END TERM 3 2026

GRADE 10

GENERAL SCIENCE

SUMMATIVE ASSESSMENT

TIME: 2 HOURS 30 MINUTES

Name	_____
Assessment Number	_____
Class / Stream	_____
Date	_____

INSTRUCTIONS TO CANDIDATES

- Write your name and assessment details in the spaces provided.
- This paper contains structured-response questions only. Answer all questions.
- Read each question carefully before answering.
- Show all working where calculations are required.
- Give units for numerical answers where applicable.
- Draw and label diagrams clearly where required.
- Use the spaces provided and write clearly and legibly.
- All questions carry the marks indicated.
- Check that all pages and questions are present before handing in your paper.

TOTAL: 100 MARKS

EXAMINER'S USE ONLY

Section	Question Numbers	Maximum Score	Candidate's Score
A	1–10	20	
B	11–15	40	
C	16–19	40	
TOTAL		100	

SECTION A — FOUNDATIONAL STRUCTURED QUESTIONS (20 marks)

1. State two reasons why General Science is important in everyday life. **(2 marks)**

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2. Distinguish between a light microscope and an electron microscope. **(2 marks)**

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3. State two adaptations of the human digestive system that enable efficient digestion and absorption of food. **(2 marks)**

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4. Differentiate between aerobic and anaerobic respiration. **(2 marks)**

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5. State two factors necessary for seed germination. **(2 marks)**

6. State two methods of preventing the transmission of microorganisms that cause infections in human beings. **(2 marks)**

7. Write the electron arrangement of: (a) sodium, Na; (b) chlorine, Cl. **(2 marks)**

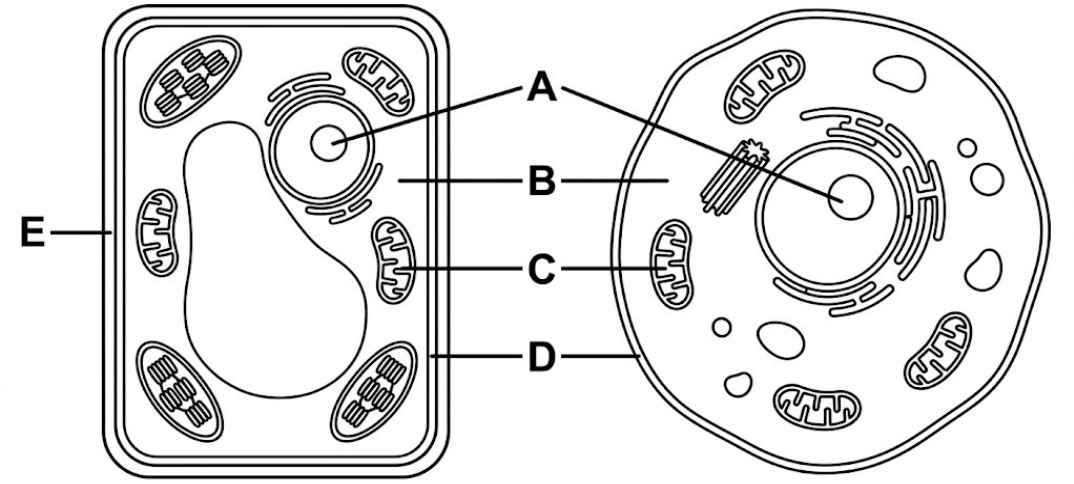
8. State two differences between ionic bonding and covalent bonding. **(2 marks)**

9. State two factors that affect the rate of a chemical reaction. **(2 marks)**

10. Define: (a) moment of a force about a point; (b) wavelength. **(2 marks)**

SECTION B — APPLICATION, DATA, DIAGRAMS AND PROBLEM SOLVING (40 marks)

11. Study the diagram below and answer the questions that follow.



(a) Name the structures labelled A, B and C. **(3 marks)**

(b) State one function of each of the three structures named in (a). **(3 marks)**

(c) State one difference between the organization of a cell and that of an organ system. **(2 marks)**

(d) Explain why the cell is regarded as the basic unit of life. **(2 marks)**

12. A learner carried out food tests on a sample of food and obtained the observations shown below.

Test	Observation
Benedict's solution + heating	Blue solution changed to orange-red
Iodine solution	No blue-black colour
Biuret test	Violet colour formed

(a) Identify the food substances indicated by the Benedict's and Biuret tests. **(2 marks)**

(b) Explain the role of enzymes in the digestion of food. **(3 marks)**

(c) Explain how the structure of the small intestine is adapted for absorption of digested food. **(3 marks)**

13. A farmer investigates water loss from leaves. Four similar potted plants are placed under different conditions. The percentage mass loss after a fixed period is recorded as follows.

Plant	Condition	Percentage mass loss
A	Well-watered, exposed to moving air	18%
B	Well-watered, sheltered from moving air	11%
C	Well-watered, high humidity	6%
D	Well-watered, leaves partly covered	8%

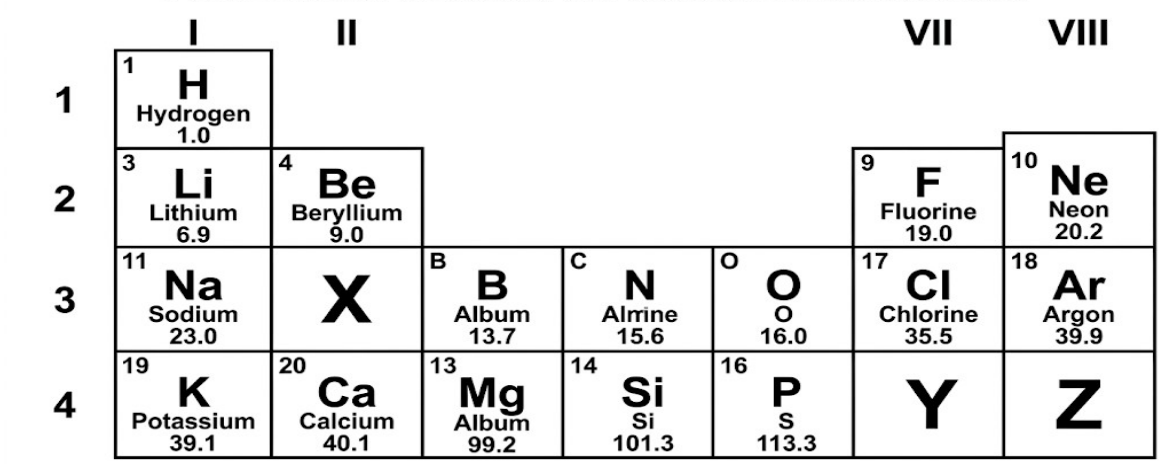
(a) Identify the process responsible for the loss of water from the leaves. **(1 marks)**

(b) Using the data, explain the effect of moving air on the rate of water loss. **(2 marks)**

(c) State two factors, other than moving air, that can affect transpiration. **(2 marks)**

(d) Explain why transport of water and mineral salts is important to plant growth. **(3 marks)**

14. The first twenty elements of the periodic table are arranged according to increasing atomic number.



(a) State the group and period occupied by an element whose electron arrangement is 2,8,1. **(2 marks)**

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(b) Explain why elements in the same group of the periodic table have similar chemical properties. **(2 marks)**

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(c) Write the chemical formula of aluminium oxide using the valencies of aluminium and oxygen. **(2 marks)**

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(d) State two uses of elements or their compounds from the periodic table in everyday life. **(2 marks)**

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15. A student investigates the rate of reaction between a solid and an acid. The student repeats the experiment at different temperatures while keeping other conditions constant.

(a) State the independent variable and one controlled variable in the investigation. **(2 marks)**

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(b) Describe how increasing temperature generally affects the rate of a chemical reaction. **(2 marks)**

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(c) Give two other factors that can affect the rate of a chemical reaction. **(2 marks)**

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(d) Explain why safety precautions are necessary when investigating rates of chemical reactions. **(2 marks)**

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SECTION C — EXTENDED STRUCTURED APPLICATION (40 marks)

16. A student balances a metre rule on a pivot. A force of 4 N acts at a distance of 0.50 m from the pivot. A second force is applied on the opposite side at a distance of 0.25 m.

(a) Calculate the moment produced by the 4 N force about the pivot. **(3 marks)**

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(b) Calculate the magnitude of the second force required to balance the metre rule. **(3 marks)**

(c) State two applications of the turning effect of force in real life. **(2 marks)**

(d) Explain why a long spanner is generally more effective than a short spanner when loosening a tight nut. **(2 marks)**

17. A ball is dropped from a height. Its motion is observed as it falls towards the ground.

(a) Define acceleration and state the direction of acceleration of a freely falling body near the Earth's surface. **(2 marks)**

(b) A body starts from rest and accelerates uniformly at 2 m/s^2 for 5 s. Calculate its final velocity. **(3 marks)**

(c) Explain two safety measures that can reduce injuries associated with falling objects or falls. **(2 marks)**

(d) Distinguish between distance and displacement. **(2 marks)**

(e) State one example of linear motion with constant acceleration in real life. **(1 marks)**

18. A wave has a frequency of 5 Hz and a wavelength of 0.8 m.

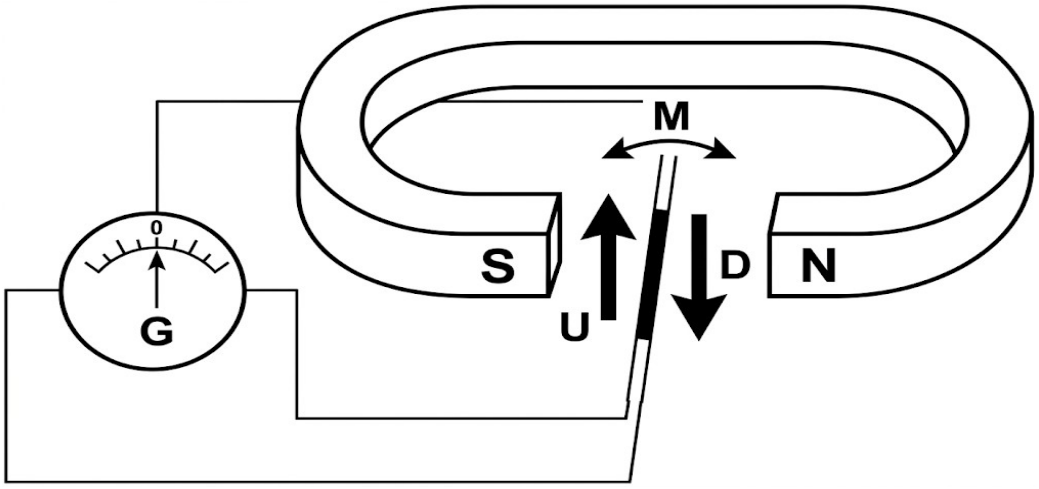
(a) Calculate the speed of the wave. **(3 marks)**

(b) State two properties of waves. **(2 marks)**

(c) Explain one application of reflection, refraction or diffraction of waves in real life. **(2 marks)**

(d) Explain one way in which waves can affect the environment and state one mitigation measure. **(3 marks)**

19. Study the electromagnetic induction arrangement shown below.



(a) State what is observed on the galvanometer when the conductor is moved through the magnetic field. **(2 marks)**

(b) Explain how the magnitude of the induced electromotive force can be increased. **(3 marks)**

(c) Describe how a simple electromagnet can be made stronger. **(2 marks)**

(d) State two applications of electromagnetic induction in everyday life. **(2 marks)**

(e) State one safety or responsibility consideration when carrying out an electromagnetic induction experiment. **(1 marks)**