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.

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QUESTION 1

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

[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)

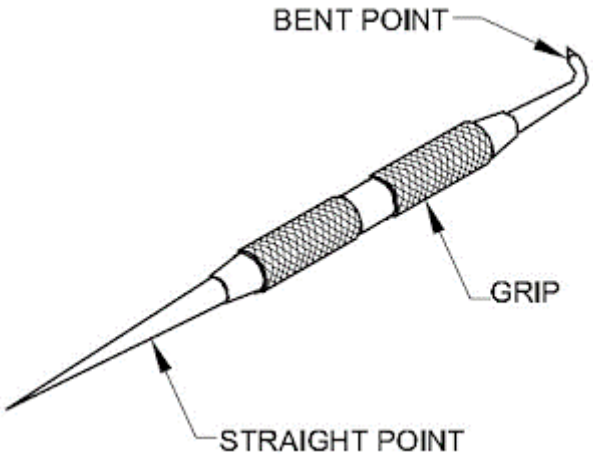
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2.3

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 °C = K – 273,15
= 313,5 – 273,15✓
= 40,35✓ °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.

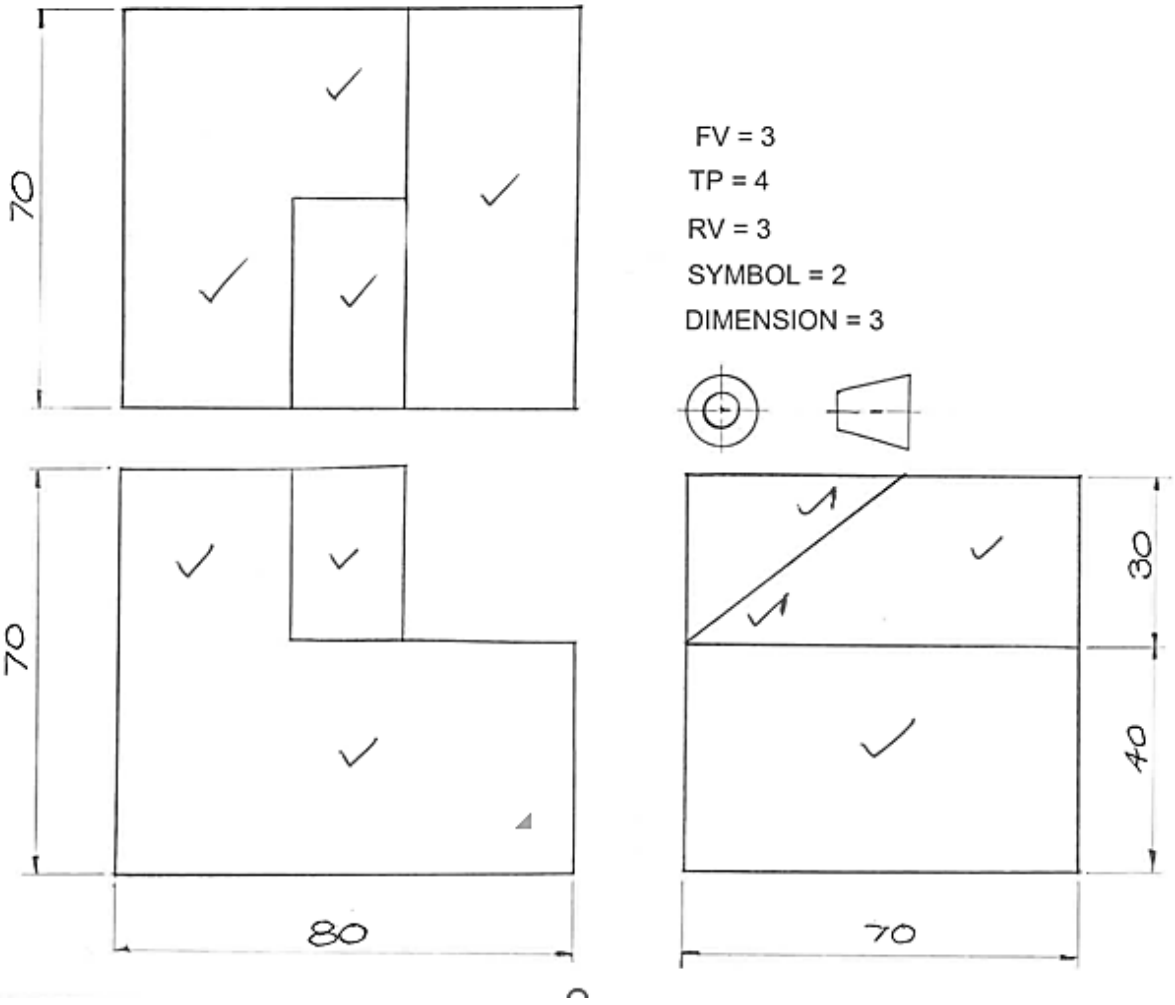
(Any 5 × 1) (5)

✓ ✓ ✓

4.4 12,40 mm (3)

[18]

QUESTION 5



[15]

TOTAL: 100

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