



**higher education
& training**

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE (VOCATIONAL)

**ENGINEERING TECHNOLOGY
NQF LEVEL 2**

16 November 2023

This marking guideline consists of 5 pages.

QUESTION 1

1.1	1.1.1	B	(6 × 1)	(6)
	1.1.2	C		
	1.1.3	A		
	1.1.4	B		
	1.1.5	C		
	1.1.6	C		
1.2	1.2.1	False	(7 × 1)	(7)
	1.2.2	False		
	1.2.3	True		
	1.2.4	True		
	1.2.5	True		
	1.2.6	False		
	1.2.7	True		
1.3	1.3.1	G	(6 × 1)	(6)
	1.3.2	E		
	1.3.3	A		
	1.3.4	B		
	1.3.5	C		
	1.3.6	F		
				[19]

QUESTION 2

2.1	A: Frame B: Handle C: Fixed jaw D: Movable jaw E: Screw F: Collar	(6 × 1)	(6)
2.2	• Use the correct type and size of clamp for the work to be done. • Choose the correct number of clamps. • Place the workpieces together on a level surface and fix the clamps. • Do not let the jaws come into contact with delicate work surfaces. • Tighten the clamps carefully. • Check that the two pieces of metal have not separated or moved. • Only remove the clamps when you have completely finished the task.	(Any 3 × 2)	(6)

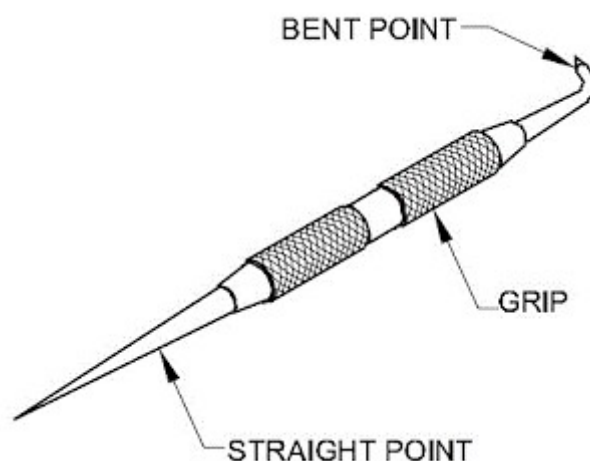
2.3

POWER TOOL	FUNCTION
• Pneumatic drill	• Drilling workpieces
• Pneumatic angle grinder	• Grinding metal surfaces
• Pneumatic impact wrench	• To remove and replace bolts and nuts
• Pneumatic descaler	• To remove scale from work surfaces

(4 × 2)

(8)

2.4



(3)

[23]**QUESTION 3**

- 3.1 3.1.1 A: Flat file
 B: Bench vice (2)
- 3.1.2 Filing ✓ a flat workpiece ✓ (2)
- 3.1.3 A file must always be used with a handle. (1)
- 3.2 • Store the Engineer's square flat, so that it stays flat
 • Do not damage the edges of the square when storing it
 • Wipe the square with an oily cloth to prevent rust (3)
- 3.3 Reamer (1)

- 3.4 3.4.1 If the pressure switch does not shut off the air compressor at the specified pressure setting, ✓ the safety valve will release the excess pressure, thus protecting the compressor. ✓
- 3.4.2 The pressure switch automatically starts and stops the motor ✓ when air tank pressure drops or reaches a specified pressure. ✓
- 3.4.3 The regulator controls ✓ the air pressure ✓ shown on the outlet pressure gauge. (3 × 2) (6)
- 3.5 • Check the lubricator oil level before using the impact wrench.
• Make sure the air supply is not contaminated.
• Inspect the air receiver for any leakages.
• Check that the pressure on the gauges is not more than that of the impact wrench.
• Open the drain valve to release any moisture.
• Keep the intake filter clean.
• Check the rubber hoses and fittings for damages or leaks. (Any 4 × 1) (4)
- 3.6 $^{\circ}\text{C} = \text{K} - 273,15$
 $= 313,5 - 273,15$ ✓
 $= 40,35$ ✓ $^{\circ}\text{C}$ ✓ (3)
- 3.7 3.7.1 Candela
 3.7.2 Ampere
 3.7.3 Mole (3 × 1) (3)
- [25]**

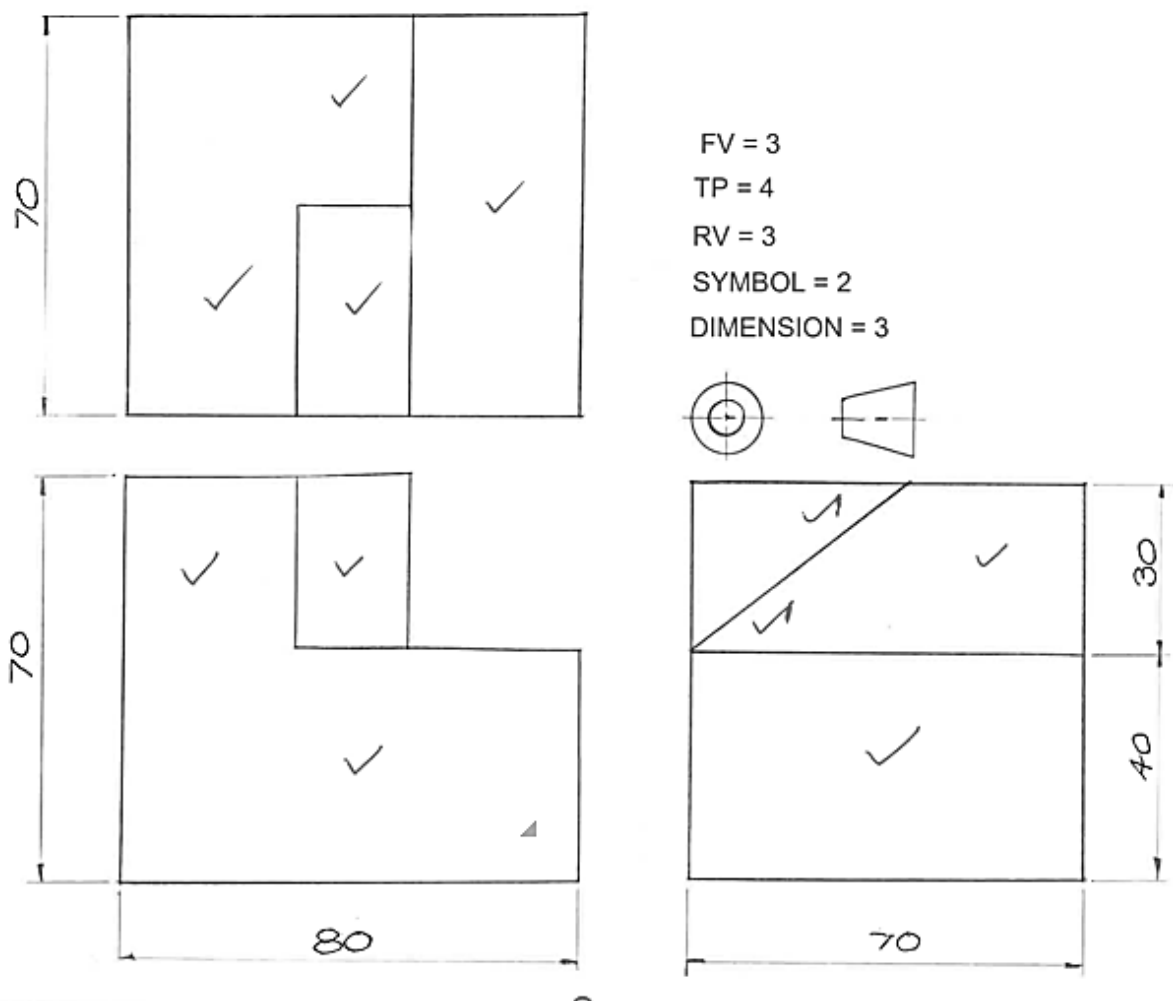
QUESTION 4

- 4.1 4.1.1 Used to join thin pieces of metal together
- 4.1.2 Used to smoothen various materials such as metal, plastic and wood or to sharpen or shape metals
- 4.1.3 Used to loosen or tighten screws
- 4.1.4 Used to measure the radius of an object (4 × 1) (4)
- 4.2 4.2.1 Measuring tape (1)
- 4.2.2 A: Case
 B: Lock
 C: Belt clip
 D: Blade
 E: Hook (5 × 1) (5)

- 4.3
- Always wipe the micrometer with a dry clean cloth before using it and also wipe the item to be measured.
 - Do not clean any part of the micrometer with a rough cloth.
 - When working with machines, never place the micrometer on top of the machine.
 - Apply the correct amount of pressure on the spindle when taking measurements.
 - Keep the micrometer clean and lightly oiled to prevent rust.
 - Always store the micrometer in its original casing to protect it from damages.

(Any 5 × 1) (5)

4.4 ✓ ✓ ✓
12,40 mm

(3)
[18]**QUESTION 5**

[15]

TOTAL: 100