higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

T1650(E)(N11)T
NOVEMBER EXAMINATION

NATIONAL CERTIFICATE

WOODWORKERS' THEORY N1

(11022171)

11 November 2014 (Y-Paper)
13:00–16:00

Calculators may be used.

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

ENGINEERING

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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. Drawing 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 Complete the following sentences by using the words listed below. Write only the word(s) next to the question number (1.1.1–1.1.5) in the ANSWER BOOK.

roofer; shop fronts; wood machinist; painter; foundation; plumber;

1.1.1 A bricklayer is responsible for the building of a ... wall which is partly below the natural ground level. (1)

1.1.2 Mouldings for doors and windows are made by a ... (1)

1.1.3 A ... is the last person on site doing 'touch-ups'. (1)

1.1.4 Shop fitting is a trade that involves the design and installation of ... to shops. (1)

1.1.5 A ... is a tradesperson who installs, maintain and repairs all types of roof coverings. (1)

1.2 The building industry is divided into the building sector and the civil sector.

Name TWO examples of the type of work done in each of these sectors. (4)

1.3 State THREE human factors and THREE technological factors that can have a negative influence on productivity. (6)
[15]

QUESTION 2: SAFETY AND HOUSEKEEPING

2.1 Define an accident. (3)

2.2 What is the main objective of the Occupational Health and Safety Act? (3)

2.3 State THREE safety precautions to observe when loads are handled manually. (3)

2.4 Name THREE safety checks that must be performed before portable electrical tools are used. (3)

2.5 Name THREE types of personal protective equipment that must be worn by workers on a building site. (3)
[15]

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QUESTION 3: TIMBER, TIMBER PRODUCTS, METAL AND GLASS

3.1 State THREE characteristics of the following trees:

3.1.1 Hardwood trees (3)

3.1.2 Softwood trees (3)

3.2 Name the THREE ways in which superficial process of preservation is done. (3)

3.3 Explain the term *conversion of timber.* (1)

3.4 DIAGRAM SHEET 1, FIGURE1, (attached) shows different defects found in timber.

Identify these defects and write the name of each defect next to the question number (3.4.1–3.4.6) in the ANSWER BOOK. (6)

3.5 State TWO requirements with which a shelter for natural seasoning must comply with. (2)

3.6 Name TWO advantages of laminated safety glass. (2)
[20]

QUESTION 4: TOOLS AND MACHINES

4.1 DIAGRAM SHEET 2, FIGURE 2 (attached) shows a picture of a G – cramp.

Identify the parts by writing the name of the part next to the applicable question number (4.1.1–4.1.4) in the ANSWER BOOK. (4)

4.2 Name THREE safety measures to observe when working with a router. (3)

4.3 Identify the different hand tools on DIAGRAM SHEET 2, FIGURE 3 (attached) and write the name and the use of each hand tool next to the question number (4.3.1–4.3.4) in the ANSWER BOOK. (8)
[15]

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QUESTION 5: FIXATIVES, GLUE AND FITTINGS

5.1 Indicate whether the following statements are TRUE or FALSE. Only write 'true' or 'false' next to the question number 5.1.1–5.1.6 in your ANSWER BOOK.

5.1.1 A wire nail is used for general carpentry work in the building industry. (1)

5.1.2 A rising butt hinge allows the door not to close under its own weight. (1)

5.1.3 Self-tapping screws are used for fixing thin metal sheets and plastic paneling. (1)

5.1.4 Tee hinges are mostly used on gates, stable and garage doors. (1)

5.1.5 Dead locks are used on doors that are required to remain open all day long (1)

5.2 Explain what the difference is between a round head screw and a raised head screw. (4)

5.3 Give THREE advantages of epoxy resin. (3)

5.4 Explain the term *adhesive*. (3)
[15]

QUESTION 6: JOINTS

6.1 Name TWO types of housing joint commonly used in the construction of a wooden bookshelf. (2)

6.2 Name ONE use of each of the following joints:

6.2.1 Finger joint. (1)

6.2.2 Mitre joint. (1)

6.2.3 Stopped dovetail joint (1)

6.3 Illustrate by means of a neat drawing, what is meant by a tongue and groove joint. (5)
[10]

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QUESTION 7: BUILDING – RELATED CALCULATIONS

26 pieces of loose shelving must be manufactured from solid meranti timber. The size of the loose shelf is 700 mm x 300 mm x 25 mm.

The following timbers size are available:

Length	3000 mm
Width	300 mm
Thickness	25 mm

7.1 How many pieces of loose shelving can be cut out of ONE plank? (2)

7.2 How many planks are needed to cut all 26 pieces of loose shelving? (2)

7.3 Calculate the volume of ONE plank in cubic metres. (3)

7.4 Calculate the material cost for the loose shelving if the cost of meranti is R1250.00 per cubic metre. (3)

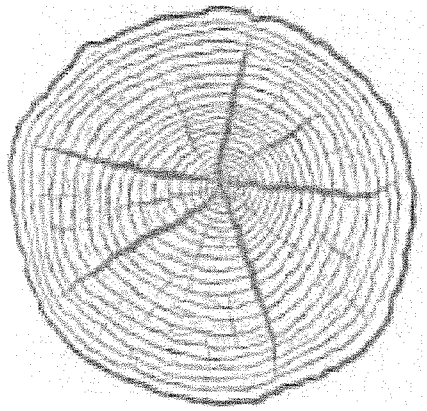
[10]

TOTAL: 100

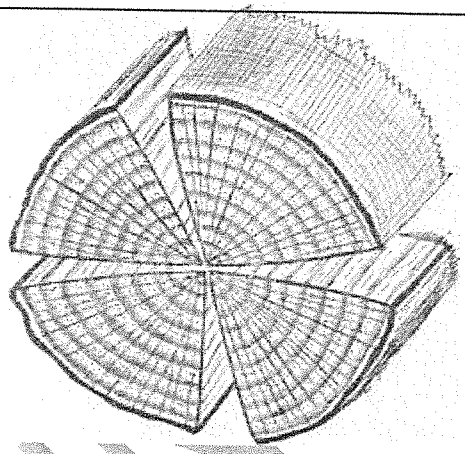
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DIAGRAM SHEET 1



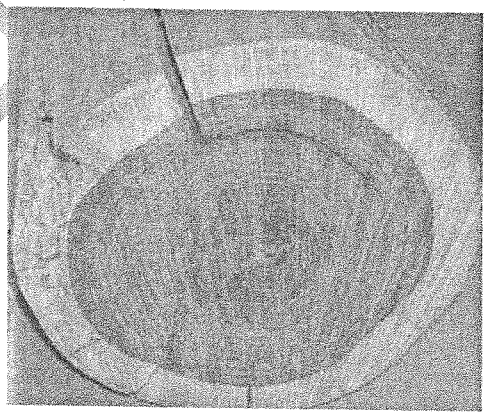
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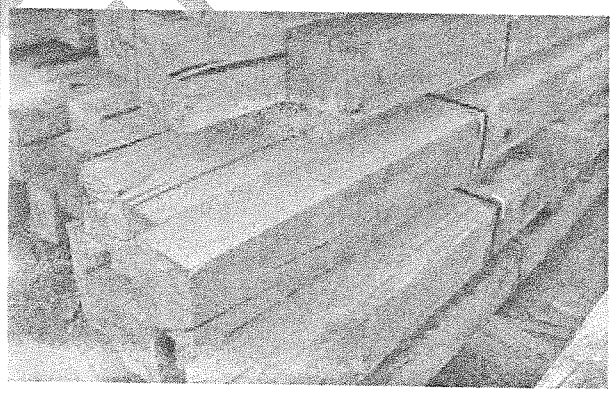
3.4.2



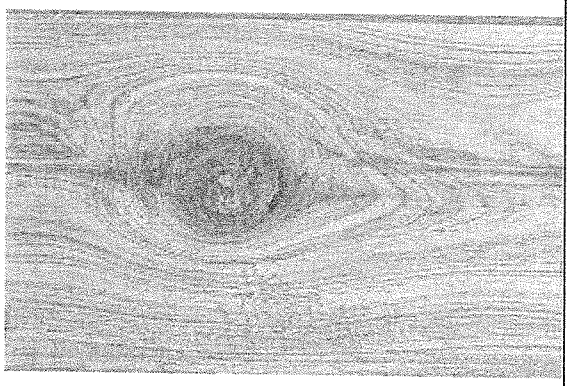
3.4.3



3.4.4



3.4.5



3.4.6

FIGURE 1

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DIAGRAM SHEET 2

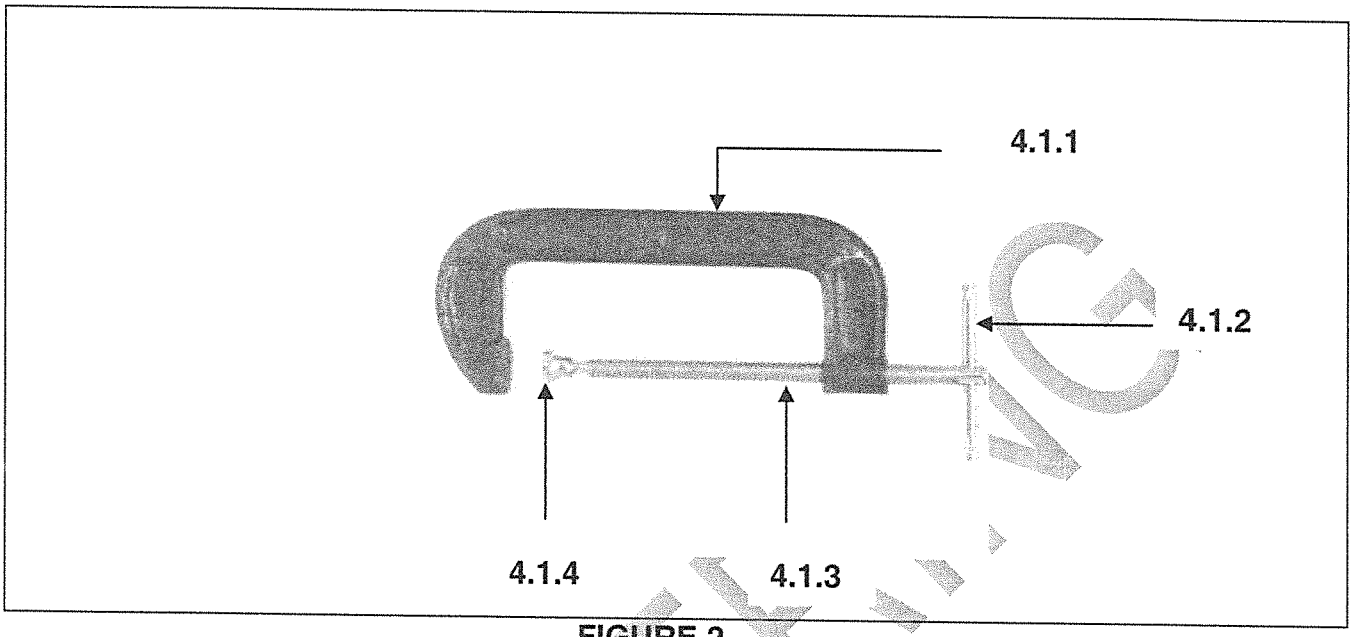


FIGURE 2

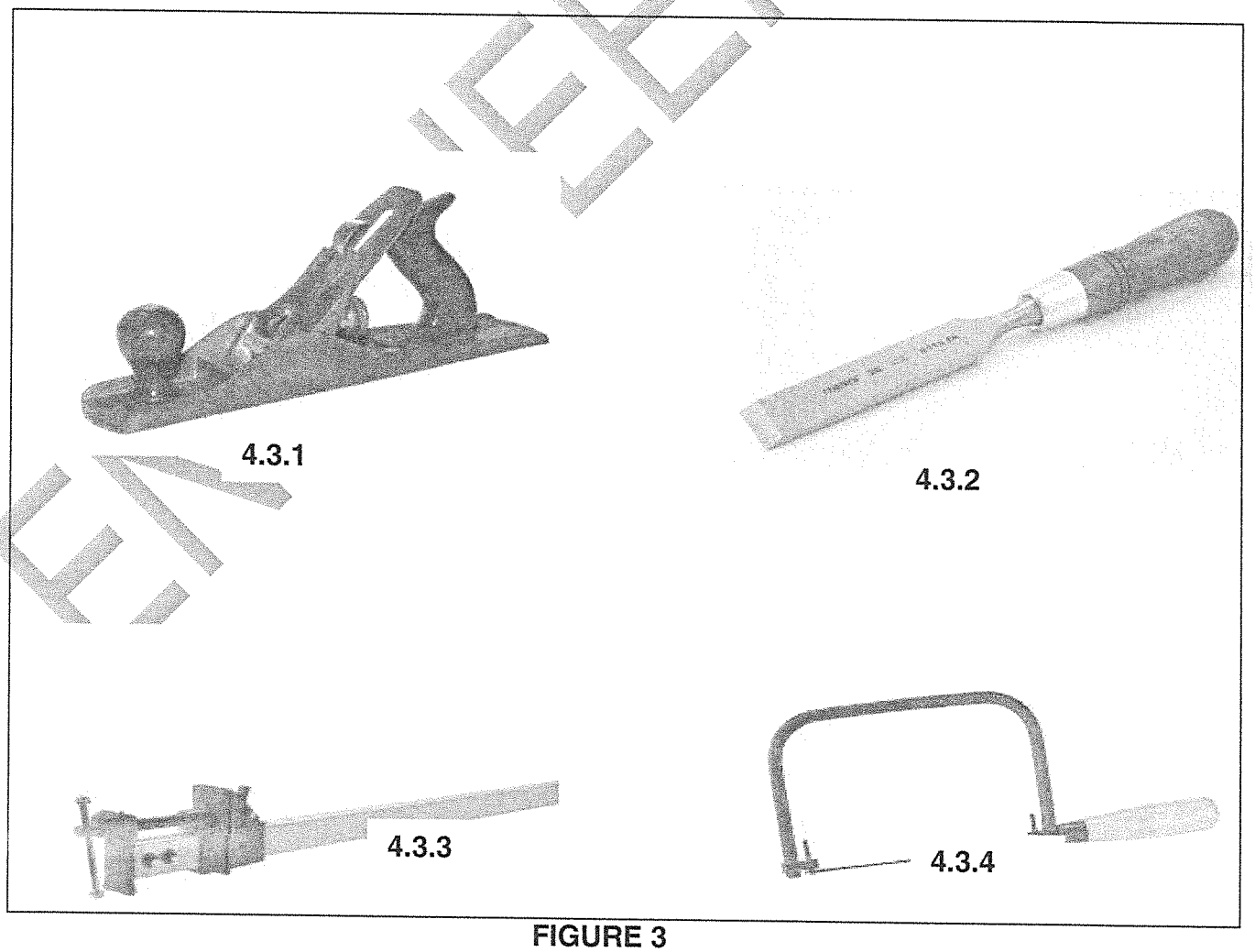


FIGURE 3

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