

**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, 18th October 2010 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. Drawings should be in pencil and all drawings in section C should be prepared in **A3 standard paper** format.
4. Calculators are **not** allowed in the examination room.
5. Cellular phones are **not** allowed in the examination room.
6. 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) If a person is to understand and interpret the technical drawing correctly, it is necessary for him to be
- A skilled in demonstrating technical drawings
 - B familiar with the use of drawing instruments
 - C able to tell people about the importance of technical drawing
 - D knowledgeable with the history of technical drawing
 - E well acquainted with the fundamentals of technical drawing.
- (ii) Scale rules are available in _____ styles.
- A flat and square
 - B flat and triangular
 - C triangular and rectangular
 - D rectangular and flat
 - E rectangular and square
- (iii) Rooms should be planned with ample wall space for
- A furniture placement
 - B door placement in position
 - C providing proper window sizes
 - D location of corridors
 - E separation of rooms in buildings.
- (iv) The steeper the roof is the
- A lesser it requires the roof covering materials
 - B lesser it has the rise
 - C more it has a longer roof slope
 - D lesser it has a shorter roof slope
 - E more it requires shorter spans.
- (v) Many of the fireplace details are best shown by its
- A horizontal section
 - B vertical section
 - C removed section
 - D elevation
 - E plan.
- (vi) Other items shown in plumbing plans besides the room arrangements are
- A pipes
 - B wall lines
 - C electrical conduits
 - D water closets
 - E finishing edges.

- (vii) If there is a conflict between what the drawings show and what the specifications call for, the way forward will be to follow the
- A specification
 - B drawing
 - C contractor's decision
 - D re-designed work
 - E workers' discussion and decision.
- (viii) A building plot should be selected
- A after the building has been designed
 - B before the building is designed
 - C immediately after consulting an architect
 - D once the client has signed an agreement with the contractor
 - E on the basis of the availability of building materials.
- (ix) The entire area of a foundation plan of a particular rectangular building is
- A smaller than that of its one wall elevation
 - B larger than its site plan
 - C larger than its floor plan
 - D the same as the floor plan
 - E smaller than its floor plan.
- (x) When a framed braced battened door is viewed from the side it is possible to see
- A battens and rails
 - B rails only
 - C battens and braces
 - D braces and stile
 - E stile only.

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

List A	List B
(i) In using a scale-rule do not accumulate distances.	A Transom
(ii) Distributes the weight of the house over a wide area in the sub-soil.	B Mullion
(iii) The orthographic appearance of the end elevation of the part of hipped roof.	C Superstructure
(iv) Height of stair rise.	D Substructure
(v) The liquid discharge from a septic tank after bacterial treatment.	E Lettering hint
(vi) A channel that carries electric wires for protection and for safety.	F Pipe
(vii) House design procedure.	G Involves the proper arrangement of room templates
(viii) Space words for easy reading	H Recommended being 30 mm
(ix) The upper part of the building above ground level.	I Overall dimensions are laid out first
(x) Intermediate horizontal weathered member of window frame.	J Sewage
	K Footing of foundation
	L Trapezium
	M Triangular
	N Hardcore
	O Always not larger than the going
	P Effluent
	Q Instead prepare working drawings
	R Conduit
	S Title block
	T Positioning a house on a plot

SECTION B (40 Marks)

Answer **all** questions in this section

- List down four (4) draughting instruments.
- Give two (2) points for which legibility in lettering depend.
- Sketch the symbols for the following electrical installation materials:
 - One way switch.
 - Two way switch.
 - Switch socket and outlet.
 - Ceiling outlet

6. Draw a neat cross section of strip foundation and label it.
7. What does each of the following show?
 - (a) Plot plan *boundary of the site*
 - (b) Detail drawing *section particular size of the item or member how its connected or cut*
8. State four (4) types of stairs commonly used in residential buildings.
9. Mention four (4) common types of windows used in buildings.
10. Sketch a one wall kitchen and label the important parts.
11. How does the weather condition affect drawing paper?
12. List down eight (8) temporary services which should be provided at a construction site.

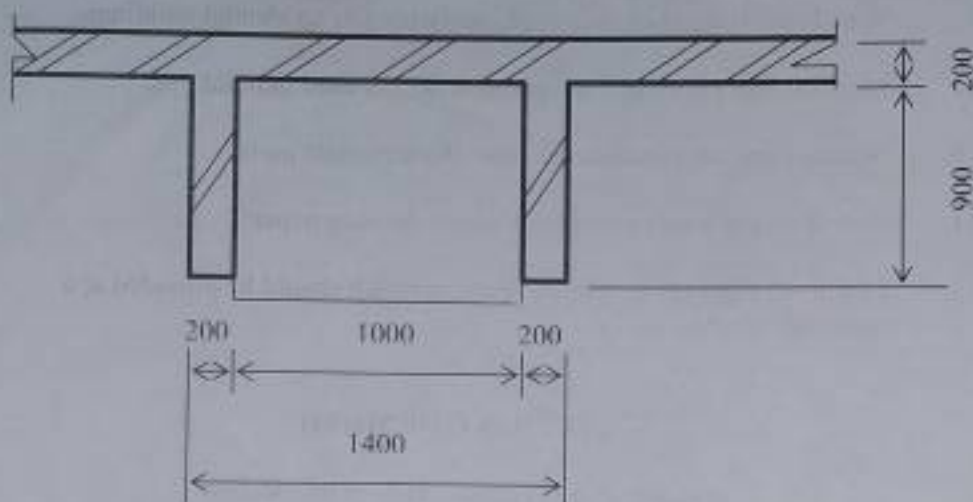
SECTION C (40 Marks)

Answer two (2) questions from this section

13. (a) Differentiate between overall dimension and detail dimension.
- (b) Few construction details of a small single roomed store are as stated below:
 - (i) Brick wall thickness of 200 mm.
 - (ii) Floor room size of 4.40 m wide by 5.6 m long.
 - (iii) One door of size 1000 mm wide by 1900 mm high placed on the longer side of wall beginning at 1500 mm from the right outside corner of the wall.
 - (iv) One window of size 1200 mm wide by 900 mm high which is placed at 1000 mm away from the door on the same longer side of wall.

To a scale of 1:50; draw the floor plan of this store. Show all necessary materials and dimensions.

14. Below is the layout plan of a fireplace opening attached to an external wall:
To a scale of 1:20; draw the isometric projection of the fireplace (with part of external wall) if all are built up to a height of 0.8 m above the floor level.
Dimensions should be clearly shown.



FIREPLACE LAYOUT PLAN (Not to scale)

15. In Architecture, planning is simply "spaces organization". Propose the planning of residential house for a family of the following composition:
- (a) Father (Policeman).
 - (b) Mother (Primary school teacher)
 - (c) A boy, 9 years old (Primary school pupil)
 - (d) A girl, 15 years old (Day Secondary school pupil)
 - (e) House girl, 18 years old (VETA, Evening class student)

Work out and sketch in single line, two (2) alternatives of floor plans for the family house. All spaces should be clearly labeled.