the inner diameter of the base is smaller than that of the edges.✓ This is necessary to accommodate the tyre bead✓ when the tyre is fitted to the rim.✓
 - With the flat-base rim, the diameter is the same across the width of the rim.✓ The tyre is slid over the rim and secured with a split ring on the one side.✓
- (5 × 1) (5)
- 2.3
- plastic
 - rubber
- (2 × 1) (2)
- 2.4
- Connect the positive terminals of the two batteries with one cable.✓
 - Connect the negative terminal✓ of the good battery to the chassis or engine earth✓ of the car that you boost.
 - After starting, disconnect the cables in the reverse order.✓
- (4)

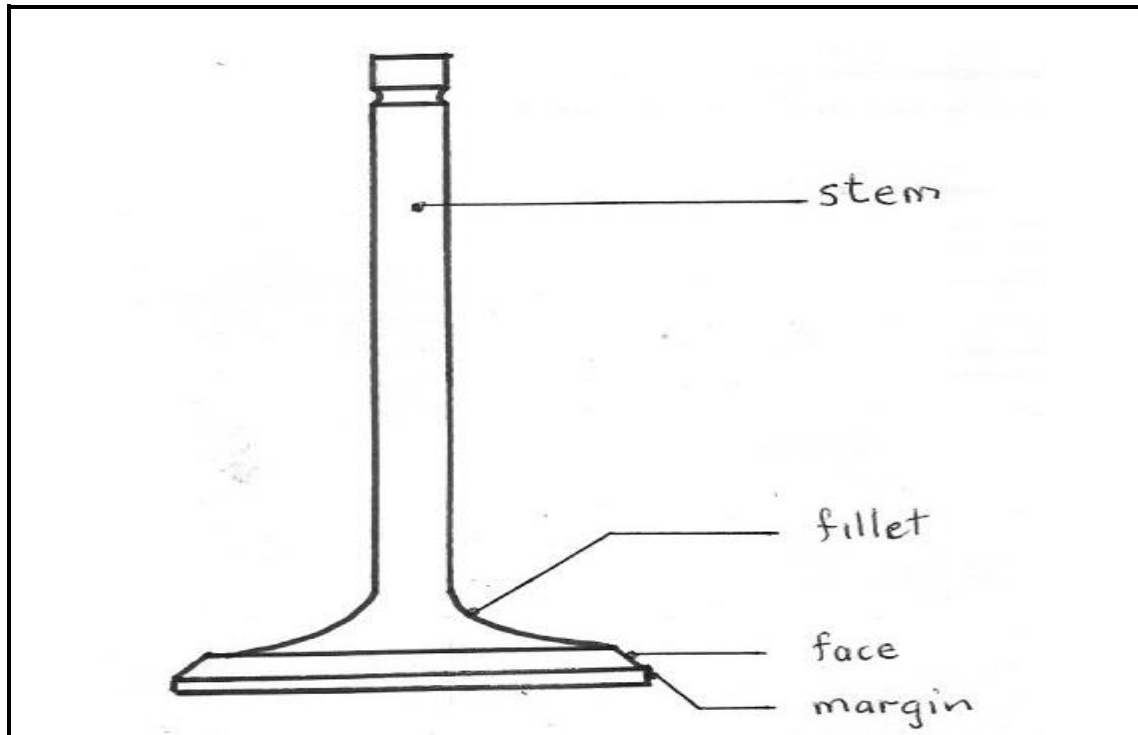
2.5



(6)
[19]

QUESTION 3

3.1



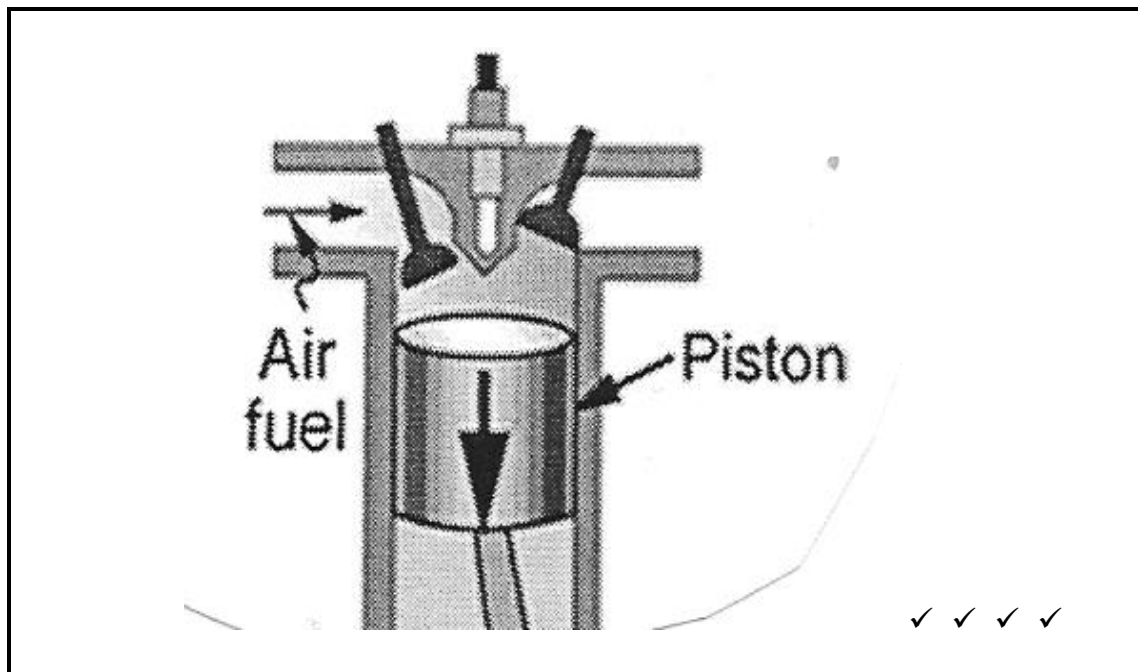
(6)

3.2

It converts the reciprocating motion ✓ of the pistons into rotary motion. ✓

(2)

3.3



During the inlet stroke the piston moves downwards, ✓ creating a vacuum in the cylinder. ✓ The inlet valve is open while the exhaust valve is closed during this time. ✓ Fresh air is therefor drawn into the cylinder via the open inlet valve. ✓

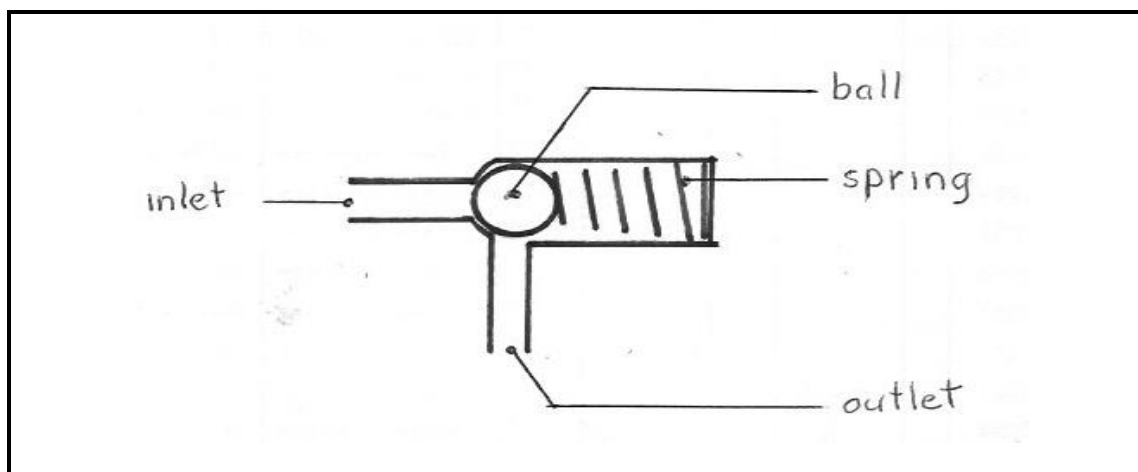
(8)

- 3.4 Closes and keeps the valve closed ✓ after the camshaft lobe. ✓ (2)
- 3.5
- single-strand roller chain.
 - double-strand roller chain. (2 × 1) (2)
- [20]**

QUESTION 4

- 4.1
- anti-oxidants
 - detergents
 - viscosity index improvers
 - anti-corrosion agents
 - anti-foaming agents
 - extreme pressure agents
 - fluidity improvers (Any 4 × 1) (4)
- 4.2 full-flow lubrication system (1)
- 4.3 To reduce the oil temperature (1)
- 4.4
- Over the time of engine operation, the oil loses its quality ✓ due to contamination and dilution. ✓
 - Oil contamination occurs when combustion gases ✓ pass the rings into the crankcase and the oil. Normal wear and tear ✓ of engine components also drops solid particles into the oil.
 - Oil dilution is mainly caused by condensation ✓ that takes place in the crankcase during warm-up. Over-fuelling ✓ due to poor engine tuning or misfiring causes excess fuel to seep past the rings into the oil. (6)

4.5

(4)
[16]

QUESTION 5

- 5.1 • copper
 • aluminium (2)
- 5.2 • The cap maintains a pre-determined pressure in the cooling system when the engine is hot
 • It allows external air to enter the cooling system when the engine is cold to prevent a vacuum forming in the cooling system (2)
- 5.3 • water pump
 • coolant
 • thermostat
 • radiator
 • cooling fan
 • hoses and pipes (Any 5 × 1) (5)
- 5.4 A push rod
 B cylinder
 C secondary seal
 D piston
 E main seal
 F return spring
 G reservoir (7 × 1) (7)
- 5.5 • diaphragm type
 • coil-spring type (2 × 1) (2)
- 5.6 flywheel (1)
- 5.7 brake fluid (1)
- [20]**
- TOTAL: 100**