higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE (VOCATIONAL)

ENGINEERING TECHNOLOGY
NQF LEVEL 2

07 November 2022

This marking guideline consists of 6 pages.

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INSTRUCTIONS TO MARKERS

1. Mark all the questions.
2. Follow the answers according to the numbering system used in this question paper.
3. Use only a red pen.
4. Put your ticks and crosses neatly and legibly.

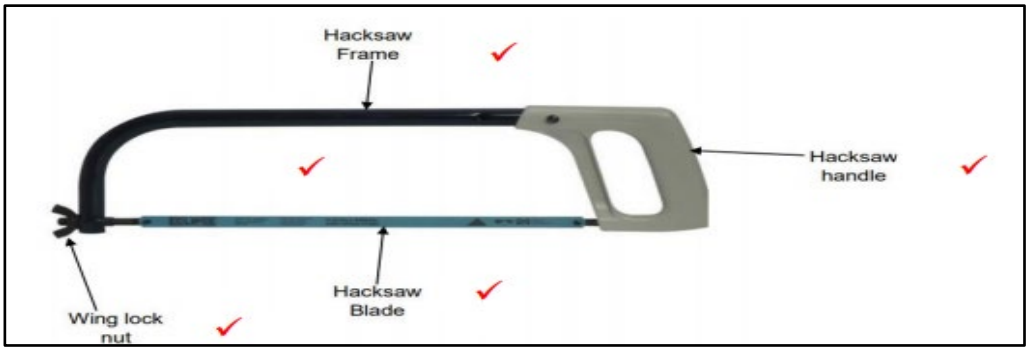
QUESTION 1

1.1	1.1.1	C		
	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	True		
	1.2.2	False		
	1.2.3	True		
	1.2.4	True		
	1.2.5	True		
	1.2.6	False		
	1.2.7	False		
			(7 × 1)	(7)
1.3	1.3.1	D		
	1.3.2	E		
	1.3.3	A		
	1.3.4	B		
	1.3.5	C		
	1.3.6	F		
	1.3.7	G		
			(7 × 1)	(7)
				[20]

QUESTION 2

2.1	2.1.1	Ball peen hammer✓ for driving chisel striking centre punch. ✓	
	2.1.2	Long-nosed pliers✓ used to hold small work pieces also in confined spaces.✓	
	2.1.3	Centre punch✓ for marking the centres of holes that are to be drilled.✓	
	2.1.4	Allen key✓ is used to tighten or loosen screws or bolts with a hexagon slot head.✓	
	2.1.5	Portable drill✓ for drilling operations holes of different sizes.✓	
		(5 × 2)	(10)

2.2



(Labelling × 4 marks, neat sketch × 1mark) (5)

2.3
- Surface gauge (Vernier height gauge)
- Scriber
- Angle plate
- Divider
- Trammel
- Centre punch (prick punch)
- Blue marking off spray
- V-block

(Any 5 × 1) (5)

2.4 2.4.1 Spanner
2.4.2 Torque wrench
2.4.3 Pedestal drill or drill press

(3 × 1) (3)
[23]

QUESTION 3

3.1
- Keep the scriber points sharp.
- Protect the point by placing a guard made from cardboard or rubber.
- Wipe the scriber with an oily cloth to prevent rust.
- Do not store other tools on top of a scriber.
- A scriber must be stored where its sharp point cannot cause injuries.

(5)

3.2 3.2.1 Portable hand drilling machine. (1)

3.2.2
- Do not carry the machine by its cord.
- Use the correct drill for the job.
- Use eye protection.
- Do not add too much pressure when drilling.
- Drill at the correct speed.
- Use the correct drill bit.
- Before you use it, check for damage to the machine.
- Do not carry the machine with your finger on the on/off switch.
- Do not use the machine if any part of it is damaged or defective.
- If the machine sounds rough, switch it off immediately.

(Any 2 × 1) (2)

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3.2.3 SPANNERS/Names of any type of spanner (open) (1)

3.2.4
- Check the electrical plug for damage and ensure that the cable connection is in order.
- Examine the carbon brushes.
- Check if the casting or body (casing) has cracks.
- Clean or blow out dust on the machine.
- It should be lubricated and stored properly.
- Roll up the cord in the correct way. (Any 3 × 1) (3)

3.3
- Have different lengths of measuring tapes available.
- Do not unroll the entire measuring tape to measure just a few millimetres.
- If possible, ask an assistant to hold the tape measure on one side.
- Check to see whether the slotted holes are not clogged with dust or rust.
- Be careful when actuating the reel-in button. Always reel in the measuring tape in steps and keep your hands away from the tape. (Any 4 × 1) (4)

3.4 $W = m \times g$

$= 68 \times 9.81$✓

$= 667.08N$✓✓ (3)

3.5 No,✓ it is not safe to operate a bench grinder without wheel guards.✓ (2)

3.6 3.6.1 Seconds
3.6.2 Millimetre
(2 × 1) (2)
[22]

QUESTION 4

4.1 4.1.1 To measure and transfer the outside dimensions of shafts to a steel ruler.

4.1.2 For taking accurate measurements and for drawing lines.

4.1.3 To align the edges of a pulley measure against corners.

4.1.4 A quick and accurate way of checking inside measurements.

4.1.5 To identify the pitch of a thread in a bolt.

4.1.6 To measure small gaps or clearances, e.g., the valve clearance on an engine.

4.1.7 To measure electrical voltage, current and resistance.

4.1.8 An instrument to check whether an angle is 90° or whether a workpiece is flat and square.

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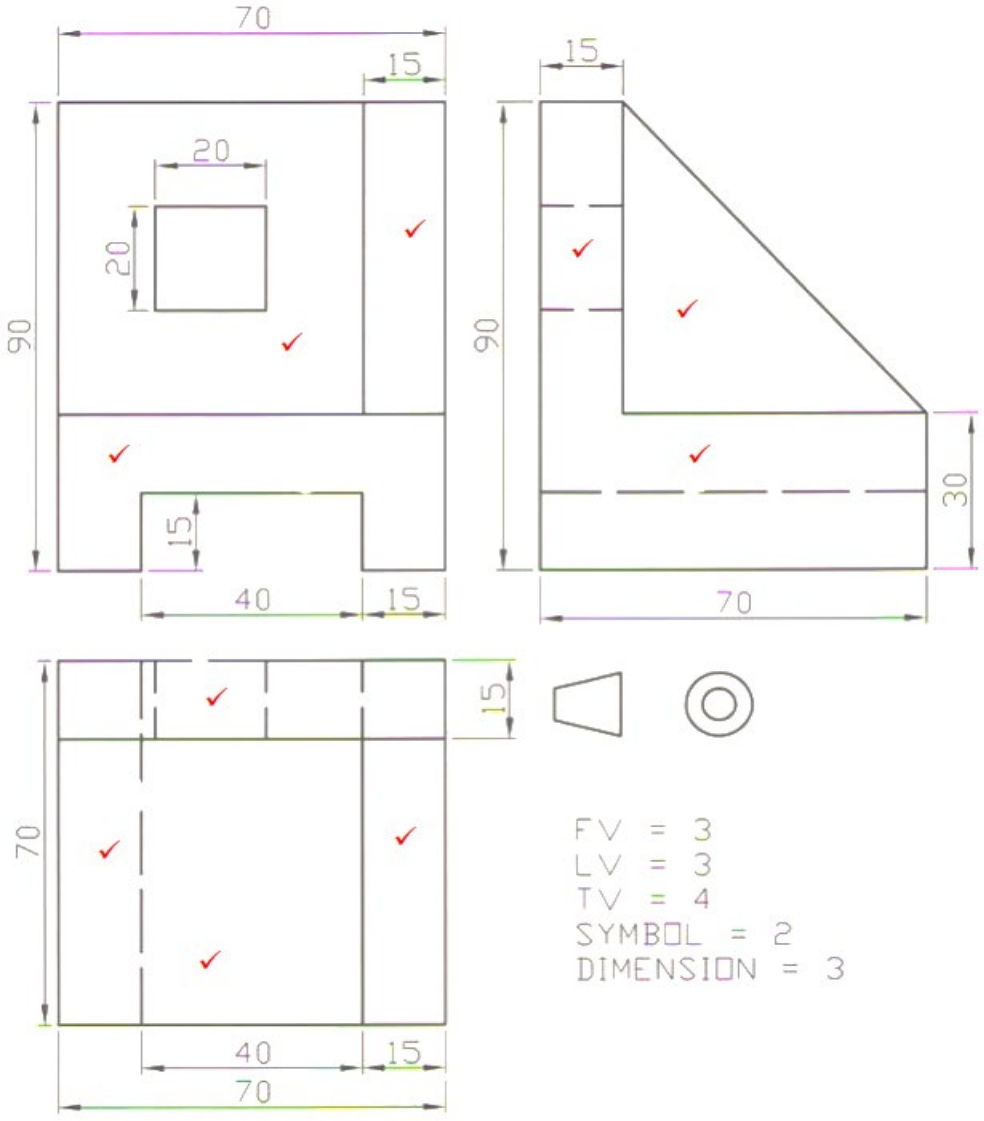
4.1.9 Made of a thin (metal, cloth or plastic) strip to measure distances.
(9 × 1) (9)

4.2 A – Head
B – Sleeve
C – Spindle
D – Column
E – Table
F – Base (6)

4.3 The drilling press (1)

4.4 9,88 mm (3)
[19]

QUESTION 5



[15]

TOTAL: 100