higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE (VOCATIONAL)

ARCHITECTURAL GRAPHICS AND TECHNOLOGY

(Second Paper)

NQF LEVEL 2

(12050622)

20 November 2019 (Y-Paper)
13:00–16:00

Calculators may be used.

This question paper consists of 6 pages.

Copyright reserved

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. Start each section on a NEW page.
5. Use only a BLUE or BLACK pen.
6. Write neatly and legibly.

Copyright reserved

QUESTION 1

Various options are given as possible answers to the following questions. Choose the answer and write only the letter (A–D) next to the question number (1.1–1.10) in the ANSWER BOOK.

1.1 The THREE most common ways to bond bricks when building a wall are …

A stretcher bond, English bond, Flemish bond
B James Bond, Cedric bond, William bond
C Zimbabwean bond, Celtic bond, American bond
D glue bond, cement bond, sticking bond

1.2 A/An … is responsible for the design of the structure of a building.

A quantity surveyor
B structural engineer
C architect
D draughtsperson

1.3 The 3-4-5 method to set out right angles on site is also known as the …

A Caesar method
B Atrium theorem
C Aristotle approach
D Pythagoras theorem

1.4 THREE types of foundations found in the construction industry are … foundations.

A boat, platform and floating
B brick, concrete and steel
C raft, pad and strip
D lintel, platform and concrete

1.5 In South Africa, architectural plans must be compiled in accordance with the …

A Brickbuilding Regulatory Body
B Concrete Specialist Council
C National Building Regulations
D SACAP Council.

1.6 The abbreviation DPC in a wall stands for …

A drill paint concrete
B damp-proof course
C drain pull cord
D door plan casting

1.7 The DRIE types of drawing packages that are offered to clients, builders and professional teams are …

A oil paintings, water colour paintings and abstract paintings
B figure-drawing, drawing from nature and landscape sketches
C working drawings, rough sketch plans and detail drawings
D pen, ink and pencil drawings

1.8 TWO types of lintels used in South Africa are … lintels.

A English and Flemish
B German and Chinese
C raft and strip-type
D reinforced concrete and precast

1.9 Which ancient civilisation first fired bricks to use in buildings?

A Egyptians
B English
C Flemish
D Chinese

1.10 The national standards for brick sizes are found in the specification document, …

A SABS 14210
B SANS 10400-k
C NHBRC 10320
D SACAP 13420

(10 × 2) **[20]**

QUESTION 2: SIMPLE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS

Write out the following abbreviations found on plans:

2.1 NTS (3)

2.2 GL (2)

2.3 MH (2)

2.4 RE (2)

2.5 FFL (2)

[11]

Copyright reserved

QUESTION 3: TERMINOLOGY AND COMPONENTS USED IN THE CONSTRUCTION INDUSTRY

Define the following terms used in the construction and building industry:

3.1 Servitude

3.2 Building line

3.3 National Building Regulations

3.4 Competent person

(4 × 2) **[8]**

QUESTION 4: MEASURING, SETTING OUT AND LEVELLING

4.1 Explain the term *measuring* and indicate the purpose of measuring. (5)

4.2 Name FIVE different types of equipment used for measuring. (5 × 2) (10)

4.3 State THREE ways in which you would take care of a steel tape measure. (3)

[18]

QUESTION 5: FOUNDATIONS

Explain under what conditions the following foundations are constructed and why:

5.1 Raft foundations

5.2 Strip foundations

5.3 Pile foundations

5.4 Pad foundations

(4 × 4) **[16]**

Copyright reserved

QUESTION 6: BRICKWORK, LINTELS AND ARCHES

6.1 Name the THREE components that precast concrete is made of. (3 × 2) (6)

6.2 Define the following arch terms:

6.2.1 Keystone

6.2.2 Crown

6.2.3 Soffit

6.2.4 Span

6.2.5 Intrados

(5 × 3) (15)

6.3 Name THREE shapes of an arch. (3 × 2) (6)

[27]

TOTAL: 100

Copyright reserved