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higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

T1790**(E)**(A4)T

# NATIONAL CERTIFICATE

# WOODWORKERS' THEORY N1

(11022171)

**4 April 2019 (X-Paper)**
**09:00–12:00**

**Nonprogrammable calculators may be used.**

**This question paper consists of 7 pages.**

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# DEPARTMENT OF HIGHER EDUCATION AND TRAINING
# REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE
WOODWORKERS' THEORY N1
TIME: 3 HOURS
MARKS: 100

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**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. Sketches must be large, neat and fully labelled.
5. Write neatly and legibly.

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## QUESTION 1: INTRODUCTION TO THE BUILDING INDUSTRY AND PRODUCTIVITY

1.1 Describe the main duty of each of the following organisations:

1.1.1 Construction Industry Development Board

1.1.2 Master Builders Association

1.1.3 National Home Builders Registration Council

1.1.4 Engineering Council of South Africa

(4 × 2) (8)

1.2 Name THREE types of false work and formwork required for reinforced concrete structural elements in building. (3)

1.3 Give FOUR reasons why dams are built. (4)

**[15]**

## QUESTION 2: SAFETY AND HOUSEKEEPING

2.1 Name THREE pieces of personal protective equipment (PPE) that protects the body. (3)

2.2 State FIVE procedures to follow in an accident response. (5)

2.3 GIVE THREE places on a building site where holes can be left open during the construction process. (3)

2.4 Corrective actions are taken to prevent the reoccurrence of an accident.

State FOUR corrective actions that should be included in an accident investigation report. (4)

**[15]**

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## QUESTION 3: TIMBER, TIMBER PRODUCTS, METAL AND GLASS

3.1 Indicate whether the following statements are TRUE or FALSE. Choose the answer and write only 'True' or 'False' next to the question number (3.1.1–3.1.5) in ANSWER BOOK.

3.1.1 Quartering is a form of conversion of a log.

3.1.2 Standard chipboard is suitable for external use.

3.1.3 All wood preservatives in South Africa must be registered with the Department of Agriculture.

3.1.4 Glass is generally made from a mixture of sand and silicates in a very hot fire stove called a kiln.

3.1.5 Copper is used to manufacture flashing for roofs and gutters.

(5 × 1) (5)

3.2 State the uses of the following converted timber in the building industry:

3.2.1 Through-and-through conversion sawn wood (3 × 1) (3)

3.2.2 Tangential cuts or plain-sawn wood (4 × 1) (4)

3.2.3 Quarter (radial) or rift-sawn wood (4 × 1) (4)

3.3 Name FOUR advantages of organically soluble preservation. (4)

**[20]**

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## QUESTION 4: TOOLS AND MACHINES

4.1 Give TWO examples of drilling machines in the building industry. (2)

4.2 Name THREE safety measures to observe when working with a pop-rivet gun. (3)

4.3 Identify the different tools shown below by writing only the answer next to the question number (4.3.1–4.3.10) in the ANSWER BOOK.

| | |
|---|---|
| 4.3.1 | 4.3.2 |
| 4.3.3 | 4.3.4 |
| 4.3.5 | 4.3.6 |
| 4.3.7 | 4.3.8 |
| 4.3.9 | 4.3.10 |

(10 × 1) (10)
**[15]**



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## QUESTION 5: FIXATIVES, GLUES AND FITTINGS

5.1 Name FOUR types of gate latches. (4)

5.2 Which glue should be used to bond each of the following?

5.2.1 Binding books

5.2.2 Labels on wine bottle

5.2.3 Self-stick envelopes

5.2.4 Cardboard

5.2.5 Masonry and glass

(5 × 1) (5)

5.3 Identify the different types of nails below by writing only the answer next to the question number (5.3.1–5.3.6) in the ANSWER BOOK.

| | |
|---|---|
| 5.3.1 | 5.3.2 |
| 5.3.3 | 5.3.4 |
| 5.3.5 | 5.3.6 |

(6 × 1) (6)

**[15]**



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## QUESTION 6: JOINTS

Illustrate each of the following joints by means of a neat, single-line drawing:

6.1 Hand-made finger joint (4)

6.2 Mortice and tenon joint (3)

6.3 Butt or rubbed joint (3)

**[10]**

## QUESTION 7: BUILDING-RELATED CALCULATIONS

You have to build SIX wooden book-shelves for a classroom.

7.1 ONE shelf needs 0,4 $m^3$ of wood at R8 000,00 per $m^3$.

What will the cost of the wood be to make SIX shelves? (4)

7.2 If the wages of the artisan is R60,00 per hour and it takes 3 hours and 30 minutes to make one shelf, what will the labour cost be to make SIX shelves? (3)

7.3 What is the final price of the SIX shelves if a profit of 35% is added? (3)

**[10]**

**TOTAL: 100**

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