higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE (VOCATIONAL)

PLANT AND EQUIPMENT
NQF LEVEL 2

XX February 2020

This marking guideline consists of 5 pages.

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QUESTION 1: INTRODUCTION TO PLANT AND MACHINERY

1.1 domesticate
1.2 3300 BCE
1.3 smelt
1.4 Fertile Crescent
1.5 dagger blades

(5 × 1) **[5]**

QUESTION 2: LEGISLATION AND SAFETY REGULATIONS

2.1 2.1.1 Unsafe working conditions like floors that are slippery, greasy and wet or jagged, rough and broken✓ may cause workers to slip, trip or stumble.✓

2.1.2 Physical hazards include gears without guards on machinery which can catch clothes or hands,✓ no rail guards around deep holes, heavy items that hang from a beam in an unsafe manner and exposed electrical cables.✓

2.1.3 Very low temperatures can make workers' hands numb.✓ Very high temperatures can cause discomfort, loss of water through sweating and makes it difficult to concentrate on the job.✓

2.1.4 Poor or insufficient lighting is dangerous because it prevents workers from seeing what they are doing✓ and can lead to accidents.✓

2.1.5 Unsafe or insufficient ventilation means workers do not get enough fresh air✓ and if workers breath in air with too little oxygen they become tired.✓

(Any relevant 5 × 2) (10)

2.2
- Terms of reference
- Procedures
- Findings
- Conclusions
- Recommendations (5)

[15]

QUESTION 3: FIRST AID

3.1
3.1.1 False
3.1.2 True
3.1.3 False
3.1.4 True

(4 × 1) (4)

3.2
- Hazards
- Hello
- Help

(3)

3.3
- Ambulance services
- Firefighters
- Hospital emergency departments
- Ambulance officers
- Paramedics
- South African Police Service

(Any 5 × 1) (5)

3.4
- What is your name?
- Do you know what day it is?
- Do you know where you are?

(3)
[15]

QUESTION 4: HAND TOOLS

4.1
- General tools
- Carpentry tools
- Building tools
- Plumbing tools
- Plastering tools
- Tiling tools
- Metalwork tools
- Glazing tools
- Mechanical tools
- Electrical tools

(Any 6 × 1) (6)

4.2
4.2.1 Metalwork tools
4.2.2 Plastering tools
4.2.3 General tools
4.2.4 General tools
4.2.5 Building tools
4.2.6 Glazing tools

(6 × 1) (6)

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4.3 For drilling precision holes in mild steel, high-speed steel drill bits,✓ that are properly sharpened, must be used.✓ Use a centre punch to mark✓ the place where the hole should be. This will allow the drill bit initial grip.✓ Adjust the speed of the drill✓ and do not push too hard.✓ Allow the drill and the drill bit to do the work.✓ (Any relevant 7 × 1) (7)

4.4 Put a little oil on the sharpening stone.✓ Gently slide the blade across the oil. This will spread the oil giving you a feel for the angle of the blade.✓ Lift the blade by 5°.✓ Put slight pressure on the blade and move it up and down across the length of the stone.✓ Keep the pressure on the blade the same all the time.✓ Check the blade every now and again to see if a shiny new piece of metal is showing.✓ Check if it is sharp by running a hand down the back of the blade.✓ If a slight ridge appears you are nearly there.✓ Get rid of burr by placing the back of the blade flat on the oil stone.✓ Move it up and down a couple of times which will get rid of the burr and the blade or plane will now be sharp.✓ (Any relevant 10 × 1) (10)

4.5 High-speed steel (1)
[30]

QUESTION 5: LADDERS

5.1 5.1.1 A-frame stepladder (1)

5.1.2 A – Pail shelf
B – Step
C – Braces/Spreaders/Hinges (3)

5.1.3 No (1)

5.2
- Avoid stepping on the top two stepladder steps or the pail shelf.
- Avoid climbing on the cross bracing on the rear section of the stepladder.
- Avoid working near overhead obstacles or power lines.
- Avoid placing the stepladder on unstable bases such as barrels, truck beds, boxes and uneven ground.
- Avoid misjudging the distance between the lowest rung and the ground when descending the ladder. (Any relevant 5 × 1) (5)

[10]

QUESTION 6: TRESTLES, SCAFFOLDING AND MOBILE TOWERS

6.1
- Upright rib grip stairway alloy tower
- Upright rib grip U700 span tower
- Upright rib grip U1300 span alloy tower (3)

6.2 It is measured from the underside of the castor✓ up to the height of the toe board.✓ (Any relevant answer) (2)

6.3
- Made of steel that complies with BS970-1 or aluminium that complies with SANS 1304
- Stiles that provide a satisfactory grip for workers wearing gloves, for example a 48 mm diameter tube is not suitable for stiles
- Clear width between stiles of at least 310 mm
- Rungs that provide nonslip support for workers climbing the ladder
- Equal rung spacing not exceeding 333 mm centre to centre
- If used vertically, a continuous ladder designed specifically for use with the type of equipment on which it is fitted (Any relevant 6 × 1) (6)

6.4
- Basic supervisory skills
- Team leadership skills
- Communication skills
- Counselling for performance of team members
- Disciplinary methods and procedures
- Organisation of work for optimum productivity
- Sufficient knowledge of the OHS Act to ensure teamwork
- Final checking of work before submitting for inspection (Any relevant 8 × 1) (8)

6.5 6.5.1 Trestle working platforms rest on a pair of trestles.✓ It allows workers to stand on the platform when working on heights and required materials and tools can be stored on the platform.✓

6.5.2 Toe boards run around the edge of platforms of a scaffold✓ and prevent workers, tools and materials from falling off the platform.✓

6.5.3 Mobile towers are scaffolding erected on wheels✓ so that it can be moved easily from place to place.✓

(Any relevant 3 × 2) (6)

[25]

TOTAL: 100

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