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, 10th November 2017 a.m.**

Instructions

1. This paper consists of sections A, B and C with a total of **fifteen (15)** questions.
2. Answer **all** questions in sections A and B, and **two (2)** questions from section C.
3. Calculators, cellular phones and any unauthorized materials are **not** allowed in the examination room.
4. Write your **Examination Number** on every page of your answer booklet(s).

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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 in the answer booklet provided.

(i) A special hand tool used for fine flat finishing on longer surfaces and edges is
A Jack plane B Router plane C Jointer plane
D Smooth plane E Fore plane.

(ii) The presence of small holes in the surface of timber that has been attacked by wood boring insects indicates
A the timber is no longer infected B an adult beetle have emerged
C insects borers have merged D the larvae have changed into pupae
E the larvae have bored into the timber.

(iii) The joint which is mostly used for joining boards glued or screwed together is
A Butt joint B Mortise and Tenon joint
C Mortise at tenon joint D Housing joint and dovetail joint
E Tongue and groove joint.

(iv) What are the two natural phenomena concerned with glue works?
A Water resistance and heat. B Cohesion and adhesion.
C Cohesion and suitable speed of set. D Adhesion and suitable time for shelf.
E Shelf life and resistance to heat.

(v) What is the function of latches used in doors?
A to provide the required locking B to support the locking
C to support double door D to close without locking
E to improve the door appearance.

(vi) Which one of the following is a classifications of carcases construction?
A Box construction and brick construction.
B Box construction and framed construction.
C Box construction and non-box construction.
D Box construction and non-framed construction.
E Non box construction and framed construction.

(vii) Which one of the following grade-ranges of abrasive papers has the finest finishing grade?
A 360 – 400 B 50 – 60. C 80 – 100.
D 120 – 180. E 220 – 280.

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(viii) Timbering to trench is defined as

A a part of foundation in the building
B a permanent support of a building
C a basic type of the foundation trench
D the temporary support of foundation
E the temporary support to the sides of the trench.

(ix) The function of sole plate which is used in shoring works is

A to distribute the load evenly over various components
B to provide a fixing point for the various components
C to allow the shores to be easily leveled
D to keep the bottom of the shores in line
E to provide good appearance of the work.

(x) The horizontal distance between two successive riser faces is known as

A Step
B Riser
C Going
D Landing
E Rise.

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

List A	List B
(i) A device which is used to support a piece of wood when sawing, cutting or chiseling.	A Bench stop
(ii) A useful device used in preparing mouldings or rebating.	B Bench holdfast
(iii) A device which is used for holding a piece of wood to the heavy work table.	C Caliper
(iv) A device used while gluing, to hold and draw the parts being assembled together while the glue is setting.	D Corner-clamp
(v) A device used for holding and drawing together right angled mitre joints while gluing and pinning.	E Cutting board
(vi) A device used for holding work piece when planing the ends square to a face or an edge.	F G-cramp
(vii) A device used to support a work piece when planing its surface.	G Hawk
(viii) A device used to test the evenness of surfaces.	H Mortise gauge
(ix) A device used for checking the inside or outside diameters of cylindrical objects.	I Ruler
(x) A device used for testing 90° of surfaces and for marking lines at right angles to a given surface.	J Sash-cramp
	K Shooting-board
	L Steady rest
	M Straight edge
	N Try square
	O Wing compass

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SECTION B (40 Marks)

Answer **all** *questions in this section.*

3. (a) What is a carpentry and joinery workshop?

   (b) What is the importance of wearing safety boots, shoes and riggers with steel toe, caps or gaiters?

4. (a) What are the impelling tools in carpentry and joinery?
   (b) Give three examples of impelling tools.

5. A 600 mm diameter plate saw has 95 teeth around its periphery; calculate the tooth pitch.

6. Show by means of sketches the fast growing ring porous and slow growing ring porous for hard wood.

7. Explain the uses of the following tools in veneering operations:
   (a) Veneer hammer
   (b) Veneer clamp
   (c) Veneer saw
   (d) Veneer knife.

8. Outline the advantages of using machines and portable powered tools in our daily life.

9. Write down the uses of the following iron mongery:
   (a) Casement stay.
   (b) Casement fastener.
   (c) Hinges.
   (d) Catches.

10. Name four important factors that should be taken into account for the adhesive to change from its liquid state into solid state.

11. Define the following terms as used in the wood work industry:
    (a) Cabinet scrapers
    (b) Abrasive paper
    (c) Rasps
    (d) Varnish.

12. (a) For each of the following operations, give the appropriate type of machine to be used:
        (i) Planing surfaces and edges of the board.
        (ii) Grooving, mitring, ripping and rebating.
        (iii) Cylindrical and circular shapes.
    (b) Define "veneer" as applied in wood work.

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SECTION C (40 Marks)

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

13. (a) With the aid of a neat sketch, explain the procedures on how the nail can be removed from a piece of board. **(08 marks)**

    (b) How would you prevent splitting or the nail from bending when nailing in hardwood board? **(04 marks)**

    (c) Outline the factors that determine the holding power of a nail in order to be used satisfactorily. **(05 marks)**

    (d) What information is necessary to state when ordering/purchasing nails? **(03 marks)**

14. (a) Name and explain five tools which will facilitate the work when working on a field site. **(08 marks)**

    (b) Briefly explain the general uses of files. **(02 marks)**

    (c) With the aid of neat cross section sketch, list common shapes of files used in woodworks. **(10 marks)**

15. (a) With the aid of neat sketches explain:

    (i) Star shake
    (ii) Cup shake
    (iii) Heart shake. **(12 marks)**

    (b) Briefly explain the following methods of timber preservative:

    (i) Brushing and spraying
    (ii) Dipping or immersing
    (iii) Steaming
    (iv) Diffusion. **(08 marks)**

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