higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE

AUGUST EXAMINATION

MOTOR TRADE THEORY N1

21 JULY 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 D
1.1.5 D
1.1.6 C
1.1.7 A
1.1.8 B
1.1.9 D
1.1.10 D

(10 x 1) (10)

1.2
A – Adjusting bar
B – Alternator
C – Radiator fan
D – Fan belt
E – Pulley (5 x 1) (5)

1.3
1.3.1 Warning of moving machinery hazard

1.3.2 Respiratory protection

1.3.3 Use safety goggles

(3 x 2) (6)
[21]

QUESTION 2

2.1
A – Camshaft pulley
B – Belt [toothed].
C – Distributor drive pulley
D – Jockey pulley belt/tensions
E – Crankshaft pulley
F – Inlet/outlet (6)

2.2
2.2.1 Flywheel
- It smoothes out engine speed and keeps the crankshaft spirit.
- It serves as a mounting surface for clutch and pressure plate.
- It engages the startor motor to crank the engine. (Any 1 x 1) (1)

2.2.2 Valve-stem oil seal
- It prevents oil on the valve stem from running into combustion chamber.
- It prevents oil on the valve stem to cause engine to smoke.

(Any 1 x 1) (1)

2.2.3 Crankshaft
- It provides a constant turning force to the wheels.
- It changes the reciprocating movement of piston into rotary.
- It distributes oil from the main bearing journals to the big end journals of the connecting rod. (Any 1 x 1) (1)

2.3 2.3.1 Jack
2.3.2 Ring squeezer
2.3.3 Pressure tester
2.3.4 Hydrometer
(4 x 1) (4)

2.4
- Piston is moving upwards
- Both inlet and outlet valves are closed
- Petrol
- Air is compressed (4 x 2) (8)

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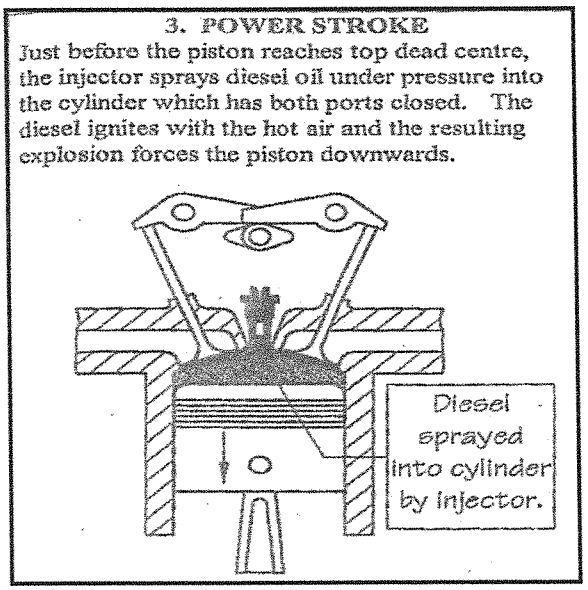
QUESTION 3

3.1



(5)

3.2 A Drive shaft
B Gear box
C Clutch
D Engine
E Final drive
F CV joints (Any 6 x 1) (6)

3.3
- Pressure plate is forced towards the flywheel by means of series of helical coil springs which provide clamping force
- Three to four release levers pivot so that they engage with the release bearing at one end and pressure plate at the other lever
- The pressure plate moves back the springs again to release the force on the driven plate when the clutch is operated to disengage. (5)

3.4
- Increases wear on front tyres
- Heavy feel of steering
- High maintenance costs
- High initial cost due to complicated drive arrangement (Any 2 x 1) (2)

3.5
- Light steering of the vehicle
- Very good traction
- Engine noise kept to a minimum
- High efficiency transmission (Any 2 x 1) (2)

[20]

QUESTION 4

4.1
4.1.1 True
4.1.2 False
4.1.3 True (3)

4.2
- Geary type
- Eccentric rotor type
- Internal gear type
- Sliding type
- Plunger type (5)

4.3 Viscosity index improves; oil body; fluidity; detergent dispersant; corrosion and rust inhibition; pour point depression; oxidation inhibitors; foaming resistance; resistance to carbon formation; extreme pressure resistance. (2)

4.4 <u>SAE 40W/50</u>
SAE – Society of Automatic Engineers
W - Winter condition
50 - Operation temperature (3)

4.5
- Radiator
- Radiator fan
- Cooling air
- Water pump
- Water jackets (5)

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QUESTION 5

5.1 Hydrometer
- Rubber bulb
- Float
- Weight
- Rubber pipe (5)

5.2
- Use two spanners to loosen the terminal
- Remove the earth terminal first
- Use spread clamps for terminals which are stuck
- Do not put battery on the paint work of a vehicle
- Clean the battery terminals
- Tighten securely and coat terminal with grease
- Use two open-end spanners to tighten clamp nuts
- Top up level of electrolyte if necessary (Any 3 x 1) (3)

5.3 It provides an air cushion between road and car wheels
It absorbs shocks resulting from irregularities in the road
It provides frictional contact for good traction
To support the weight of the vehicle
To offer maximum rolling resistance to motion
To give safe operation up to the maximum speed
To give a comfortable ride
To provide quiet, straight ahead running and freedom from skidding on cornering and braking (Any 2 x 1) (2)

5.4
- Cheap to produce and assemble
- Keeps its pressure for a longer period
- Increases safety
- Lighter in mass
- Cooler running (Any 3 x 1) (3)

5.5
- Punch
- Rug spanner
- Torque wrench
- Allen key
- Phillips screw driver
- Engineering vice
- Trestle (7 x 1) (7)

[20]

TOTAL: 100