

TOPICAL PRACTICE 4



4

Plants

PART A

19

4.1 Plants Respond to Stimuli

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

HOTS

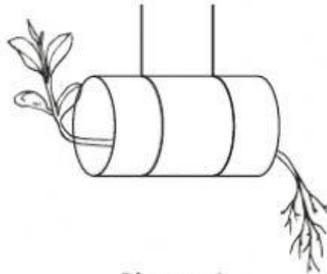


Diagram I

What conclusion can be made from this observation?

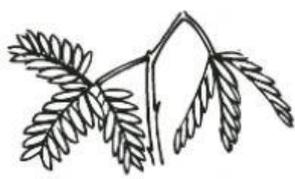
Put a tick (✓) for the **correct** answer and a cross (X) for the **wrong** answer.

- (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

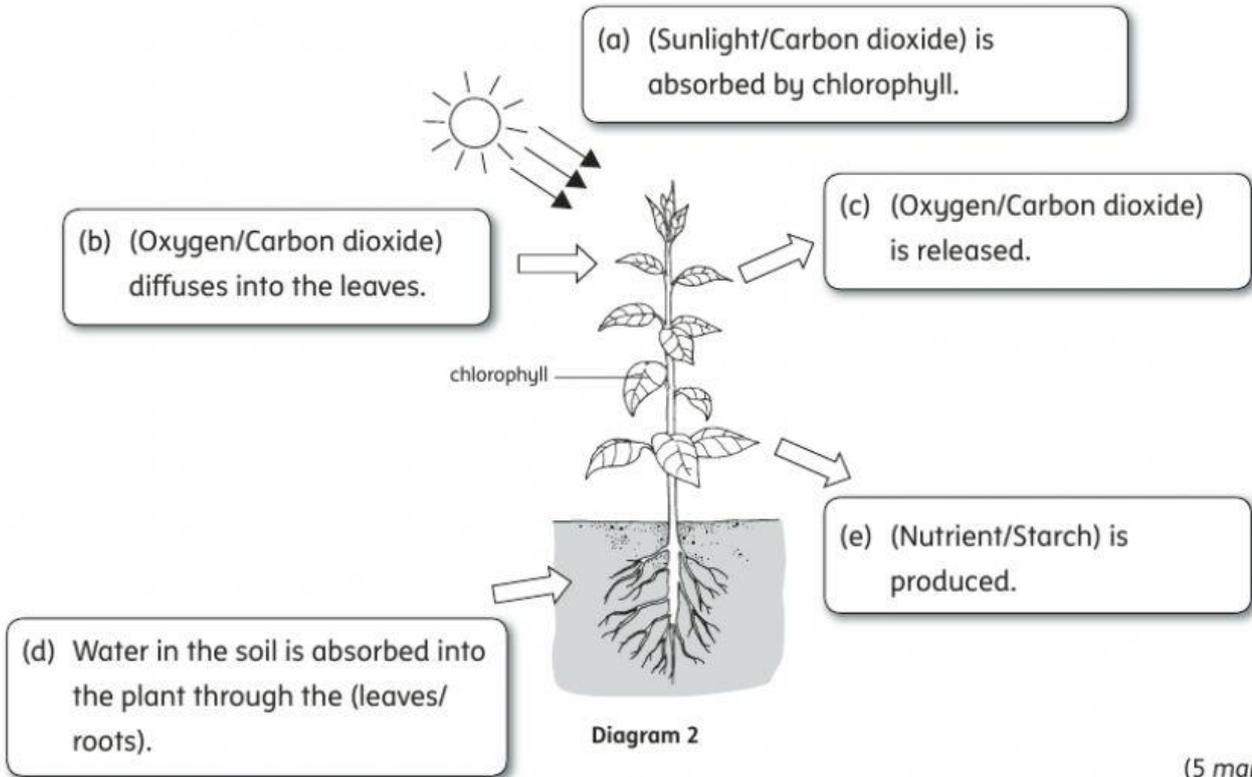
- (a) Grow towards sunlight
- (b) Grow towards water

- (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.



(5 marks)

- 4 Circle the correct answers.

- (a) Which organism cannot carry out photosynthesis?
- (b) At which time does photosynthesis cannot be carried out?
- (c) What is the name of the process of plants that help them to make food?
- (d) Which part of the plants carries out photosynthesis?
- (e) Which product of photosynthesis is needed by humans to breathe?

ferns	fungi
day	night
photosynthesis	breathing
leaves	roots
carbon dioxide	oxygen

(5 marks)

PART B

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

4.1 Plants Respond to Stimuli

1 Diagram 1 shows an investigation

HOTS

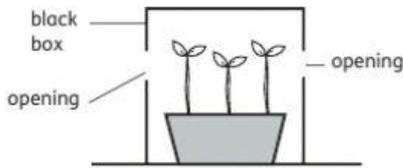
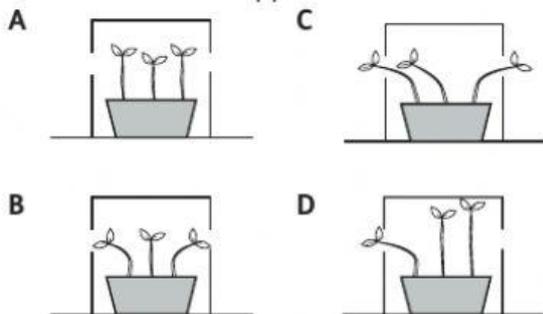


Diagram 1

Predict what will happen after one week.



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

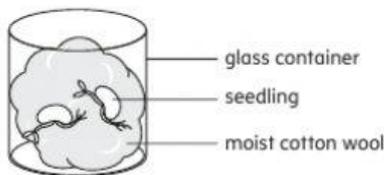


Diagram 2

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

HOTS



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

HOTS

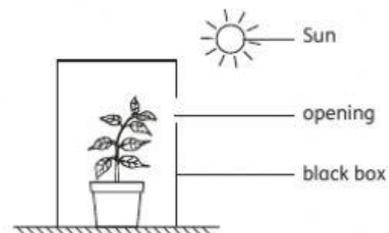


Diagram 4

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
- B Gravity
- C Touch
- D Sunlight

4.2 Photosynthesis

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

HOTS
[UPSR CLONE]

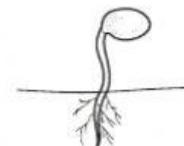


Diagram 5

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

- 7 Which of the following is **not** needed to carry out photosynthesis?
A Sunlight
B Carbon dioxide
C Chlorophyll
D Flowers
- 8 What happens to the excess sugar in the **HOTS** 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 Diagram 6 shows an apparatus set-up prepared for an investigation. **HOTS**

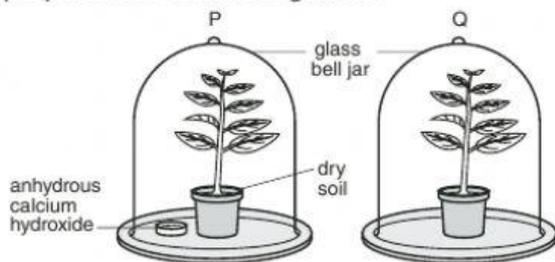


Diagram 6

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.

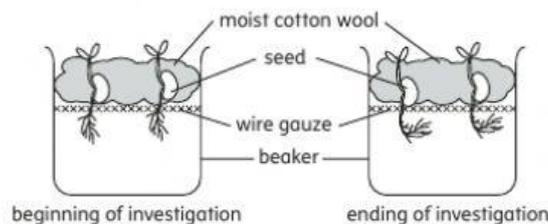


Diagram 1

(a) What is the aim of this investigation?

_____ (1 mark)

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

_____ (1 mark)

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.

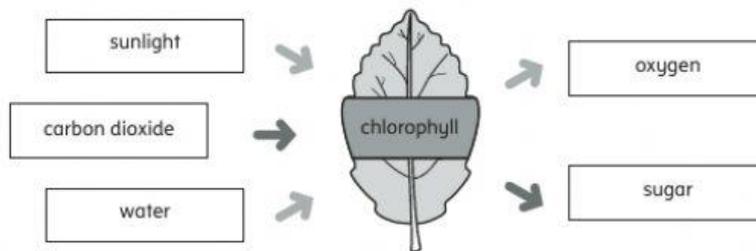
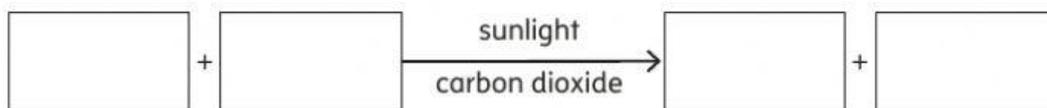


Diagram 2

(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)

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.

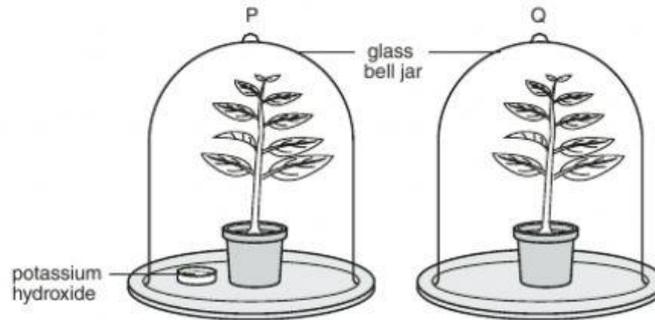


Diagram 3

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)

TOPICAL PRACTICE 5



5

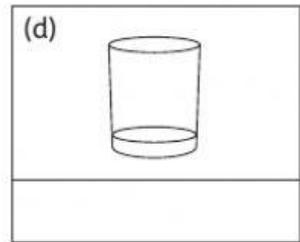
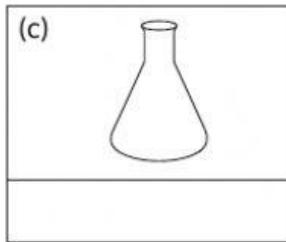
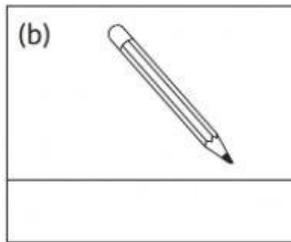
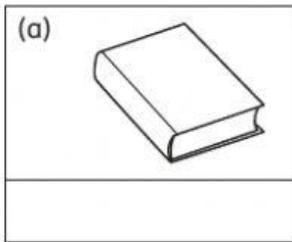
Properties of Light

PART A

16

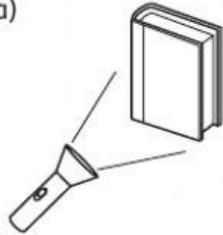
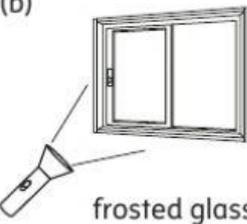
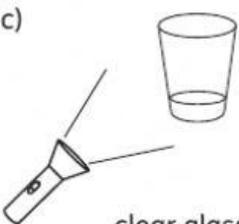
5.1 Light Travels in a Straight Line

1 Tick (✓) the objects that produce shadows and a cross (X) 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.

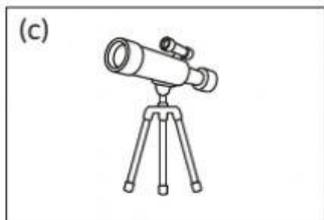
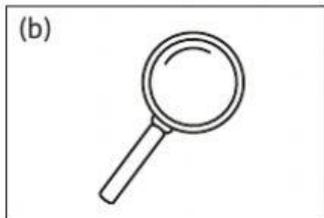
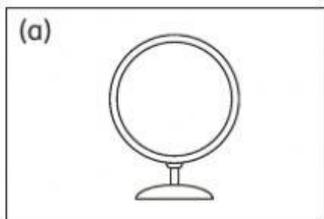
Type of object	The darkness of shadows formed	Type of material (Transparent/Translucent/Opaque)
(a) 	(i) _____ (ii) _____	(ii) _____
(b)  frosted glass	(i) _____ (ii) _____	(ii) _____
(c)  clear glass	(i) _____ (ii) _____	(ii) _____

(6 marks)

5.2 Light Can be Reflected

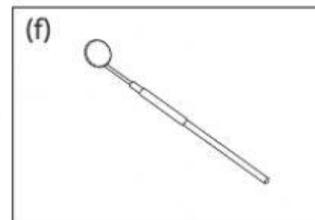
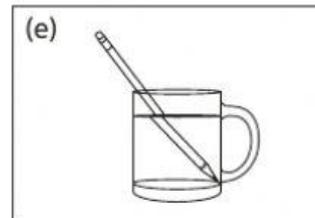
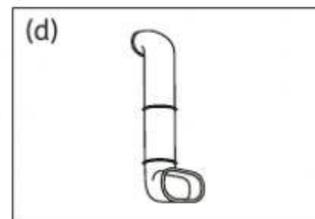
5.3 Light Can be Refracted

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



Light is reflected

Light is refracted



(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 1?

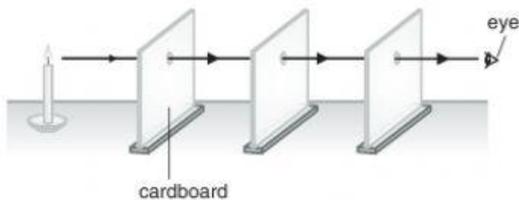


Diagram 1

- 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 1 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 1

Which of the following statements is correct?

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

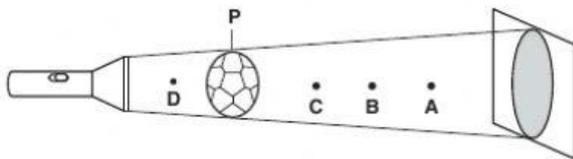
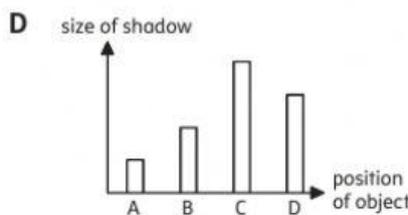
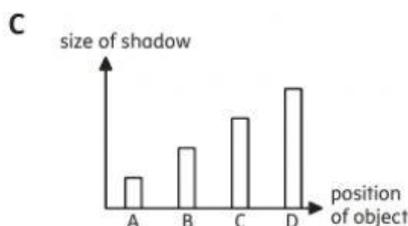
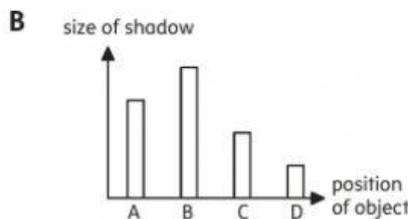
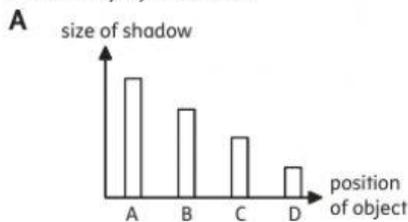


Diagram 2

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



4 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?

