



higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE
NOVEMBER EXAMINATION
MOTOR TRADE THEORY N1

11 NOVEMBER 2014

This marking guideline consists of 6 pages.

QUESTION 1

- | | | | |
|-----|--|-------------|--------------------|
| 1.1 | 1.1.1 D
1.1.2 C
1.1.3 A
1.1.4 B
1.1.5 A
1.1.6 B
1.1.7 B
1.1.8 D
1.1.9 C
1.1.10 C | (10 × 1) | (10) |
| 1.2 | A – Dipstick
B – Oil pump
C – Strainer
D – Sump
E – Oil-filler cap
F – Oil-pressure switch
G – Oil filter
H – Oil
I – Oil drain plug | (9 x 1) | (9) |
| 1.3 | <ul style="list-style-type: none"> • Difficult to start • Engine fails to crank | (Any 1 x 1) | (1)
[20] |

QUESTION 2

- | | | | |
|-----|--|-------------|-----|
| 2.1 | A – Cylinder head
B – Piston
C – Connecting rod
D – Big-end bearing
E – Crankshaft
F – Bearing caps | (6 x 1) | (6) |
| 2.2 | <ul style="list-style-type: none"> • Weak oil pump • Cracked cylinder head • Weak compression | (Any 2 x 1) | (2) |
| 2.3 | <ul style="list-style-type: none"> • Splash system • Pressure system | | (2) |

2.4 FIGURE 1 (hydrometer structure)

(5)

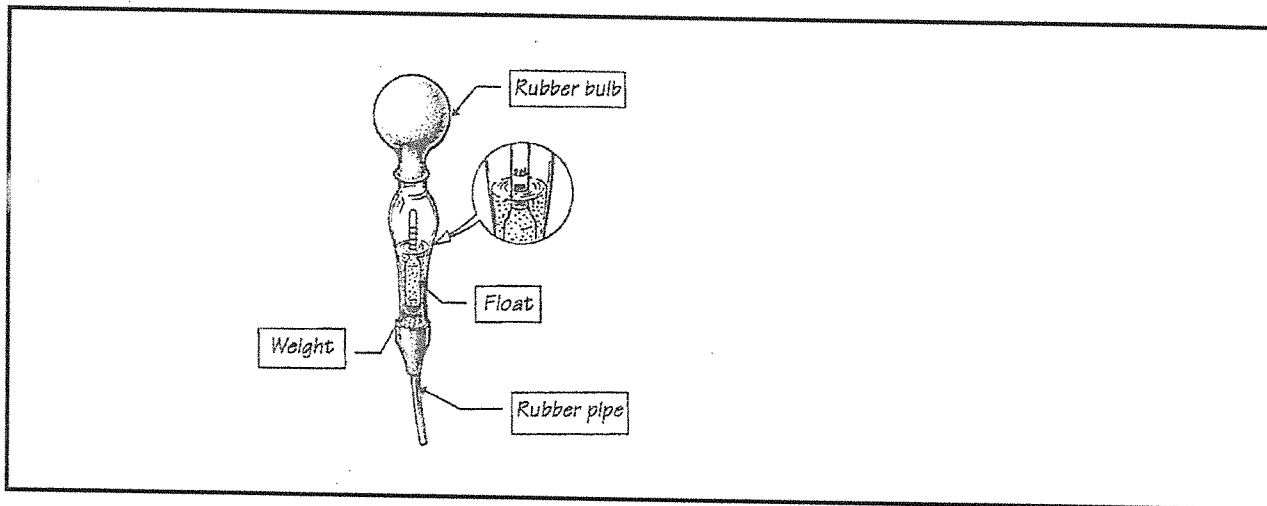


FIGURE 1

- 2.5
- Series connection of battery
 - Parallel connection of battery

(2)

- 2.6 Prolonged discharging
Local chemical action in the cells
Insufficient or infrequent charging
The electrolyte level being too low
The specific gravity of the electrolyte being too low

(Any 3 × 1)

(3)
[20]**QUESTION 3**

3.1 FIGURE 2 (valve structure)

(6)

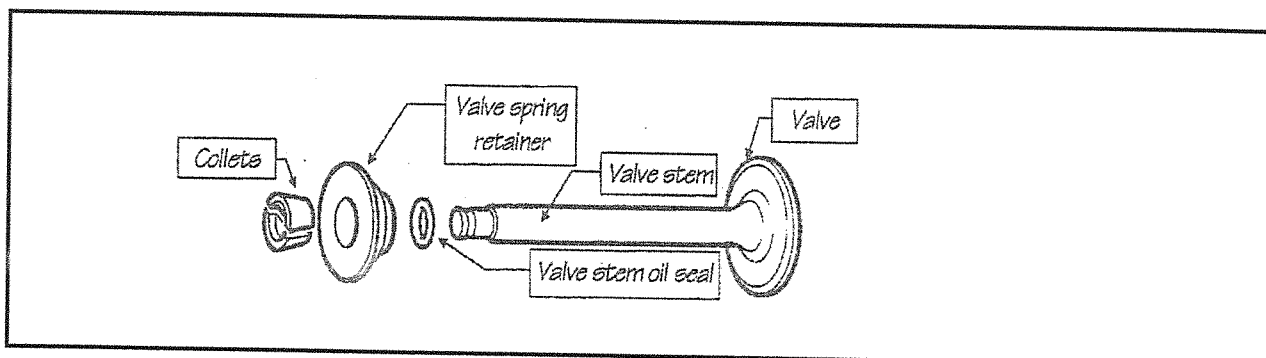


FIGURE 2

- 3.2 Oil rings and compression rings (2)
- 3.3
- To prevent the chain belt from sleeking against lamina cover
 - To ensure that the chain belt stays on the sprockets
- (2)
- 3.4
- A – Camshaft
 - B – Tensioner
 - C – Timing belt
 - D – Connecting rod
 - E – Camshaft
 - F – Camshaft
 - G – Valve
 - H – Piston
- (8 x 1) (8)
- 3.5 3.5.1 Crankshaft
- Provides a constant turning force to the wheels
 - Changing reciprocating movement of piston into rotary motion
 - Distributes oil from main journal bearings to big end of the connecting rod
- (Any of the above) (1)
- 3.5.2 Flywheel
- * It smoothes the engine.
 - * It serves as a mounting surface for the clutch and pressure plate.
 - * It engages the starter motor to crank the engine.
- (Any of the above) (1)
- [20]

QUESTION 4

- 4.1 4.1.1 True
- 4.1.2 True
- 4.1.3 True
- 4.1.4 False
- 4.1.5 False
- (5 x 1) (5)
- 4.2
- To transmit the torque smoothly from running engine
 - To allow gear changing when the vehicle is in motion
 - To give temporary neutral when the engine is running for gear selection
- (3)

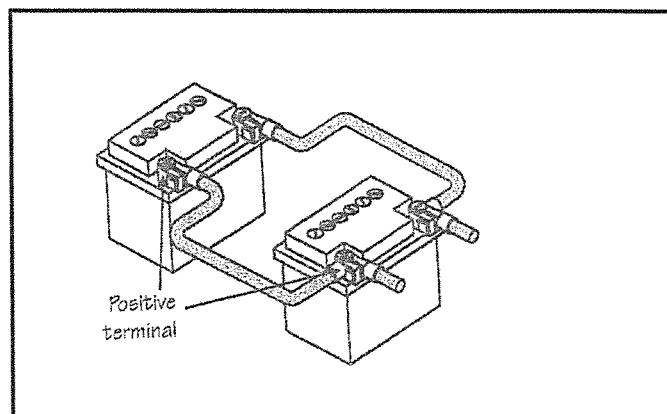
- 4.3
- Safety shoes must be worn all the time.
 - No loose cloth, sleeves, long hair in the workshop
 - Safety goggles or welding helmets must be worn.
 - Facial mask for asbestos dust from brake shoes
 - Ear guards must be worn when working in a noisy place.
 - Gloves must be worn when working with acids.
 - A creeper to protect your body from cold floor
- (Any 3 x 1) (3)
- 4.4 Negligence; ignorance of the danger involved; fooling about tiredness or daydreaming; failure to use correct equipment; lack of skills through inadequate training; untidy or obstructed equipment. (Any 4 x 1) (4)
- 4.5 Release-lever broken spring
Gearbox input shaft-bearing damaged
Release bearing worn or damaged
Input shaft splines of clutch excessively worn
Broken or loose shock spring of clutch plate (5)

[20]**QUESTION 5**

- 5.1 FIGURE 3 (battery parallel connection) (4)

PARALLEL CIRCUIT

The two 12 V batteries are connected in parallel to form a 12 V battery that will last longer and have a greater cranking capacity than one 12 V battery. This arrangement is used on smaller trucks with a diesel engine that is difficult to start. The two batteries will supply sufficient current to the 12 V starter motor to start the engine.

**FIGURE 3**

- 5.2 A – Radial ply; B – Cross ply (2)
- 5.3
- Longer tyre life; assures vehicle safety; comfortable ride
 - Prevent excessive heat built-up; proper tyre inflation allows full tyre area to touch the road
- (Any 2 x 1) (2)
- 5.4 Cheap to produce and assemble; keep pressure for a longer period; increase safety; they are lighter in mass; cooler turning (Any 3 x 1) (3)

5.5	5.5.1	Trolley jack		
	5.5.2	Hacksaw		
	5.5.3	Ring squeezer		
	5.5.4	Veneer calliper		
	5.5.5	Centre punch		
	5.5.6	Vice grip (pipe pliers)		
	5.5.7	Outside micrometer		
	5.5.8	Lead light		
	5.5.9	Clamp screw	(9 x 1)	(9)
				[20]
			TOTAL:	100