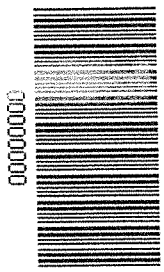
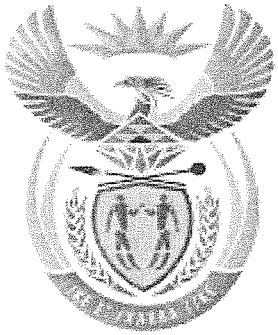




higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE

APRIL EXAMINATION

MOTOR TRADE THEORY N1

24 MARCH 2014

This marking guideline consists of 5 pages.

QUESTION 1

1.1	1.1.1	A		
	1.1.2	C		
	1.1.3	C		
	1.1.4	C		
	1.1.5	D		
	1.1.6	D		
	1.1.7	B		
	1.1.8	A		
	1.1.9	C		
	1.1.10	A	(10 × 1)	(10)

1.2	1.2.1	Torque wrench		
	1.2.2	Tap set		
	1.2.3	Piston ring squeezer	(3 × 1)	(3)

1.3
A – Compression ring
B – Oil ring
C – Piston
D – Gudgeon pin bush/Piston pin bush
E – Connecting rod
F – Big-end bearing (6)

1.4
- Prevents oil leakage out of engine
- Prevents dust and water from entering into engine
- Is a back-up to oil turbine (Any 1 × 1) (1)

[20]

QUESTION 2

2.1
- Excessive speed/force
- Failing to use the prescribed guides. Too broad has many variations. E.g. long hair, loose clothes, rings/neck chains. Axle stands and concrete floors
- Smoking in the workshop
- Failure to wear protective clothing
- Fooling around in the workshop (4)

2.2
A – Retention washer
B – Valve cotters
C – Valve spring
D – Valve seal
E – Valve
F – Valve seat (6)

2.3 A – Clutch plate
B – Flywheel
C – Release bearing
D – Clutch cable/fluid pipe
E – Clutch pedal
F – Bell housing
G – Release fork (7)

2.4
- Maintaining engine operation temperature
- Helps keep engine at operating temperature
- Conducts heat away from metal around combustion chamber
- Provides means of heating passenger compartment
- Prevents condensation of the fuel
- Prevents engine seizure (melting) (Any 3 × 1) (3)

[20]

QUESTIONS 3

3.1
- Inlet or Induction stroke – Piston move downwards sucking in a mixture of petrol and air through open inlet valve
- Compression stroke – Piston is moving upwards, with both valves closed
- Power stroke – Combustion takes place valves closed, piston forced downwards
- Exhaust stroke – Piston moves upward, exhaust valve forces burnt gases out opens while inlet valve closed (8)

3.2 A – Flywheel
B – Clutch plate
C –Crankshaft
D – Pressure plate
E – Release lever
F – Release bearing
G – Helical spring pressure (7)

3.3 3.3.1 To remove the ridge at the top of a cylinder

3.3.2 To measure small clearance

3.3.3 To cut internal and external screw threads

3.3.4 Used to tighten nuts and bolts to specific tightness

3.3.5 To hold small work pieces or used in confined space (5 × 1) (5)

[20]

QUESTION 4

4.1
4.1.1 True
4.1.2 False
4.1.3 True
4.1.4 True
4.1.5 True
(5 × 1) (5)

4.2
- Reduced power loss by reducing friction
- Reduce wear in moving parts
- Assists in cooling hot components
- Reduces friction between parts
- Seals pistons and rings against cylinder walls
- Reduces rusting of parts
- Absorbs shock and reduces noise between moving parts

(Any 3 × 1) (3)

4.3
- Positive crankcase ventilation/closed
- Road – draught system/open

(2)

4.4
4.4.1 Rotary pump (1)

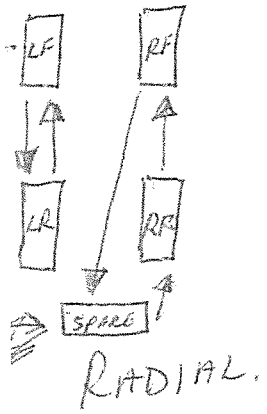
4.4.2
A – Outlet rotor
B – Inlet port
C – Outlet port
D – Inner rotor
E – Drive shaft
(5)

4.5
- Insufficient coolant
- Slipping fan belt
- Faulty thermostat
- Blocked radiator
- Water leaks
- Faulty radiator pressure cap

(4)
[20]

QUESTION 5

5.1



(2)

5.2 5.2.1
- Wear on the outer edges
- Increase fuel consumption

(Any 1 × 1) (1)

5.2.2
- Wear on the centre of tread
- Poor road traction
- Skiding

(Any 1 × 1) (1)

5.3 A – Cross ply/Steel belt
B – Radial ply/Fibre belt (2)

5.4
- To support the weight of the vehicle and distribute it over the road surface
- It must give safe operation up to the maximum
- The tyres provide frictional contact between the wheels and the road for good secure traction. (3)

5.5
- Absorb road shocks
- Road grip/traction for movement
- Road grip for braking
- Absorb road noise

(Any 3 × 1) (3)

5.6
- Ballpen hammer
- Shifting spanner
- Valve spring compressor
- Oil filter remover
- Ring squeezer
- Bearing puller
- Trolley jack

(8)
[20]

TOTAL: 100