

KENYA CERTIFICATE OF BASIC EDUCATION

SENIOR SCHOOL ASSESSMENT

AUGUST ASSIGNMENT 2026

GRADE 10 – GENERAL SCIENCE

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 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. Three learners at Nairobi Science Senior School are conducting an investigation in the laboratory.

Aisha Listed: Cells, human body systems, ecology, genetics, microorganisms.

Brian Listed: Matter, acids and bases, elements and compounds, laboratory analysis.

Kevin Listed: Electricity, energy, waves, magnetism, light.

- a) Identify **ONE** branch of General Science represented by each learner. (3 marks)

Name of learner	Aisha	Brian	Kevin
Branch of general science			

b) State ONE importance of *General Science* in daily life. (1 mark)

c) Name ONE career related to the activities in the laboratory. (1 mark)

d) Define the term "*General Science*". (1 mark)

2. A Grade 10 class at **Kisumu High School** observes the image above.

a) Identify TWO differences between plant and animal cells shown. (2 marks)

b) Name TWO organelles visible in both cells. (2 marks)

c) State ONE function of the nucleus. (1 mark)

d) What instrument is used to view such detailed images? (1 mark)

3. A ball is released from rest at the top of a hill and rolls down with increasing speed.

a) Define acceleration. (1 mark)

b) Identify the type of motion shown. (1 mark)

c) State ONE reason why the speed of the ball increases. (1 mark)

d) Mention TWO real-life examples of linear motion. (2 marks)

e) State ONE safety measure in experiments involving moving objects. (1 mark)

4. A teacher at **Mombasa High School** displays selected elements.

a) Classify sodium and magnesium into their chemical families. (2 marks)

b) Name the group of chlorine. (1 mark)

c) State ONE property of noble gases. (1 mark)

d) Explain why sodium is reactive. (2 marks)

5. A student is seen breathing heavily after a 100m race.

a) Name the type of respiration occurring in muscles during intense exercise. (1 mark)

b) Define respiration. (1 mark)

c) State ONE product of anaerobic respiration. (1 mark)

d) Explain oxygen debt. (2 marks)

e) State ONE importance of respiration in humans. (1 mark)

6. A student tests substances using universal indicator.

a) Identify TWO acidic substances in the picture. (2 marks)

b) State the colour of acid in universal indicator. (1 mark)

c) Name ONE salt formed in neutralisation. (1 mark)

d) State ONE use of salts in agriculture. (1 mark)

e) Define a base. (1 mark)

SECTION B: (50 MARKS)

7. A stone is dropped vertically from a bridge and falls freely to the ground.

a) Define free fall motion. (2 marks)

b) State TWO effects of gravity on falling objects. (2 marks)

c) Explain why objects fall at different speeds in air. (2 marks)

d) State TWO safety measures when carrying out free fall experiments. (2 marks)

e) Calculate the velocity of a body after 5 seconds if acceleration due to gravity is 10 m/s^2 . (2 marks)

8. Two children are seated on opposite sides of a seesaw.

Tasks:

a) Define moment of a force. (2 marks)

b) Explain how balance is achieved on a seesaw. (2 marks)

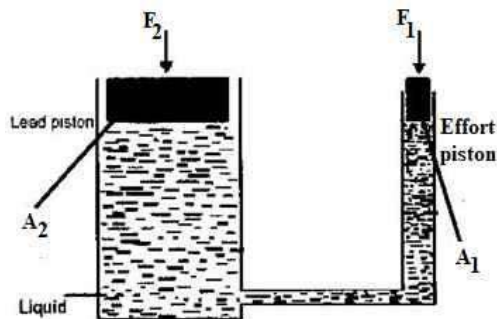
c) State TWO applications of moments in daily life. (2 marks)

d) Distinguish between clockwise and anticlockwise moments. (2 marks)

9.

a. Give a reason why water is not a suitable liquid for use in a barometer

b. The figure below is a simplified diagram of a hydraulic jack. The cross section area A_2 of the load piston is 25 times the A_1 of the effort piston, $A_2 = 25A_1$. F_1 is the force applied (Effort) while F_2 represents A_1 the load.



i. Write an expression for the pressure exerted on the liquid by the effort piston.
A mechanic applies a force of 100N on the effort piston while raising the rear part of a car.

ii. Determine the maximum load that can be raised (2 marks)

iii. Give a reason why gas is not suitable for use in place of the liquid in the jack

10. A student observes magnesium reacting rapidly with oxygen.

a) Define rate of reaction. (2 marks)

b) State TWO factors affecting rate of reaction. (2 marks)

c) Explain the role of catalyst in reactions. (2 marks)

d) Describe ONE experiment to show effect of temperature on reaction rate. (2 marks)

e) State ONE industrial application of reaction rates (Haber process). (2 marks)

11. a) Define chemical bond. (2 marks)

b) Identify TWO types of bonds shown. (2 marks)

c) Explain ionic bonding using sodium chloride as an example. (2 marks)

d) State TWO properties of ionic compounds. (2 marks)

e) Explain ONE use of graphite or diamond based on structure. (2 marks)

12. A health officer in Nairobi reports an outbreak of flu and food spoilage cases.

a) Identify THREE types of microorganisms shown. (3 marks)

b) State TWO modes of transmission of microorganisms. (2 marks)

c) Explain ONE method of preventing infections. (2 marks)

d) State TWO economic importance of microorganisms. (2 marks)

e) Name ONE disease caused by viruses. (1 mark)

ANSWERS

GENERAL SCIENCE MARKING SCHEME

SECTION A (30 MARKS)

QUESTION 1 (6 MARKS)

a) Branches of science (3 marks)

- Aisha → Biology ✓ (1)
- Brian → Chemistry ✓ (1)
- Kevin → Physics ✓ (1)

b) Importance of General Science (1 mark)

- Helps in understanding nature / solving daily life problems / technological development ✓

c) Career (1 mark)

- Doctor / Engineer / Laboratory technologist / Scientist ✓ (any relevant)

d) Definition (1 mark)

- General Science is the study of Biology, Chemistry and Physics and their application in life ✓

QUESTION 2 (6 MARKS)

a) Differences (2 marks)

- Plant cell has cell wall, animal cell does not ✓
- Plant cell has chloroplast, animal cell does not ✓

b) Organelles (2 marks)

- Nucleus ✓
- Mitochondria ✓ (any correct two)

c) Function of nucleus (1 mark)

- Controls cell activities / contains genetic material ✓

d) Instrument (1 mark)

- Electron microscope ✓

QUESTION 3 (6 MARKS)

a) Acceleration (1 mark)

- Rate of change of velocity ✓

b) Type of motion (1 mark)

- Linear motion with acceleration ✓

c) Reason (1 mark)

- Gravity increases velocity ✓

d) Examples (2 marks)

- Car moving on road ✓
- Falling stone ✓
- Running athlete ✓ (any two)

e) Safety measure (1 mark)

- Clear surroundings / use safety zone / avoid throwing towards people ✓

QUESTION 4 (6 MARKS)

a) Classification (2 marks)

- Sodium → Alkali metal ✓
- Magnesium → Alkaline earth metal ✓

b) Group of chlorine (1 mark)

- Halogens ✓

c) Property of noble gases (1 mark)

- Inert / unreactive ✓

d) Reactivity of sodium (2 marks)

- Has one valence electron ✓
- Easily loses electron to form positive ion ✓

QUESTION 5 (6 MARKS)

a) Type of respiration (1 mark)

- Anaerobic respiration ✓

b) Definition (1 mark)

- Breakdown of food to release energy in cells ✓

c) Product (1 mark)

- Lactic acid / ethanol + CO_2 ✓

d) Oxygen debt (2 marks)

- Extra oxygen needed after exercise to break down lactic acid ✓

e) Importance (1 mark)

- Produces energy for body activities ✓

QUESTION 6 (6 MARKS)

a) Acids (2 marks)

- Vinegar ✓
- Lemon juice ✓

b) Colour (1 mark)

- Red / orange ✓

c) Salt formed (1 mark)

- Sodium chloride / potassium nitrate ✓

d) Use in agriculture (1 mark)

- Fertilisers ✓

e) Base definition (1 mark)

- Substance that produces hydroxide ions in solution ✓

SECTION B (50 MARKS)

QUESTION 7 (10 MARKS)

a) Free fall (2 marks)

- Motion of body under gravity only ✓

b) Effects of gravity (2 marks)

- Increases speed ✓
- Pulls objects downward ✓

c) Different speeds (2 marks)

- Air resistance / mass differences ✓

d) Safety measures (2 marks)

- Use safe dropping area ✓
- Avoid throwing near people ✓

e) Calculation (2 marks)

$$v = u + at$$

$$u = 0, a = 10 \text{ m/s}^2, t = 5 \text{ s}$$

$$v = 0 + 10 \times 5 = \mathbf{50 \text{ m/s}} \checkmark \checkmark$$

QUESTION 8 (10 MARKS)

a) Moment definition (2 marks)

- Turning effect of a force about a pivot ✓

b) Balance on seesaw (2 marks)

- Equal moments on both sides ✓

c) Applications (2 marks)

- Door opening ✓
- Spanner use ✓
- Seesaw ✓

d) Difference (2 marks)

- Clockwise → moves in clock direction ✓
- Anticlockwise → opposite direction ✓

13.

a. Very low density hence, a very big column required (=11m)

b.

i. $p = F_1/F_2$

ii. $F_2/A_2 = F_1/A_1$

$$\therefore F_2 = A_2/A_1$$

$$F_1 = 25 \times 100 = 2500\text{N}$$

- iii. Gas is compressible hence it does not transmit pressure equally throughout the system.

QUESTION 9 (10 MARKS)

a) Rate of reaction (2 marks)

- Speed at which reactants form products ✓

b) Factors (2 marks)

- Temperature ✓
- Concentration ✓
- Catalyst ✓
- Surface area ✓ (any two)

c) Catalyst (2 marks)

- Speeds up reaction without being used ✓

d) Experiment (2 marks)

- Reaction of marble chips with acid at different temperatures ✓

e) Industrial application (2 marks)

- Haber process ✓

QUESTION 10 (10 MARKS)

a) Chemical bond (2 marks)

- Force holding atoms together ✓

b) Types (2 marks)

- Ionic bond ✓
- Covalent bond ✓

c) Ionic bonding (2 marks)

- Transfer of electrons from sodium to chlorine ✓
- Formation of Na^+ and Cl^- ions ✓

d) Properties (2 marks)

- High melting point ✓
- Conduct electricity when molten ✓

e) Use (2 marks)

- Graphite: used in pencils due to softness ✓
- Diamond: used in cutting tools due to hardness ✓

QUESTION 11 (10 MARKS)

a) Microorganisms (3 marks)

- Bacteria ✓
- Virus ✓
- Fungi ✓

b) Transmission (2 marks)

- Airborne ✓
- Contaminated food/water ✓
- Contact ✓

c) Prevention (2 marks)

- Hygiene / vaccination / boiling water ✓

d) Economic importance (2 marks)

- Used in fermentation (bread, alcohol) ✓
- Decomposition ✓

e) Disease (1 mark)

- Flu / COVID-19 / measles ✓