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)

2 December 2020 (Y-paper)
13:00–16:00

This question paper consists of 5 pages.

191Q1N2002

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TIME: 3 HOURS
MARKS: 100

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. Freehand drawings, sketches and/or diagrams must be neat, reasonably large, in proportion and done in pencil with labelling included as required.
5. Rule off across the page after each completed question.
6. Clearly cross out all work you do not want to be marked.
7. All the abbreviations and symbols must comply with the latest National Building Regulations and all relevant SANS (SABS) codes.
8. Use only a black or blue pen.
9. Write neatly and legibly.

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QUESTION 1: PLANNING AND DESIGN SPECIFICATIONS

1.1 Choose the correct option from those given in brackets in the following sentence and write only the answer next to the question number (1.1) in the ANSWER BOOK.

There are endless possibilities for the use of anthropometry in the design of (industrial, baking, beer-making) equipment. (2)

1.2 Make a freehand drawing in good proportion, to illustrate SIX of the mean dimensions of adult females (depth of head, upper body length, height, arm length, lower body length and leg length from foot to knee). The necessary dimensions must be shown. (8)

1.3 Indicate whether the following statements 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 Environmental ergonomics can reduce the chance of injury in the workplace.

1.3.2 The mean height for females is greater than the mean height for males.

(2 × 1) (2)

1.4 State THREE of the most common causes of backache. (3)

1.5 Name FOUR types of common standing worktops. (4)

1.6 Complete the sentences below by choosing an option from the following list. Write only the answer next to the question number (1.6.1–1.6.3) in the ANSWER BOOK.

doctors; disabled; mobility; doorways; corridors; canes; toilets; 100 mm; 180; 150; 1 000 mm; 900 mm

Proper consideration should be given to the provision of (1.6.1) … and washing facilities for (1.6.2) … people. Most wheelchairs require a space of 2,27 square metres to make a turn of (1.6.3) … degrees. (3 × 2) (6)

[25]

QUESTION 2: DRAWING OFFICE ORGANISATION

2.1 Indicate whether the following statements are TRUE or FALSE by writing only 'True' or 'False' next to the question number (2.1.1–2.1.4) in the ANSWER BOOK

2.1.1 When interviewing trained draughts persons for a vacant position, the question of their skills is usually not a problem. Skills are easily verified by their qualifications and references from previous employers.

2.1.2 In a small office it is possible for the office manager to know the details of all the various jobs being handled at any time, but in an office of large proportions this is no longer possible.

2.1.3 The aim of an interview for the position of a trainee in the drawing office should be to discover the initiative and attitude of the applicant.

2.1.4 While the knowledge and skills of a prospective employee are important, his/her personality and approach to the job are equally important.

(4 × 1) (4)

2.2 Make a freehand drawing in good proportion, titled 'Drawing office organisational flow chart'. Illustrate and name the different positions from the drawing office manager at the top down to the learner/trainee draughts persons. (8)

2.3 State FOUR of the administrative tasks that should be completed by a competent drawing office team. (4 × 2) (8)

[20]

QUESTION 3: HEALTH AND SAFETY FOR DRAUGHTSPERSONS

3.1 What does the acronym NOSA stand for? (1)

3.2 Colour-coding is used as a safety feature for certain components.

Name the colour that indicates each of the following components next to the question number (3.2.1–3.2.10) in the ANSWER BOOK:

3.2.1 Air

3.2.2 Acids

3.2.3 Alkalis

3.2.4 Fire-fighting

3.2.5 Gases (other than air)

3.2.6 Oils

3.2.7 Steam

3.2.8 Water

3.2.9 Walkways

3.2.10 Danger zones

(10 × 1) (10)

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3.3 Name SIX items of personal protective equipment (PPE) (including protective clothing) that are designed to shield the worker from injury. (6 × 2) (12)

3.4 Make a freehand drawing in good proportion to illustrate each of the following safety hazard signs:

3.4.1 First-aid equipment

3.4.2 Location of the fire-fighting equipment

3.4.3 Informative sign showing the location of an emergency telephone

3.4.4 Proceeding beyond this point is prohibited

3.4.5 Safety clothing: eye protection must be worn

(5 × 2) (10)
[33]

QUESTION 4: MEASURING INSTRUMENTS AND EQUIPMENT

4.1 Make a freehand drawing in good proportion of a vernier height gauge and label the different parts. (12)

4.2 Complete the following sentences by writing the missing word or words next to the question number (4.2.1–4.2.5) in the ANSWER BOOK.

4.2.1 The beam of the vernier height gauge is marked and read in the same way as the standard … … (2)

4.2.3 A movable slide, or head, which contains the … scale, can slide up and down the beam and can be locked in position by a clamping screw. (1)

4.2.4 The … can be removed and replaced with an attachment for a clock gauge. (1)

4.3 State THREE uses of the vernier height gauge. (3 × 2) (6)
[22]

TOTAL: 100

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