

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

Friday, 11th November 2016 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. Calculators and Cellular phones are **not** allowed in the examination room.
4. Write your **Examination Number** on every page of your answer booklet(s).



SECTION A (20 Marks)

Answer all questions in this section.

1. For each of the items (i) – (xi), choose the correct answer from among the given alternatives and write its letter beside the item number in the answer booklet provided.
- (i) Which table among the following must be completed with special timber and all classes of joints?
A Conference table. B Coffin table. C Folding table
D Office table. E Studying table.
- (ii) The only tools used for pulling large nails and removing old materials during renovation work is
A claw hammer B ball pen hammer C mallet hammer
D sledge bar E warrington hammers.
- (iii) Timbering of deep trenches can be done with the help of the following methods except
A vacuum method B sheet piling C stay bracing
D box sheeting E vertical sheeting.
- (iv) The strong temporary structures which is used for centric construction is known as
A Heavy timber B Thin timber C Light timber
D Wide timber E Long timber.
- (v) The butt joint can be used for construction of timber partition but the joint must be nailed at
A straight nailing. B skew nailing. C horizontal nailing.
D vertical up nailing. E in line nailing.
- (vi) When an opening for doorway occurs, the specific joint needed is
A Wedge joint. B Flaming joint. C Halving joint
D Dowelling joint. E Mortise and tenon joint.
- (vii) The vertical member (board) for supporting sides of the trench is known as
A strut B braces C pulling board
D hardboard E working board
- (viii) Which type of the glue has special property and must be soaked and heated before use?
A Contact glue B Scotch glue C Casein glue
D Urea formaldehyde E Aliphatic glue.
- (ix) Mould oil is used on formwork as
A lubrication oil B water proofing C rust inhibitor
D resistance to traces E release agent

- (x) The lower shelf or base of a cupboard is known as
- | | | | | | |
|---|-----------|---|-----------|---|----------|
| A | Carcase | B | Plinth | C | Standard |
| D | Pot board | E | End board | | |

2. Match the items in List A with responses in List B by writing the letter of the corresponding response beside the item number in the answer booklet provided.

List A	List B
(i) Absorb mineral salts from the soil.	A Annular rings
(ii) Coniferous trees.	B Bark
(iii) Distribute sap towards the centre.	C Branches
(iv) Deciduous trees.	D Cambium
(v) Food of the tree.	E Hard wood
(vi) Formation of cover on the outside of the tree.	F Heart wood
(vii) Layer of wood where new cells are formed.	G Knots
(viii) Support the crown.	H Leaves
(ix) The wood in the inner part of the tree usually darker in colour and durable.	I Medullary rays
(x) The formation of new layer each year.	J Photosynthesis
	K Pith
	L Roots
	M Sap
	N Soft wood
	O Trunk

SECTION B (40 Marks)

Answer all questions in this section.

- Mention four personal protective equipments that can be used or worn to safeguard the body against entanglement.
- List eight parts of a bench plane.
- Illustrate with sketches, the two ways of setting a circular saw teeth to prevent binding.
- State the precautions which must be observed when using synthetic resin and rubber based contact adhesives.
- Define the following terms:
 - Rafter
 - Verge
 - Eaves
 - Hip.
- Name two distortions that may occur during seasoning of timber
 - State the causes of defects in timber during seasoning.
- Why fast grown ring porous hard woods are considered to be stronger than

- slow grown ring porous hard woods?
- (b) What is meant by the term "grain" in timber industry?
10. State the specific function of portable hand router.
11. Mention four factors which govern the thickness of shavings and the smoothness of the finish when dressing a board.
12. (a) Explain the term "Equilibrium Moisture Content".
 (b) Name four types of insects which are known to attack seasoned timber.

SECTION C (40 Marks)

Answer two (2) questions from this section.

13. (a) List four harmful effects that can be caused by adhesive to your health. (04 marks)
 (b) State six precautions that should be taken to avoid harmful effects listed in 13 (a) above. (06 marks)
 (c) Explain how you can use the handsaw properly. (05 marks)
 (d) (i) Why widening joints are essential?
 (ii) Sketch a section of a tongue and grooved joint. (05 marks)
14. (a) Define a radial arm saw. (02 marks)
 (b) State the main safety precautions to be observed when operating a radial arm saw. (06 marks)
 (c) Name three type of sanding machines and state the major application of each type. (06 marks)
 (d) State the basic differences between a hardwood and softwood. (06 marks)
15. (a) Define the term cutting list. (02 marks)
 (b) State four purposes of a cutting list. (06 marks)
 (c) Figure 1 is a door frame made by *mnínga* taken from a machine shop. Before planed the timber was 75mm thick and 100mm wide. Prepare a cutting list for five door frames. (06 marks)

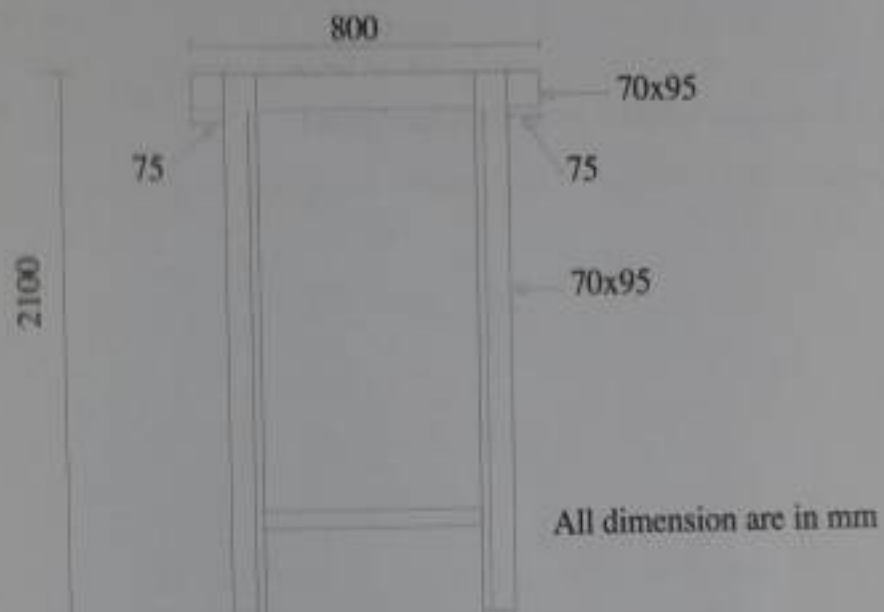


Figure 1

- (d) Calculate the cost of five door frames in 15 (c) if the timber is charged at Tsh. 4,500/= per meter run and 3,500/= labour charge per frame. **(06 marks)**