



higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE

JUNE EXAMINATION

MAINTENANCE MANAGEMENT: FARMING N4

7 JUNE 2013

This marking guideline consists of 7 pages.

SECTION A: MOTOR MECHANICS**QUESTION 1: GENERAL**

1.1	D		
1.2	A		
1.3	C		
1.4	C		
1.5	D		
1.6	D		
1.7	D		
1.8	C		
1.9	A		
1.10	D	(10 × 1)	(10)
1.2	1.2.1 I		
	1.2.2 J		
	1.2.3 G		
	1.2.4 H		
	1.2.5 E		
	1.2.6 F		
	1.2.7 C		
	1.2.8 D		
	1.2.9 A		
	1.2.10 B	(10 × 1)	(10)
			[20]

QUESTION 2: ENGINE OPERATION

- | | | |
|-----|--|-------------|
| 2.1 | TDC and BDC | (2) |
| 2.2 | Inlet (induction), compression, power, exhaust | (4) |
| 2.3 | 2.3.1 Petrol engine | (1) |
| | 2.3.2 Petrol engine | (1) |
| | 2.3.3 Diesel engine | (1) |
| | 2.3.4 Diesel engine | (1) |
| | | [10] |

QUESTION 3: COOLING

- | | | |
|-----|-----------------------|-------------|
| 3.1 | B | (1) |
| 3.2 | B | (1) |
| 3.3 | C | (1) |
| 3.4 | B | (1) |
| 3.5 | B | (1) |
| 3.6 | A Pressure cap or cap | (1) |
| | B Radiator | (1) |
| | C Cooling fan | (1) |
| | D Water pump | (1) |
| | E Thermostat | (1) |
| | | [10] |

QUESTION 4: LUBRICATION

- | | |
|-----|--------------------|
| 4.1 | Gear type |
| | Rotary type |
| | Internal gear type |
| | Sliding vane-type |
| | Plunjer-type |

(Any 2 × 1) (2)
Please turn over

- 4.2 It pumps oil under pressure through the engine. (2)
- 4.3 A Camshaft (1)
- B Camshaft gear (1)
- C Oil pump (1)
- 4.4 A To oil sump (1)
- B Ball valve (1)
- C Pressure-relief spring (1)
- [10]

TOTAL SECTION A: 50

SECTION B: BUILDING, WELDING AND ELECTRICAL POWER TOOLS

QUESTION 5: GENERAL

- 5.1 5.1.1 C (1)
- 5.1.2 D (1)
- 5.1.3 A (1)
- 5.1.4 B (1)
- 5.2 Wet soils
- Poor building-carrying capacity
- Swelling grounds
- Treacherous ground layers
- Sink holes (Any 3 × 1) (3)
- 5.3 Wear safety goggles.
- Make sure the electrical cable and plug is in good condition.
- The cutting or grinding disc must be in a good condition.
- Safety guards must be in place.
- Keep the electrical cable away from the working area. (Any 3 × 1) (3)

- 5.4 Gap between the work piece rest and the stone must not be more than 3 mm. (1)
- The work-piece rest must be very tight. (1)
- 5.5 To prevent excessive loading on the electrical motor as to prevent damaging the electrical motor (1)
- To prevent the breaking of the grinding/cutting disc and to prevent injuries (1)
- 5.6 5.6.1 Alternating
- 5.6.2 Direct
- 5.6.3 Direct
- 5.6.4 Alternating (4 × 1) (4)
- 5.7 Parts are identical
- Assembly time is less
- Worker can do the work alone
- Reduce fit and measure time
- Unschool workers can be used
- Jigs can be reused and stored
- Reduce warpage
- Reduce manufacturing cost (Any 2 × 1) (2)
- [20]

QUESTION 6: ELECTRICAL POWER TOOLS

- 6.1 6.1.1 C
- 6.1.2 D
- 6.1.3 B
- 6.1.4 A (4 × 1) (4)

- 6.2 Put a round object through the centre hole of the wheel. (1)
- Keep the wheel in the air with the object in the hole. (1)
- Gently tap the wheel with a non-metal object. (1)
- A high-pitched tone indicates the grinding wheel is not broken. (1)
- A low-pitched (dull) tone indicates the grinding wheel is broken. (1)
- 6.3 Sleeve (1)
- [10]**

QUESTION 7: SHIELDED-METAL ARC WELDING

- 7.1 7.1.1 C (1)
- 7.1.2 E (1)
- 7.1.3 D (1)
- 7.1.4 B (1)
- 7.1.5 A (1)
- 7.2 Undercut
- Porosity
- Slag inclusions
- Spatter
- Warping, bending (Any 4 × 1) (4)
- 7.3 Co₂ (carbon dioxide) (1)
- [10]**

QUESTION 8: BUILDING

- 8.1 = 75 × 100 = 7 500 mm
= 7 500 / 1 000 = 7,5 m (2)
- 8.2 Jointing is when the joints are being finished off by pressing the mortar into the joints. Jointing is normally done with external walls that are not to be plastered, face bricks. (4)

8.3	8.3.1	B	(1)
	8.3.2	C	(1)
	8.3.3	D	(1)
	8.3.4	A	(1)
			[10]

TOTAL SECTION B: 50

GRAND TOTAL: 100