higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

T1610(E)(J21)T

AUGUST EXAMINATION

NATIONAL CERTIFICATE

WOODWORKERS' THEORY N1

(11022171)

21 July 2014 (Y-Paper)
13:00–16:00

Calculators may be used.

This question paper consists of 6 pages and 2 diagram sheets.

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DEPARTMENT OF HIGHER EDUCATION AND TRAINING
REPUBLIC OF SOUTH AFRICA

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

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. Drawings must be large, neat and in good proportion.
5. ALL the drawings must be fully labelled.
6. Write neatly and legibly.

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QUESTION 1: INTRODUCTION TO THE BUILDING INDUSTRY AND PRODUCTIVITY

1.1 State ONE task performed by each of the following tradesmen in the building industry:

1.1.1 Joiner

1.1.2 Plumber

1.1.3 Painter

1.1.4 Carpenter

1.1.5 Shop fitter

(5 x 1) (5)

1.2 Describe the difference between a *road* and a *bridge* in the civil industry. (4)

1.3 Briefly explain how each of the following technological factors can have a positive influence on productivity:

1.3.1 Process layout and methods

1.3.2 Product or services of design

1.3.3 Plant and equipment

(3 x 2) (6)
[15]

QUESTION 2: SAFETY AND HOUSEKEEPING

2.1 Give THREE causes of accidents with regard to unsafe acts and THREE causes of accidents with regard to unsafe conditions. (3 x 2) (6)

2.2 Indicate whether the following statements are TRUE or FALSE. Write only 'true' or 'false' next to the question number (2.2.1–2.2.6) in the ANSWER BOOK.

2.2.1 Scaffolding must be inspected by a competent person once a week and also after bad weather conditions.

2.2.2 The scaffold platform must be more than 75 mm away from the structure.

2.2.3 A ladder must not be wedged up on one side if the ground is uneven.

2.2.4 A ladder should not extent at 1 metre above its support.

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2.2.5 The sides of the trenches must be adequately supported by means of shoring.

2.2.6 When entering a building site, it is important to wear the appropriate personal protective equipment (PPE).

(6 x 1) (6)

2.3 State THREE safety precautions to be observed with regard to the safeguarding of floor openings. (3)
[15]

QUESTION 3: TIMBER, TIMBER PRODUCTS, METAL AND GLASS

3.1 Give THREE reasons why timber must be seasoned. (3 x 1) (3)

3.2 State FOUR disadvantages of natural seasoning. (4 x 1) (4)

3.3 Give TWO reasons why various defects are likely to occur in timber. (2 x 1) (2)

3.4 Describe the characteristics and the use of the following timber products:

3.4.1 Chipboard

3.4.2 Block board

3.4.3 Laminated board

(3 x 3) (9)

3.5 Give the names of the TWO groups into which plastics are divided. (2)
[20]

QUESTION 4: TOOLS AND MACHINES

4.1 A carpenter sub-contractor is asked to hang six semi solid wooden interior doors on a building site for Grinaker construction.

Name FIVE hand tools that the carpenter requires to hang the doors. (5)

4.2 Various options are given as possible answers to the following questions. Choose the answer and write only the letter (A–C) next to the question number (4.2.1–4.2.6) in the ANSWER BOOK.

4.2.1 The … is used to hammer in large nails.

A warrington cross-pane hammer
B exeter cross-pane hammer
C claw hammer

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4.2.2 The … is used for cutting wood along the grain.

A crosscut saw
B rip saw
C tenon saw

4.2.3 The … is used for rough shaping.

A rasp
B cabinet file
C surform tool

4.2.4 The … is used for making small holes for nails.

A bradawl
B countersink bit
C flat bit

4.2.5 The … is used to plane a piece of wood to the required size.

A smoothing plane
B spokeshave
C jack plane

4.2.6 The … is used to remove bent nails.

A pliers
B pincers
C cutting pliers

(6 x 1) (6)

4.3 A shop fitter uses a jig saw to do various kinds of jobs on site.

State FOUR uses of a jig saw. (4)
[15]

QUESTION 5: FIXATIVES, GLUE AND FITTINGS

5.1 FIGURE 1, DIAGRAM SHEET 1 (attached) shows six fittings often used by woodworkers.

Identify these objects by writing down the name and the use next to the question number (5.1.1–5.1.6) in the ANSWER BOOK. (6 x 2) (12)

5.2 State THREE advantages of polyurethane glue. (3)
[15]

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QUESTION 6: JOINTS

FIGURE 2, DIAGRAM SHEET 2 (attached) shows five joints commonly used in woodwork.

Identify these joints by writing the name and the use of each joint next to the question number (6.1–6.5) in the ANSWER BOOK. **[10]**

QUESTION 7: BUILDING-RELATED CALCULATIONS

7.1 A sample of timber weighs 270 g. After oven-dry to constant weight, it weighs 190 g.

Determine the percentage moisture content of the sample of timber. (3)

7.2 A carpenter quoted R15 000,00 to build a 7 x 3 metre carport. The labour cost for the carport is 48% and the cost for material is 37%.

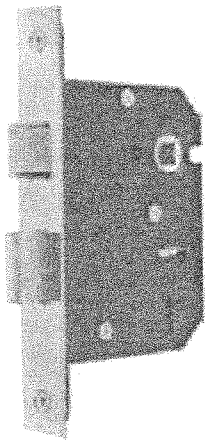
What is the amount paid for the material and what is the profit that the carpenter made on the job? (7)
[10]

TOTAL: 100

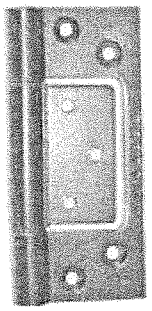
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DIAGRAM SHEET 1



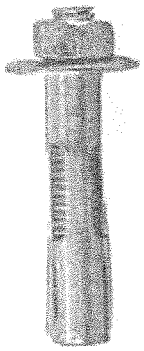
5.1.1



5.1.2



5.1.3



5.1.4



5.1.5

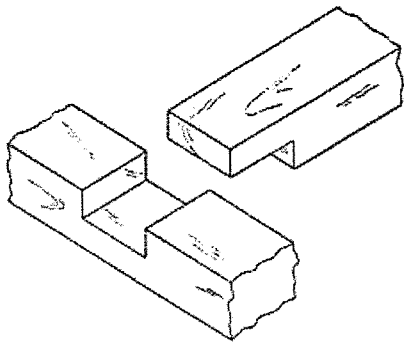
5.1.6

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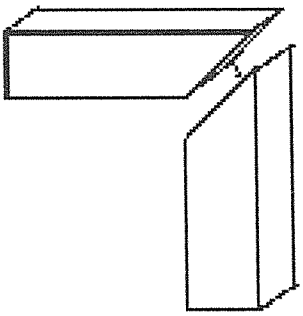
FIGURE 1

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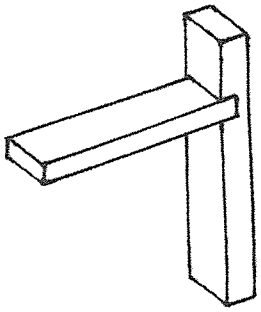
DIAGRAM SHEET 2



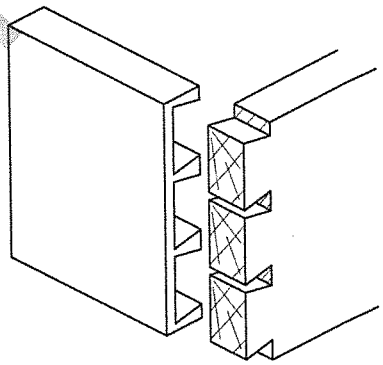
6.1



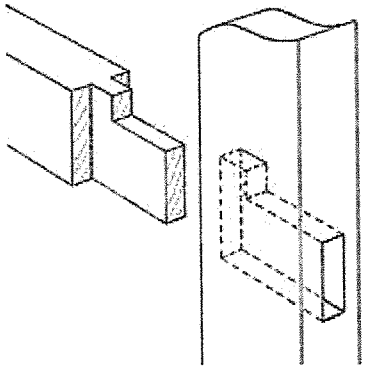
6.2



6.3



6.4



6.5

FIGURE 2

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