higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE (VOCATIONAL)

ARCHITECTURAL GRAPHICS AND TECHNOLOGY

(Second Paper)

NQF LEVEL 4

(12050644)

13 March 2018 (Y-Paper)
13:00–16:00

Calculators may be used.

This question paper consists of 4 pages.

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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. ALL drawing work, including candidate information, must be done in pencil.
5. ALL drawing work must comply with the relevant SANS (SABS) recommended codes.
6. ALL abbreviations and symbols must comply with the latest National Building Regulations and ALL relevant SANS (SABS) codes.
7. A balanced layout is very important and candidates will be penalised for poor planning.
8. The sketches and/or diagrams must be done in pencil and be neat, reasonably large, in proportion and fully labelled.
9. Write neatly and legibly.

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QUESTION 1: ADMINISTRATION, LEGISLATION AND REGULATIONS

1.1 Explain the responsibility of a building inspector, employed by the local authority, when a building project starts. (5)

1.2 Explain what it means when the local authority require a competent person to complete a 14 (2) form in terms of the National Building Standards Act 103 of 1977. (5)

1.3 List THREE ways to demonstrate compliance with the application of the South African National Building Regulations. (3 × 2) (6)

1.4 What does NHBRC stand for? Explain its function. (5)

1.5 Explain the rationale behind building regulations in the construction industry. (4)

1.6 What does SACAP stand for and what is its function in South Africa's building environment? (5)

[30]

QUESTION 2: STAIRCASES AND LADDERS

2.1 As an architectural draughtsperson you need to be able to communicate ideas onsite using neat and clear hand sketches. These sketches are not to scale, but reasonably accurate and in proportion.

Draw a hand sketch on A4 paper showing a typical section through a straight staircase. Include annotations and dimensions in the sketch. Marks will be allocated for neatness and proportion of the sketch. (6)

The staircase has the following specifications:

2.1.1 A tread of 300 mm (3)

2.1.2 A riser of 186 mm (3)

2.1.3 Regulation balustrade height (3)

2.1.4 Label the stringer (3)

2.1.5 Label the newel post (3)

2.1.6 A 120 mm going (3)

2.2 List THREE types of staircases. (3 × 2) (6)

[30]

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QUESTION 3: BUILDING PLANS

Determine the percentage coverage of the following four examples and show ALL calculations.

3.1 ERF SIZE 442 m^2, AREA of level 1 = 110 m^2, AREA of level 2 = 110 m^2, AREA of garage = 18 m^2.

3.2 ERF SIZE 633 m^2, AREA of level 1 = 220 m^2, AREA of level 2 = 220 m^2, AREA of garage = 24 m^2.

3.3 ERF SIZE 2 200 m^2, AREA of single-level dwelling = 400 m^2, AREA of outbuildings = 120 m^2 and AREA of garage = 55m^2.

3.4 ERF SIZE 726 m^2, AREA of level 1 = 225 m^2, AREA of level 1 covered stoep = 15 m^2, AREA of level 2 is 200 m^2.

3.5 ERF SIZE 1 123 m^2, AREA of level 1 = 322 m^2, AREA of level 1 covered stoep = 24 m^2, AREA of level 2 is 300 m^2.

(5 × 2) **[10]**

QUESTION 4: QUANTITIES AND COSTING IN A BUILDING PLAN

4.1 List 11 typical expenses incurred by a contractor when building a house. (11)

4.2 List 11 construction activities in timeline order from once the substructure and floor plinth is cast to the handover of the site to the client. (11)

4.3 What takes 28 days to be ready before further building work can commence? (4)

4.4 How many days must a carpenter wait before hanging doors and installing ceiling brandering and ceilings? (2)

4.5 Which professional compiles the SG diagram and lodges it in the deeds office? (2)

[30]

TOTAL: 100

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