higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE

MOTOR TRADE THEORY N1

22 November 2022

This marking guideline consists of 6 pages.

SECTION A

QUESTION 1

1.1 A
1.2 D
1.3 C
1.4 D
1.5 A
1.6 C
1.7 B
1.8 C
1.9 D
1.10 C

(10 × 1) **[10]**

QUESTION 2

2.1 True
2.2 False
2.3 False
2.4 False
2.5 False

(5 × 1) (5)
[5]

QUESTION 3

3.1 3.1.1 D or E
3.1.2 H
3.1.3 G
3.1.4 F
3.1.5 B

(5 × 1) (5)

3.2 3.2.1 Exhaust
3.2.2 Increase
3.2.3 PCV valve
3.2.4 Engine mountings
3.2.5 Do not contain

(5 × 1) (5)
[10]

TOTAL SECTION A: 25

QUESTION 4

4.1
4.1.1 Camshaft
4.1.2 Adjusting nut or tappet adjuster
4.1.3 Rocker arm
4.1.4 Valve spring
4.1.5 Valve
4.1.6 Pushrod
4.1.7 Cam follower

(7 × 1) (7)

4.2
- To prolong engine life
- To extend the life of working components inside the engine
- To maintain the viscosity of the oil
- To prevent sludge build-up
- To maintain the fuel efficiency of the vehicle
- To help maintain the engine operating temperature
- To replenish oil that is lost due to burning (Any 5 × 1) (5)

4.3
- Steering is lighter.
- The vehicle has very good traction.
- Engine noise is lower.
- There is no long drive shaft.
- Braking efficiency is improved because of the centre of gravity.
- It is easy to design an aerodynamic body shape.
- Exhaust system is short. (Any 3 × 1) (3)

4.4
- It should not boil.
- It should not freeze.
- It should resist rust and scale.
- It should be able to lubricate. (Any 3 × 1) (3)

4.5
- It seals the top of the radiator and prevents leakage.
- It pressurises the cooling system so it can operate at higher temperatures without boiling.
- It minimises evaporation.
- It relieves excess pressure that develops.
- It prevents a vacuum from forming when the engine cools down.
- It prevents steam from forming. (Any 3 × 1) (3)

[21]

QUESTION 5

5.1 An uncontrolled, unplanned event that takes place causing injury or damage to property or equipment. (2)

5.2
- The workshop makes a good impression on clients.
- Workers become more productive.
- Less time is wasted looking for tools or equipment.
- Workshop space is saved.
- Risks of fire hazards are reduced
- Improved and accurate stock-taking.
- Staff morale is raised. (Any 4 × 1) (4)

5.3
5.3.1 Escape route direction
5.3.2 First-aid equipment location
5.3.3 No open flames allowed
5.3.4 High voltage warning
(4 × 1) (4)

5.4
- Select the right size angle grinder for the job (1 500 W or 2 000 W).
- Use the correct size of attachments for heavy-duty grinders.
- Use clamps or vices to hold a work piece so that both hands are free to operate the grinder.
- Check whether the speed rating on the disk is the same as or higher than the grinder speed.
- Make sure the disc is not cracked or chipped.
- Make sure that the grinder wheel guard is fitted and secured.
- Use correct PPE. (Any 7 × 1) (7)

5.5
5.5.1 Anvil
5.5.2 Spindle
5.5.3 Locking mechanism
5.5.4 Barrel/sleeve
5.5.5 Thimble
5.5.6 Ratchet
5.5.7 Frame
(7 × 1) (7)
[24]

QUESTION 6

6.1
- To transmit power and torque to the transmission system
- To enable gear change while the vehicle is in motion
- To enable temporary neutral when the engine is running but the vehicle is stationary
- To allow the vehicle to start moving smoothly and gradually (Any 3 × 1) (3)

6.2
- It is a much cheaper system.
- It requires less maintenance.
- Adjustment is simple.
- The location of the engine does not affect its operation. (Any 2 × 1) (2)

6.3 Place the vehicle in a safe position (nothing in front of the vehicle) and apply the park brake/handbrake firmly.✓ Select a gear higher than first gear✓ and attempt to pull away by slightly raising the engine revs.✓ If the clutch slips, the engine revs will rise.✓ If the clutch does not slip, the engine will cut out.✓ There will also be a distinctive burning smell.✓ (Any 4 × 1) (4)

6.4
- Difficult gear selection will occur
- Grating of gears while driving and changing gears (2)

6.5
6.5.1 Crankshaft gear/sprocket
6.5.2 Counterweight
6.5.3 Big-end journals
6.5.4 Crankshaft web
6.5.5 Flywheel flange
6.5.6 Nose or snout
6.5.7 Main bearing journals
(7 × 1) (7)

6.6 The main function is to change reciprocating motion into rotary motion. (2)
[20]

QUESTION 7

7.1 A – correct tyre pressure
B – under-inflation
C – over-inflation (3)

7.2
- They run at a cooler temperature.
- They puncture slowly (no tyre burst).
- They are easy to remove and fit.
- They improve safety. (Any 2 × 1) (2)

7.3
- Low SG in the electrolyte
- Low level of electrolyte
- Using a battery in a low state of charge
- Leaving a battery in a discharged state for long periods
- Leaving a charged battery for long periods without charging (Any 3 × 1) (3)

7.4 7.4.1 B
7.4.2 A
(2 × 1) (2)
[10]

TOTAL SECTION B: 75
GRAND TOTAL: 100