

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

**072**

**ARCHITECTURAL DRAUGHTING**

(For Both School and Private candidates)

**Time: 3 Hours**

**Year: 2022**

**Instructions**

1. This paper consists of section **A**, **B** and **C** with total of thirteen **(13)** questions.
2. Answer **all** questions in section **A** and **B**, and **one (1)** questions from section **C**.
3. Section **A** carries **ten (10)** marks, section **B** carries **sixty (60) marks**, and section **C** carries **thirty (30)** marks.
4. Cellular phones, and any unauthorized materials are **not** allowed in the examination room.
5. Write your **Examination Number** on every page of your answer booklet (s).



## SECTION A (10 marks)

Answer **all** questions in the section

1. Choose the correct answer for each item (i) to (x) and write its letter in the answer booklet provided:

i) Which type of window will you use to a house having an enclosed space below the roof, which requires air and light?

- A. Dormer window
- B. Corner window
- C. Bay window
- D. Skylight window
- E. Clerestorey window

ii) Who is responsible to prepare a site plan drawing of a building?

- A. A surveyor
- B. Town engineer
- C. Town planner
- D. An architect
- E. A land officer

iii) A client decided to use architectural drawings to select one among proposed residential house with different size and arrangement of rooms. Which type of drawing a client would use?

- A. Elevation drawing
- B. Floor plan drawings
- C. Roof plan drawing
- D. Site plan drawing
- E. Sectional view drawings

iv) Which of the following terms describe the projecting brickwork, which contain the fire and support chimneybreast over the fireplace?

- A. Fire back
- B. Flue
- C. Hearth
- D. Lintel
- E. Jambs

v) Which of the following is the softest pencil to be used for drafting purpose?

- A. HB
- B. 1B
- C. 2B
- D. H
- E. 2H

vi) What type of scale is used when a drawing is smaller than the actual size of the object?

- A. Enlarging scale
- B. Reducing scale
- C. Small scale
- D. Decreasing scale
- E. Increasing scale

vii) Suppose you are drawing a one-point perspective. Where will you locate the vanishing point? A

- A. Above the horizon
- B. At picture plane
- C. On the horizon
- D. At station point
- E. At ground line

viii) Lettering is used to give descriptive words and notice in order to produce drawings, which are clearly understood. What does the single stroke-lettering

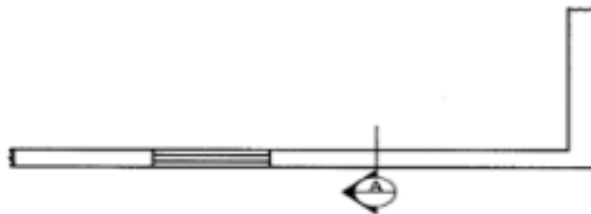
mean?

- A. Cursive writing
- B. Uniformity in letter as obtained in one stroke of the pencil
- C. Writing in one stroke without lifting the pencil
- D. Writing only with hand and with small diameter lead pencil
- E. Cutting plane name

ix) Suppose you are working with local water authority and asked to connect an indirect water supply system in a residential building: which plumbing fitting will you connect directly?

- A. Sink
- B. Bath tube
- C. Shower
- D. Wash basin
- E. Water closet

x) The figure below shows one among the methods of labeling section lines. What does letter A represents?

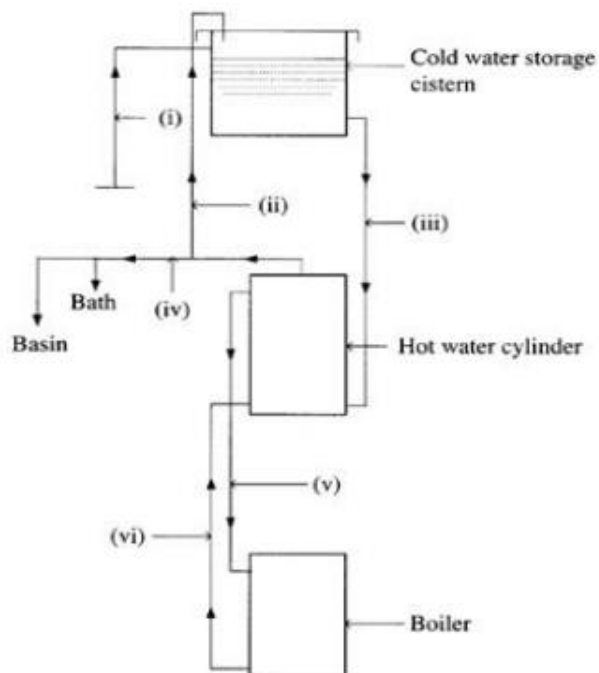


- A. Extended section
- B. Sheet of section reference line
- C. Section line name
- D. Cutting line name
- E. Cutting plane name.

## SECTION B (60 marks)

Answer **all** questions from this section

2. Distinguish the given forms of roofs;
  - (a) gambrel and mansard roofs;
  - (b) gable and hip roofs.
3. (a) Identify three factors that affect the choice of scale to be used for drawing a section of a building.  
(b) Distinguish between a cross section and a longitudinal section of the house floor plan.
4. Explain how to keep drawings clean while protecting the surface of the paper.
5. (a) Explain:
  - (i) why someone should opt for a fan light, and
  - (ii) where the fan light is placed in a building.  
(b) Explain the purpose of providing architraves as the window frame finishes.
6. Identify pipes labeled (i) – (vi) in the figure provided below.



7. With the aid of plan sketches, to explain how the landing of the following types of stairs is proposed:
  - (a) bifurcated stair
  - (b) quarter turn stair.
8. Identify six pieces of information they would need from the client during the house planning process.
9. Draw the graphical symbols that would represent the given sanitary fixture when preparing a working drawing of a residential building floor plan;
  - (a) Western style water closet,
  - (b) rectangular bath tub,
  - (c) wall-hung urinal,
  - (d) kitchen sink double drainage board.
10. (a) Explain the four ways in which an officebuilding door can be designed to close an opening .
  - (b) Explain situation under which the given types of doors can be used:
    - (i) Ledged and battened doors,
    - (ii) Framed battened and braced doors.
11. Draw a shallow manhole showing
  - (a) a half channel,
  - (b) a drainage chute,
  - (c) benching
  - (d) drainage pipe.

### SECTION C ( 30 marks)

Answer any **one (1)** questions from this section

12. (a) Draw a skeleton core flash door showing a ventilation hole in a core rails, plywood skin and a lock block.
- (b) You are given suggested dimensions for a double leaf shutter having panels in each leaf as follows:

- (i) The size of door opening is  $1200\text{ mm} \times 2100\text{ mm}$ ,
- (ii) The size of the timber member for a door frame is  $100\text{ mm} \times 50\text{ mm}$ ,
- (iii) The size of the timber member for top and intermediate rail is  $125\text{ mm} \times 40\text{ mm}$ ,
- (iv) The size of the timber member for bottom rail is  $200\text{ mm} \times 40\text{ mm}$ ,
- (v) The thickness of the door shutter is  $40\text{ mm}$ ,
- (vi) The thickness of the panel member is  $25\text{ mm}$ ,
- (vii) The size of timber member for styles is  $100\text{ mm} \times 40\text{ mm}$ ,

Draw a panel door to a scale of 1:10 showing a front elevation, horizontal sectional and vertical sectional through the panels.

13. (a) Draw a pictorial drawing of the hipped roof showing the following parts of the roof

- (i) Verge
- (ii) Ridge
- (iii) Common rafter
- (iv) Valley rafter
- (v) Jack rafter
- (vi) Hip rafter

- (b) By using a scale of 1:50, draw a section through the close couple roofs with span of 8m and a pitch of 8:12. The roof members should have the following dimensions:

- (i) Ridge 125 mm x 25 mm
  - (ii) Common rafter, binder, collar, ceiling joist and a wall plate is 100 mm x 50 mm.
  - (iii) Purlin 150 mm x 75 mm,
  - (iv) The overhang should be 600 mm.
- (c) What will be the length of the common rafter measured from your drawing?