*Siku za Mapumziko

THE UNITED REPUBLIC OF TANZANIA
NATIONAL EXAMINATIONS COUNCIL
CERTIFICATE OF SECONDARY EDUCATION EXAMINATION

074

CARPENTRY AND JOINERY

(For Both School and Private Candidates)

Time: 3 Hours **Thursday November 18, 2004 a.m.**

Instructions

1. This paper consists of sections A, B and C.
2. Answer **all** questions in sections A and B and two (2) questions from section C.
3. Electronic calculators are **not** allowed in the examination room.
4. Cellular phones are **not** allowed in the examination room.
5. Write your **Examination Number** on every page of your answer booklet(s).

This paper consists of 5 printed pages.

SECTION A (20 marks)

Answer **all** questions in this section.

1. For each of the items (i) - (x) choose the correct answer from among the given alternatives and write its letter beside the item number.

(i) The temporary braces used on door frames to maintain a tested squareness is

A later left to be part member of a frame
B removed when the frame is fixed in position on the site
C removed and replaced by introducing the ledge
D removed when the bottom member of a frame is fixed.
E removed when the shutter is fixed.

(ii) The tie beam introduced to complete a rectangular framing of a truss for a pitch roof

A prevents the outword pull at eave which can cause a house to collapse
B prevents the air compression
C is a normal formular of making trusses
D is there to increase the king post
E is made to receive the ceiling board.

(iii) The means of avoiding a nail from splitting the wood is by

A drying wood properly
B working with green timber
C sharpening the end of the nail
D blunting the end of the nail
E wetting the end of the nail before driving into wood.

(iv) Bow, cup, spring and twist are forms of

A joint
B warping
C nails
D timber connector
E screw.

(v) The formula for determing the pitch of a roof is

A ratio of span to the pitch
B ratio of span to the rise
C ratio of rise to span
D the product of the pitch and the span
E the product of span and rise.

(vi) Iron mongery that allows movement include

A bolt, screws, nuffolk and butt hinge
B spring hinge, piano and parliament hinge
C porad-cut, escutcheon and crim pin
D hook, flap, tacks and wiggle
E bolt, spring hinge, porad-cut and tacks.

(vii) Safety regulations govern the

A workshop only
B workshop and hand tools
C workshop, hand tools and clothings
D hand tools and clothings only
E working bench.

(viii) Cohesion and adhesion are the major factors which determine the

A weakness of the glue
B strength of the glue
C tightness of two timbers together
D gliterness of the varnish
E water content of the timber.

(ix) Which of the following is a possible situation to promote fungus growth?

A Damp and sunny
B Hot and windy
C Damp and unventilated
D Dark and unventilated
E Rainy and ventilated

(x) The best converting method of timber is the

A trough and through method
B slash method
C tangential sawing
D quarter sawing
E combined quarter and the slash method.

2. Match the responses in **List B** with the phrases in **List A** by writing the letter of the correct response beside the item number.

LIST A	LIST B
(i) An outward direction weathered beyond the face of building thus throwing water clear of the face	A Connectors
(ii) A natural abrasive used for hand sanding	B U-bolt
(iii) A nail made to hold fancing wire	C Sash
(iv) They are clinging together molecules of different substances	D Siding and paneling
(v) The hinges better for gates and public building doors	E Widening
(vi) A structure temporary supporting material and workers above ground	F Glazing
(vii) Common joint for flooring	G Coupling
(viii) Devices of galvanized steel for joining built up roof trusses	H Sawing
(ix) Placing of glass windows and doors	I Scaffolds
(x) An individual frame into which glass is set	J Cohesion
	K Tee hinges
	L Adhesion
	M Hooks and hinges
	N Stapples
	O Barbed dowel pin
	P Sill
	Q Slates
	R Garnet
	S Flint
	T Nail wire

SECTION B (40 marks)

Answer **all** questions from this section.

3. Jointing, fixing devices and materials to provide structural efficiency fall into **three (3)** groups. Name the **three (3)** groups.

4. Show **four (4)** areas of work where the wedges are important devices.

5. Name **three (3)** types of morticing machines.

6. Explain the following terms as used in wood work:

   (a) Dowelling. (b) Trenching.

7. Name **three (3)** methods used for construction of timber floors.

8. State **four (4)** major steps, by sequence, used to sharpen a dull saw.

9. Explain briefly **two (2)** types of timber partitions.

10. Name **four (4)** methods used to fix a door frame.

11. What is the difference between "lock" and "night latch lock"?

12. (a) State **two (2)** types of shores. (b) Explain briefly the **two (2)** types in 12 (a).

SECTION C (40 marks)

Answer **two (2)** questions from this section.

13.

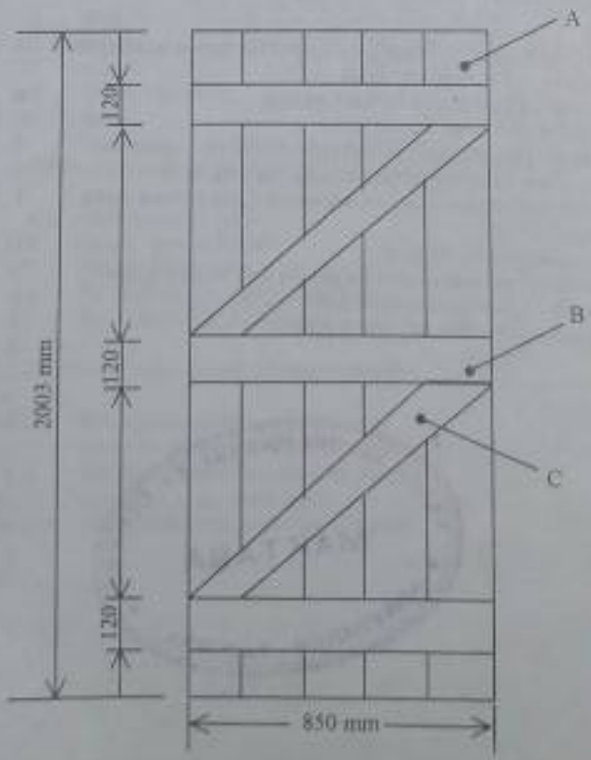

Figure 1

Study the diagram in figure 1 and answer the following questions:

(a) Name the type of door in figure 1.

(b) Give the names of the members A, B and C.

(c) Name the suitable iron mongery suitable for fixing or hanging the door.

(d) If the door is made of mninga 230 x 25 mm.

Calculate the selling price of the door given the following:

- Price per metre run sh. 4,200/=
- 50 mm nails ½ kg at sh. 1,000/= per kilogram
- 38 x 8 flat head screws 1 gross at sh. 1,500/= per gross

(Calculations should not be based on a mass production system).

14. (a) Define the term "defect in timber."

(b) Timber defects are classified in **two (2)** groups. Name them.

(c) Write down **four (4)** defects during tree growth.

(d) By means of sketch, show the difference between a **live knot** and **dead knot**.

15. (a) What does the term "timbering to trenches" mean?

(b) Write down **three (3)** classes of timbering.

(c) State **three (3)** regulations used in timbering construction.

(d) Sketch a simple method of protecting an open trench.