higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE

MOTOR TRADE THEORY N1

5 April 2018

This marking guideline consists of 5 pages.

QUESTION 1

1.1	1.1.1	A		
	1.1.2	A		
	1.1.3	C		
	1.1.4	A		
	1.1.5	D		
	1.1.6	C		
	1.1.7	B		
	1.1.8	A		
	1.1.9	B		
	1.1.10	C		
			(10 x 1)	(10)
1.2	1.2.1	False		
	1.2.2	True		
	1.2.3	True		
	1.2.4	False		
	1.2.5	True		
			(5 x 1)	(5)
				[15]

QUESTION 2

2.1 2.1.1 Head protection e.g. a hard hat – when you are exposed to the risk of heavy or sharp objects that may fall from above

2.1.2 Eye protection e.g. safety goggles – when you are working with a grinder or metal cutter

2.1.3 Ear protection e.g. ear plugs or ear muffs – when the noise levels in the work area are high

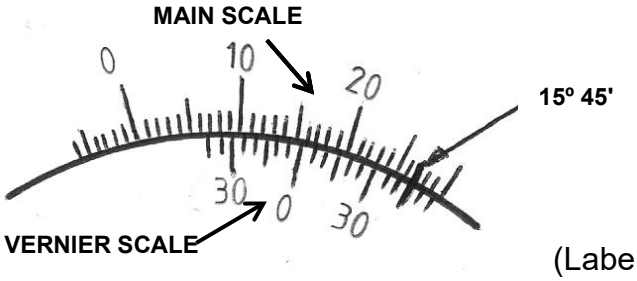
2.1.4 Respiratory protection e.g. a dust mask – when working with materials emitting hazardous fumes or dust

2.1.5 Hand protection e.g rubber gloves – when working with dangerous liquids

(5 x 2) (10)

2.2
- Stone-type honer
- Flex honer (2 x 1) (2)

2.3



(Labelling of scale = 2 marks)
(Correct drawing = 1 mark) (3)
[15]

QUESTION 3

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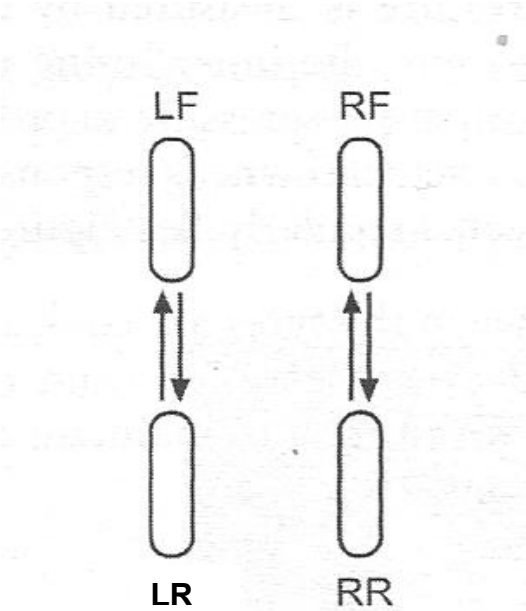
3.1
- Age
- Overcharging
- Poor maintenance
- Undercharging
- Low electrolyte levels

(Any 4 x 1) (4)

3.2 Positive terminal (1)

3.3



(Labelling = 1 mark)
(Correct drawing = 1 mark) (2)

3.4
3.4.1 P– Passenger
3.4.2 T – Temporary
3.4.3 LT– Light truck
3.4.4 C– Commercial

(4 x 1) (4)

3.5
- Overinflation – Tyres wear in the centre
- Underinflation – Tyres wear on the edges (2 x 1) (2)

3.6 Mid-engine rear-wheel drive (1)

3.7
3.7.1 Excessive camber
3.7.2 Incorrect toe adjustment
3.7.3 Worn shocks
(3 x 1) (3)
[17]

QUESTION 4

4.1
A – Spark plug
B – Exhaust port
C – Inlet port
D – Transfer port
E – Connecting rod
F – Crankcase (6 x 1) (6)

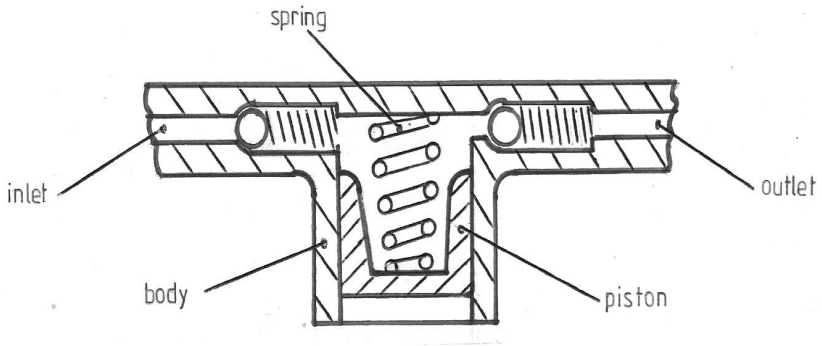
4.2 When the piston moves✓ up, it covers the exhaust and transfer ports.✓ Further movement compresses the mixture. At the same time, towards the end of the compression stroke, the inlet port is opened below✓. The vacuum created✓ in the crankcase by the piston, draws the fresh mixture✓ into the crankcase.

After ignition and towards the end✓ of the power stroke, the exhaust port is opened✓ before the transfer port. The downward movement of the piston pressurises✓ the crankcase, forcing the mixture into the cylinder via the transfer✓ port. The incoming mixture expels✓ the exhaust gas from the cylinder through the exhaust port. (10 x 1) (10)

4.3
A – Crank journal
B – Cam drive gear or sprocket
C – Balance weight
D – Oil drilling
E – Flywheel flange
F – Main journal (6 x 1) (6)
[22]

QUESTION 5

5.1



(Labelling = 5 marks) (Correct drawing = 3 marks) (8)

5.2 The piston is moved backwards by✓ the return spring. This creates a vacuum✓ above the piston, drawing in oil through the inlet valve. During this time the outlet valve remains closed.✓ As the cam moves around, the piston is pushed✓ forward, pressurising the oil above it. The outlet valve✓ is lifted off its seat allowing the oil through the outlet✓ valve into the main gallery under pressure. The inlet valve is closed✓ during this stroke. (7)

5.3
- Force feed
- Fullforce feed (2 x 1) (2)

5.4
- Oil throwers
- Oil screws (2 x 1) (2)

[19]

QUESTION 6

6.1
- Wax pellet thermostat ✓ – specially formulated wax✓
- Bellows thermostat✓ - alcohol✓ (2 x 2) (4)

6.2 The pressure✓ built-up in the cooling system during warm-up will cause the hot coolant to spurt out✓ and cause serious burns. (2)

6.3 Pressure test (1)

6.4
- Too little coolant
- Faulty thermostat
- Clogged radiator
- Faulty water pump
- Defective or loose fan belt
- Worn radiator cap (Any 5 x 1) (5)

[12]

TOTAL: 100