



higher education
& training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE

MOTOR TRADE THEORY N1

29 November 2023

This marking guideline consists of 6 pages.

MARKING GUIDELINE

-2-
MOTOR TRADE THEORY N1**QUESTION 1**

1.1	1.1.1	C		
	1.1.2	C		
	1.1.3	B		
	1.1.4	C		
	1.1.5	C		
	1.1.6	D		
	1.1.7	C		
	1.1.8	C		
	1.1.9	C		
	1.1.10	A		
			(10 × 1)	(10)
1.2	1.2.1	False		
	1.2.2	True		
	1.2.3	False		
	1.2.4	True		
	1.2.5	True		
			(5 × 1)	(5)
1.3	1.3.1	D		
	1.3.2	E		
	1.3.3	I		
	1.3.4	F		
	1.3.5			
			(5 × 1)	(5)
				[20]

QUESTION 2

2.1	2.1.1	<ul style="list-style-type: none"> • Never exceed the capacity of a hoist. • Never make adjustments under a hoist while it is moving. • Make sure the safety devices are working. • Always position the vehicle in such a way that the weight is distributed evenly. • Make sure the lift is serviced and conforms in all safety aspects. • Make sure that people and equipment around you are safe. <p>(Any ONE correct applicable answer)</p>		
	2.1.2	<ul style="list-style-type: none"> • Always wear safety goggles. • Never exceed the pressure limit on the gauge. • Make sure there are no leaks on the ram. <p>(Any ONE correct answer)</p>		

MARKING GUIDELINE

-2-

MOTOR TRADE THEORY N1

- 2.1.3
- Never exceed the lifting capacity of a crane.
 - Make sure there are no oil leaks on a crane.
 - Make sure the wheels are not seized.
 - Make sure the ground is level and firm.
- (Any ONE correct answer)
(any 3 × 1) (3)
- 2.2
- Make sure the measuring surfaces are clean.
 - Close the micrometer until the measuring points are together and check if the zero lines up.
 - Use the adjusting tool to adjust the sleeve until the zero is aligned and then recheck the micrometer.
- (3)
- 2.3
- It provides financial compensation for workers injured or contracting diseases in their scope of work.
 - It also provides compensation for families of employees who pass on owing to accidents or injuries at the workplace.
- (2)
- 2.4
- Employers must maintain all equipment so that it does not affect employees' health or safety.
 - Employers must remove any risks or dangers that may affect employees' health or safety.
 - Employers must ensure that employees receive proper training.
 - Employers must ensure that all PPE is available to employees.
- (Any THREE correct applicable answers) (3)
- 2.5
- Petrol
 - Diesel
 - Used oil
 - Used antifreeze
 - Brake fluid
 - Battery acid
- (Any TWO applicable answers) (2)
- 2.6
- They are always punctual.
 - They are always neat and tidy (they wear clean overalls).
 - They adhere to rules and safety regulations.
 - They are efficient and productive.
- (Any other correct applicable answer – max 4) (4)
- 2.7
- A – Cylinder head
 B – Valve/rocker/tappet cover
 C – Valve train/valve springs/push rods ✓
 D – Engine block
 E – Flywheel/ring gear
 F – Engine sump
- (6)
- 2.7 Aluminium/cast iron
- (1)
- [24]**

QUESTION 3

- 3.1 A – Exhaust manifold gasket
B – Exhaust manifold
C – Heatshield
D – Warm-air collector plate (4)
- 3.2 It's a global computer network on which information is stored✓ and on which information about almost any subject is available.✓ (2)
- 3.3
- Make of vehicle
 - Model of vehicle
 - Engine type
 - VIN number
- (Any TWO answers) (2)
- 3.4
- Microsoft Word
 - Microsoft Excel
 - Microsoft PowerPoint
 - Windows Media Player
 - Web browser
 - Google Chrome
- (Any TWO correct, applicable answers) (2)
- 3.5.1 A – Exhaust stroke
B – Compression stroke (2)
- 3.5.2 C
B
D
A (4)
- 3.5.3 Only air gets drawn into the cylinder of a diesel engine.✓ With a petrol engine, a mixture of fuel and air gets drawn into the combustion chamber.✓ (2)
- [18]**

QUESTION 4

- 4.1 It is to maintain the clearance between moving and stationary components✓ and prevent metal-on-metal contact.✓ (2)
- 4.2.1
- Gear-type oil pump
 - Crescent-type oil pump
 - Rotor-type oil pump
- (3)
- 4.2.2
- Cheap to manufacture
 - Delivers high pressure
 - Simple design
 - No check valves or springs
- (Any TWO answers) (2)

- 4.2.3 Pump is very expensive to manufacture. (1)
- 4.2.4
- Wear on the tips of the rotor gear.
 - Scoring on the rotor gear, driven gear or housing.
 - Too low oil viscosity.
- (3)
- 4.3
- Sump plug/washer
 - Oil seals (crankshaft/camshaft)
 - Tappet cover gasket
 - Sump gasket
 - Mechanical fuel pump (Any other correct applicable answer- max 4)
- (4)
- 4.4 When the engine is cold, the thermostat remains closed✓ and prevents circulation of coolant through the engine.✓ When the engine reaches operating temperature, the wax expands and opens the valve,✓ allowing coolant to circulate through the engine and radiator.✓ (4)
- 4.5
- To prevent the formation of scaling and rust, which cause a blockage in a radiator.
 - To maintain the viscosity and efficiency of coolant properties that deteriorate over time.
- (2)
- 4.6
- The boiling point of coolant is increased.
 - Evaporation of coolant is decreased.
 - Smaller radiators can be used.
 - The water pump maintains the system's capacity.
 - Smaller fans require less power.
- (Any 3 × 1) (3)
- [23]**

QUESTION 5

- 5.1 A – under-inflation
B – over-inflation
C – even/normal tyre wear (3)
- 5.2
- Seals/secures the tyre to the rim.
 - Prevents the rim from spinning inside the tyre.
- (2)
- 5.3 Connect the positive clamp of the booster cable from the good battery to the positive terminal of the weak battery.✓ Connect the negative clamp of the booster cable from the good battery to an earth point on the engine or engine bay earth cable. ✓ Switch on the headlights and any auxiliary items of the car to be started.✓ Proceed to start the vehicle and remove the negative clamp first and then the positive clamp.✓ (4)

MARKING GUIDELINE

-6-

MOTOR TRADE THEORY N1

- 5.4
- Low outside temperatures decrease a battery's capacity.
 - Because of low temperatures, oil is thicker and an engine is difficult to crank.
 - Electrolytes can freeze if a battery is undercharged. (Any 2 × 1)
- (2)
- 5.5
- Parallel hybrid system
 - Series hybrid system
 - Plug-in hybrid system (Any 2 × 1)
- (2)
- 5.6
- They make use of regenerative braking systems that capture the kinetic energy generated by braking✓ and converts it into the electrical power that charges a vehicle's high-voltage battery.✓
- (2)
- [15]**
- TOTAL: 100**