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   *Monday 20th October 2008 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 7 printed pages.

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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 among the given alternatives and write its letter beside the item number.

   (i)   A flat is a
   - A   map of several blocks
   - B   bench mark
   - C   plot
   - D   graphic description of a sub-divisions of land
   - E   reserved plot for Government houses.

   (ii)   The size of wall thickness varies according to the
   - A   building material
   - B   area of construction
   - C   purpose of building
   - D   load of the building
   - E   type of structure.

   (iii)   The going of a step is measured from
   - A   edge of one nosing to the edge of the next
   - B   edge of one nosing to the face of the riser
   - C   face of one riser to the back of the next
   - D   face of one tread to the edge of nosing
   - E   face of one tread to the back of next tread.

   (iv)   The intermediate vertical member of a casement window frame is called a
   - A   muntin
   - B   mullion
   - C   stile
   - D   jamb
   - E   transom.

   (v)   Bridging joists are also known as
   - A   cripple joists
   - B   trimming joists
   - C   binders
   - D   common joists
   - E   wall plates.

(vi)   The rise of a semi-circular arch is

   A $\frac{1}{8}$ of a span

   B $\frac{1}{2}$ of an arch span

   C   the diameter of the arch
   D   the chord of the arch

   E $\frac{1}{3}$ of an arch span.

(vii)   The vertical dimensions of a building are shown on a
   A   foundation plan
   B   elevation
   C   Floor plan
   D   Roof plan
   E   cross section.

(viii) Scale can be expressed as a
   A   fraction
   B   picture
   C   an instruction
   D   whole number
   E   model.

(ix)   In a roof construction the level distance below any rafter on half the width of the building
        is called
   A   pitch
   B   slope
   C   rise
   D   run
   E   span.

(x)   "In-situ" cast concrete can be defined as concrete that has been made
   A   in location
   B   on site
   C   in a factory
   D   in large units
   E   in laboratory.

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

LIST A	LIST B
(i) Apartment	A. The face or front elevation of a building
(ii) Dressing room	B. A curved structure designed to support itself
(iii) Bond	C. Tread of steps used in a winding staircase
(iv) Coping	D. Is an area above windows
(v) Balcony	E. A compartment used as store in the site
(vi) Façade	F. A room or suit of two or more rooms suitable as residence for one or more persons
(vii) Gable	G. A cap or top course of masonry on a wall to prevent moisture penetration
(viii) Winders	H. Is the inner section of the chimney
(ix) Safe load per unit area which the ground can carry	I. Is the top most part of a roof
(x) Arch	J. The arrangement of masonry units in a wall.
	K. Is the top part of a wall with triangular shape
	L. Is the space for door openings
	M. Is an area used as kitchen
	N. Is part of a bedroom
	O. A deck projecting from the wall of a building above ground level
	P. Is a series of going on a staircase
	Q. Is a face or selection of the building
	R. Bearing capacity
	S. Is a straight structure designed to support walls
	T. A big wardrobe for the family

SECTION B (40 marks)

Answer **all** questions in this section.

3. Define the following terms with reference to stairs.

(a) Nosing

(b) Flight

(c) Baluster

(d) Pitch line

4. Write down the long form of each of the following abbreviations as used in perspective drawing.

   (a) G.L.

   (b) S.P.

   (c) P.P.

   (d) V.P.

5. What is the purpose of a site plan?

6. Sketch a stretcher bond.

7. Sketch the symbols used to represent the following features in drawings.

   (a) Rectangular manhole

   (b) Ramp

   (c) Double bed

   (d) Casement higher at side

8. What are the standard colour codes for electric wires?

9. What is the purpose of working drawings and specifications in architecture?

10. Why does a flat roof need a slight slope?

11. Mention the **two (2)** functions of a roof.

12. Label the parts indicated in figure 1 below.


Figure 1.

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SECTION C (40 marks)

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

13. Figure 2 below is a floor plan of the proposed residential building not drawn to scale, the dimensions shown are in mm.
Using the data below and to a scale of 1:75 draw the right end elevation of the building.
   (i) All walls above FFL are 150 mm thick.
   (ii) Height from floor level to the bottom of the window is 900 mm.
   (iii) Height of all windows is 1200.
   (iv) Height just above window to the wall plate is 730 mm.
   (v) Roof slope is 30°.
   (vi) Roof overhang is 600 mm.
   (vii) Fascia board is 200 mm.
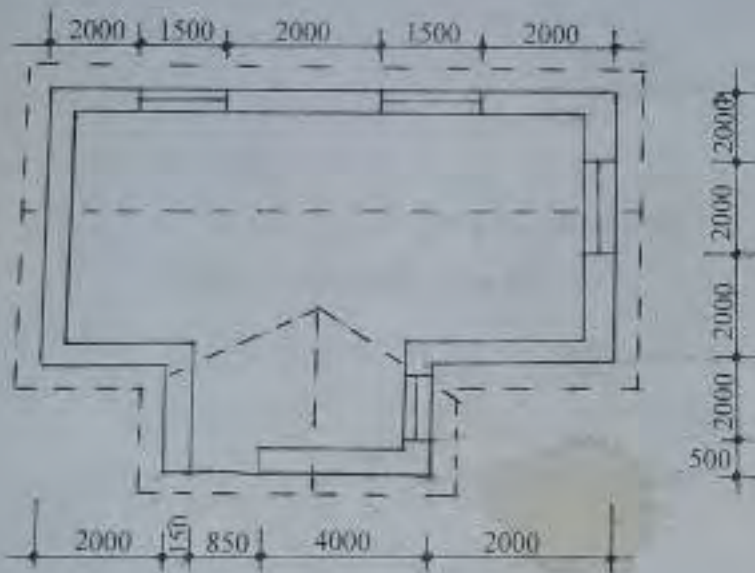
14. (a) The drawing table of a draughtsman is 600 mm x 800 mm.
   Draw the same table to a scale of
   (i) 1:100
   (ii) 1:50.

   (b) (i) Define an eave.

   (ii) With a neat sketch(es) show the following.
   - Closed eave
   - Open eave
   - Flush eave

15. Fig 3(a) and 3(b) below show a plan and elevation of one point perspective (office method) at a scale of 1:1. Copy them and complete the required perspective.
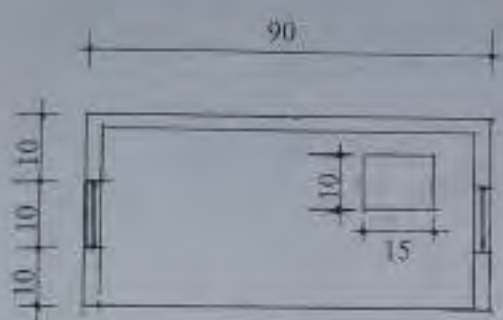
PLAN
Fig. 3 (a)
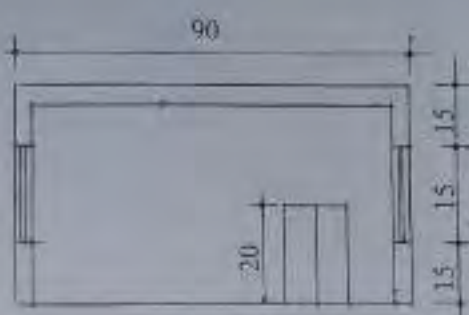
END ELEVATION
Fig. 3 (b)

NOT TO SCALE

All dimensions are in mm.