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

072 ARCHITECTURAL DRAUGHTING

TIME: 3 Hours *Wednesday November 19, 2003 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 phone 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) to (x) choose the correct answer from among the given alternatives and write its letter beside the item number.

(i) Drawing is a

A language for the introverts
B means of communication by lines
C subject for the dull pupils
D military language
E subject for technicians.

(ii) Details within the drawing are shown by

A overal dimensions
B dotted lines
C hatched lines
D sectional lines
E leader lines.

(iii) Dead loads are loads caused by

A moving wind
B resting equipment
C moving bodies
D the static and non moving bodies
E non living things.

(iv) Shingles are a type of roofing material manufactured from

A sisal yarns
B cement
C galvanised steel
D wood
E man made material.

(v) Scales can be expressed as

A an instruction
B a fraction
C whole number
D picture
E a model.

(vi) Dotted lines or broken lines are used to show

A visible areas
B hidden areas
C unnecessary areas
D cut views
E built areas.

(vii) The following information is necessary and should appear on a drawing:

A Door and window schedule
B Type of brick to be used
C Contractor's name
D Bearing load of the roof supports
E Bearing capacity of the surrounding environment.

(viii) A person who initiates a drawing is the

A clerk of works
B material engineer
C architect
D client
E site engineer.

(xi) The element which shows the true picture of the building materials in a drawing is the

A ground plan
B rear elevation
C drainage layout
D vertical section drawing
E section drawing.

(x) The block plans in a drawing office are initiated by

A a village headman
B a land officer
C a town planner
D a surveyor
E an architect.

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

LIST A	LIST B
(i) Earth used to fill in areas around a foundation wall.	A Datum line
(ii) The strip on the door jambs against which the door closes.	B Pitch
(iii) An offer and guarantee by a contractor that the performance of the built work will be in accordance with the conditions of the contract.	C Proper line D Combination of neighbourhoods E Door stop F Bid condition
(iv) A reference that remains constant. The sea level is commonly used.	G Density H Back fill I Base
(v) Community.	J Dimension line K Plot
(vi) The number of residential structures and people in a given amount of space.	L Performance bond M Materials bond N Location
(vii) Legal limits of a plot on all sides.	O Wedge
(viii) Thin unbroken lines upon which building dimensions are placed.	P Degree Q Free regulation R Site
(ix) A slope of roof usually expressed as a ratio.	S Centre line of main roads T Triangulation point
(x) The agreement between an architect, builder and owner, indicating fee and conditions under which the project is undertaken.	U Lean to roof.

SECTION B (40 marks)

Answer **ALL** questions in this section.

3. Give names and sizes of any 4 drawing papers.

4. With the aid of a sketch, indicate using an arrow the ascending and descending stair on the plan of a stair.

5. Name two broad classes of roofs.

6. List four features shown on elevation drawing.

7. Give four (4) factors on which the classification of windows depend.

8. State four (4) uses of architectural scale

9. The needs and tasks of clients differ from one client to another. Give the method which the designers use to make sure that they satisfy them.

10. Sketch a typical traditional casement window to

    (a) open out-ward (b) open in-ward.

11. Sketch the door conventions for a

    (a) double acting door (b) folding door

12. Arrange the leads/pencils according to degree of hardness.

SECTION C (40 marks)

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

13. (a) Define

    (i) total rise of stair (ii) total going of stair.

    (b) A straight flight concrete stair is constructed between two floor levels with a room height of 2665 mm. The floor slab thickness is 110 mm and the rise of one step is 185 mm. Calculate

    (i) the number of risers
    (ii) the number of treads
    (iii) the going
    (iv) the total going
    (v) the pitch of stair.

    (c) To a scale of 1:5 draw a single line sectional elevation of a stair showing at least two steps.

    Assume that $2r + g = 650$ mm and waist of stair 100 mm.

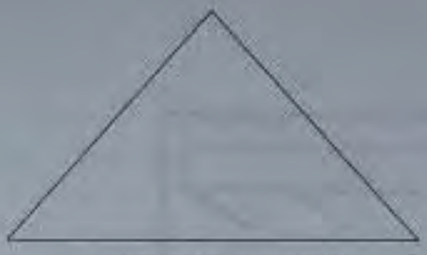
14. (a) With the aid of sketches explain briefly the difference between a **high pitched roof** and a **low pitched roof** if their spans remain the same.

    (b) A gable end side roof elevation with its roof plan projected below it (not to scale) is shown in the figure below.

    (i) Copy the views by transferring the measurements directly from the given views.

    (ii) Draw the roof surface development projecting on both sides of the roof plan given.

Clearly show the construction lines



GABLE END ELEVATION

ROOF PLAN

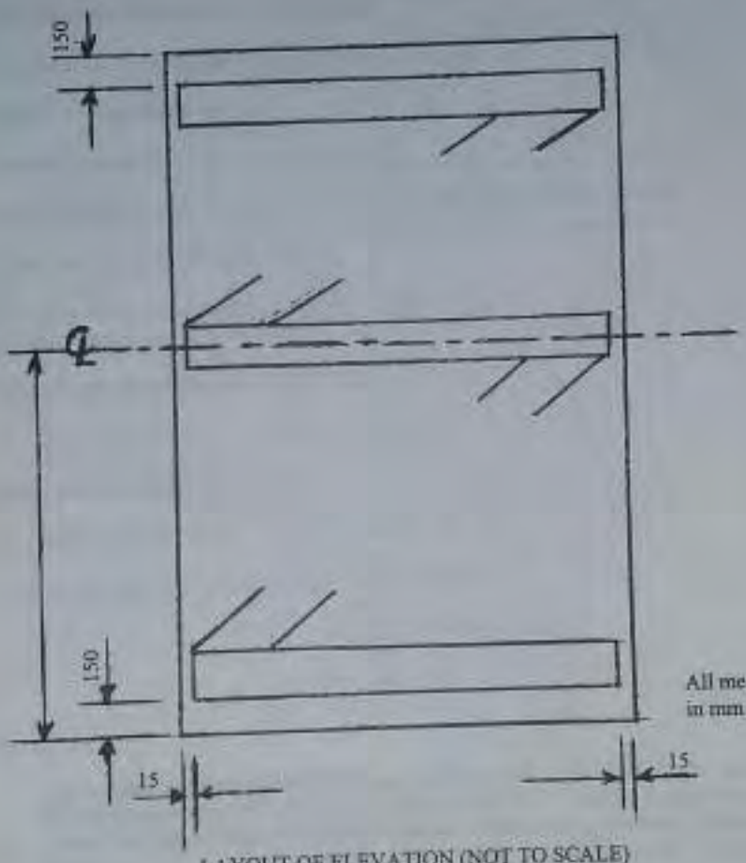
15. The construction details of a ledged, braced and battened door consists of seven tongue and grooved battens each of size 20 mm thick x 140 mm wide x 1950 mm high (excluding the tongues and grooves), tongue and grooves 10 mm x 10 mm size, three ledges each of 20 mm thick x 120 mm wide and two braces each of 20 mm thick x 120 mm wide.

Guided with a door layout below and to a scale of 1:10, draw

(a) the internal elevation of a door

(b) the end elevation viewed from left side

(c) the horizontal cross section with the cutting plane line passing through the bottom brace.



LAYOUT OF ELEVATION (NOT TO SCALE)