KENYA CERTIFICATE OF BASIC EDUCATION

SENIOR SCHOOL ASSESSMENT

AUGUST ASSIGNMENT 2026

GRADE 10 – BUILDING CONTRUCTION

Time: 2 Hours

LEARNER'S DETAILS

Name: _____. **School:** _____.

Assessment Number: _____. **Date:** _____.

School Code: _____. **Signature:** _____.

INSTRUCTIONS TO CANDIDATES

1. Write your name in the spaces provided above.
2. Write the name of your school and your stream in the spaces provided.
3. Write your admission number and the date of the assessment in the spaces provided.
4. This paper consists of two sections: A and B.
5. Answer all questions in section A and section B.
6. Answer the questions in English.
7. All answers MUST be written in the spaces provided in the paper.
8. Do NOT remove any page from this question paper.

FOR OFFICIAL USE ONLY

SECTION	SECTION A	SECTION B	% SCORE	EE1	EE2	ME1	ME2	AE1	AE2	BE1	BE2
SCORE RANGE	30 MARKS	50 MARKS		90-100	75-89	58-74	41-57	31-40	21-30	11-20	1-10
POINTS				8 POINTS	7 POINTS	6 POINTS	5 POINTS	4 POINTS	3 POINTS	2 POINTS	1 POINT
LEARNER'S TOTAL SCORE											

SECTION A (30 MARKS)

Answer ALL questions in this section.

1. A learner named **Amani** from **Alliance High School** is preparing a site in **Kiambu** for a new classroom block. **Amani** needs to select the correct hand tools for site clearing and stripping.

   (a) **Identify** the tools below and **state** their specific use in site preparation. (4 Marks)

Tool	Name	Use
		
		

(b) **Mention** one factor Amani should consider when selecting this building site according to the building code. (1 Mark)

_____

2. **State** whether the following statements regarding the historical development of buildings are **TRUE** or **FALSE**. (3 Marks)

   i. Early humans primarily used caves as their first form of permanent shelter. [_____]
   ii. The industrial revolution had no impact on the materials used in modern building construction. [_____]
   iii. Historically, building development has moved from simple natural shelters to complex skyscraper designs. [_____]

3. **Moraa**, a student in **Eldoret**, is moving from manual isometric drawing to CAD.

   (a) **Distinguish** between an isometric drawing and a plane shape drawing. (2 Marks)

_____

_____

(b) **List** two types of CAD software Moraa might use to set up her drawing environment. (2 Marks)

   i. _____
   ii. _____

4. **Select** the correct constituent material for concrete described by the learners below: (4 Marks)

   i. **Kiplagat:** "I am the binding agent that holds everything together when water is added." (_____)
   ii. **Atieno:** "I provide bulk and strength; I am often called ballast." (_____)
   iii. **Wanjiku:** "I am the fine aggregate used to fill the voids between larger stones." (_____)
   iv. **Mutua:** "I trigger the chemical reaction called hydration." (_____)

5. **Match** the tool shown in the images to its primary function in foundation walling. (5 Marks)

i.	**Spirit Level**	A. Ensuring the wall is perfectly vertical (plumbness).
ii.	**Plumb Bob**	B. Checking the horizontal level of the stone courses.
iii.	**Builder's Square**	C. Ensuring the corners are set at exactly 90 degrees.

6. **Match** the plumbing material to its typical property or use. (4 Marks)

i.	**Plastic (PVC)**	A. High thermal conductivity; used for hot water.
ii.	**Copper/Metal**	B. Non-corrosive and lightweight.
iii.	**Ceramic**	C. Used for heavy-duty external drainage.
iv.	**Concrete**	D. Used for sanitary fixtures like toilet bowls.

7. Five safety precautions a learner should observe when using a **Pipe Cutter** or **Die Stock** in the workshop. (5 Marks)

i. _____
ii. _____
iii. _____
iv. _____
v. _____

SECTION B: 50 MARKS

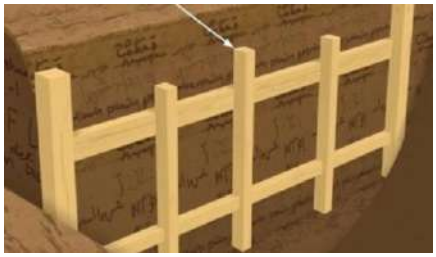
(Answer ALL questions in this section)

8. A contractor in **Mombasa** is excavating a trench in **loose, wet soil**.

(a) **Define** the term "Timbering" and **explain** its importance in this scenario. (3 Marks)

_____
_____
_____

(b) **Identify** and **Name** the components labeled **X, Y, and Z** in the timbering illustration below. (6 Marks)

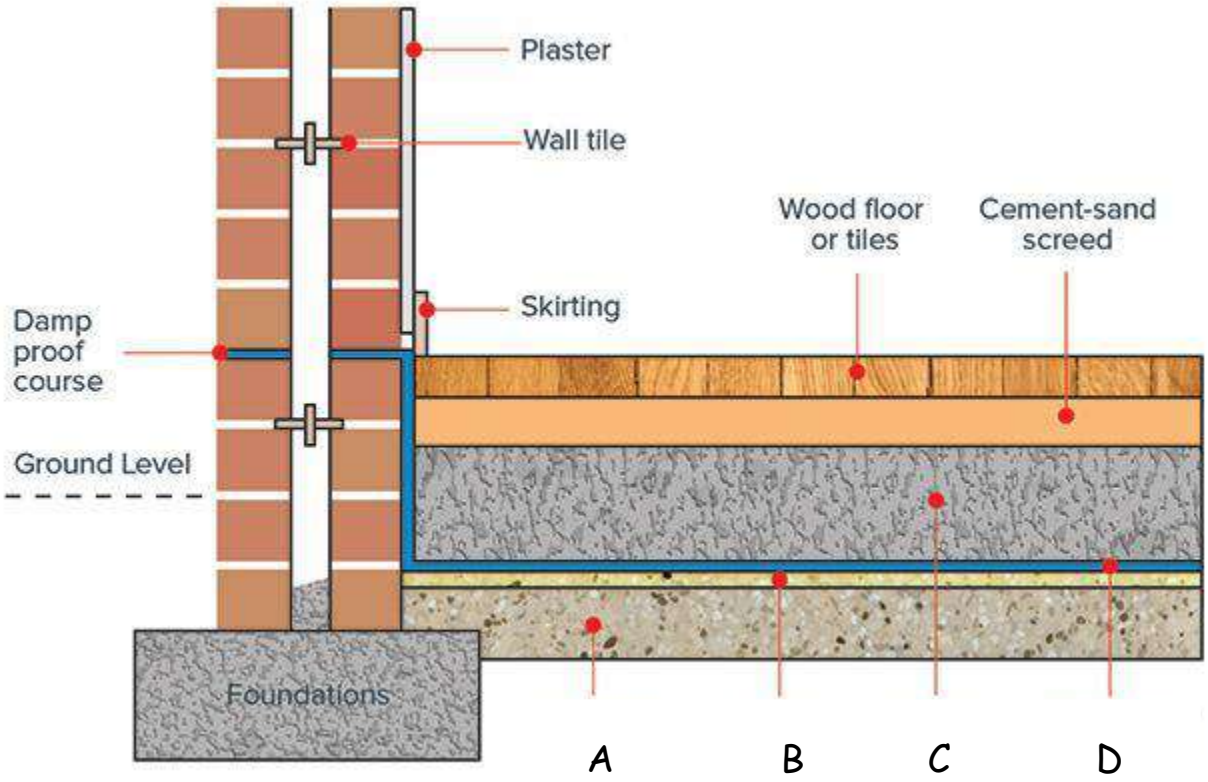


X: _____ Y: _____ Z: _____

(c) **Describe** the procedure for setting out a **Strip Foundation** using the 3-4-5 method. (6 Marks)

i. _____
ii. _____
iii. _____
iv. _____
v. _____

9. Learners at **Kisumu Senior School** are constructing a solid ground floor.



(a) **Identify** the components **A, B, C, and D** in the cross-section diagram below. (4 Marks)

A: _____

B: _____

C: _____

D: _____

(b) **Explain** the function of the **Damp Proof Membrane (DPM)** in a solid ground floor. (3 Marks)

i. _____
ii. _____
iii. _____
iv. _____
v. _____

(c) **List** three steps in the process of **curing** a concrete floor. (3 Marks)

i. _____
ii. _____
iii. _____

10. A plumber is required to install a sink in a new building in **Nakuru**.

(a) **Name** the three pipe fittings shown below. (3 Marks)

1. _____ 2. _____ 3. _____

(b) **Describe** the step-by-step procedure for **threading** a GI pipe using a die stock. (6 Marks)

i. _____
ii. _____
iii. _____

(c) **Explain** how to calculate the **radius of a bend** before performing pipe bending. (6 Marks)

i. _____
ii. _____
iii. _____

11. (a) **Illustrate** by sketching a basic building section and **label** the following components: Floor, Wall, Roof, and Foundation. (6 Marks)

(b) **Compare** the use of manual drawing instruments versus CAD software in terms of speed and accuracy. (4 Marks)

Manual drawing instruments	Cad software

ANSWERS & MARKING SCHEME

SECTION A

1. **(a)** Tool A: Plumb Bob;

Uses of a Plumb Bob in Building Construction

1. **Checking verticality of walls** – Ensures walls are perfectly upright and not leaning.
2. **Aligning building corners** – Helps builders keep corners straight and vertical.
3. **Setting door and window frames** – Ensures frames are installed in a true vertical position.
4. **Aligning columns and pillars** – Used to check that columns and pillars are vertical during construction.
5. **Transferring points from one level to another** – Helps transfer measurements from ceilings to floors or from upper floors to lower floors.
6. **Laying masonry work** – Assists masons in keeping brick and block walls straight and upright.
7. **Installing formwork** – Ensures formwork for concrete structures is correctly aligned.
8. **Checking scaffold alignment** – Helps ensure scaffolding is erected vertically and safely.

   Tool B: Mattock (Breaking hard ground/removing roots).

   (b) Accessibility, soil type, drainage, or availability of services.

2. 1: TRUE, 2: FALSE, 3: TRUE.
3. **(a)** Isometric is a 3D representation at 30° angles; Plane shape is 2D (length and width only).
   (b) AutoCAD, ArchiCAD, Revit.
4. Kiplagat: Cement; Atieno: Coarse Aggregates; Wanjiku: Sand; Mutua: Water.
5. 1-B, 2-A, 3-C.
6. 1-B, 2-A, 3-D, 4-C.
7.
    1. Wear hand gloves. 2. Ensure pipe is secure in a vice. 3. Use sharp cutting wheels. 4. Clear oil spills to avoid sliding. 5. Use the correct tool for the pipe size.

SECTION B

8. **(a)** Timbering: Temporary wooden/metal supports for trench sides. Importance: Prevents collapse/cave-ins in loose soil.

   (b) X: Poling boards; Y: Walings; Z: Struts.

   (c) Establish a straight line, measure 3 units on one side, 4 units perpendicular, and verify the diagonal (hypotenuse) is 5 units.

9. **(a)** A: Hardcore; B: Blinding; C: Concrete Slab. D: Damp Proof Membrane (DPM);

   (b) Prevents rising damp/moisture from reaching the floor surface.

(c) Keeping surface moist, covering with polythene, ponding with water.

10. **(a)** 1: Elbow; 2: Tee; 3: Union/Coupling.

    (b) Measure/Mark, Square-cut pipe, Ream internal edges, Apply oil, Place die stock, Rotate clockwise/counter-clockwise to cut threads.

    (c) Based on pipe diameter and the angle required; usually R=3×Diameter or as specified by the plan.

11. **(a)** (Check for sketch showing: Foundation at bottom, Floor above it, Wall rising, Roof at top).
    (b) CAD is faster for complex edits and more accurate in measurements; Manual is slower but better for basic conceptual learning.