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

072 ARCHITECTURAL DRAUGHTING
(For Both School and Private Candidates)

Time: 3 Hours **Wednesday November 17, 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 6 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) Architectural lettering differs greatly from that used in engineering drawings because

A most architectural drawings are shown to the client
B architectural lettering makes use of the lower case lettering method
C engineering lettering is practised by laymen
D engineering lettering employs an inconsistent style
E lettering in architectural drawings is always formative.

(ii) Few features shown on the floor plan are

A rooms and roofs
B roofs and walls
C windows and rooms
D wall finishes and doors
E ceilings and doors.

(iii) It is obvious that all building plans are drawn to —— scale.

A reducing
B enlarged
C full
D smaller
E larger

(iv) The viewing direction for a cut surface of an object is shown by the

A thickness of the cutting plane line
B position where the cutting plane line passes
C break lines shown on sectioning
D arrow heads on a cutting plane line
E north point direction.

(v) The front elevation of the roof part of a hip roof has a shape of a

A triangle
B rectangle
C trapezium
D parallelogram
E rhombus.

(vi) The fireback in fireplace constructions

A reflects heat into the room and draws smoke up the chimney
B controls the circulation of air when the fuel burns
C installs the paper size of fireback in the fire place
D contains the smoke generated which might hinder heat reflection into the room
E extinguishes any unnecessary burning of fuel when not required.

(vii) A perspective drawing is

A orthographic projection
B isometric drawing
C axonometric projection
D pictorial drawing
E first angle projection.

(viii) Casement windows are designed to open

A outwards
B inwards
C by means of side pivots
D by swinging like a door
E by moving vertically

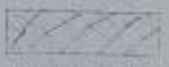
(ix) When preparing plumbing linework drawings the service pipe conveys water from

A company's stop cock to hot water vessel
B cold water cistern to hot water vessel
C company's stop cock to cold water cistern
D cold water cistern to draw off points
E water main to company's stop cock.

(x) Which type of stair is used more often in a residential building?

A Elliptical stair
B Spiral stair
C Lift
D Dog-legged stair
E Ramp

2. Match the responses in **LIST B** with the words/phrases in **LIST A** by writing the letter of the response beside the item number.

LIST A	LIST B
(i) Specification writer	A Small drawings giving general arrangements
(ii) Floor plans, elevations and details	B Service line
(iii) Two methods of dimensioning drawings	C Table of classification
(iv) The function of a badge board in roofs	D Hinged window
(v) Sewage line	E Smoke shelf
(vi) The reason for avoiding the front door from opening directly to the living room	F To maximize privacy at the living room
(vii) Casement window	G The person who writes the cost of proposed building
(viii) Common location of flue controller in fireplaces	H The major classification of the architectural working drawings
(ix) A symbol of a sawn wood	I 
(x) Schedules	J Uni-directional and aligned
	K To cover the ends of purlins at the gable wall
	L Drainage disposal system
	M Dwelling
	N Sitting room
	O Door sill
	P Extension lines and dimension lines are useful
	Q The person who prepares the details of materials, methods of construction and finishes for a proposed building
	R 
	S The capacity of a building to accommodate people
	T To support the tie beams before ceilings are fixed

SECTION B (40 marks)

Answer **all** questions in this section.

3. Describe the basic elements of drawings.

4. What is the function of a ridge board?

5. What are the specific uses of soft pencils and hard pencils?

6. Differentiate a foundation from a drain trench.

7. When is a stair said to be
   (a) Steep? (b) Shallow?

8. (a) What is the use of braces in match boarded doors?
   (b) Name the joint used between the
      (i) top rail and stile of a panelled door.
      (ii) stile and middle rail of a framed, braced and battened door.

9. What is the function of a dining area in a residential building?

10. What does site plans show?

11. Write **four (4)** types of dimension information shown on floor plans.

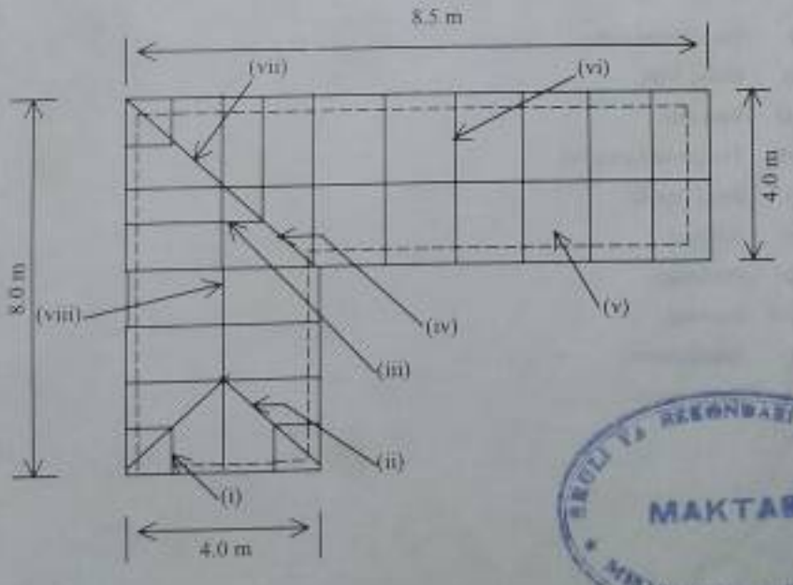
12. Distinguish between a one point and a two point perspective drawing.

SECTION C (40 marks)

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

13. (a) State the duties of each of the following:
   (i) Client. (ii) Contractor. (iii) General foreman. (iv) Trade foreman.
   (b) What is DENSITY as used in architecture?
   (c) Explain why it is necessary to show a layman client presentation drawings of a house rather than a set of working drawings.

14. (a) From the given roof plan, write down the names of the members indicated by numbers (i) – (viii).



(b) To a scale of 1:50 draw a roof plan of the building in 14.(a) above if the building is already fixed with roof covering materials. Dimension your drawing.

(c) Draw a neat section of a vertical section through a window opening fitted with a casement window rebated to open outwards to show clearly the parts of the wall, lintel, cill and frame details.

15. (a) Draw the symbols of the following:

(i) Stop valve.
(ii) Water tap.
(iii) Bath.
(iv) Inspection pipe.
(v) Sewer drain.
(vi) Storm water drain.
(vii) Plaster.
(viii) Glass/mirror (elevation).
(ix) Hollow block.
(x) Block partition.

(b) Estimate the quantity of brickwork and plastering required in a wall 4.0 m long, 3.0 m high and 215 mm thick.

N.B: Brickwork in m^3.
Plastering in m^2.
A wall is to be plastered on both sides.

(c) Write the abbreviations of the following:

(i) Intercepting trap.
(ii) Grand level.
(iii) Vent pipe.
(iv) Tongue and grooved.
(v) Bench mark.
(vi) Air brick.
(vii) Brickwork.
(viii) Drawing.
(ix) Specification.
(x) Not to scale.