TOPICAL PRACTICE 4

4 Plants

PART A

/19

4.1 Plants Respond to Stimuli

1 Diagram 1 shows the observation made at the end of an investigation.

HOTS

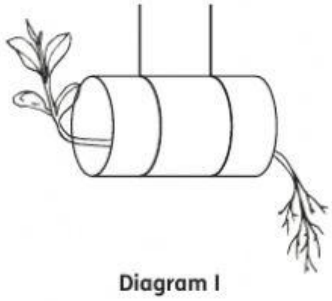

Diagram 1

What conclusion can be made from this observation?
Put a tick (✓) for the **correct** answer and a cross (✗) for the **wrong** answer.

(a) Shoots have positive response towards air. ☐

(b) Roots have positive response towards gravity. ☐

(c) Shoots have negative response towards gravity. ☐

(d) Roots have negative response towards sunlight. ☐

(4 *marks*)

2 Which parts of the plants respond to the following stimuli?
Write letters P, Q or R in the suitable box.

		
P	Q	R

(a) Grow towards sunlight ☐

(b) Grow towards water ☐

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LIVEWORKSHEETS

(c) Grow towards gravity

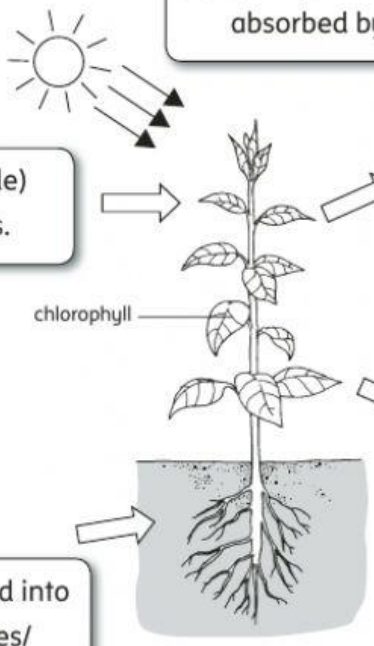
(d) Fold up when they are touched

(e) Grow away from gravity

(5 *marks*)

4.2 Photosynthesis

3 Diagram 2 shows a life process of plants known as photosynthesis. Underline the correct answers.



(a) (Sunlight/Carbon dioxide) is absorbed by chlorophyll.

(b) (Oxygen/Carbon dioxide) diffuses into the leaves.

(c) (Oxygen/Carbon dioxide) is released.

(d) Water in the soil is absorbed into the plant through the (leaves/ roots).

(e) (Nutrient/Starch) is produced.

Diagram 2

(5 *marks*)

4 Circle the correct answers.

(a) Which organism cannot carry out photosynthesis?	ferns	fungi
(b) At which time does photosynthesis cannot be carried out?	day	night
(c) What is the name of the process of plants that help them to make food?	photosynthesis	breathing
(d) Which part of the plants carries out photosynthesis?	leaves	roots
(e) Which product of photosynthesis is needed by humans to breathe?	carbon dioxide	oxygen

(5 *marks*)

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PART B

/10

Instruction: *Choose the correct answer from* **A, B, C** *or* **D.**

4.1 Plants Respond to Stimuli

1 HOTS Diagram 1 shows an investigation

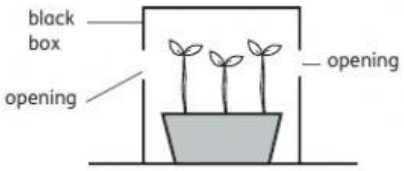
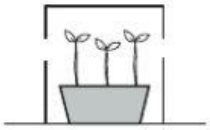
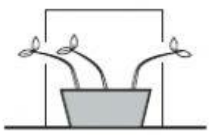


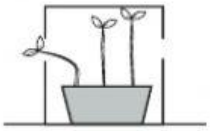
Diagram 1

Predict what will happen after one week.

A 

C 

B 

D 

2 Diagram 2 shows an apparatus set-up prepared for an investigation.

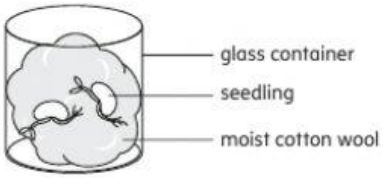


Diagram 2

What is being investigated in this experiment?

A To investigate the response of plants to water
B To investigate the response of plants to gravity
C To investigate the response of plants to touch
D To investigate the response of plants to sunlight

3 HOTS Diagram 3 shows an observation made on a pot of flowering plant which was hung upside down at the compound of a house.



Diagram 3

Why did the shoots of the plant grow in that direction?

A Shoots respond to air
B Shoots respond to gravity
C Shoots respond to carbon dioxide
D Shoots respond to sunlight

4 HOTS Diagram 4 shows an observation made on a seedling which was covered with a black box with an opening for one week.

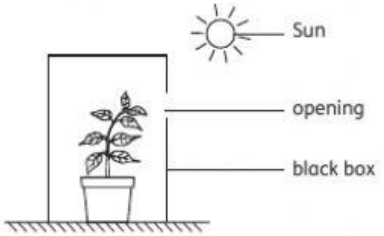


Diagram 4

What is the importance of this type of response to the plants?

A Helps plants to get enough water
B Helps plants to get enough air
C Helps plants to get enough minerals
D Helps plants to get enough sunlight

5 The mimosa leaves fold up when brushed by our hands. What is the stimulus that causes this response?

A Water **C** Touch
B Gravity **D** Sunlight

4.2 Photosynthesis

6 HOTS UPSR CLONE Diagram 5 shows a stage in the growth of a green bean seed.

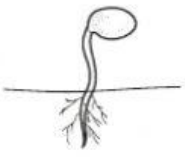


Diagram 5

Why does photosynthesis cannot be carried out at this stage?

A Not mature
B No green leaves
C Air cannot be absorbed
D The roots are not long enough

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7 Which of the following is **not** needed to carry out photosynthesis?
- **A** Sunlight
- **B** Carbon dioxide
- **C** Chlorophyll
- **D** Flowers

8 HOTS What happens to the excess sugar in the plants?
- **A** Expelled from the plants
- **B** Converted to starch to be stored
- **C** Converted to carbon dioxide to be released
- **D** Used by the plants to make new food

9 HOTS Diagram 6 shows an apparatus set-up prepared for an investigation.

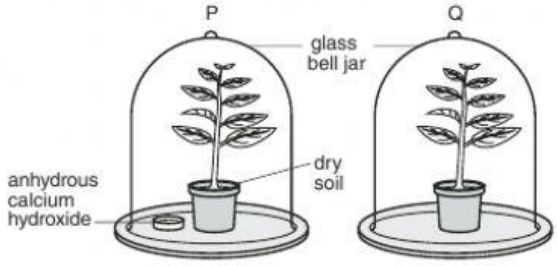

Diagram 6

What is the hypothesis for this investigation based on the apparatus set-up in Diagram 6?
- **A** Plants need water to carry out photosynthesis.
- **B** Plants need chlorophyll to carry out photosynthesis.
- **C** Plants need carbon dioxide to carry out photosynthesis.
- **D** Plants need sunlight to carry out photosynthesis.

10 Which of the following statements is correct?
- **A** Roots of plants grow towards water to get nutrients.
- **B** Shoots of plants grow towards sunlight to look for food.
- **C** Plants move from one place to another to look for minerals.
- **D** Plants do not need to move to look for food because plants can make their own food.

PART C

17

Instruction: *Write your answers in the spaces provided.*

4.1 Plants Respond to Stimuli

1 Diagram 1 shows an investigation carried out to examine the response of plants.

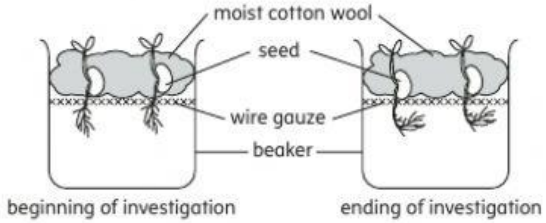

Diagram 1

(a) What is the aim of this investigation?

_____

(1 *mark*)

(b) What observation can be made at the end of the investigation?

_____

(1 *mark*)

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HOTS (c) What conclusion can be made from the observation?

_____

(1 *mark*)

HOTS (d) In your opinion, between water and gravity, which stimulus will the roots respond to?

_____

(1 *mark*)

HOTS (e) Give **a** reason for your opinion in (d).

_____

(1 *mark*)

4.2 Photosynthesis

2 Diagram 2 shows a life process of plants.

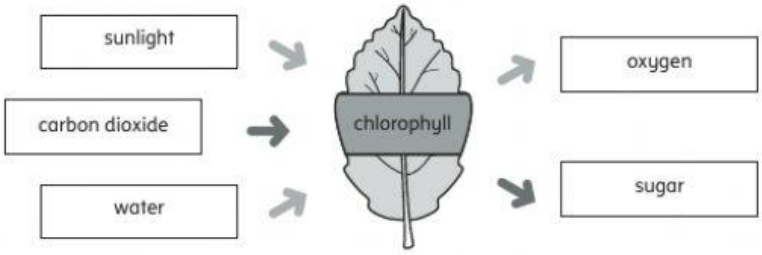


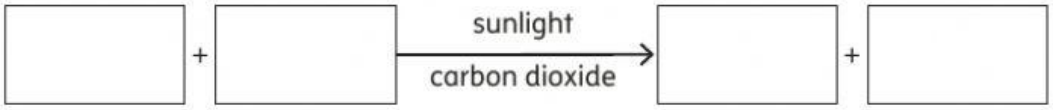
Diagram 2

(a) What is the name of this process?

_____

(1 *mark*)

(b) Complete the equation for the process by filling in the suitable words in the boxes below.



(2 *marks*)

(c) Explain briefly this life process of plants.

_____

_____

(1 *mark*)

HOTS (d) Explain why the gas produced is important to humans and other living things.

_____

(1 *mark*)

(e) What happens to the sugar produced?

_____

_____

(1 *mark*)

HOTS (f) Predict what will happen to other living things if plants do not carry out this process.

_____

(1 *mark*)

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3 A group of pupils kept two pots of green plants in a dark cupboard for 24 hours so that the starch present in the leaves was used up. They then prepared the apparatus set-up as shown in Diagram 3. Potassium hydroxide solution was used to absorb the carbon dioxide. Both plants were exposed to sunlight for 4 hours. A leaf was plucked from each plant and the test for the presence of starch was conducted with iodine solution. Table I shows the results obtained.

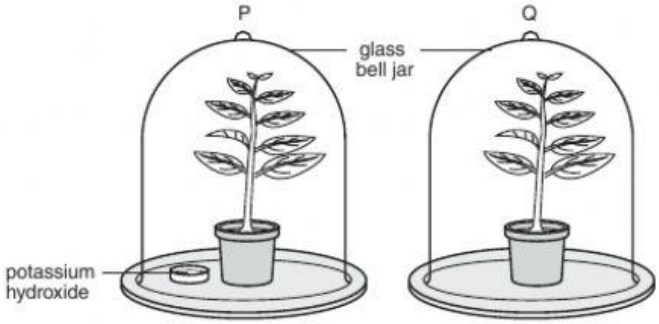

Diagram 3

Leaf from set	Presence of starch
P	No starch is present
Q	Starch is present

Table I

(a) What is the aim of this investigation?

_____

(1 *mark*)

HOTS (b) What is the manipulated variable in this investigation?

_____

(1 *mark*)

HOTS (c) Has photosynthesis been carried out by the plant in glass bell jar P?
Tick (✓) the correct answer.

☐ Yes ☐ No

HOTS Give your reason.

_____

(1 *mark*)

(d) Has photosynthesis been carried out by the plant in glass bell jar Q?
Tick (✓) the correct answer.

☐ Yes ☐ No

HOTS Give your reason.

_____

(1 *mark*)

HOTS (e) What conclusion can be made from this investigation?

_____

(1 *mark*)

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LIVEWORKSHEETS

TOPICAL PRACTICE 5

5 Properties of Light

PART A

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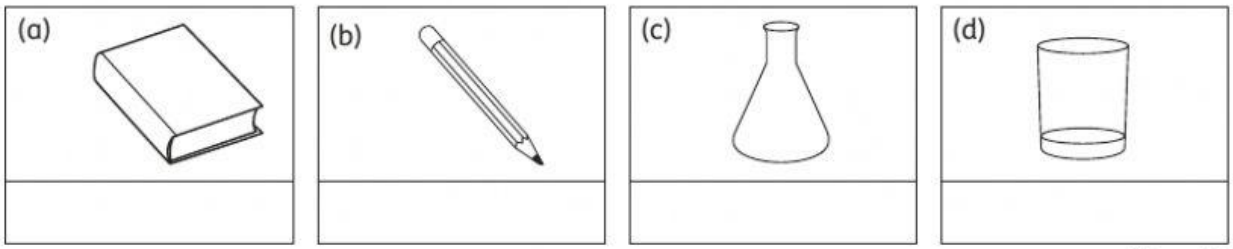
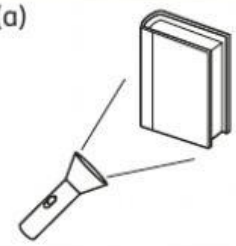
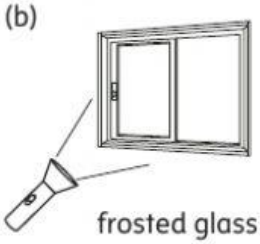
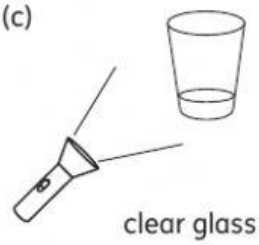
5.1 Light Travels in a Straight Line

1 Tick (✓) the objects that produce shadows and a cross (✗) the objects that do not produce shadows.



(4 marks)

2 Shade the darkness of the shadows formed when light is shone on the following objects.

Type of object	The darkness of shadows formed	Type of material (Transparent/Translucent/Opaque)
(a) 	(i)	(ii) _____
(b)  frosted glass	(i)	(ii) _____
(c)  clear glass	(i)	(ii) _____

(6 marks)

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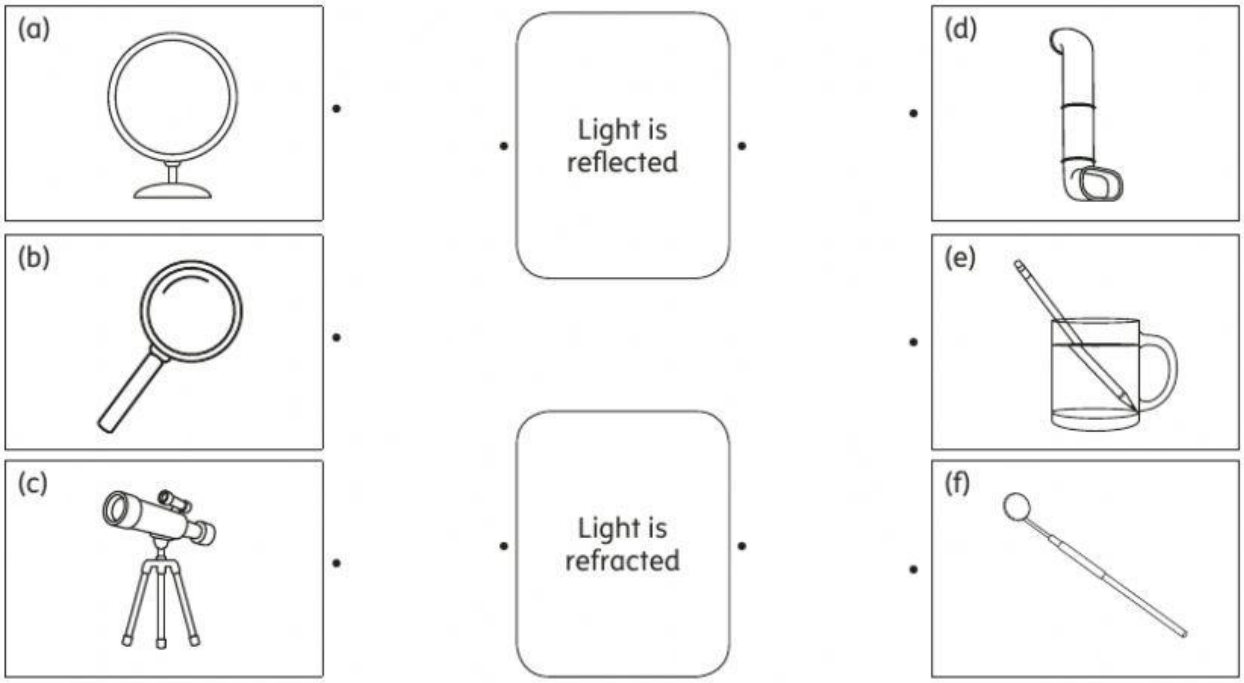
LIVEWORKSHEETS

5.2 Light Can be Reflected

5.3 Light Can be Refracted

3 Match the properties of light used for the objects below.



(6 *marks*)

PART B

10

Instruction: *Choose the correct answer from* **A**, **B**, **C** *or* **D**.

5.1 Light Travels in a Straight Line

1 What must Ahmad do to ensure the candle flame can be seen clearly in Diagram I?

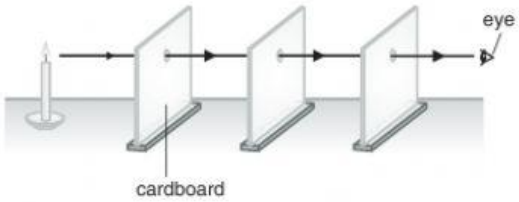


Diagram I

A Position the holes in line with his eye.
B Move some of the cardboard to the left and some to the right.
C Place the candle on a flat, shiny and smooth surface.
D Place the cardboard away from the light source.

2 Table I shows the results of an investigation carried out by Damia on the ability of light to pass through objects.

Object	Ability of light to pass through object
X	All light can pass through
Y	No light can pass through
Z	Some light can pass through

Table I

Which of the following statements is correct?

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A Z is a transparent material.
B X is unable to let customers see the products from the outside of the shop.
C A shadow is formed when light is shone on object Y.
D A translucent object like Z enables us to see clearly while driving a vehicle.

3 HOTS Diagram 2 shows an investigation on the formation and size of shadows formed.

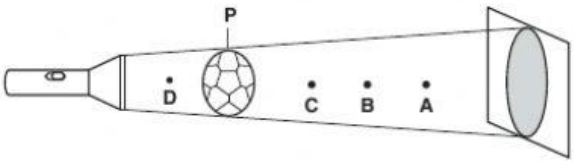
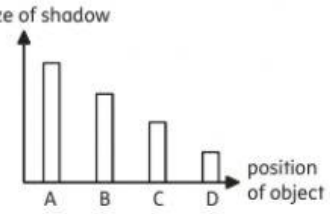
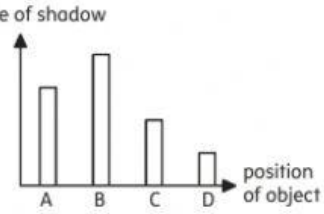
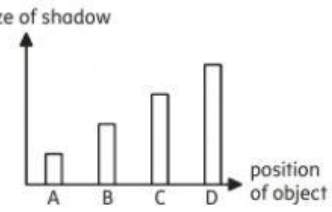


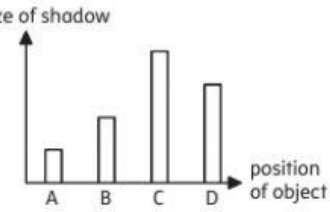
Diagram 2

Which of the following bar charts represents the size of the shadows formed when object P is at A, B, C and D?

A


B


C


D


4 HOTS In the olden days, the construction of lighthouses on the shoreline was of great help to the sailors.



Diagram 3

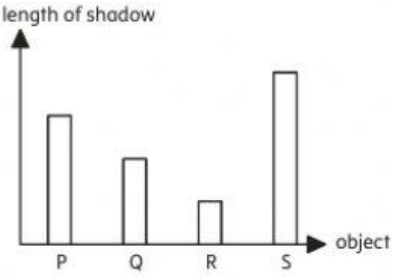
Predict what would happen if no lighthouse was built.

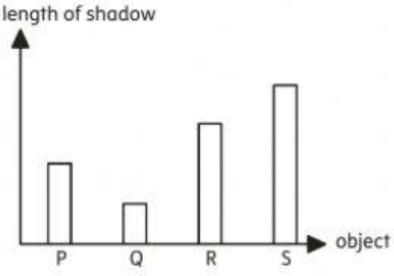
A The ships would sail with the help of the wind.
B The destination of a ship could not be determined.
C Difficult for sailors to identify land from a great distance.
D The duration of a voyage would be much longer.

5 The statements below show the results obtained by a group of pupils who carried out an investigation.

- P produces the longest shadow.
- Q produces a shadow which is shorter than R.
- S produces a shadow which is longer than R but shorter than P.

Which bar chart represents the information above?

A


B


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