



higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE (VOCATIONAL)

**MANUAL MANUFACTURING
NQF LEVEL 2**

29 February 2024

This marking guideline consists of 5 pages.

QUESTION 1

- 1.1 True
- 1.2 False
- 1.3 True
- 1.4 True
- 1.5 False
- 1.6 False
- 1.7 False
- 1.8 True
- 1.9 True
- 1.10 True

(10 × 1) **[10]****QUESTION 2**

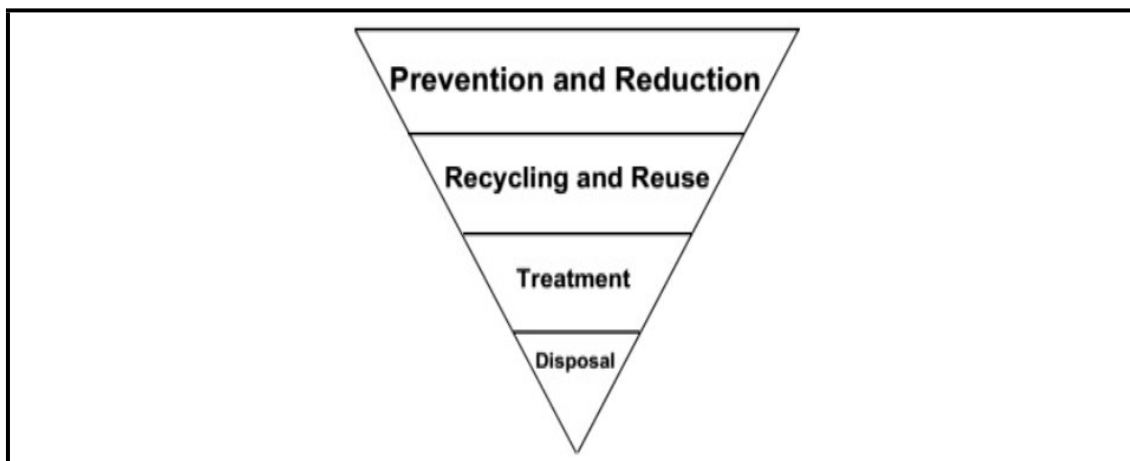
2.1 Safety, Health and Environment (1)

2.2 Although the burden of health and safety primarily falls on the employer, employees are not absolved of responsibility. ✓ They are expected to cooperate with their employers and colleagues to help ensure that everyone meet legal requirements – whoever enters the workshop is responsible. ✓ (2)

- 2.3
- Safety glasses
 - Hearing protection
 - Respirators
 - Work gloves
 - Work boots
- (5)

- 2.4
- Air pollution
 - Water pollution
 - Land pollution
 - Noise pollution
 - Light pollution
- (Any 3 × 1) (3)

2.5

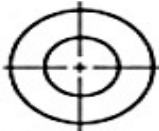
(4)
[15]

QUESTION 3

3.1 It gives a mental picture of what an object looks like. (1)

- 3.2
- Freehand drawing
 - Isometric drawing
 - Sectional drawing
 - Assembly drawing
 - Detail drawing
- (5)

3.3

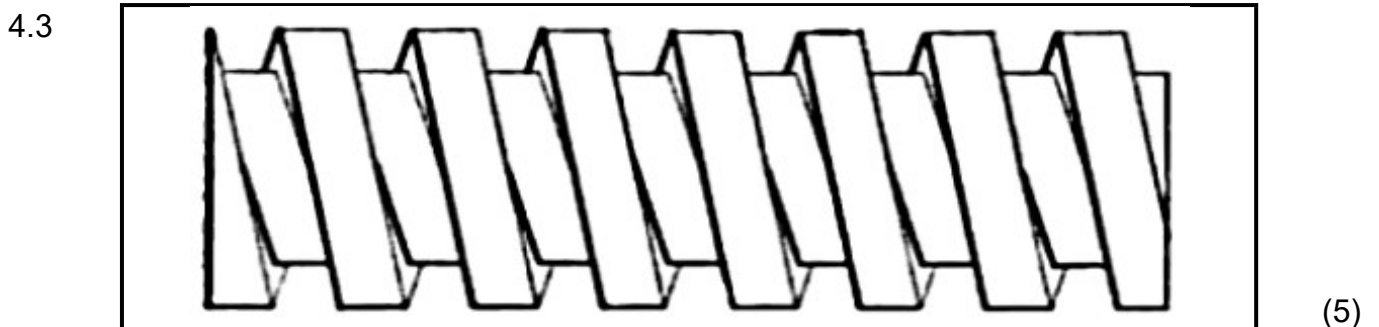
PROJECTIONS	SYMBOLS	
First-angle orthographic		
Third-angle orthographic		

(2 × 3) (6)

[12]**QUESTION 4**

- 4.1
- 4.1.1 12 mm
- 4.1.2 67 mm
- 4.1.3 137 mm
- (3 × 1) (3)

- 4.2
- Ball-peen hammer
 - Straight-peen hammer
 - Cross-peen hammer
- (3)



- 4.4
- 4.4.1 G-clamp (1)
- 4.4.2 To hold components in place while work is being done on the components (2)

- 4.4.3
- Fixed jaw
 - Loose jaw
 - Screw
 - Body
 - Handle
- (Any 4 × 1) (4)

- 4.5
- Use the right-sized spanner.
 - Do not use it as a hammer or lever.
 - Do not use a pipe to increase the lever of the spanner.
 - An open-ended spanner has weak jaws, so it should not be used on very tight nuts or bolts.
- (4)
[22]

QUESTION 5

- 5.1
- Step 1: Wear PPE.
- Step 2: Gather the necessary equipment needed before starting.
- Step 3: Clean the workpiece to be welded.
- Step 4: Align the two workpieces to the required angle.
- Step 5: Turn on the welder and adjust the setting guided by the type of material to be welded.
- Step 6: Tack-weld the workpieces.
- Step 7: Fill in the remaining areas with bead welds. (Any 5 × 1) (5)
- 5.2
- 5.2.1 It is used to connect the electrode holder to the welding machine.
- 5.2.2 It connects the workpiece to the welding machine. It is also called a return cable. (2 × 2) (4)
- 5.3
- It offers continuous eye protection from infrared radiation given off by red-hot metal even when not in the darkened mode.
 - A beginner does not have to master the electrode steady when dropping the helmet over his/her face before welding.
 - No need to raise and lower the helmet when performing a series of welds. (3 × 2) (6)
- 5.4
- Prevention against electric shock: Check electrical leads for damage.
 - Prevention against radiation: Welding helmets and full body cover
 - Scattering of hot particles or globules of metal parts: Leather protective wear
 - Flying pieces of slag chipped away from weld: Protective welding screens
 - Heat and fumes: Adequate ventilation
 - Arc rays that can seriously damage eyes: Welding helmets, welding screens
 - Ensure gas bottle regulators are set correctly. (Any 5 × 1) (5)

- 5.5
- Cost of soldering iron
 - Size of joint to be soldered
 - Heat required
 - Size of the soldering area

(4)
[24]

QUESTION 6

- 6.1 Housekeeping includes keeping work areas neat and orderly, ✓ maintaining halls and floors free from slip and trip hazards ✓ and removing waste materials (e.g. paper, cardboard) and other fire hazards from work areas. ✓ (3)

- 6.2
- 6.2.1 Caution
 - 6.2.2 Prohibition
 - 6.2.3 Mandatory
 - 6.2.4 Supplementary
- (4 × 1) (4)

- 6.3
- 6.3.1
 - Maintenance-free
 - Very lightweight
 - Low cost
 - Easy to machine
 - Withstands a lot of shock
 - Needs no lubricants
- (Any FIVE)

- 6.3.2
 - Eliminates condensation problems
 - Provides smooth surface
 - Nonmagnetic
 - Easy to handle
 - Lightweight
 - High friction resistance
- (Any FIVE)
(2 × 5) (10)
[17]

TOTAL: 100