higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

**NATIONAL CERTIFICATE (VOCATIONAL)**

# DRAWING OFFICE PROCEDURES AND TECHNIQUES

(First paper)
**NQF LEVEL 3**

(12050713)

**27 November 2023 (X-paper)**
**09:00–12:00**

**This question paper consists of 5 pages.**

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# DEPARTMENT OF HIGHER EDUCATION AND TRAINING
# REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE (VOCATIONAL)
DRAWING OFFICE PROCEDURES AND TECHNIQUES
NQF LEVEL 3
TIME: 3 HOURS
MARKS: 100

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**INSTRUCTIONS AND INFORMATION**

1. Answer all the questions.
2. Read all the questions carefully.
3. Number the answers according to the numbering system used in this question paper.
4. Start each section on a new page.
5. Use only a black or a blue pen.
6. Produce freehand drawings, sketches and diagrams neatly, reasonably large, in proportion, fully labelled and in pencil.
7. Rule off across the page on completion of each question.
8. Clearly cross out all work that you do not want to be marked.
9. All abbreviations and symbols must comply with the latest National Building Regulations and all relevant SANS (SABS) codes.
10. Write neatly and legibly.

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## QUESTION 1: PLANNING AND DESIGN SPECIFICATIONS

1.1 Choose the word between brackets that best fits the sentence by writing only the answer next to the question number (1.1) in the ANSWER BOOK.

Scientific measurement and collection of data relating to human physical characteristics. (ergonomics/anthropometrics) (2)

1.2 Make a labelled freehand drawing showing any FIVE mean dimensions of the front view of an adult male in good proportion. (7)

1.3 Indicate whether the following statement are TRUE or FALSE by writing only 'True' or 'False' next to the question number (1.3.1–1.3.2) in the ANSWER BOOK.

1.3.1 Generally speaking, the recommended angle for inclined ladders is 50 to 70 degrees.

1.3.2 A zigzag ramp which goes up a long bank needs to be almost level as it bends, otherwise the gradient on the inside of the bends will be very steep.

(2 × 1) (2)

1.4 List FOUR terms in the origins of anthropometry. (4)

1.5 What do each of the following words mean? Write only the answer next to the question number (1.5.1–1.5.5) in the ANSWER BOOK.

1.5.1 Mean

1.5.2 Oblique

1.5.3 Perimeter

1.5.4 Scale

1.5.5 Depth

(5 × 2) (10)
**[25]**

## QUESTION 2: DRAWING OFFICE ORGANISATION

2.1 Indicate whether the following statement are TRUE or FALSE by writing only 'True' or 'False' next to the question number (2.1.1–2.1.2) in the ANSWER BOOK.

2.1.1 Different companies have different types of organisational structures. This is usually determined by the management style of the company, the nature of the work they do and the size of the organisation.

2.1.2 In some drawing offices one organisational structure may work better than it would in another organisation, so they would use a different structure.

(2 × 1) (2)

2.2 List any TWO classifications of draughtspersons in a drawing office organisation. (2)

2.3 List TWO sections in which the organisation of any drawing office can be divided into. (2)

2.4 List TWO key functions and issues that support the second aspect of the organisational structure. (4)

2.5 Make a labelled freehand drawing of a drawing office indicating the flat structure of the drawing office for an engineering, manufacturing and production business unit in good proportion. (10)

**[20]**

## QUESTION 3: HEALTH AND SAFETY FOR A DRAUGHTSPERSON

3.1 What is hypothermia? (4)

3.2 List FOUR services offered to clients by the NOSA. (4)

3.3 Explain the relevance of safety in the workplace. (3)

3.4 Name FOUR duties of employees regarding health and safety practices in the workplace. (8)

3.5 Name THREE personal protection equipment (PPE) items designed to protect employees from injury in the workplace. (3)

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3.6 Draw freehand drawings of the following safety hazard signs in good proportion.

3.6.1 Electric isolator switch

3.6.2 Staffed first aid station

3.6.3 Direction of emergency exit

3.6.4 Location of fire blanket

(4 × 2) (8)
**[30]**

## QUESTION 4: MEASURING INSTRUMENTS AND EQUIPMENT

4.1 Make a neat, labelled sketch of a depth micrometre, showing the sleeve, thimble, ratchet, datum line, crosspiece, 2 × length rods. (11)

4.2 Explain TWO functions of a depth micrometre. (5)

4.3 Explain the operating principles of a depth micrometre. (5)

4.4 Explain what one measures using a depth micrometre. (4)
**[25]**

**TOTAL: 100**

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