Ai Tong School
Primary 5 Science
2022 Term 1 Weighted Assessment

20

Name: _____ ( ) Date: _____

Class: P5 _____ Duration: 30 minutes

Section A (8 marks)

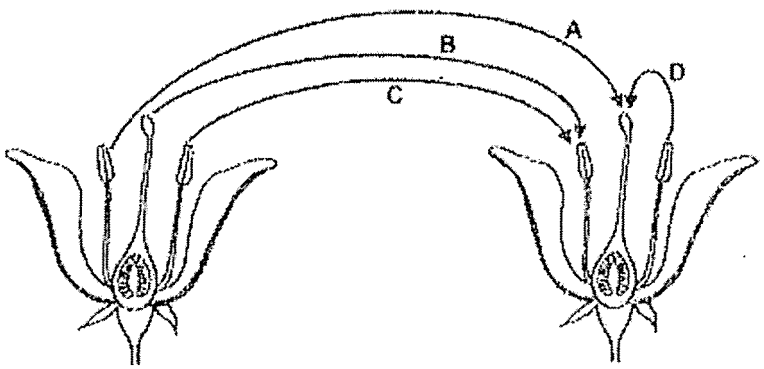
For each question from 1 to 4, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4) and write your answer in the bracket provided.

1 Which of the following statements about cells is correct?

(1) Cells can be seen with the naked eye.
(2) Cells have fixed shapes and structures.
(3) Cells are unable to reproduce on their own.
(4) Cells are able to react to changes in the environment.

( )

2 The diagram shows two flowers from the same plant.



Which pair of arrows shows pollination taking place?

(1) A and B only
(2) B and C only
(3) A and D only
(4) C and D only

( )

(Go on to the next page)

3 In the table below, a tick (✓) shows the parts that cells P, Q, R and S have.

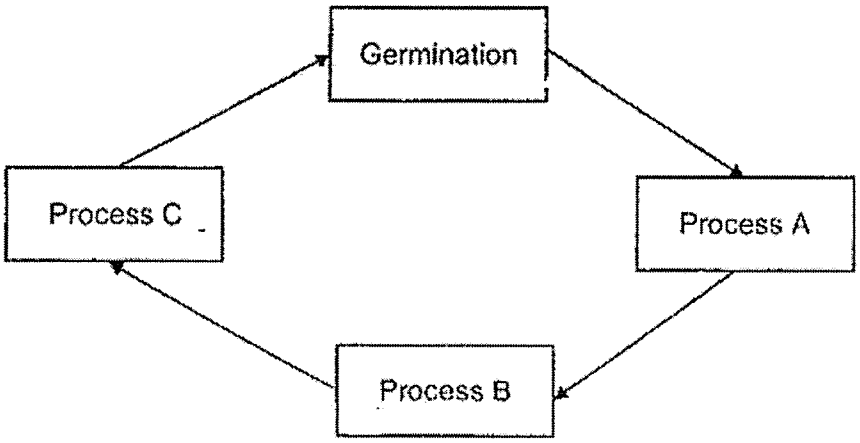
	Cell P	Cell Q	Cell R	Cell S
Cytoplasm	✓	✓	✓	✓
Cell membrane	✓	✓	✓	✓
Nucleus	✓	✓	✓	
Cell wall	✓	✓		
Chloroplasts	✓			

Based on the information provided, which statement is correct?

(1) Cell Q makes its own food.
(2) Cells P and Q are plant cells.
(3) Cells R and S are from a plant.
(4) Cells Q, R and S are from an animal.

( )

4 The diagram below shows the processes involved in the reproduction of a flowering plant.



Which of the following correctly identifies processes A, B and C?

	Process A	Process B	Process C
(1)	Seed Dispersal	Pollination	Fertilisation
(2)	Seed Dispersal	Fertilisation	Pollination
(3)	Fertilisation	Pollination	Seed Dispersal
(4)	Pollination	Fertilisation	Seed Dispersal

( )

(Go on to the next page)

Section B (12 marks)

For questions 5 to 8, write your answers in the spaces provided.

The number of marks available is shown in bracket [ ] at the end of each question or part question.

5 A cell was placed into a solution at the beginning of the experiment as shown in Diagram A. Diagram B shows what happened to the cell after a few hours.

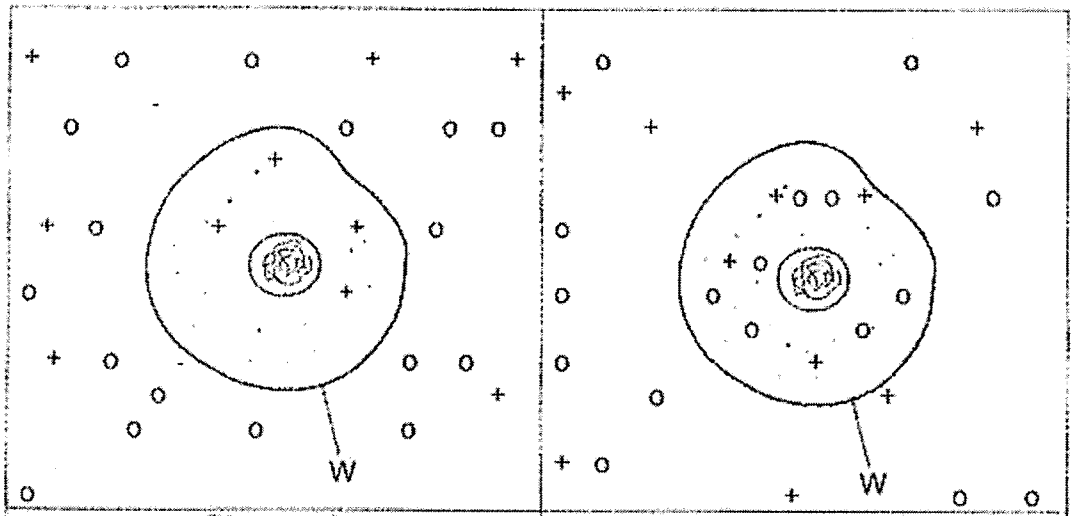


Diagram A (Beginning of the experiment) | Diagram B (End of the experiment)

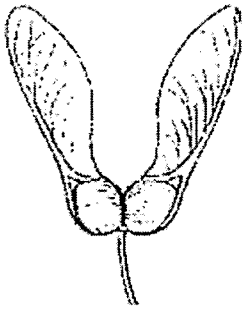
Key	
+	Substance Y
O	Substance Z

(a) Does the cell in the diagrams above belong to an animal or plant? Give a reason for your answer. [1]

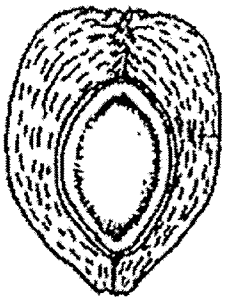
(b) Name part W. Based on the experiment, what can you conclude about part W? [2]

(Go on to the next page)

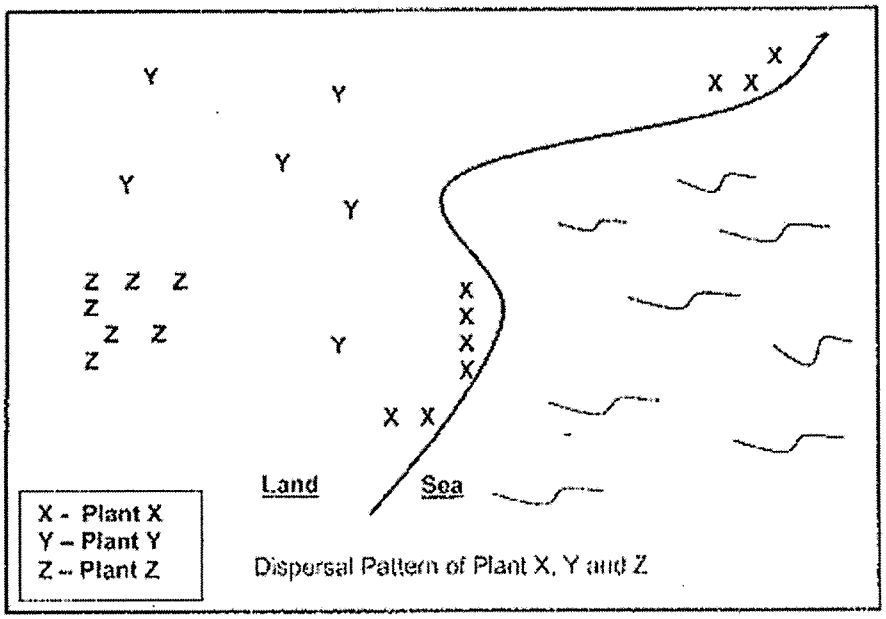
6 The diagram below shows two fruits A and B and the dispersal pattern of Plant X, Y and Z.



Fruit A



Fruit B



Dispersal Pattern of Plant X, Y and Z

(a) Based on the above diagram, how is Plant Z likely to be dispersed? Explain your answer. [1]

(b) Explain how the structure of Fruit A enables it to be dispersed. [1]

(Go on to the next page)

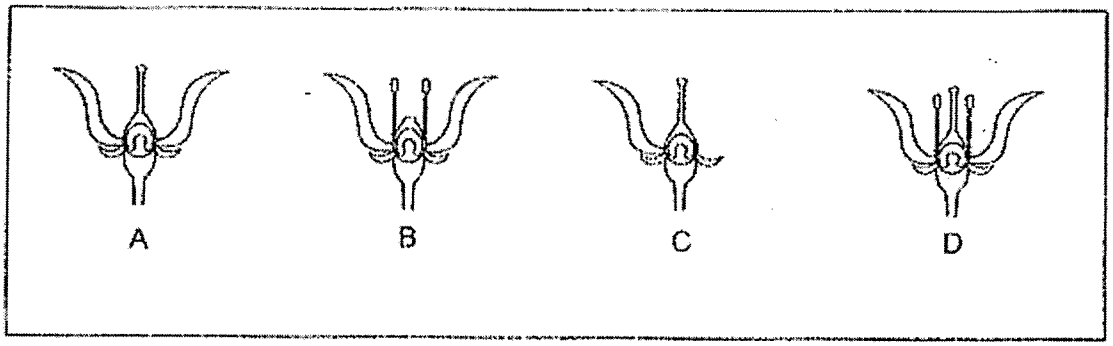
2

(c) Fruit B has a fibrous husk. Which plant X, Y or Z is likely to produce Fruit B? Explain your answer. [2]

(Go on to the next page)

2

7 The diagram below shows four flowers, A, B, C and D.



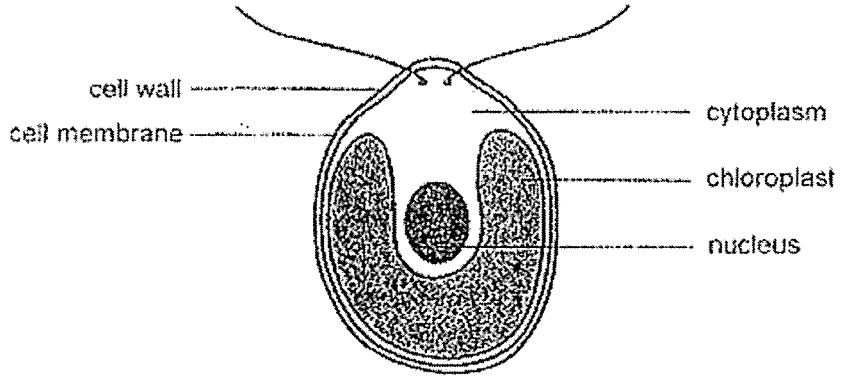
(a) Which of the flower(s) can develop into a fruit? [1]

(b) Explain your answer in part (a). [2]

(Go on to the next page)

3

8 The diagram below shows a single-celled organism which lives in pond water.



(a) Is this single-celled organism a plant or an animal? [1]

(b) Give a reason for your answer in part (a) above. [1]

End of Paper

2

Ai Tong School
Primary 5
2022 Science Weighted Assessment
Correction Template

Section A

1. 4
2. 3
3. 2
4. 4

Section B

5 (a) Animal cell. It does not have a cell wall.

5 (b) Part W is the cell membrane.

The cell membrane allows Substance 2 to go in and out of the cell but not Substance Y.

*When describing the function of cell membrane, do not use the following terms.
- pass through (does not imply two way movement)
- **Must have the idea of control and movement of certain substances in and out of the cell**

6 (a) Plant Z is dispersed by explosive action / splitting action.

Most of the plants are dispersed near to parent plant.

6 (b) Fruit A has wing -like structure which helps it to be dispersed by the wind.

*When answering questions pertaining to seed dispersal, make reference to data from the diagram.

6 (c) Choice: Plant X.

Data: They grow near the sea / water, and

Explanation: the fibrous husks helps the fruits to be dispersal by water.

7 (a) Flowers A, C and D

7 (b) Flowers A, C and D still have their stigma which means they can still be pollinated by pollen grains and fertilisation can still take place in the ovary.

*Recall the female parts of a flower. Which are the parts important for its development into a fruit? What the main processes needed for a flower to develop into a fruit?

8 (a) It is a plant.

8 (b) The single-cell organism has cell wall and all plants have cell wall.

Ai Tong School
Primary 5
Science Practical Assessment 2022

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Parent's Signature: _____

Name: _____( ) Class: P5 _____ Date: _____

Duration: 40 minutes

Activity 1 (7 marks)

Materials given:

- beaker containing water and ice cubes
- a thermometer

⚠ Caution: The thermometer is fragile. Please handle with care.

Instructions:

1. Measure the temperature of water and ice cubes in the beaker. Record the temperature below. [1]

   Temperature of water and ice cubes in the beaker : _____

2. Name the process happening to the ice cubes in the beaker. [1]

   _____

3. Observe the water droplets that were formed on the outer surface of the beaker. Explain how the water droplets were formed. [2]

   _____

   _____

   _____

   _____

4. State the change of state of ice in the beaker. [1]

From _____ state to _____ state.

5. Based on your observation of the beaker containing ice cubes and water, tick (✓) in the correct column to indicate if the object stated is gaining heat or losing heat. [1]

Object	Gaining heat	Losing heat
Ice cubes in the beaker		
Air surrounding the beaker		

6. Predict the temperature of the contents in the beaker after three hours. [1]

Temperature of the contents in the beaker after three hours : _____

7

Activity 2 (8 marks)

Materials given:

- cross-section of specimen A
- cross-section of specimen B
- specimen X
- magnifying glass

Instructions:

1. Examine the cross-sections of specimens A and B.

2. Specimens A and B are fruits. Based on your observation, give a reason why. [1]

_____

_____

3. Name the method of seed dispersal for specimens A and B. [1]

Specimen A: _____

Specimen B: _____

4. State one reason for your answer for specimen B in question (3). [1]

_____

5. State one advantage of the method used by specimen A to disperse its seeds. [1]

_____

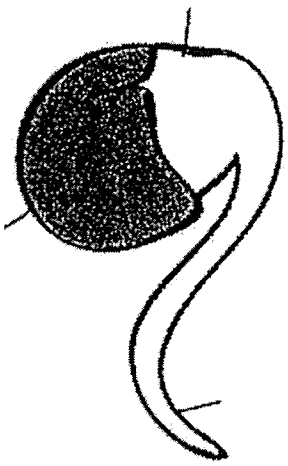
_____

6. Is specimen A capable of carrying out photosynthesis? Explain your answer. [2]

_____

_____

7. Examine specimen X. Label the seed coat, seed leaf and root in the diagram below. [1]



Specimen X

8. Tick (✓) the correct box. [1]

Specimen X is _____.

☐ a flowering plant

☐ a non-flowering plant

☐ fungi

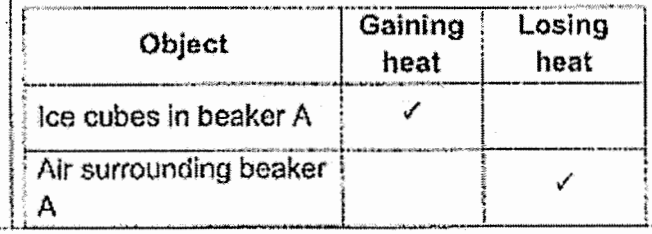
END OF PAPER

8

Name: _____ ( ) Class: _____

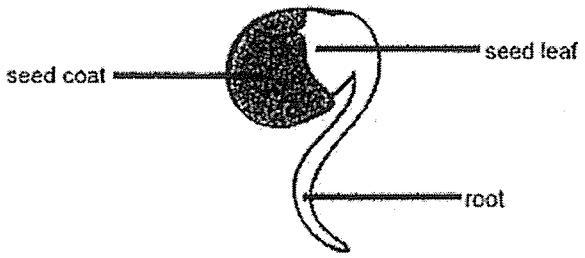
Primary 5
Science Practical Assessment 2022 Correction Template

Activity 1

Question	Answers	Remarks
1	0°C	Do note that all measurements must include units. When ice is melting, the mixture of ice and water is at 0°C. Heat energy from the surroundings is used to melt the ice instead of increasing temperature of the mixture.
2	The ice cubes are melting.	
3	Warmer Water vapour from the surrounding air comes into contact with the cooler outer surface of the beaker, loses heat and condenses into tiny water droplets on the outer surface of the beaker A.	- Heat source must be identified correctly. - Temperature difference between the surroundings and the condensing surface must be stated. - Heat transfer (heat gain/heat loss) must be stated. - Change of state and its process must also be stated. Use mnemonic to help you remember this answering technique.
4	From solid state to liquid state.	Melting is process of heat gain whereby ice changes from the solid state to the liquid state.
5		Ice cubes in the beaker gain heat from the surrounding air. Air in the surroundings loses heat to the ice cubes in the beaker.

Object	Gaining heat	Losing heat
Ice cubes in beaker A	✓	
Air surrounding beaker A		✓

6	room temperature (between 20 °C to 34 °C)	After three hours, there will be no heat transfer between the mixture in the beaker and the surroundings, so the mixture will have reached room temperature.
Activity 2		
2	Data: Specimen A and B have seeds Explain: and only fruits have seeds.	Use C (given) – D – E in your explanation.
3	Specimen A: splitting / explosive action Specimen B: animal	
4	Specimen B is a fleshly fruit.	Animals will be attracted to feed on fleshy fruits, thereby either throwing away the seeds or swallowing the seeds and eventually passing them out, thus dispersing the seeds away from the parent plant.
5	Does not depend on external agents such as wind, water and animals for seed dispersal.	
6	Choice: Yes Data: Specimen A is green. Explain: indicating that it contains chlorophyll that traps light to make food for the plant.	Use C – D – E in your explanation

7		
8	✓ a flowering plant ☐ a non-flowering plant ☐ fungi	