

SECTION A (30 marks)

Answer all the questions in this section on the answer sheet provided.

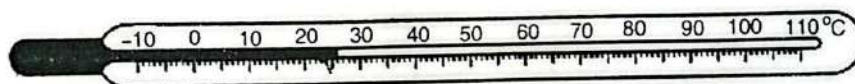
1. Learners prepared the following list of first aid measures.

- (i) Wash the affected area with cool running water.
- (ii) Apply lotion to the affected area.
- (iii) Keep the affected area open.

The first aid measures would be applied in case of a

- A. burn
- B. cut
- C. chemical splashed in the eyes
- D. ingestion of harmful chemicals.

2. The following diagram represents an instrument used to measure a basic physical quantity.



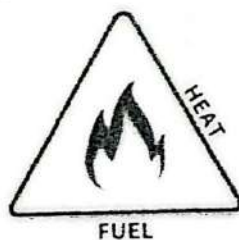
Which one of the following quantities is measured using the instrument?

- A. Temperature
- B. Electric current
- C. Weight
- D. Length



3. Most cooking utensils are made of aluminium metals. Which of the following properties of aluminium makes it suitable for making cooking utensils?
- A. Good conductor of heat
 - B. Good conductor of electricity
 - C. Low melting point
 - D. It is easy to clean
4. An atom is the smallest particle of an element. Which of the following particles make up the nucleus of the atom?
- A. Protons and neutrons
 - B. Neutrons only
 - C. Protons only
 - D. Protons and electrons
5. During a field visit to a farm, learners observed that some fruits have sour taste. The sour taste is caused by
- A. a base
 - B. water
 - C. a salt
 - D. an acid.

6. Susan, a Grade 8 learner, observed that elements combine to form compounds. The following pairs of elements can combine to form a compound **except**
- hydrogen and oxygen
 - copper and aluminium
 - nitrogen and hydrogen
 - oxygen and nitrogen.
7. During a nature walk, learners collected samples of a solid substance and put it in water. They observed that the substance dissolved in water but left out some soil particles undissolved. The learners concluded that the solid sample is likely to be a
- substance with salt and soil
 - heterogenous mixture
 - homogeneous mixture
 - soluble salt
- Which of the following combinations is **true** about the solid?
- (i) and (ii)
 - (ii) and (iv)
 - (i) and (iii)
 - (iii) and (iv)
8. The following are some of the changes that take place in nature:
- boiling of water
 - rusting of iron sheets
 - burning of charcoal
 - mixing water and salt
- Which **two** are chemical changes?
- (i) and (iv)
 - (ii) and (iv)
 - (ii) and (iii)
 - (i) and (iii)
9. The following picture shows a fire triangle.



Which component of the fire triangle is missing in the picture?

- Oxygen
- Extinguisher
- Matches
- Wood

10. Which of the following methods can only be used to separate heterogeneous mixtures?

- A. Decantation
- B. Distillation
- C. Filtration
- D. Evaporation

11. The atomic number of chlorine is 17. Given that the number of neutrons in the nucleus of the atom is 18, calculate the mass number of chlorine.

- A. 17
- B. 18
- C. 35
- D. 1

12. The following table shows the volume of soap solution used to form lather with four samples of equal volume of water.

Sample of water	Volume of soap used (cm ³)
(i)	1.2
(ii)	1.5
(iii)	3.4
(iv)	1.2

Which sample of water is the softest?

- A. (i)
- B. (ii)
- C. (iii)
- D. (iv)

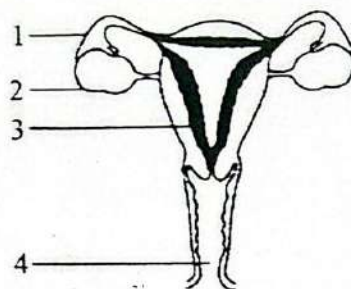
13. During a class discussion, learners were asked to classify the following substances as either metals or alloys:

- (i) Iron
- (ii) Bronze
- (iii) Brass
- (iv) Steel

Which of the following combinations consists of alloys only?

- A. (i), (iii) and (iv)
- B. (ii), (iii) and (iv)
- C. (i), (ii) and (iv)
- D. (i), (ii) and (iii)

14. The following diagram represents a human reproductive system.



Implantation takes place at the part labelled

- A. 4
- B. 1
- C. 3
- D. 2

15. Peter and his friends were discussing the functions of the human skin. Which of the following is **not** one of the functions they are likely to have discussed?

- A. Protection against germs
- B. Exchange of gases
- C. Protecting tissues from injury
- D. Excretion of waste

16. Which of the following components is **only** found in plant cells?

- A. Nucleus
- B. Cell membrane
- C. Cell wall
- D. Mitochondrion

17. Osmosis involves movement of molecules across a membrane. Which row represents the **correct** type of molecule and membrane during osmosis?

	Molecule moving	Type of membrane
A.	Water	Semi-permeable
B.	Oxygen	Semi-permeable
C.	Water	Permeable
D.	Oxygen	Permeable

18. Various methods are used to control the number of mosquitoes to prevent the spread of malaria. Which one of the following methods can cause least ecological damage when controlling the number of mosquitoes?
- Draining the swamps where mosquitoes live.
 - Spraying swamps with chemical pesticides to kill mosquitoes.
 - Spraying oil over swamps to suffocate mosquito larvae.
 - Increasing the population of fish to feed on mosquito larvae.
19. Which of the following is a condition required for photosynthesis to take place in plants?
- Glucose
 - Light
 - Oxygen
 - Heat
20. The following picture shows a dentition obtained from a certain animal.



The animal feeds on

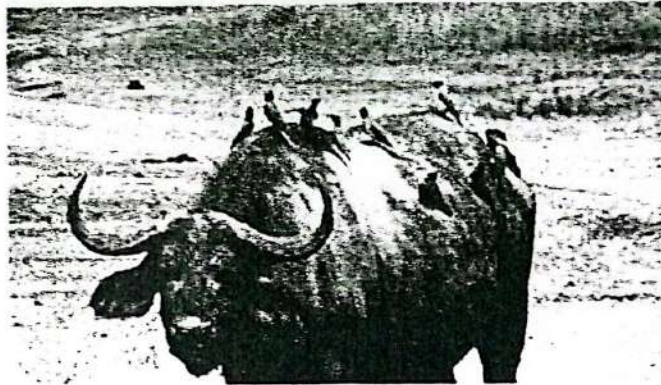
- decaying matter
 - flesh
 - vegetation
 - vegetation and flesh.
21. During a field study within the school compound, learners observed flowers with the following characteristics:

Flower	Characteristics
Q	Small in size
R	Sweet scented
S	Long stamen
T	Brightly coloured petals

Which pair of the flowers observed is insect pollinated?

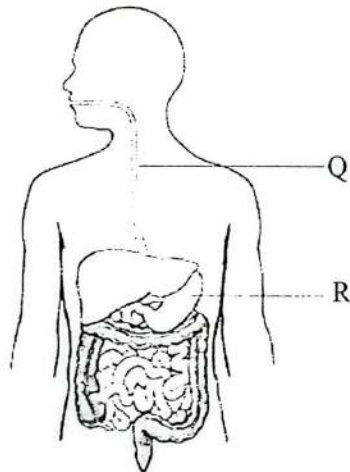
- Q and S
- R and T
- R and S
- Q and T

22. During a visit to a national park, a learner took a photograph of birds feeding on ticks on a buffalo as shown.



The relationship between the birds and the buffalo is

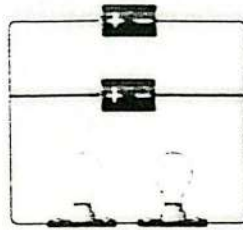
- A. holozoic
 - B. parasitic
 - C. saprophytic
 - D. symbiotic.
23. The following diagram represents a human digestive tract.



Identify the physiological processes that take place in the parts marked Q and R.

	Q	R
A.	Ingestion	Egestion
B.	Passage of food	Digestion
C.	Digestion	Ingestion
D.	Egestion	Passage of food

24. The following diagram shows how two cells and two bulbs are arranged in a simple circuit.

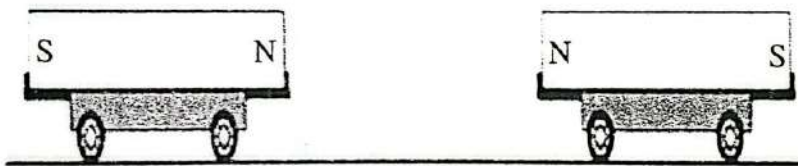


Which of the following is **true** about the arrangement?

	Cells	Bulbs
A.	Parallel	Parallel
B.	Parallel	Series
C.	Series	Parallel
D.	Series	Series



25. The following diagram shows two toy cars each carrying a magnet. The toys were moved close to each other, then left free.



Which of the following happened to the toys?

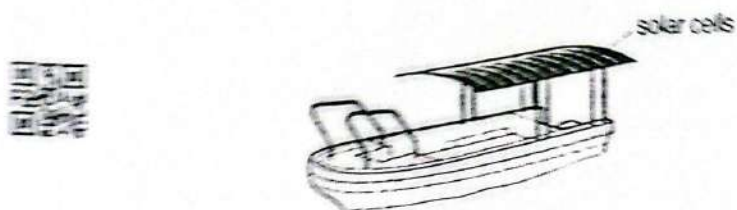
- A. They remained where they were.
 B. The toys moved closer and stuck to each other.
 C. One of the toys flipped over the other.
 D. The toys moved away from each other.
26. Maria described the properties of a certain material she collected from the field as follows:
- (i) it is a solid
 - (ii) it does not dissolve in water
 - (iii) it is attracted by a magnet

The material is likely to have been

- A. glass
 B. wood
 C. iron
 D. plastic.

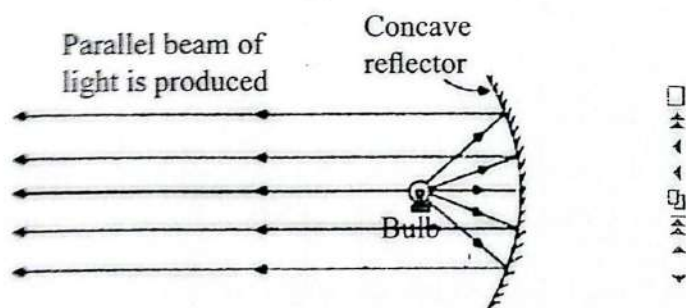


27. The following diagram shows solar cells mounted on a boat to produce electrical energy to power the boat.



Which energy transformations take place for the boat to move?

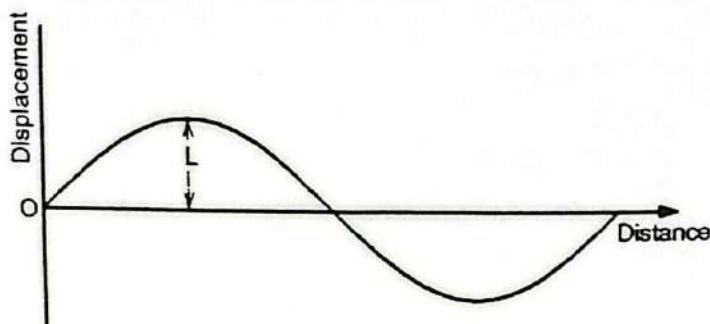
- A. Light - mechanical - electrical
 - B. Light - electrical - mechanical
 - C. Electrical - light - mechanical
 - D. Electrical - mechanical - light
28. A brick was placed on a surface. If the area of the brick in contact with the surface is reduced, what happens to the pressure exerted on the surface by the brick? The pressure
- A. increases
 - B. decreases
 - C. decreases then increases
 - D. increases then decreases.
29. The following diagram shows reflection of light in a torch.



What is the name of the point where the bulb is placed?

- A. Principal focus
- B. Principal axis
- C. Centre of curvature
- D. Radius of curvature

30. The following diagram shows a wave.



The part marked L represents the

- A. amplitude
B. frequency
C. period
D. wavelength.



SECTION B (40 marks)

Answer *all* the questions in this section in the spaces provided after each question.

31. (a) Identify **two** basic skills in science acquired when using a metre rule. (2 marks)

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- (b) State the SI units of the following physical quantities used in Integrated Science. (2 marks)

Physical Activity	SI Unit
Length	
Time	

32. During a class discussion on mixtures, learners listed the following substances:

- (i) air
(ii) sandy water
(iii) rain water
(iv) beans and maize



- (a) In the table provided, classify the substances as either homogeneous or heterogeneous mixtures. (2 marks)

Type of mixture	Substance(s)
Homogeneous	
Heterogeneous	

- (b) Describe how a mixture of salt and water can be separated.

(2 marks)

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33.

- (a) Elements can be represented using chemical symbols. Give the appropriate chemical symbol to each of the following elements. (3 mark)

Element	Symbol
Carbon	
Oxygen	
Sodium	



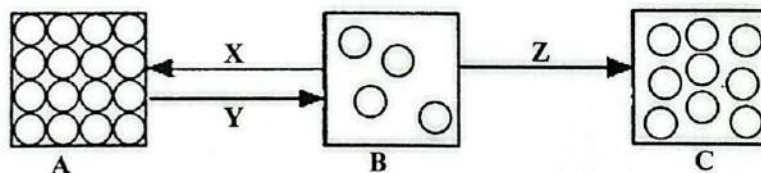
- (b) State **one** use of oxygen in day-to-day life.

(1 mark)

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34. The following diagram shows states of matter.



- (a) Name the states of matter represented by:

A (1 mark)

B (1 mark)

- (b) Identify the processes labeled X and Y.

X (1 mark)

Y (1 mark)

35. Autotrophism is a mode of nutrition where plants make their own food.

(a) Name **two** raw materials required by plants during autotrophism. (2 marks)

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(b) Identify the cell organelle where photosynthesis occurs. (1 mark)

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(c) State how the following features of plant leaves affect the photosynthesis process:

(i) broad leaf surface; (1 mark)

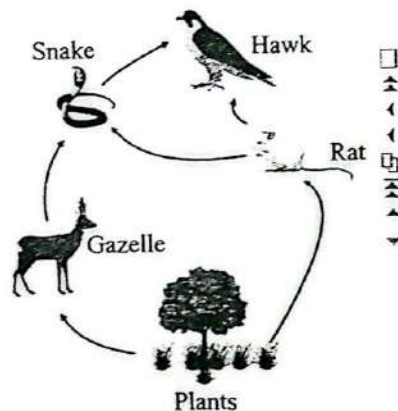
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(ii) network of veins. (1 mark)

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36. The following diagram shows a food web in an ecosystem.



(a) (i) Use the food web to construct **one** food chain that ends with a tertiary consumer. (1 mark)

- (ii) Identify the producer in the food web.

(1 mark)

- (b) Explain the effect of drought on the ecosystem.

(2 marks)

37. Kidneys are parts of the urinary system that prevent accumulation of waste in the body to dangerous levels.



(2 marks)

- (a) Name two other parts of the human urinary system.

(i)

(ii)

- (b) State the function of the parts named in (a).

(2 marks)

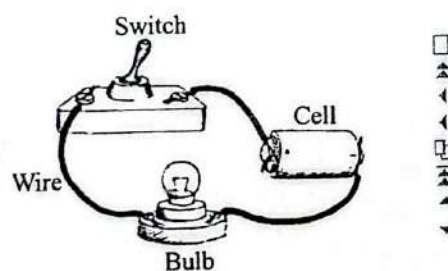
(i)

(ii)

- (c) Name two waste products excreted through the kidney.

(2 marks)

38. The following set-up represents a simple electric circuit.



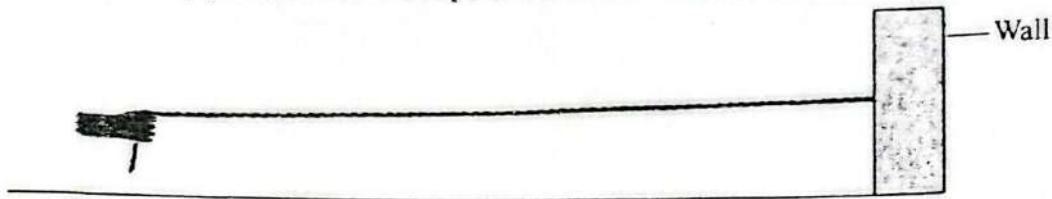
- (a) Identify the source of electricity in the set-up.

(1 mark)

- (b) State the observation made when the switch is on.

(1 mark)

39. The following picture shows a rope fixed on the wall and held on one side.



- (a) Describe how a wave can be generated in the rope. (2 marks)

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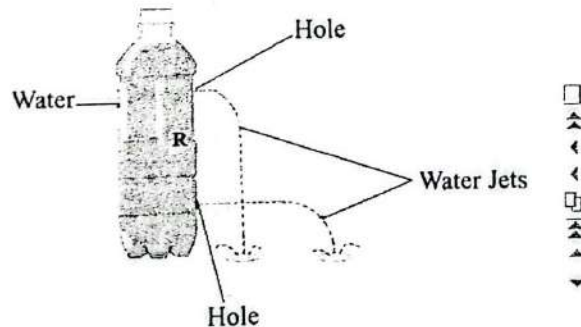
- (b) Name the type of wave generated in (a). (1 mark)

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- (c) Name **one** example of the type of the wave in (b). (1 mark)

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40. The following diagram represents a set-up used to demonstrate a certain factor affecting pressure in liquids.



- (a) State the factor that was being demonstrated. (1 mark)

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- (b) Indicate on the diagram how water will jet out if another hole is made at point R. (1 mark)

- (c) Apart from the factor stated in (a) name **one** other factor that affects pressure in liquids. (1 mark)

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