higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE

CARPENRTY AND ROOFING THEORY N2

(11022192)

15 April 2021 (X-paper)
09:00–12:00

This question paper consists of 8 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

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

During the setting out of a building various equipment is used.

Name and explain FIVE setting out equipment that you will use specifically for the levelling, measuring and setting out of a building. (5 × 2) **[10]**

QUESTION 2

2.1 FIGURE 1 below shows an incomplete plan view of an L-shaped building. Re-draw the plan view in your answer book and show the layout of the roof construction. The building is finished off with a gable construction on the south side of the building and a hipped roof construction on the eastern side of the building.
Show and label all the members in the plan view, including the flying hip. (18)

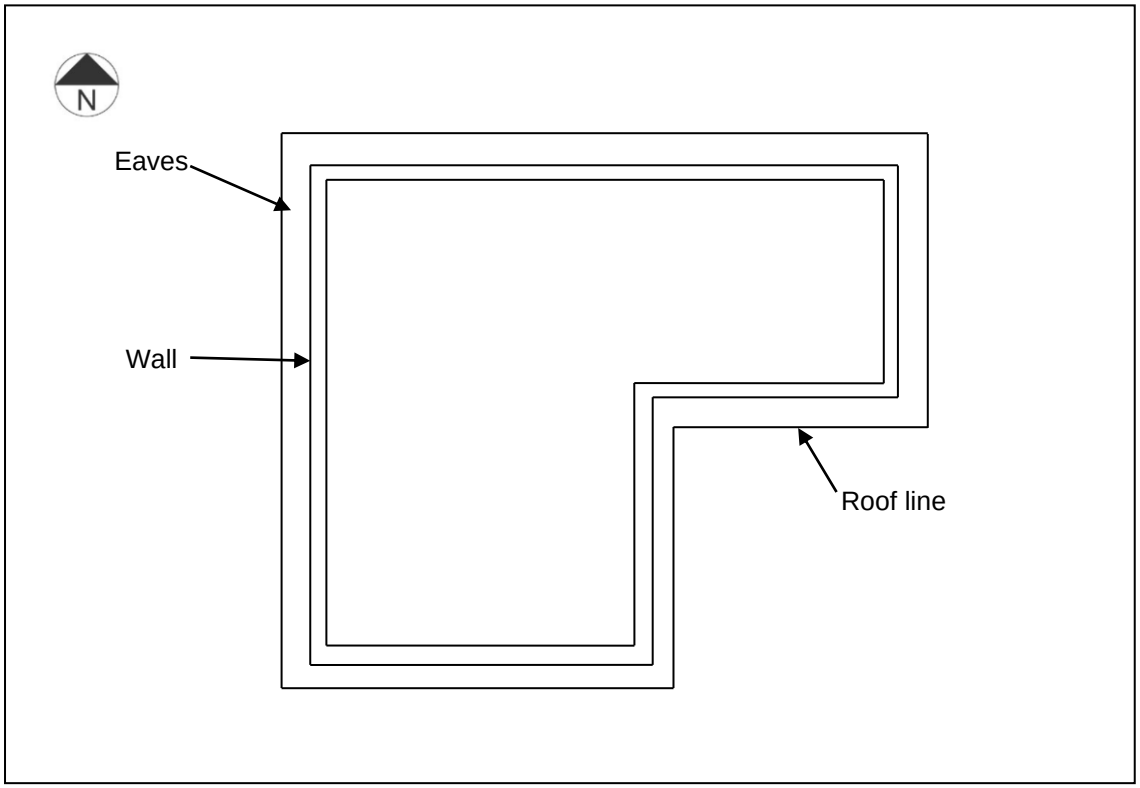


FIGURE 1

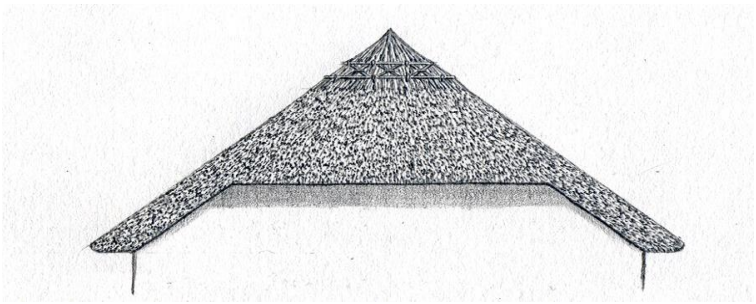
2.2 Explain the term *king post.* (2)
[20]

QUESTION 3

3.1 FIGURE 2 – 4 below shows different types of roof covering materials.

Name the roof coverings and give TWO advantages of each roof covering by writing only the answers next to the applicable question number (3.1.1–3.1.3) in the ANSWER BOOK.

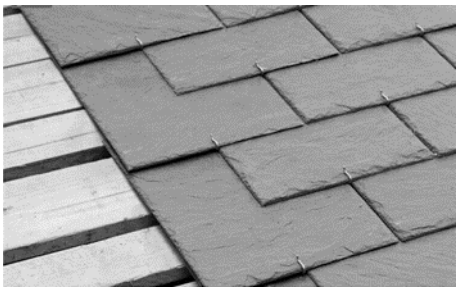
3.1.1



Source: *https://beginners-guide.com*

FIGURE 2

3.1.2



Source: *https://www.a9architecture.co.uk*

FIGURE 3

3.1.3



Source: *https://www.burtonroofing.co.uk*

FIGURE 4 (9)

3.2 List TWO physical properties and give FOUR advantages of *secret fixed sheets*. (6)

[15]

QUESTION 4

Choose a term from COLUMN B that matches a description in COLUMN A. Write only the letter (A–H) next to the question number (4.1–4.8) in the ANSWER BOOK.

COLUMN A		COLUMN B	
4.1	A ceiling system that is not directly fixed to the brandering	A	cornice
4.2	A ceiling system that consists of fibre cement sheets	B	brandering
4.3	Decorative appearance of a tongue and groove ceiling system	C	suspended ceiling
4.4	Runs at 90º with the bottom cords of the roof and supports the ceiling boards	D	secret nailing
4.5	Finishing method used when installing gypsum ceiling boards	E	boarded ceiling
4.6	Covers the opening between the ceiling and the wall	F	Aluminium T-bar
4.7	Support and finishing method for a suspended ceiling system	G	V-joint profile
4.8	A method used to fix tongue and groove ceiling boards	H	H-section

(8 × 1) **[8]**

QUESTION 5

5.1 Dormers and bay windows always show an architectural feature which gives elegance to a well-designed building.

With the aid of neat labelled pictorial sketches, show the difference between the following:

5.1.1 Dormer with a flat roof

5.1.2 Dormer with a pitched roof

(2 × 5) (10)

5.2 Draw a neat sketch to show the plan view of a *square bay window* (5)

[15]

QUESTION 6

6.1 FIGURE 5 below shows a cross-sectional view through the top half of a typical roof light installed in a roof with a pitch of 30°.

Name all the numbered parts by writing only the answers next to the question numbers (6.1.1–6.1.10) in the ANSWER BOOK. (10)

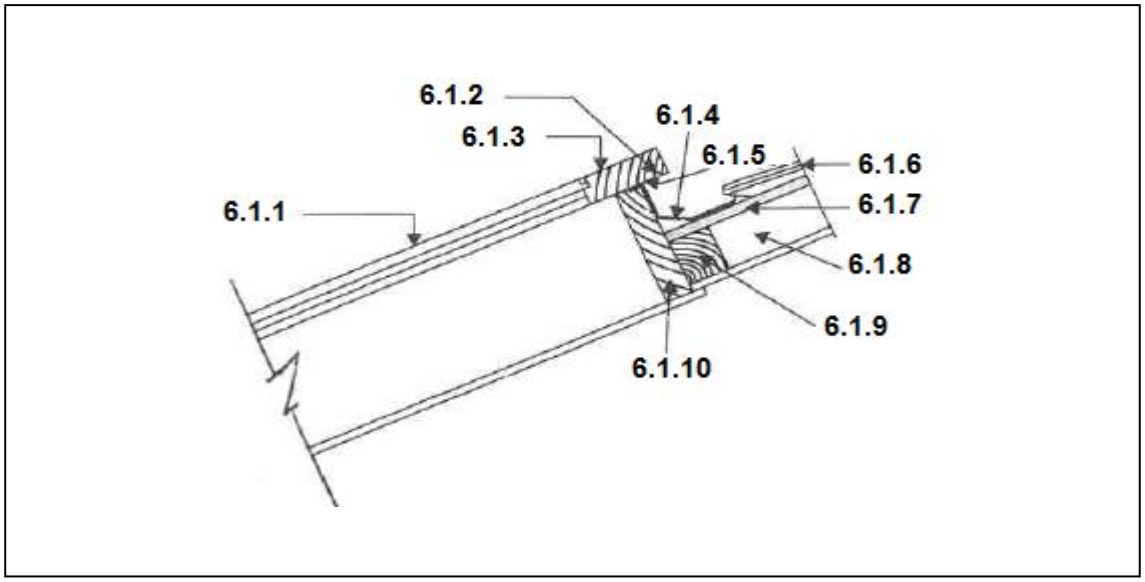


FIGURE 5

6.2 Give TWO main functions of a skylight (2)

[12]

QUESTION 7: CARPENTRY CANDIDATES ONLY

7.1 Framed wall panelling creates a decorative finish to the internal walls of a room.

Make a neat horizontal cross-sectional sketch, through the muntin of framed wall panelling. Clearly show parts of the raised and fielded panels on both sides of the muntin supported by the rough ground. The sketch must be fully labelled. (7)

7.2 Describe the procedures that you will follow to hang a flush hollow core door. (9)

7.3 FIGURE 3 below shows a horizontal cross-sectional view through the formwork for a square column. Study the drawing and name all the numbered parts by writing only the answers next to the question numbers (7.3.1–7.3.4) in the ANSWER BOOK. (4)

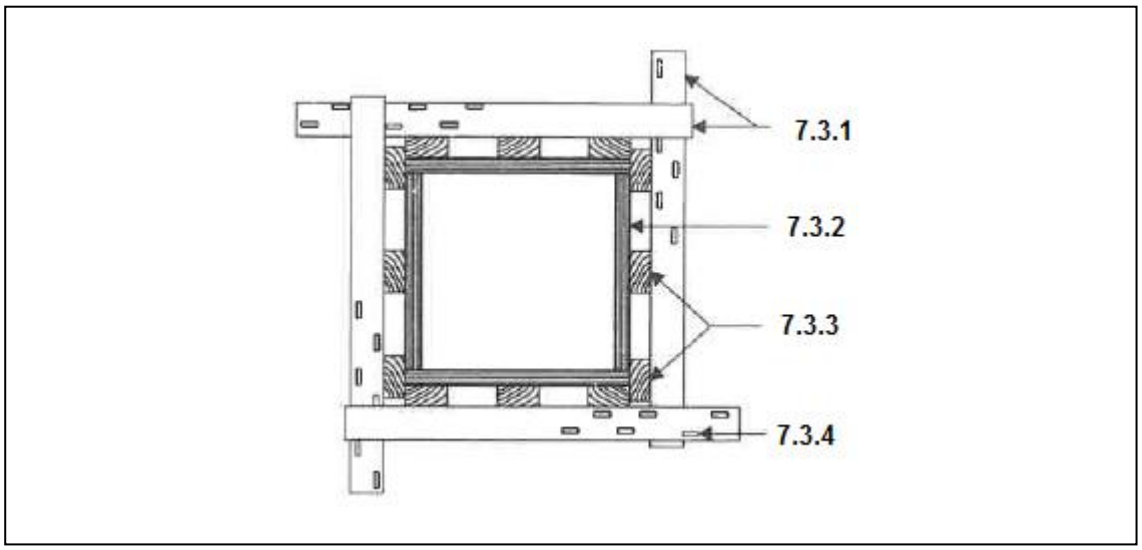


FIGURE 6

[20]

QUESTION 8: ROOFING CANDIDATES ONLY

8.1 The main purpose of flashing in roof work is to prevent rainwater from entering a building.

By means of freehand drawings, illustrate the sheet metal *development* and the *pattern* for a valley gutter flashing. (2 + 4) (6)

8.2 Give TWO characteristics of *copper,* in relation to the roofing trade. (2)

8.3 Give TWO advantages of each of the following materials used for the manufacturing of gutters. Write only the answer next to the question number (8.3.1-8.3.4) in the ANSWER BOOK.

8.3.1 Aluminium

8.3.2 Galvanised steel

8.3.3 Unplasticised poly vinyl chloride (uPVC)

8.3.4 Fibre cement

(4 × 2) (8)

8.4 Explain the use of the following roofer's tools. Write only the answer next to the question number (8.4.1-8.4.4) in the ANSWER BOOK.

8.4.1 Slaters hammer

8.4.2 Slate ripper

8.4.3 Bentley slate cutter

8.4.4 Hand guided band saw

(4 ×1) (4)
[20]

TOTAL: 100

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