higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE

MAINTENANCE MANAGEMENT: FARMING N4

14 November 2022

This marking guideline consists of 5 pages.

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QUESTION 1

1.1
- Chisel✓ – to chisel metal or to clean metal etc. ✓
- Spanners✓ – to loosen or tighten nuts or bolts✓
- Screwdrivers✓ – to loosen or tighten screws✓
- Hammers ✓ – to drive in nails or bend metal✓
- Workshop press✓ – to press out bearings or bushes✓ (5 × 2) (10)

1.2
1.2.1	D
1.2.2	A
1.2.3	C
1.2.4	B
1.2.5	E
1.2.6	J
1.2.7	I
1.2.8	G
1.2.9	F
1.2.10	H

(10 × 1) (10)
[20]

QUESTION 2

2.1
2.1.1	Internal
2.1.2	Four
2.1.3	Two
2.1.4	Cylinder
2.1.5	Torque
2.1.6	Intake
2.1.7	Exhaust
2.1.8	Compression
2.1.9	Power
2.1.10	Chemical

(10 × 1) (10)

2.2 2.2.1
A – Driven gear (or driver gear)
B – Outlet (Not inlet, look at arrows)
C – Inlet (Not outlet, look at arrows)
D – Pump casing or outer casing
E – Driver gear (or driven gear) (5)

2.2.2
- Gear oil pump✓
- The gear oil pump circulates engine oil from the sump to all engine components under pressure.✓✓ (3)

2.3 2.3.1 Cartridge oil filter (not only oil-filter)
2.3.2 Oil pressure switch
23.3 Screw oil filter or canister oil filter (not only oil filter)
2.3.4 Thermostat
2.3.5 Fluid clutch cooling fan (not only cooling fan or fan)
2.3.6 Radiator cap (not only cap)
2.3.7 Water pump (not only pump)

(7 × 1) (7)
[25]

QUESTION 3

3.1 3.1.1 D
3.1.2 C
3.1.3 E
3.1.4 B
3.1.5 A

(5 × 1) (5)

3.2 3.2.1 A – Leg
B – Face
C – Toe
D – Throat
E – Root

(5 × 1) (5)

3.2.2 T-joint (not fillet weld) (1)

3.3
- The metal heats up when welded
- The metal expands
- The metal cools off after welding
- The metal contracts leaving internal stress (4)

[15]

QUESTION 4

4.1 4.1.1 D
4.1.2 A
4.1.3 C
4.1.4 B
4.1.5 F

(5 × 1) (5)

4.2 4.2.1 True
4.2.2 True
4.2.3 False
4.2.4 False
4.2.5 False

(5 × 1) (5)
[10]

QUESTION 5

5.1 5.1.1

$$I = \frac{V}{R}$$

$$I = \frac{230✓}{100✓}$$

$$I = 2{,}3\ A✓$$

5.1.2

$$R = \frac{V}{I}$$

$$R = \frac{220✓}{30✓}$$

$$R = 7{,}33\ Ohm✓$$

(2 × 3) (6)

5.2
- Energy source (battery)
- Conductors (wire)
- Control device (switch)
- Load (light, motor etc)

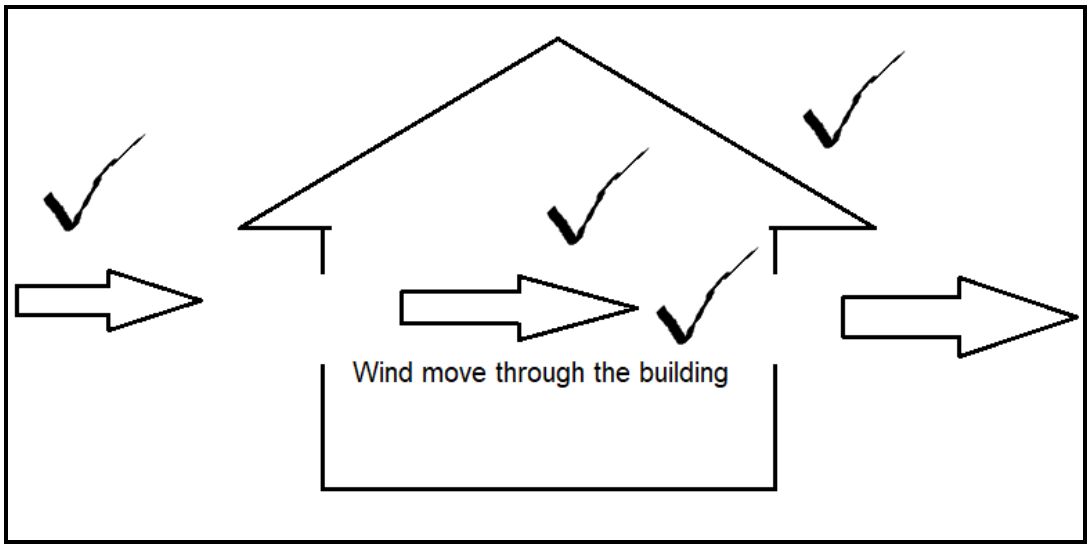
(Any 3 × 1) (3)

5.3 The current flow inside the conductor (1)

[10]

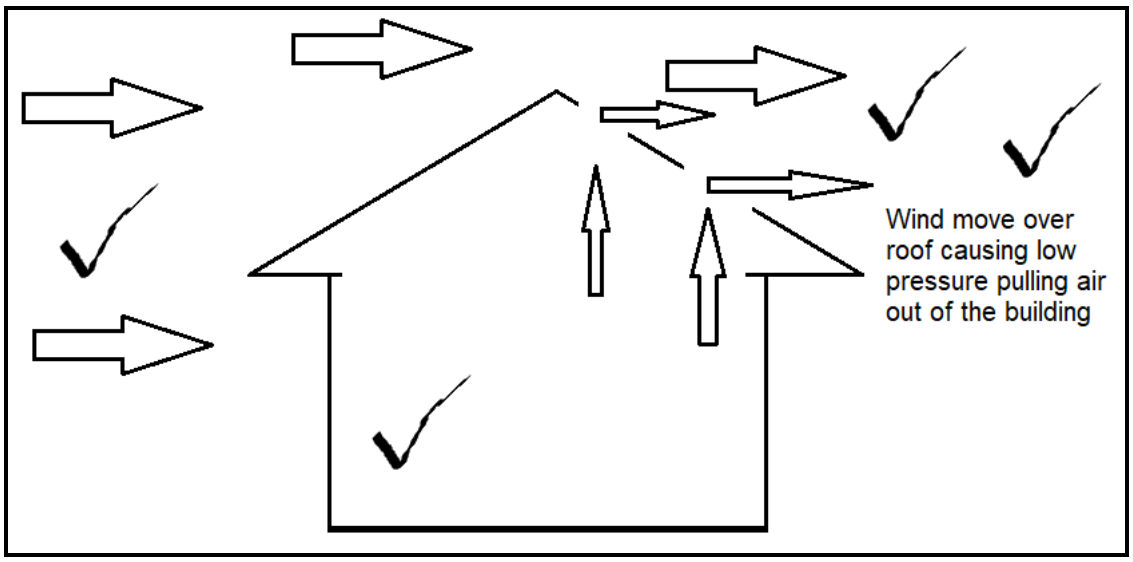
QUESTION 6

6.1 Cross flow✓ (1 mark for term), (3 marks for picture), (1 mark for explanation)



(5)

Pressure differential✓ (1 mark for term), (3 marks for picture), (1 mark for explanation)



(5)

6.2

6.2.1	A
6.2.2	C
6.2.3	E
6.2.4	I
6.2.5	G

(5 × 1) (5)

6.3

6.3.1	True
6.3.2	True
6.3.3	False
6.3.4	True
6.3.5	True

(5 × 1) (5)
[20]

TOTAL: 100

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