higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE (VOCATIONAL)

DRAWING OFFICE PROCEDURES AND TECHNIQUES

(First paper)

NQF LEVEL 2

XX February 2020

This marking guideline consists of 7 pages.

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QUESTION 1

1.1
- Patent drawings
- Reference drawings
- Advertising drawings
- Technical literature drawings
- Maintenance and repair drawings (Any 2 × 1) (2)

1.2 The design method is a way to find a solution to a problem by drawing possible solutions✓ without considering practical✓ or cost✓ implications. It unlocks creative energies✓ when the ideas are sketched. (4)

1.3
- Aeronautical engineering
- Industrial engineering
- Marine engineering
- Structural engineering
- Civil engineering
- Electrical engineering
- Chemical engineering
- Electronic engineering
- Mechanical engineering
- Automotive engineering
- Mining engineering (Any 5 × 2) (10)

1.4 1984 (1)

1.5 1.5.1 safeguard
1.5.2 register
(2 × 1) (2)
[19]

QUESTION 2: DRAWING OFFICE STANDARDS AND SPECIFICATIONS

2.1 2.1.1
- Constructing geometric figures
- Drawing arcs and circles
- Marking off dimensions (Any ONE)

2.1.2
- Transferring distances
- Dividing a line in equal parts (Any ONE)
(2 × 1) (2)

2.2
- Protect all the edges from damage.
- Be careful not to prick holes in the ruler with sharp points of the divider or compass when measuring or marking off.
- Wipe the ruler with a clean, soft cloth before use.
- Keep the rubber dust from the eraser away from a plastic ruler because rubber is corrosive and reacts with the plastic. (Any 3 × 1) (3)

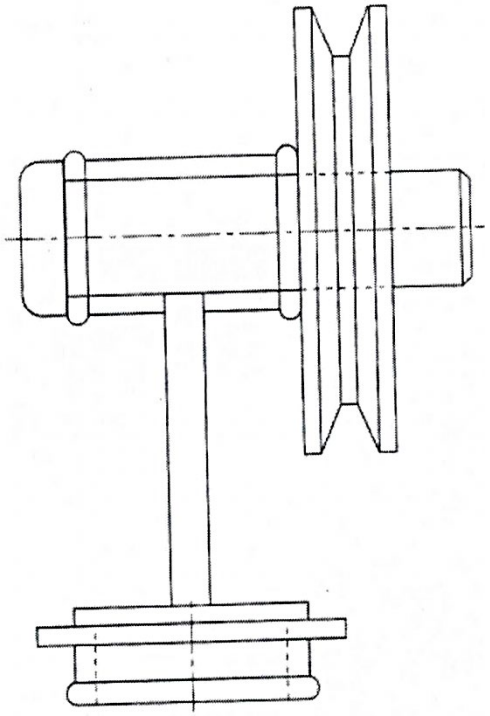
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2.3 legend (1)

2.4 2.4.1 7
2.4.2 5
2.4.3 3,5
2.4.4 2,5

(4 × 1) (4)

2.5



(8)
[18]

QUESTION 3: DRAWING OFFICE LAYOUT AND EQUIPMENT

3.1
- It will prevent data corruption in the event of power dips or power surges.
- It will keep the file server and workstations running long enough to perform an orderly shutdown in case of power failures.
- It ensures clean power where all the computer equipment is connected to one circuit (only reserved for computer equipment). (3 × 2) (6)

3.2
- Mathematics
- Theory of machines
- Fluid mechanics
- Thermodynamics
- Materials science
- Construction methods
- Electronics
- Ergonomics
- Aesthetics
- Engineering science
- Engineering design
- Architecture
- Strength of materials
- Electrical engineering
- Mechanical engineering
- Civil engineering
- Marine engineering
- Electronic engineering
- Chemical engineering (Any 4 × 1) (4)

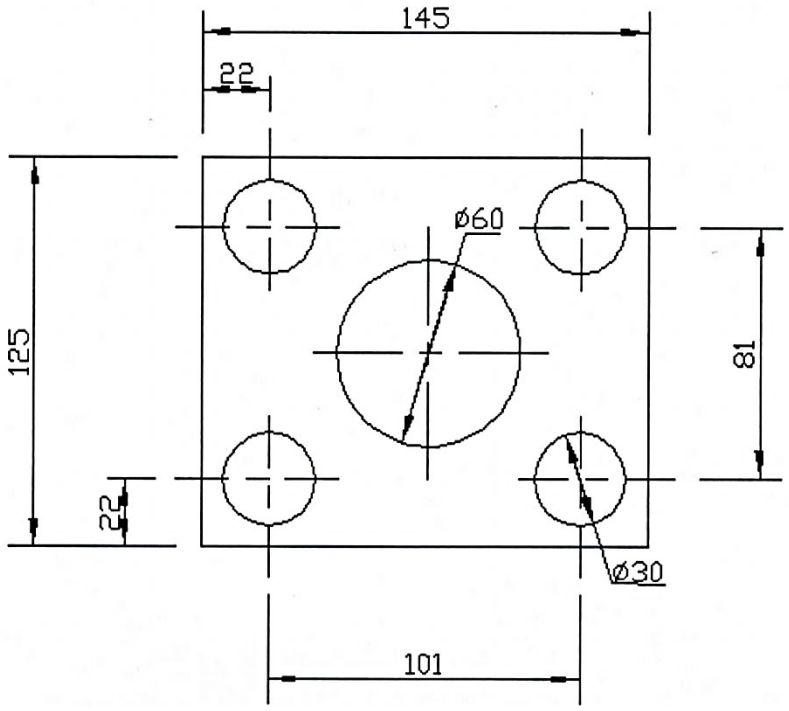
3.3
- Prepares detailed drawings of individual components, parts or sections
- Inserts production guidance and general information on drawings, including items such as tolerances and surface finishes
- Calculates detail dimensions
- Prepares parts lists
- Arranges for completed drawings to be checked, traced and reproduced for use as working drawings (Any 4 × 1) (4)

3.4
- For whom is the report intended?
- What is to be reported on and why?
- Which type of report is required?
- Which format should be used?
- When is the deadline?
- Are conclusions and recommendations expected? (Any 4 × 1) (4)

[18]

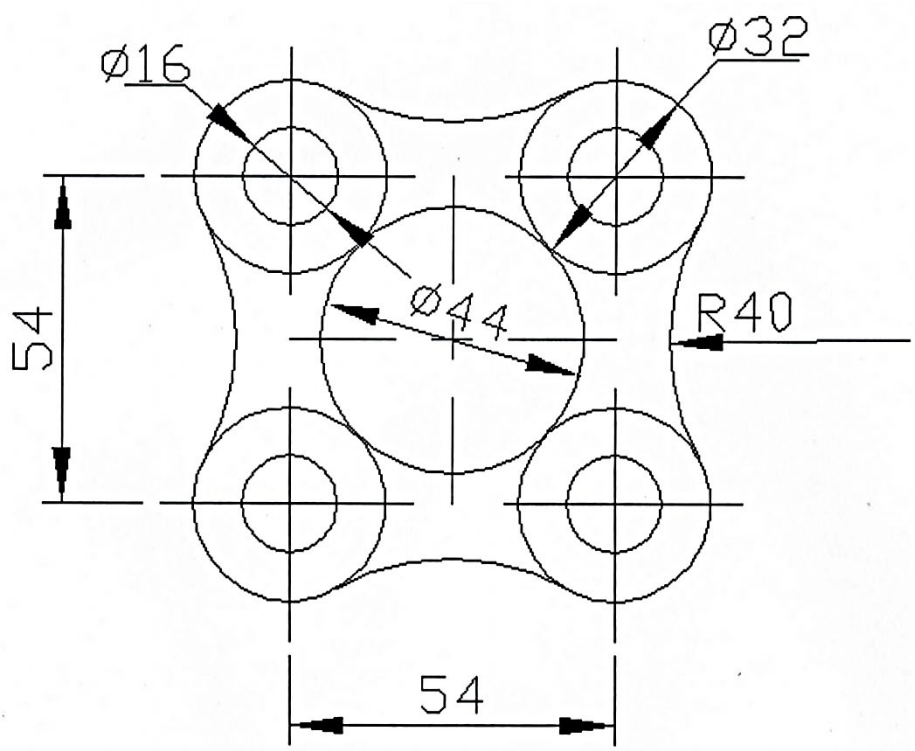
QUESTION 4: PRINCIPLES OF VISUALISATION AND PERCEPTION

4.1



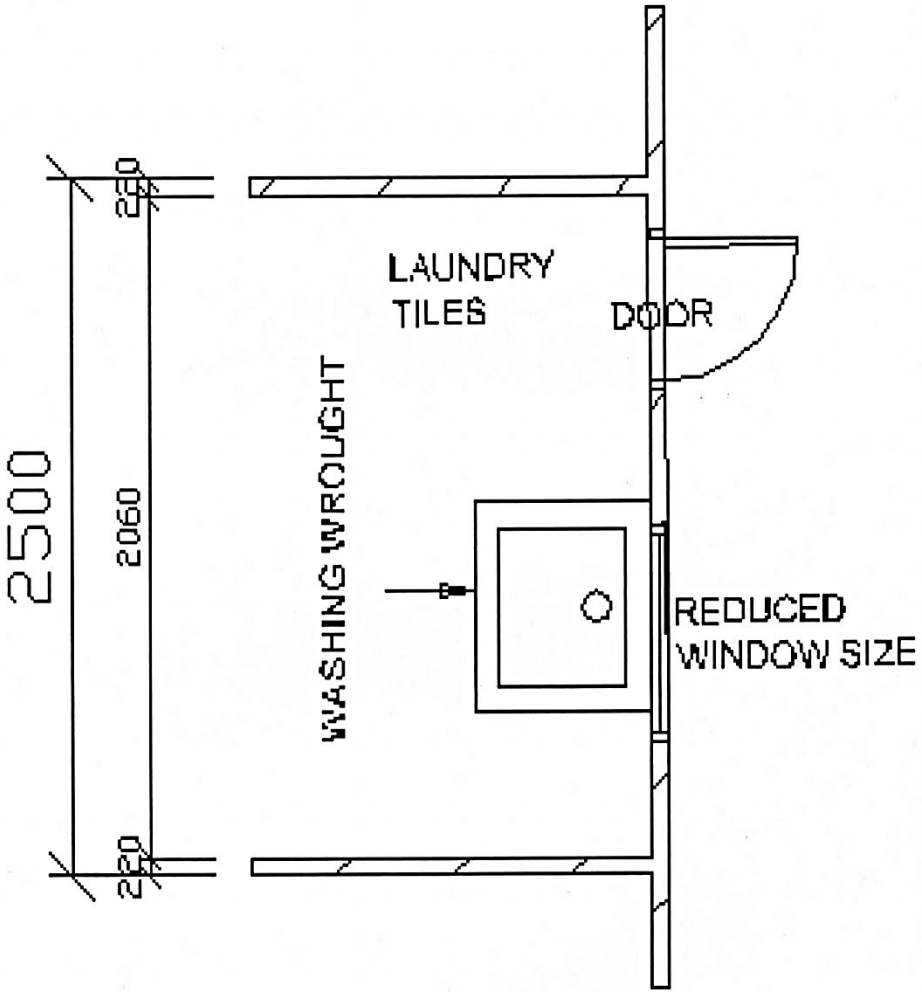
(3 for labelling + 3 for drawing) (6)

4.2



(8)

4.3



(4 for redesigned laundry plan + 2 for labelling + 2 for drawing) (8)

4.4
- A client who requires a specific product is often not familiar with specific details and needs the experience and ideas of a specialist to clarify initial ideas.
- The product or design idea is unworkable from either a cost viewpoint or because of incorrect materials.
- Specifications are incorrect or not in accordance with national standards (SANS) or codes of practice.
- Written instructions are unclear and open to misinterpretation.
- Sketches and design requirements are poor or unclear. (Any 2 × 1) (2)

[24]

QUESTION 5: UNITS OF MEASUREMENT

5.1	Seconds			(1)
5.2	273 kelvin			(1)
5.3	5.3.1	60		
	5.3.2	60		
			(2 × 1)	(2)
5.4	Ampere			(1)
5.5	Pascal			(1)
5.6	135×10^3 kPa			(1)
5.7	5.7.1	23° 59'		
	5.7.2	155° 0'		
	5.7.3	148° 50'		
			(3 × 2)	(6)
5.8	5.8.1	8×10^{-4}		
	5.8.2	49×10^{-7}		
	5.8.3	691×10^{-10}		
	5.8.4	9×10^{-16}		
			(4 × 2)	(8)
				[21]
			TOTAL:	**100**

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