higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

T220**(E)**(A4)T
APRIL EXAMINATION

NATIONAL CERTIFICATE

CARPENTRY AND ROOFING THEORY N2

(11022192)

4 April 2016 (X-Paper)
9:00–12:00

This question paper consists of 7 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. This question paper must be answered as follows:
   - 1.1 ALL the candidates must answer QUESTION 1 TO 6.
   - 1.2 CARPENTRY CANDIDATES must answer QUESTION 7 only.
   - 1.3 ROOFING CANDIDATES must answer QUESTION 8 only.
   - 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. Keep subsections of questions together.
5. Sketches must be neat and clear and done in PENCIL.
6. ALL drawings must be labelled.
7. Rule off across the page on completion of each subsection.
8. Start each question on a NEW page.
9. Write neatly and legibly.

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QUESTION 1: SETTING OUT OF BUILDINGS

1.1 You are instructed to dig a foundation trench on a sloping site but you do not have a dumpy level to assist you with the completion of the job.

Name FIVE tools or equipment that you will use to perform this task. (5)

1.2 Illustrate, by means of a sketch, how you will use the equipment mentioned in QUESTION 1.1 to level the trench. (5)
[10]

QUESTION 2: ROOF CONSTRUCTION

2.1 Draw the front view of a factory engineered W- or fink roof truss. Show ALL the members and the sketch must be fully labelled. (10)

2.2 Briefly explain the difference between an *open eave* and a *closed eave*. NO sketches are required. (4)

2.3 Draw the front view of roofing square. Label all the visible parts. (6)
[20]

QUESTION 3: ROOF COVERING

3.1 Discuss the physical properties of the following roof covering material and also mention where they can be used (applications):

3.1.1 Natural slates

3.1.2 Fibre-cement slates

(2 x 3) (6)

3.2 Draw a neat, detailed cross-sectional view to show the finishing of the valley of a roof covered with metal tiles. (9)
[15]

QUESTION 4: CEILINGS

4.1 Name TWO places where the following types of ceilings may be fitted:

4.1.1 Boarded ceilings

4.1.2 Timber ceilings

4.1.3 Suspended ceilings

(3 x 2) (6)

4.2 Name TWO different methods of how to cover and finish off the joints of ceiling boards of a boarded ceiling. (2)
[8]

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QUESTION 5: DORMER ROOF CONSTRUCTION

5.1 Define and explain the following:

5.1.1 Bay window (5)

5.1.2 Dormer (3)

5.2 Describe the purpose of having a dormer built into the roof of a house. (4)

5.3 Give the names of THREE different types of bay windows. (3)

[15]

QUESTION 6: ROOF LIGHT CONSTRUCTION

6.1 FIGURE 6.1 below shows part of a cross-section (one bottom corner) through a longitudinal roof light.

Name the parts and the waterproofing details as numbered by writing down the answers next to the question numbers (6.1.1–6.1.10) in the ANSWER BOOK.

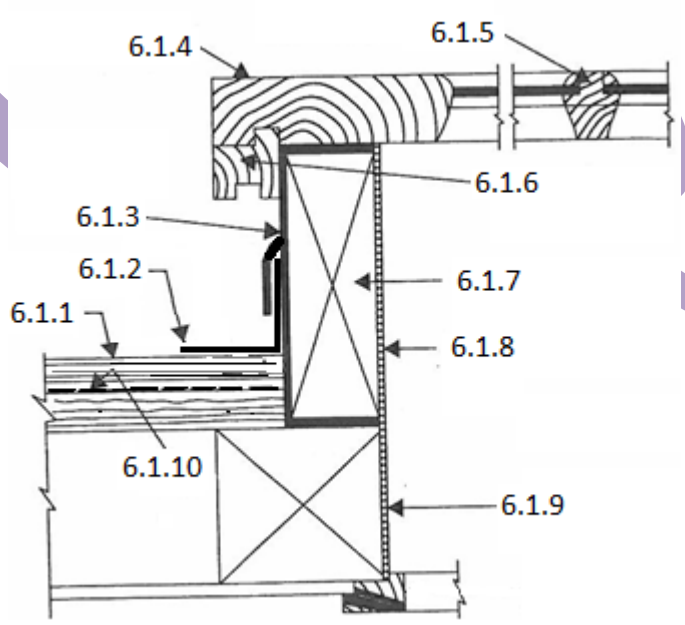


FIGURE 6.1 (10)

6.2 What is meant by the term *patent glazing* installed in steel roof lights? (2)

[12]

QUESTION 7: THIS QUESTION IS FOR CARPENTRY CANDIDATES ONLY

7.1 FIGURE 7.1 below shows a cross-section through a three-quarter height (door height) processed board panelling.

Name the parts as numbered by writing down the answer next to the question number (7.1.1–7.1.8) in the ANSWER BOOK.

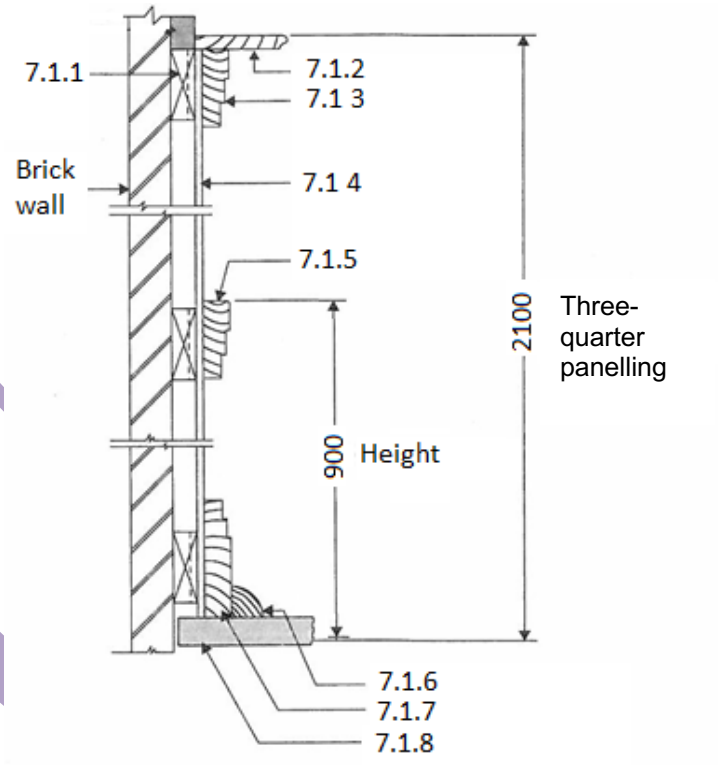


FIGURE 7.1 (8)

7.2 Briefly describe the term *drywall partition*. (2)

7.3 Doors are made of different materials such as timber, glass, metal, etc. and can be divided into categories of different door types.

Name at least FOUR different types of doors. (4)

7.4 FIGURE 7.4 below shows a vertical/dead shore system in position where an opening has to be created in the lower part of a load-bearing wall.

Name the parts as numbered by writing the answer next to the question number (7.4.1–7.4.6) in the ANSWER BOOK.

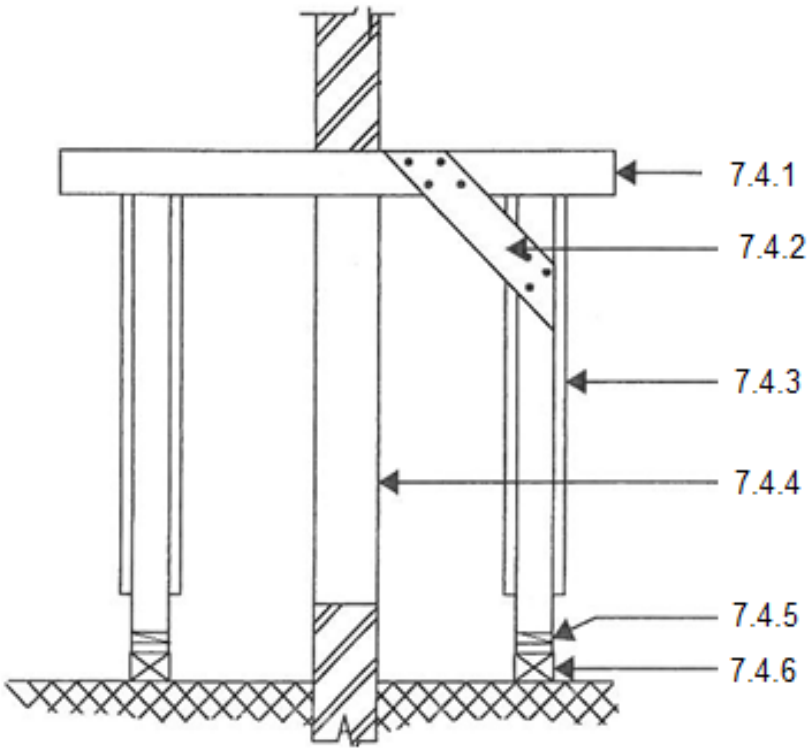


FIGURE 7.4 (6)
[20]

QUESTION 8: THIS QUESTION IS FOR ROOFING CANDIDATES ONLY

8.1 State TWO characteristics and TWO uses of the following metals applicable to roofing:

8.1.1 Galvanised iron

8.1.2 Aluminium

(2 x 4) (8)

8.2 Choose a description from COLUMN B that matches an item in COLUMN A. Write only the letter (A–I) next to the question number (8.2.1–8.2.8) in the ANSWER BOOK.

COLUMN A		COLUMN B	
8.2.1	Downpipe	A	is a downpipe shoe
8.2.2	Holder bat	B	rustfree
8.2.3	PVC cement	C	economical and requires no painting
8.2.4	Fibre gutter	D	secure downpipe in position
8.2.5	Swan neck/off-set	E	made of fibre cement
8.2.6	UPVC gutter	F	secure gutters to fascia board
8.2.7	Aluminium gutter	G	pipe that carries rainwater from the roof gutter to the groundwater channel
8.2.8	Fascia bracket	H	to seal joints
		I	form of rainwater pipe that connects the gutter to the downpipe under an eave

(8 x 1) (8)

8.3 Explain the functions of the following tools specifically used by a roofer:

8.3.1 Parallel sheers

8.3.2 Bentley slate cutter

8.3.3 Slate ripper

8.3.4 Slater's hammer

(4 x 1) (4)
[20]

TOTAL: 100

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