higher education & training

Department:
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REPUBLIC OF SOUTH AFRICA

T300(**E**)(A1)T

NATIONAL CERTIFICATE

CARPENTRY AND ROOFING THEORY N2

(11022192)

1 August 2018 (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 will be marked. All work you do not want to be marked must be clearly crossed out.

INSTRUCTIONS AND INFORMATION

1. 1.1 ALL the candidates must answer QUESTION 1 to QUESTION 6.

   1.2 CARPENTRY CANDIDATES must answer QUESTION 7 only.

   1.3 ROOFING CANDIDATES must answer QUESTION 8 only.

2. Read ALL the questions carefully.

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

4. Start each question on a NEW page.

5. Keep subsections of questions together.

6. Sketches must be neat and clear and done in PENCIL.

7. ALL drawings must be labelled.

8. Rule off across the page on completion of each subsection.

9. Write neatly and legibly.

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QUESTION 1: SETTING OUT OF BUILDINGS

1.1 FIGURE 1 below shows a builder's dumpy level.

Identify all the numbered parts by writing the answer next to the question number (1.1.1–1.1.7) in the ANSWER BOOK. (7)

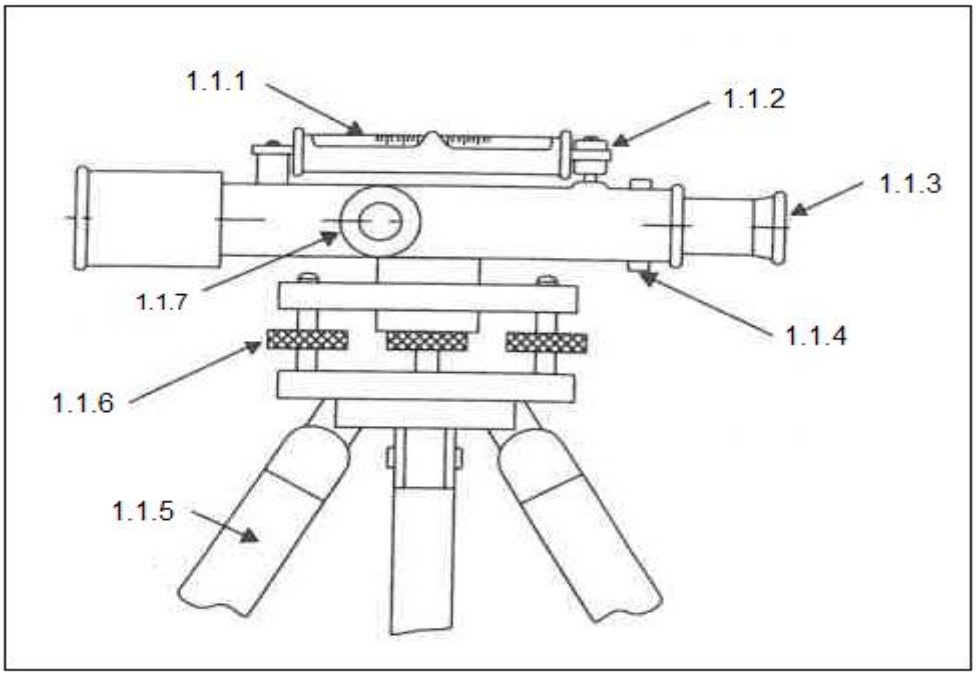


FIGURE 1

1.2 In order to prevent problems the builder must ensure to set out the 90° corners of a building squarely.

Name THREE different methods of how this can be achieved. (3)
[10]

QUESTION 2: ROOF CONSTRUCTION

2.1 Design and draw a large, neat, single-line sketch of an attic/mansard roof truss. Show and label ALL the basic members. (12)

2.2 Describe the construction of a lean-to roof. (2)

2.3 Give TWO applications of the lean-to roof described in QUESTION 2.2. (2)

2.4 Briefly explain the following terms in roof work:

2.4.1 Gable end (2)

2.4.2 Dihedral angle (2)
[20]

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QUESTION 3: ROOF COVERING

Roof trusses are made by order to fit specific roof designs. Different types of roof covering material are obtainable for the cladding of roofs, but each section of the roof has a specific finishing.

Draw neat and detailed vertical, cross-sectional views to distinguish between the following finishes:

3.1 Ridge of a roof covered with fibre cement slates (7)

3.2 Valley of a roof covered with corrugated metal tiles (8)

[15]

QUESTION 4: CEILINGS

4.1 State TWO effective advantages of each of the following ceiling systems:

4.1.1 Suspended

4.1.2 Boarded

4.1.3 Timber

(3 × 2) (6)

4.2 State TWO types of tongue-and-groove joints with different stub mouldings that can be used to enhance the appearance of a timber ceiling. (2)

[8]

QUESTION 5: DORMER ROOF CONSTRUCTION

5.1 A dormer is a framed structure of a building that protrudes externally from the plane of a sloping roof surface.

State FOUR functions of a dormer. (4)

5.2 Describe a bay window in point form. (5)

5.3 Give THREE names of each of the following:

5.3.1 Dormer

5.3.2 Bay window

(2 × 3) (6)

[15]

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QUESTION 6: ROOF LIGHT CONSTRUCTION

Draw a neat, vertical, cross-sectional view through a longitudinal roof light built into a pitched roof which is covered with roof tiles. The roof light must hinge at the top. Show and label ALL the members.

[12]

QUESTION 7: (CARPENTRY CANDIDATES ONLY)

7.1 FIGURE 2 shows the construction of a full-on wall-to-wall timber frame dry wall partition in position, cladded with plaster board facings.

Identify all the numbered members of the frame by writing the answer next to the question number (7.1.1–1.1.7) in the ANSWER BOOK. (7)

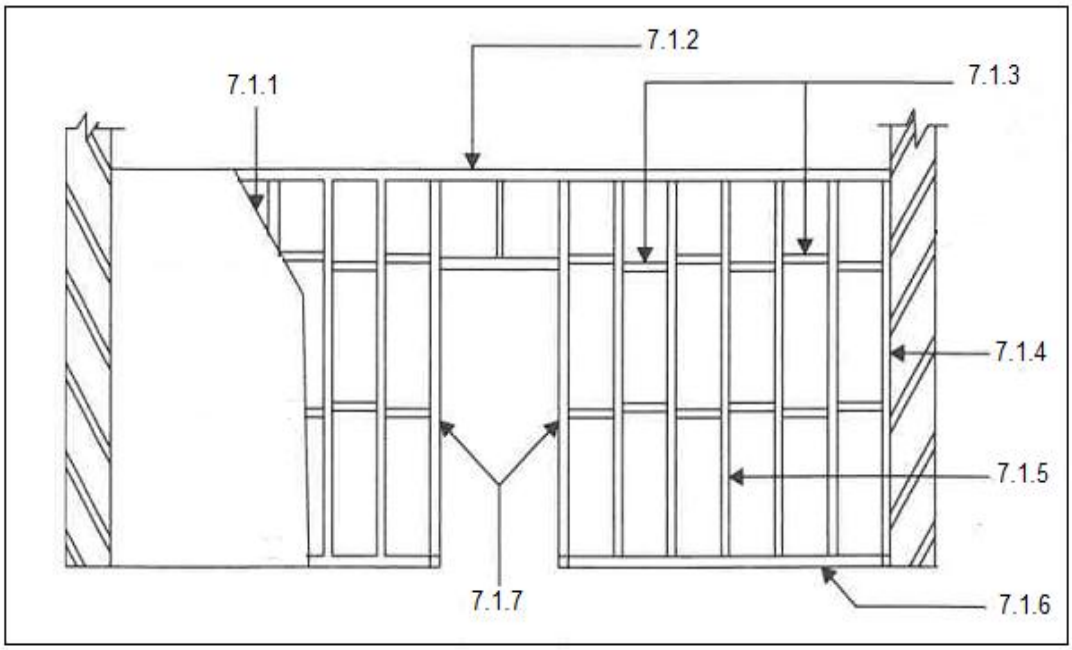


FIGURE 2

7.2 Describe step by step in sequence the hanging of a standard front door of a building. (7)

7.3 Distinguish by means of neat sketches between *open laggings* and *closed laggings.* (2 × 3) (6)

[20]

QUESTION 8: (ROOFING CANDIDATES ONLY)

8.1 Copy the table below in your ANSWER BOOK and complete it by stating TWO uses of each of the following metals applicable to roofing.

	METALS	USES
8.1.1	Brass	
8.1.2	Zinc	
8.1.3	Aluminium	
8.1.4	Lead	

(4 × 2) (8)

8.2 State FOUR standard specifications a roofer has to consider when purchasing gutters to finish off the roof work. (4)

8.3 Briefly explain the process to apply membrane reinforced liquid as a waterproofing agent between a roof and a parapet wall. (4)

8.4 Indicate whether the following statements are TRUE or FALSE. Choose the answer and write only 'True' or 'False' next to the question number (8.4.1–8.4.4) in the ANSWER BOOK.

8.4.1 A slate ripper is used to lift large sections of the roof when tiles or slates need to be replaced.

8.4.2 A hand-guided band saw is used to trim or cut tiles to a specific size.

8.4.3 The Bentley slate cutter is used to cut off smaller quantities of tiles.

8.4.4 A parallel sheers is used to trim the tiles to a specific size.

(4 × 1) (4)

[20]

TOTAL: 100

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