higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE

CARPENTRY AND ROOFING THEORY N2

(11022192)

20 November 2020 (X-paper)
09:00–12:00

This question paper consists of 6 pages.

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DEPARTMENT OF HIGHER EDUCATION AND TRAINING
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE
CARPENTRY AND ROOFING THEORY N2
TIME: 3 HOURS
MARKS: 100

NOTE: If you answer more than the required number of questions only the required number of questions will be marked. All work you do not want to be marked must be clearly crossed out.

INSTRUCTIONS AND INFORMATION

1. Answer the question paper as follows:

   1.1 All candidates must answer QUESTION 1 to QUESTION 6.

   1.2 CARPENTRY CANDIDATES must answer QUESTION 7.

   1.3 ROOFING CANDIDATES must answer QUESTION 8.

   1.4 Do not answer both QUESTION 7 and QUESTION 8.

2. Read all the questions carefully.

3. Number the answers according to the numbering system used in this question paper.

4. Sketches must be neat, clear, labelled and done in pencil.

5. Write neatly and legibly.

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QUESTION 1

1.1 Briefly explain each of the following terms:

1.1.1 Datum peg (3)

1.1.2 Benchmark (3)

1.2 Make a neat labelled sketch that will show the setting out of a corner profile with the 3:4:5 method. The sketch must show the 3:4:5 method and the corner profiles of one corner in position. (4)

[10]

QUESTION 2

Indicate whether the following statements are TRUE or FALSE by writing only 'True' or 'False' next to the question number 2.1.1–2.1.6) in the ANSWER BOOK. Correct the statement if it is FALSE.

2.1 2.1.1 The intermediate members (braces) of a Howe truss are designed in such a way that it forms a W in the frame.

2.1.2 Gang-nail connector plates are used when members are assembled manually on site.

2.1.3 A dihedral angle is the angle of intersection between two sloping roofs.

2.1.4 Attic trusses consists of two parts of different pitches

2.1.5 A 38 x 38 mm tilting batten provides support for the first row of tiles at the ends of the rafter.

2.1.6 In the construction of closed eaves, the external skin of the wall (beam filling) is extended against the underside of the roof covering.

(10)

2.2 Define the building term *joist*. (1)

2.3 Describe the term *flying hip* when constructing an L-shape roof. (2)

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2.4 FIGURE 1 shows a tool used in roof work.

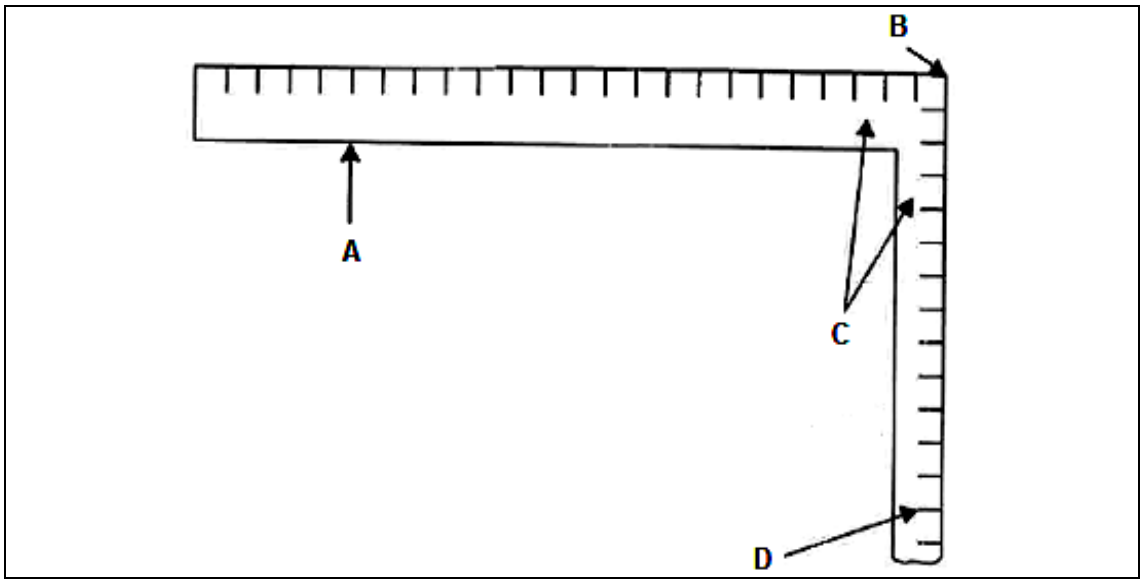


FIGURE 1

2.4.1 Name this tool and give TWO of its functions. (3)

2.4.2 Label all the parts of the tool (A – D) by writing only the answer next to the letter (A–D) in the ANSWER BOOK. (4 × 1) (4)

[20]

QUESTION 3

3.1 Make a neat labelled, vertical cross-sectional sketch through the apex of a roof truss covered with metal tiles. The sketch must include a ridging board and the fixing of the metal tiles must be shown. (11)

3.2 Give TWO advantages and TWO disadvantages (other than being waterproof or not) of thatch as a roof-covering material. (4)

[15]

QUESTION 4

Discuss the boarded ceiling system with reference to each of the following:

4.1 Installation and fixing of ceiling boards (6)

4.2 Finishing of installed ceiling boards (2)

[8]

QUESTION 5

5.1 Draw a vertical cross-sectional view to show the waterproofing detail between the windowsill and the lower part of the framework for a dormer window. Show and label all surrounding detail on the sketch. (11)

5.2 Briefly explain the purpose of a dormer window in the roof of a building. (4)
[15]

QUESTION 6

6.1 FIGURE 2 shows a vertical cross-sectional view through a roof light with patent glazing fitted in a steel roof construction, covered with corrugated fibre cement sheets.

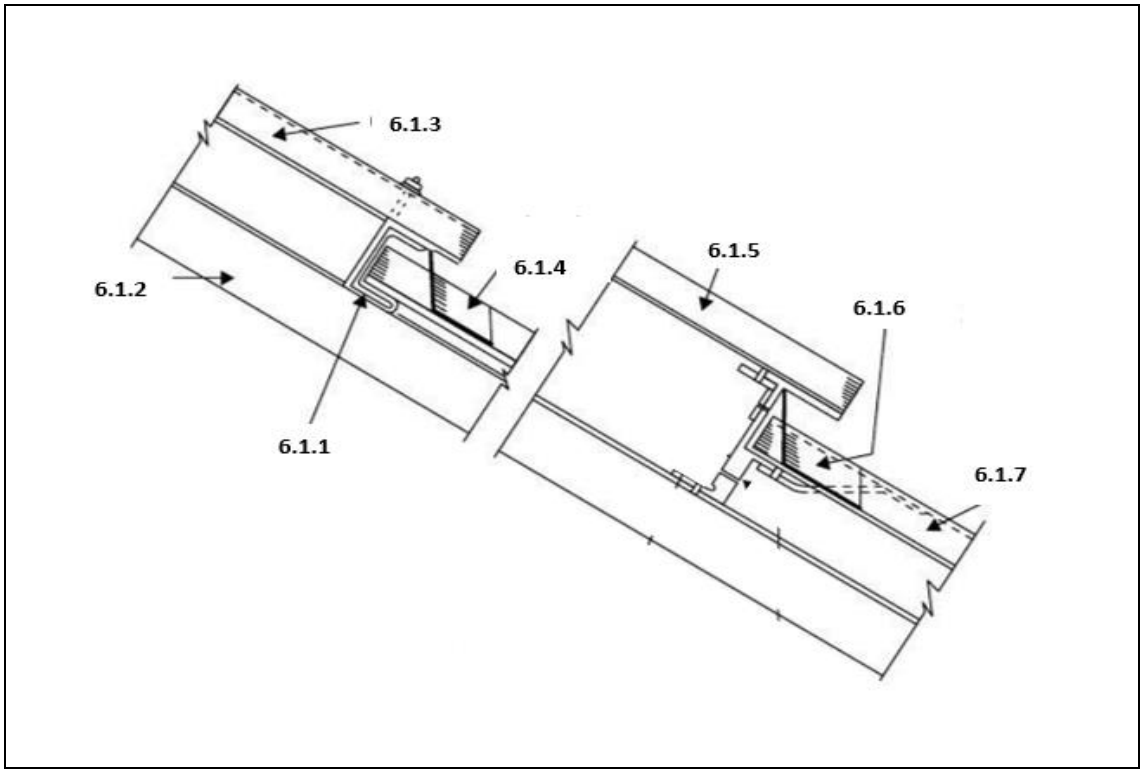


FIGURE 2

Label all parts by writing only the answer next to the question number (6.1.1–6.1.7) in the ANSWER BOOK. (7 × 1) (7)

6.2 Explain each of the following terms related to the installation of roof lights:

6.2.1 Flashing

6.2.2 Patent glazing

(2 × 2) (4)

6.3 Give another word for the term *roof light* (1)
[12]

QUESTION 7: CARPENTRY CANDIDATES ONLY

7.1 Illustrate, with the aid of a neat, fully labelled vertical cross-sectional sketch, a standard flush sliding door. Do not draw the whole door but just enough to clearly show the sliding mechanism at the top and the floor guide at the bottom. (14)

7.2 Give FOUR reasons for using centring in the construction of arches. (4)

7.3 Explain the term *access to building material* as a basic requirement for formwork. (2)

[20]

QUESTION 8: ROOFING CANDIDATES ONLY

8.1 List FOUR metals, other than zinc and brass, commonly used in the roofing trade and give ONE method of joining each of these materials. (4 + 4) (8)

8.2 State EIGHT specifications to consider when purchasing gutters. (8)

8.3 Give the function of each of the following roofing tools:

8.3.1 Disc cutter

8.3.2 Electric jigsaw

8.3.3 Crowbar

8.3.4 Slater's hammer

(4 × 1) (4)

[20]

TOTAL: 100

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