higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE

MAINTENANCE MANAGEMENT: FARMING N5

13 JUNE 2018

This marking guideline consists of 7 pages.

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QUESTION 1

1.1
1.1.1 True
1.1.2 False
1.1.3 False
1.1.4 True
1.1.5 False
1.1.6 True
1.1.7 True
1.1.8 False
1.1.9 True
1.1.10 True

(10 × 1) (10)

1.2
A – Distributor
B – Points/contact breaker
C – Ignition coil
D – Battery
E – Spark plug

(5 × 1) (5)

1.3
- Regularly check the electrolyte levels and add distilled water if needed.
- Put the battery on slow charge every six months.
- Clean the terminals and rub with petroleum jelly every six months.

(Any applicable 2 × 1) (2)

1.4
- Change fuel filters regularly.
- Clean water traps regularly.
- Repair all diesel leaks.
- Use clean diesel.
- Replace cam belt at prescribed intervals.
- Check for loose injectors.
- Repair/replace worn-out injectors.
- Secure all air leaks on engine intake manifolds.
- Calibrate diesel injection pumps according to manufacturing specifications.
- Listen for diesel knocks. (Any applicable 2 × 1) (2)

1.5
- bad starting
- engine overheating
- engine misfiring
- poor fuel consumption
- excessive diesel knock
- black smoke from the exhaust pipe (Any ONE) (1)

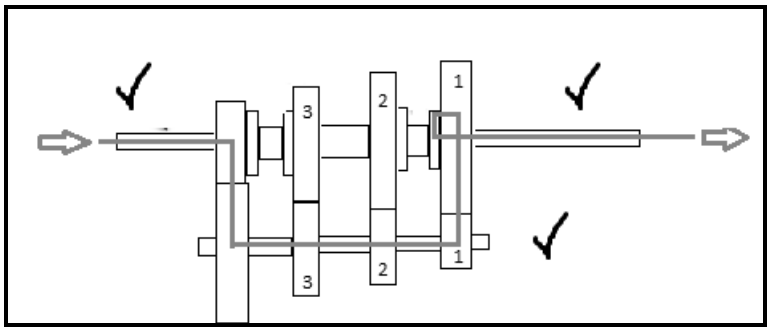
[20]

QUESTION 2

2.1
- Provides a permanent neutral.
- Enables engine torque to be increased.
- Provides a forward and reverse.
- Allows road speed to be increased.
- Allows engine torque to increase to move a vehicle from a stationary start.

(Any applicable 2 × 1) (2)

2.2



(3)

2.3 A – Indicates that it is a passenger tire.
B – Indicates the width of the tire, expressed in millimetres.
C – Indicates the aspect ratio (height of tire to width of tire) expressed as a percentage. (3)

2.4
2.4.1 E
2.4.2 D
2.4.3 B
2.4.4 C
2.4.5 A

(5 × 1) (5)

2.5 Liquids✓ cannot be compressed,✓ but when pressure✓ is applied to a liquid within a closed space,✓ pressure is exerted equally in all directions.✓ (5)

2.6
- Check tire pressure regularly. Adhere to manufacturer specifications.
- Inspect tire for cuts and budging.
- Check wheel alignment regularly to avoid excessive tire wear.
- Rotate wheels every 10 000 kilometre to ensure equal wear on all tires.
- Do not store tires in direct sunlight; it will cause hardening of the rubber.
- Avoid continued exposure to strong chemicals; it will deteriorate rubber.
- Always have a dust cap fitted to the air valve.
- Limit strong acceleration and hard braking; it will increase tire wear.
- Don't overfill tractor tires. The correct amount of fluid is required for proper traction purposes.
- Inspect wheel rims for serviceability.
- Balance wheels when steering shake occurs. (Any applicable 2 × 1) (2)

[20]

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QUESTION 3

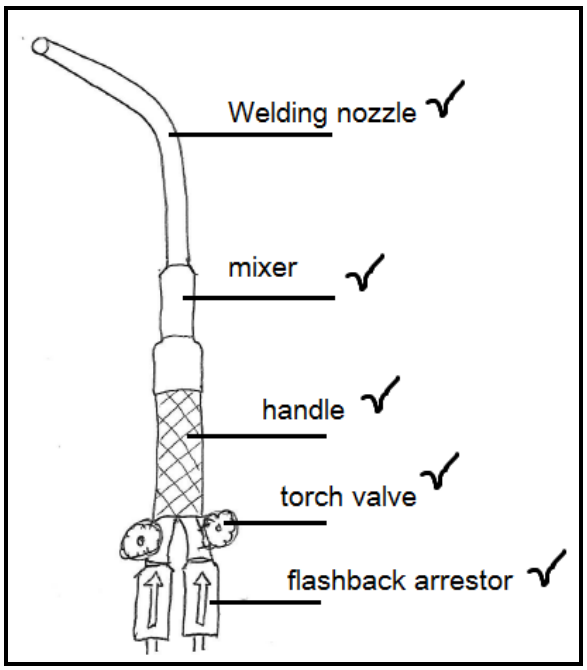
3.1
- Gas welding is done at higher degrees Celsius than gas braze welding.
- Gas welding is done with mild steel filler rod and brazing is done with a bronze filler rod.
- Gas welding is a permanent joint while gas brazing is a semi-permanent joint.
- Gas welding is done with a neutral flame while brazing is done with a slightly carburised flame.
- Gas welding do not need any flux, while braze welding needs flux.

NOTE: To explain the difference, the student will need to explain the difference between one concept at a time and not merely list the characteristics of gas welding and gas braze welding separately.)

(Any applicable 5 × 2) (10)

3.2 A – Undercut
B – Porosity
C – Bad fusion
D – No penetration
E – Hollow weld (5 × 1) (5)

3.3



(5)
[20]

QUESTION 4

4.1
- Connect the positive cable (+ red) to the positive poles of both batteries.
- Connect the negative (- black) cable first to the negative pole of the jump battery.
- Then connect the other side of the negative cable to the negative pole of the flat battery, the side that has the cable on the body.
- There must be no chance of sparks which can cause a fire or an explosion.
- Disconnect the cables the moment the car starts. (5)

4.2 3 200 × 0,3 = 960 W
9 000 × 0,1 = 900 W
3 000 × 1 = 3 000 W
3 000 × 0,15 = 450 W
3 500 × 0,5 = 1 750 W

Total load = 960 + 900 + 3 000 + 450 + 1 750 = 7 060 W

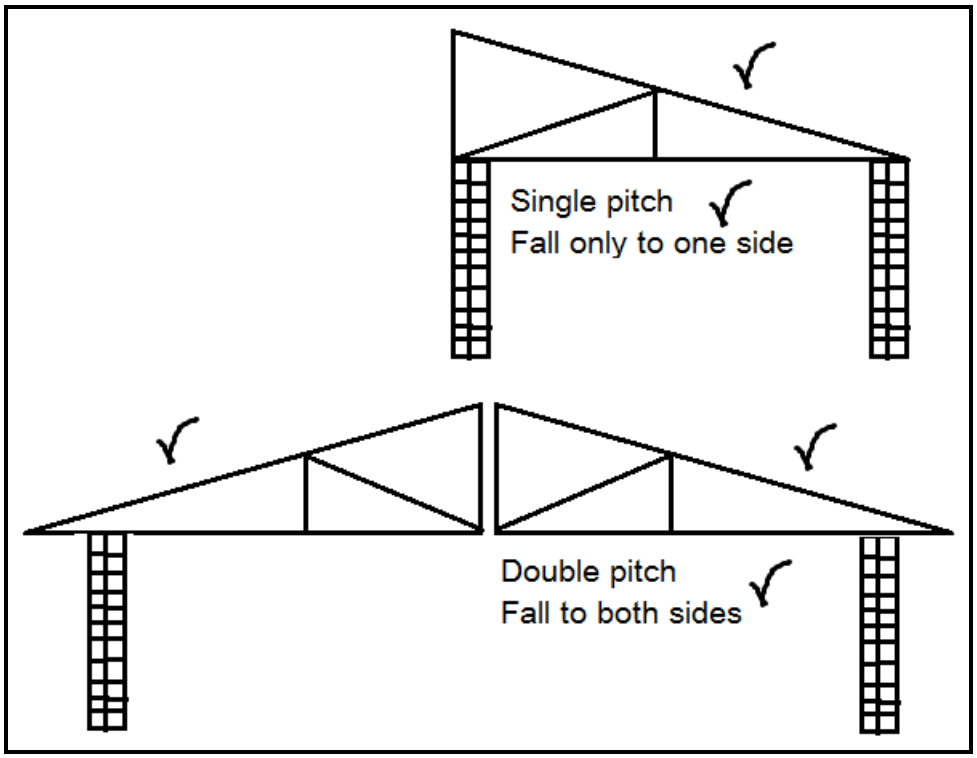
$\frac{7\,060}{1\,000} = 7{,}06\ \text{kW}$ (7)

4.3 7 060 × 1,10 = R7 766 (1)

4.4 4.4.1 True
4.4.2 True
(2 × 1) (2)
[15]

QUESTION 5

5.1



(5)

5.2
- To distribute the weight of the roof evenly over the length of the wall
- To fasten the tie beams to the wall

(2)

5.3
5.3.1 D
5.3.2 A
5.3.3 B

(3 × 1) (3)

5.4
5.4.1 32 mm
5.4.2 20 mm
5.4.3 25 mm

(3 × 1) (3)

5.5
5.5.1 True
5.5.2 False

(2 × 1) (2)

5.6
A – Water trap
B – Gully (grease trap)
C – Water trap
D – Waste pipe
E – Sewer pipe

(5 × 1) (5)

5.7
- To keep unwanted smells out of the house.
- To keep unwanted insects from entering the house. (2)

5.8
- To catch all the grease from the basin.
- To keep objects from obstructing or going into the sewer pipe. (2)

5.9 100 mm (1)
[25]

TOTAL: 100

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