

# Anglo-Chinese School (Junior)



## BITE-SIZED ASSESSMENT 1 (2021)

### PRIMARY 5

### SCIENCE

Friday

5 March 2021

40 min

Name: \_\_\_\_\_ (     ) Class: 5.(     ) Parent's Signature: \_\_\_\_\_

#### INSTRUCTIONS TO PUPILS

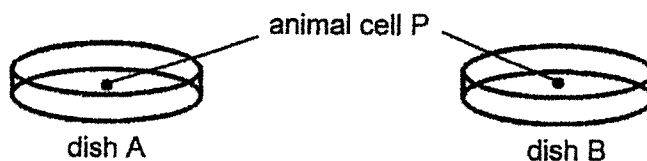
- 1 Do not turn over the pages until you are told to do so.
- 2 Follow all instructions carefully.
- 3 There are 8 questions in this booklet.
- 4 Answer ALL questions.
- 5 The marks are given in the brackets [   ] at the end of each question or part question.

Question Paper	Possible Marks	Marks Obtained
<b>Total</b>	<b>20</b>	

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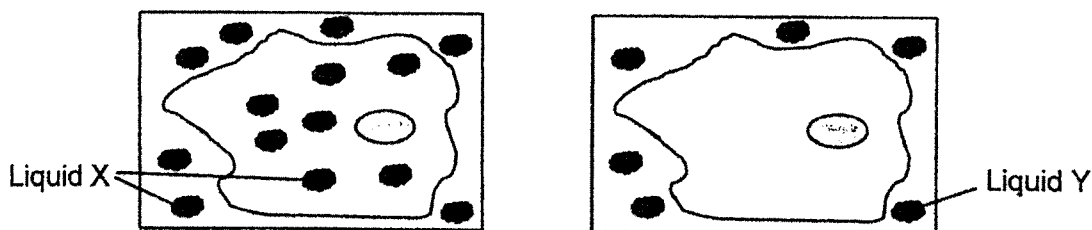
This question paper consists of 9 printed pages (inclusive of cover page).

1. Eric used an animal cell, P, for an experiment.



He placed two identical animal cells P, one in each petri dish. He then placed a drop of Liquid X on the cell in dish A and a drop of Liquid Y on the cell in dish B.

The diagram shows what happened after some time.



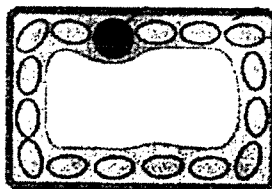
- (a) Identify and state the function of the cell part that allows Liquid X to enter the cell but not Liquid Y. [1]

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Eric observed a plant cell under the microscope.



- (b) Which part of the plant is this cell most likely taken from? Explain your answer. [2]

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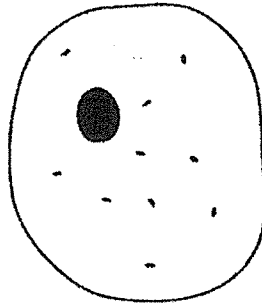


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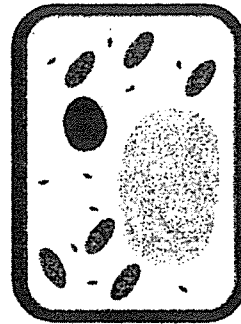


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2. Elias drew two different cells.



Cell A



Cell B

State two differences between the cells.

[1]

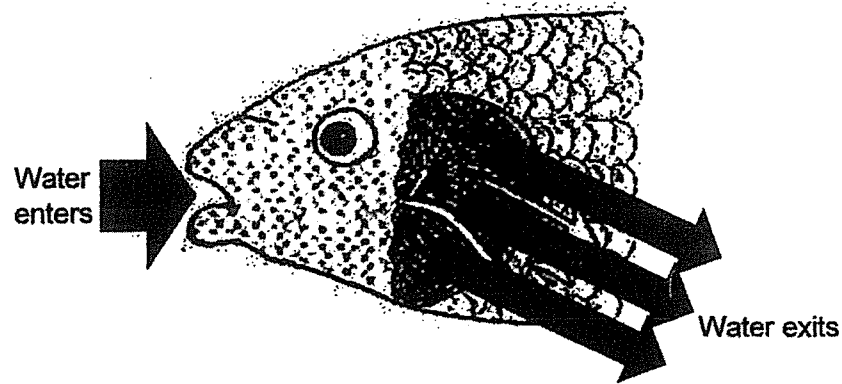
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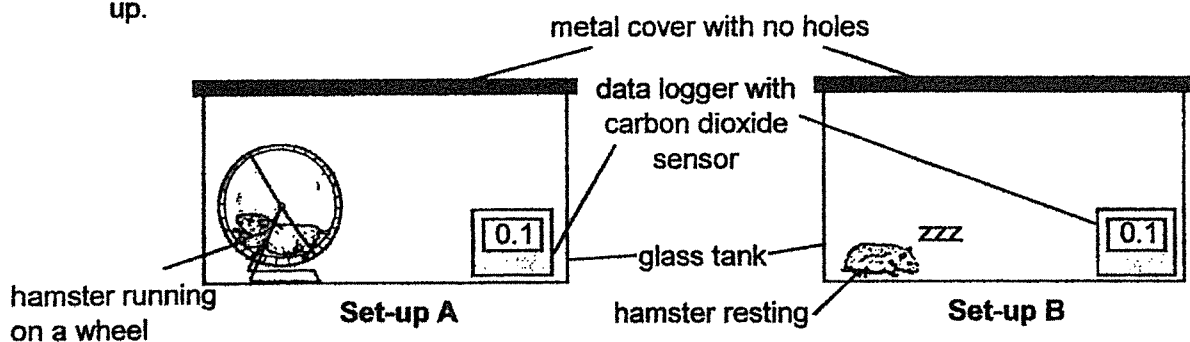
3. The diagram shows water passing through the mouth and gills of a fish for it to breathe.



- (a) Each of the following statements is either true or false about how a fish breathes. Place a tick (✓) in the correct column for each statement. [2]

		True	False
(i)	The fish absorbs dissolved oxygen at its mouth.		
(ii)	Water that exited the fish's gills has more carbon dioxide than the water that entered the fish's mouth.		
(iii)	The more blood vessels present at the gills, the more the amount of dissolved oxygen taken in by the fish's gills.		
(iv)	The gill covers are found under the gills.		

Edward prepared the following set-ups for his experiment using identical tanks and hamsters. He placed identical data loggers with a carbon dioxide sensor in each set-up.



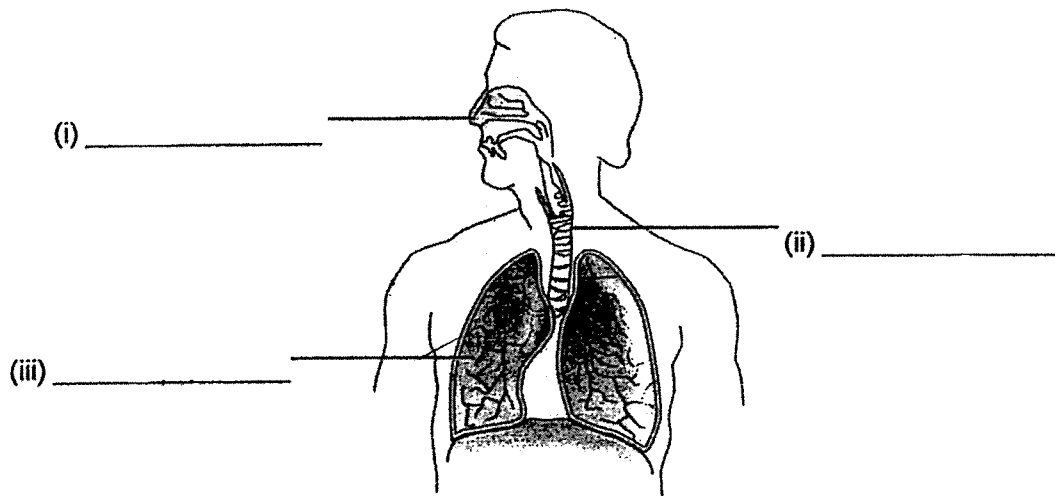
- (b) In which set-up, A or B, will the reading of the data logger be higher after ten minutes? Explain your answer. [1]

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4. The diagram shows the human respiratory system.

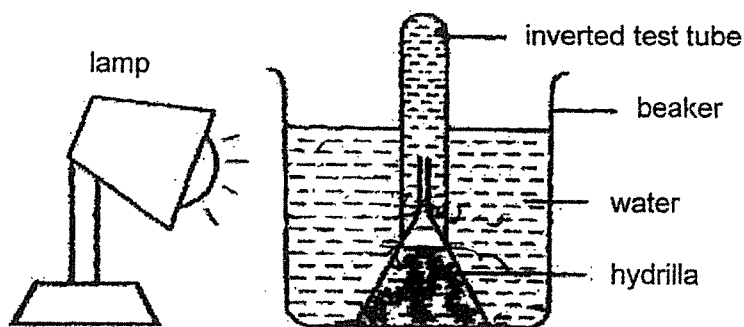


- (a) Label the different parts, (i), (ii) and (iii) in the diagram. [1]
- (b) Describe the function of the human lungs. [1]

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5. Eugene prepared the set-up as shown. He placed a lighted lamp next to the beaker for five hours without changing the light intensity.



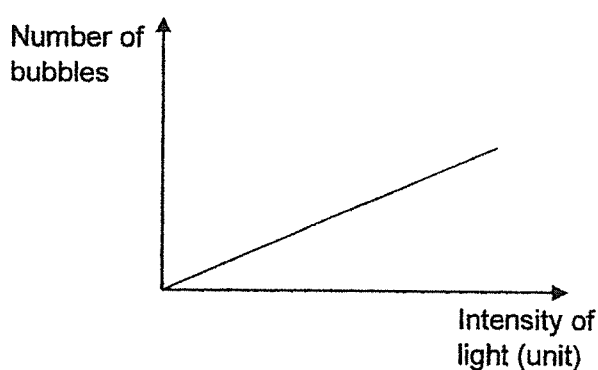
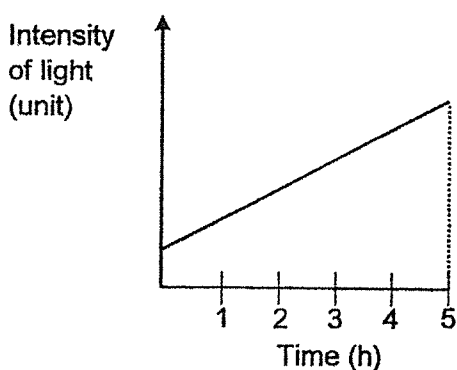
At the end of five hours, some gas was collected at the top of the inverted test tube.

- (a) What was the gas collected in the test tube and which process caused the gas to be produced? [1]

Gas: \_\_\_\_\_

Process: \_\_\_\_\_

- (b) Eugene repeated the experiment but this time, he increased the intensity of light over five hours. He counted the number of bubbles produced by the hydrilla as he increased the light intensity and plotted the graphs.



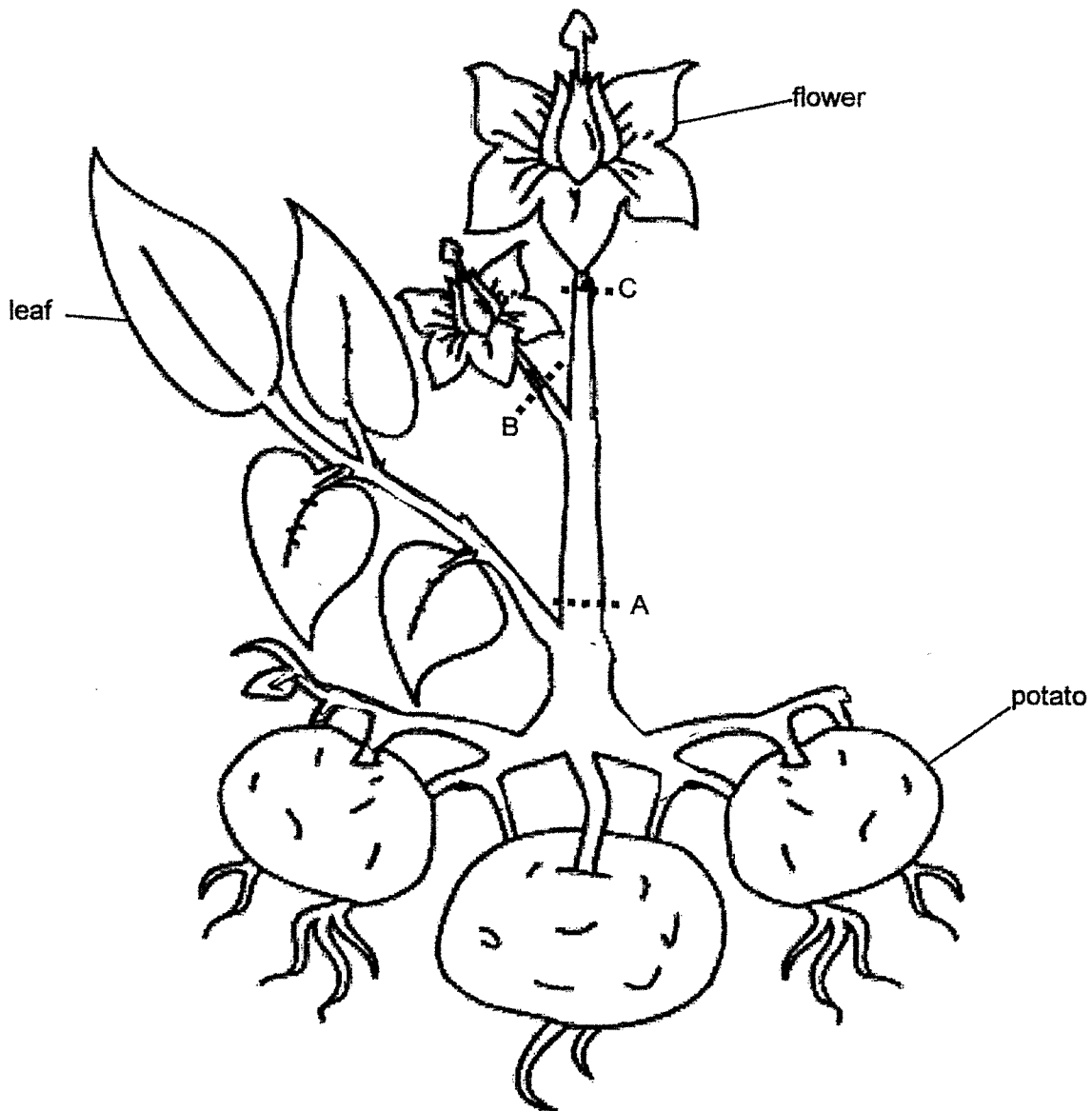
- (i) Identify the changed variable and the measured result in the experiment. [1]

Changed variable: \_\_\_\_\_ Measured result: \_\_\_\_\_

- (ii) Based on the graph, describe the relationship between the intensity of light and the number of bubbles produced by the hydrilla. [1]

\_\_\_\_\_  
\_\_\_\_\_

6. Edmund planted a potato plant.



- (a) Draw at least **three** arrows (→) on the diagram to show how food is transported in the stem of the plant. [1]
- (b) Edmund wanted to make the potatoes grow as big as possible in the shortest period of time. At which part of the stem, A, B, or C, should Edmund remove the food-carrying tubes? Explain your answer. [2]

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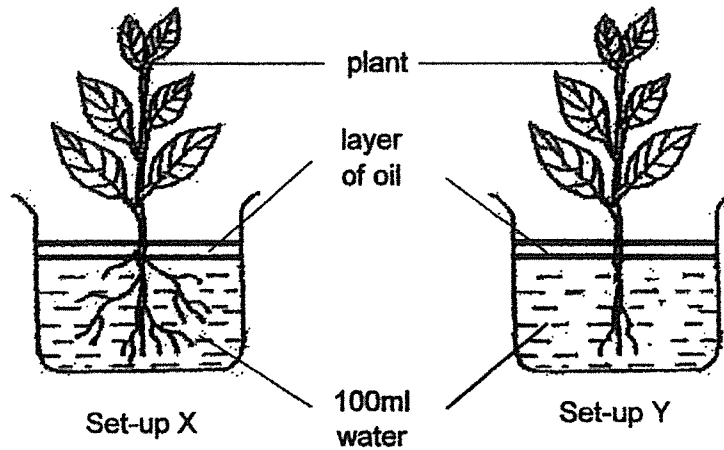
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7. Edgar set up an experiment as shown. He left the set-ups in his garden and measured the water level at the end of the day.



- (a) What is the aim of Edgar's experiment? [1]

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- (b) What change will Edgar observe in the set-ups at the end of the day? [1]

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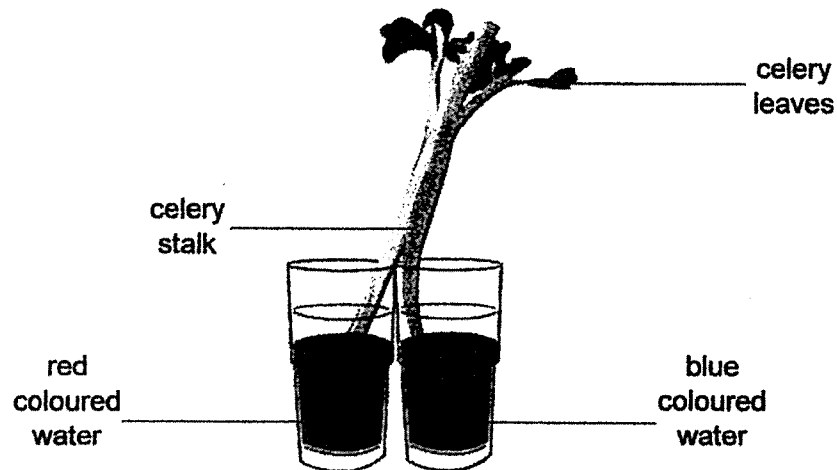


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- (c) Edgar sets up another experiment to find out if the number of leaves affect the amount of water loss by the plant. In the table below, place a tick (✓) for the variables which he should keep constant to test the aim of his experiment. [1]

Variable	Keep constant
Amount of roots	
Number of leaves	
Type of plant	
Amount of water	
Amount of sunlight	

8. Ezekiel cut a celery stalk into two and placed the split celery stalk into two cups as shown in the diagram.



- (a) What would Ezekiel observe about the celery leaves after six hours? [1]

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- (b) Explain your observation in (a). [1]

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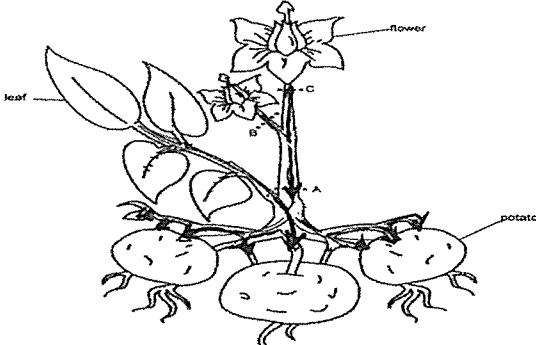
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## ANSWER KEY

YEAR : 2021  
 LEVEL : PRIMARY 5  
 SCHOOL : ANGLO-CHINESE SCHOOL (JUNIOR)  
 SUBJECT : SCIENCE  
 TERM : BITE-SIZED ASSESSMENT 2 I

Q1	a)	Cell membrane. It controls the flow of substances entering and leaving the cell as it semi-permeable		
	b)	Leaf. The cell above has chloroplast, which contains chlorophyll to help the leaf →		
Q2	Cell B has a cell wall, but Cell A does not have a cell wall Cell B has chloroplast, but Cell A does not have chloroplast			
Q3	a)	(i)	False✓	
		(ii)	True✓	
		(iii)	True✓	
		(iv)	False✓	
	b)	Set-up A. The hamster in Set-up A is running on a wheel, indicating that the rate of respiration would be higher for the hamster in Set-up A than B, as the hamster in Set-up B is sleeping. Thus, more oxygen would be taken in by the hamster in Set-up A to produce more energy so more carbon dioxide would be given out by the hamster in Set-up A.		
Q4	a)	(i)	Nose	
		(ii)	Windpipe	
		(iii)	Lungs	
	b)	Take in oxygen, give out carbon dioxide		
Q5	a)	Gas: oxygen Process: Photosynthesis		
	b)	(i)	Changed variable: intensity of light Measured result: Number of bubbles	
		(ii)	As the intensity of light increases, the number of bubbles produced by the hydrilla increases.	

→ trap light and make food in the process of photosynthesis. Thus, it is taken from the leaf as the leaf has chloroplast, similar to the cell above.

Q6	a)														
	b)	<p>Part A. Food made by the leaves through the process of photosynthesis in the presence of light could only be transported to the potato<sup>to the stored</sup> and not the flowers as the food-carrying tubes at Part A was removed, indicating that food could not reach the flowers as the food needs to travel past Part A to reach the flowers. As the potato stored more food, it become bigger.</p>													
Q7	a)	<p>To find out if the number of roots affect the amount of water taken in (absorbed roots.)</p>													
	b)	<p>There will be more water left in Set-up Y than Set-up X</p>													
	c)	<table><tr><th>Variable</th><th>Keep constant</th><td rowspan="6"></td></tr><tr><td>Amount of roots</td><td>✓</td></tr><tr><td>Number of leaves</td><td></td></tr><tr><td>Type of plant</td><td>✓</td></tr><tr><td>Amount of water</td><td>✓</td></tr><tr><td>Amount of sunlight</td><td>✓</td></tr></table>	Variable	Keep constant		Amount of roots	✓	Number of leaves		Type of plant	✓	Amount of water	✓	Amount of sunlight	✓
Variable	Keep constant														
Amount of roots	✓														
Number of leaves															
Type of plant	✓														
Amount of water	✓														
Amount of sunlight	✓														
Q8	a)	<p>Half of the celery leaves turn red and the other half turn blue</p>													
	b)	<p>The blue coloured water and red coloured water was transported in separated water-carrying tubes to the celery leaves, so the colours would not mix, resulting in half of celery leaf turning blue and the other half red.</p>													

END

# Anglo-Chinese School (Junior)



## BITE-SIZED ASSESSMENT 2 (2021)

### PRIMARY 5

### SCIENCE

Friday

7 May 2021

50 min

Name: \_\_\_\_\_ (     ) Class: 5.(     ) Parent's Signature: \_\_\_\_\_

#### INSTRUCTIONS TO PUPILS

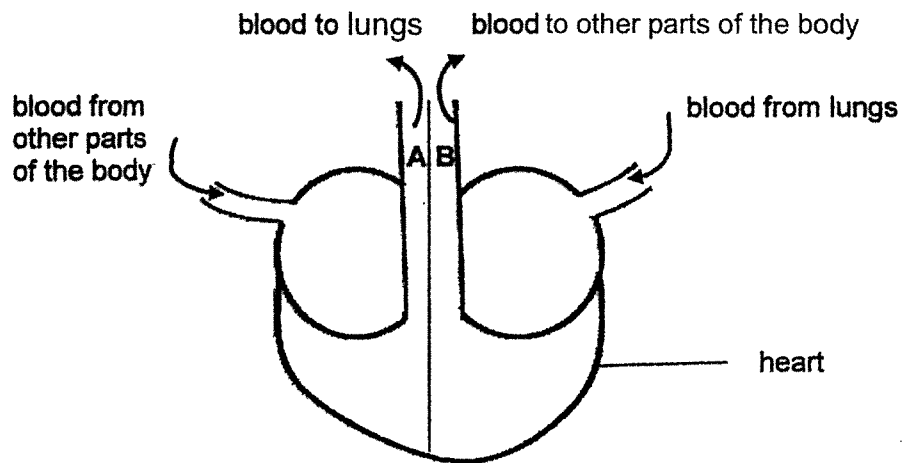
- 1 Do not turn over the pages until you are told to do so.
- 2 Follow all instructions carefully.
- 3 There are 12 questions in this booklet.
- 4 Answer ALL questions.
- 5 The marks are given in the brackets [   ] at the end of each question or part question.

Question Paper	Possible Marks	Marks Obtained
Total	30	

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This question paper consists of 9 printed pages (inclusive of cover page).

1. The diagram shows the movement of blood to and from a heart in the human body.



Compare the amount of carbon dioxide carried in the blood in blood vessels A and B.

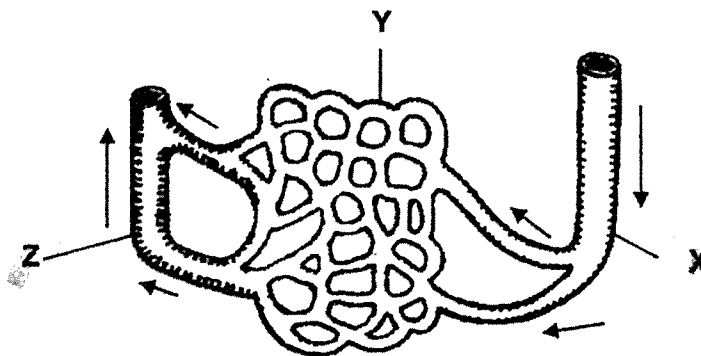
[1]

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2. The diagram shows three types of blood vessels, X, Y and Z, found in a human body. The arrows show the direction of blood flow.



- (a) State the organ in the body that pumps blood to all parts of the body.

[1]

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- (b) Explain why the blood in blood vessel Z contains less oxygen as compared to the blood in blood vessel X.

[1]

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- (c) Name two substances, apart from gases, that are transported in the blood in X.

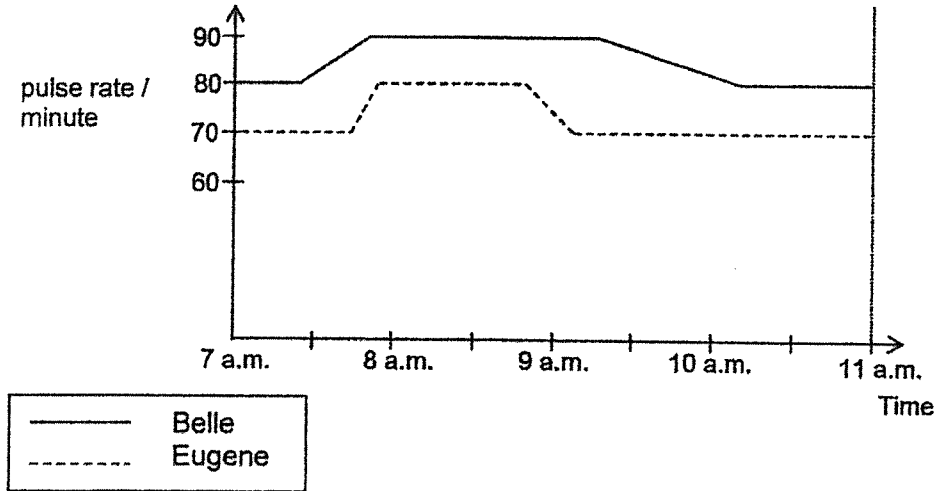
[1]

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SCORE	
	4

3. Eugene and Belle have a resting pulse rate of 70 beats per minute and 80 beats per minute respectively. Both of them began running round the track. After running for some time, they walked slowly to cool down.

The graph shows their pulse rates from 7am to 11am.



- (a) Who began running first? Explain why.

[1]

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- (b) Explain why their pulse rate increased while exercising.

[2]

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SCORE	3
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4. Figure 1 shows how blood travels in the human body.

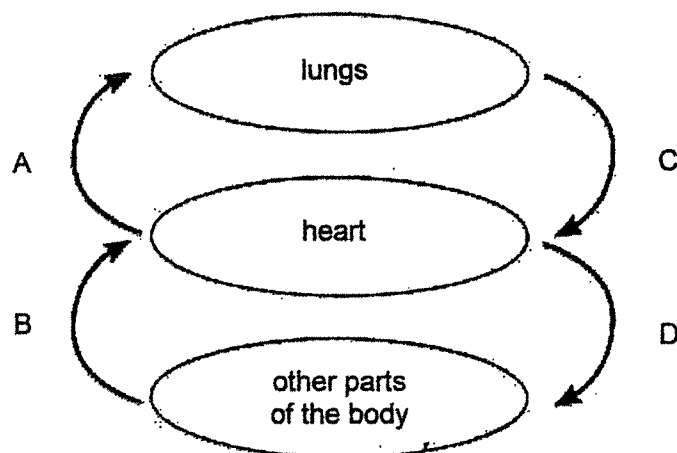
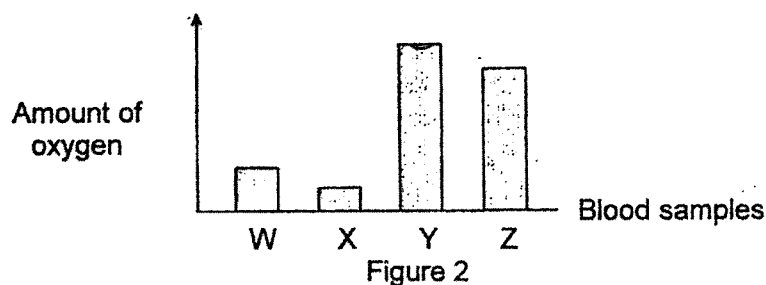


Figure 1

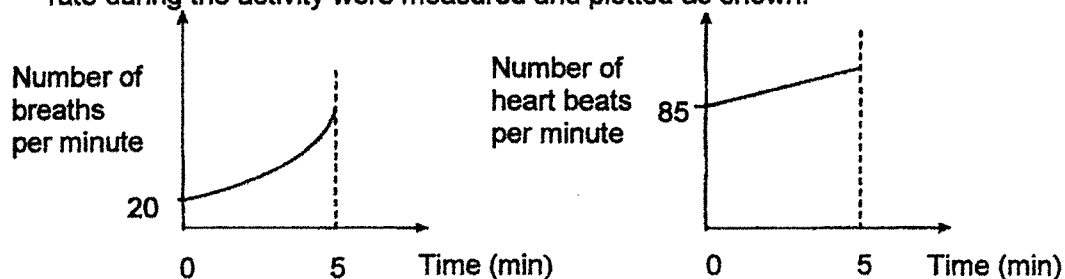
Figure 2 shows the amount of oxygen in four blood samples, W, X, Y and Z, taken at the same time from different blood vessels, A, B, C and D in Figure 1.



- (a) Match each blood vessel, A, B, C and D, in Figure 1 correctly to its blood sample, by writing W, X, Y and Z, in the table. [2]

Blood vessels	A	B	C	D
Blood samples				

Elliott was asked to jog around a field for five minutes. His breathing rate and heart rate during the activity were measured and plotted as shown.



- (b) Based on the graph, what happened to his heart rate when his breathing rate increased? [1]

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SCORE	
	3



5. Ann, Bruno and Candice observed water boiling in a kettle. They each made the following statements.

Ann: "There is more water vapour in the surroundings now."

Bruno: "I can see steam coming out of the spout of the kettle."

Candice: "The water is boiling and the temperature is still rising."

Two of them made incorrect statements.

- (a) Who made the incorrect statements?  
Explain why each statement is incorrect.

[3]

	Name	Explanation
(i)		
(ii)		

6. Explain the difference between boiling and evaporation.

[1]

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7. Fanny placed a beaker of ice cubes on a table in the Science laboratory. She then recorded the changes in temperature of the contents in the beaker at intervals of five minutes.

Time (min)	Temperature (°C)
0	0
5	0
10	0
15	0
20	1
25	8
30	23

- (a) Name the process that is taking place in the beaker during the first 15 minutes. [1]

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- (b) List all the states of matter in the beaker at the 10<sup>th</sup> minute. [1]

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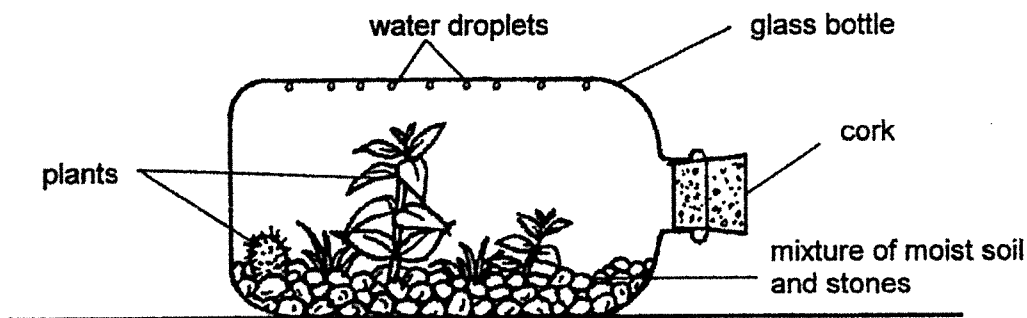
- (c) Explain why the temperature of the contents in the beaker increased between the 20<sup>th</sup> and 30<sup>th</sup> minute. [1]

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8. The diagram shows a terrarium, a bottle garden. It is a small garden placed in a sealed clear glass bottle. It only needs to be watered once at the start, for a continuous supply of water for many weeks. He placed the terrarium beside a window in his air-conditioned office.



Explain clearly how the plant in the terrarium gets a continuous supply of water without being watered for two weeks. [2]

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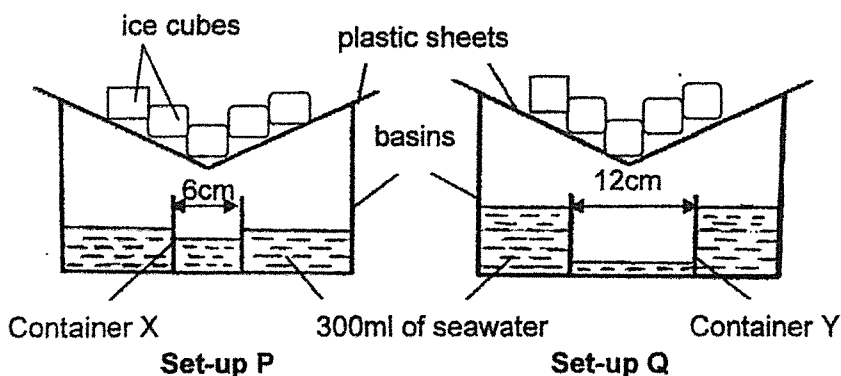
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SCORE	5
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9. Farhan wanted to collect some drinking water from seawater, using containers X and Y, at room temperature. He prepared the following set-ups in identical basins and plastic sheets. He placed them in an air-conditioned room at 16 °C for three hours.



- (a) Farhan noticed that container X collected water faster than container Y. Explain why. [2]

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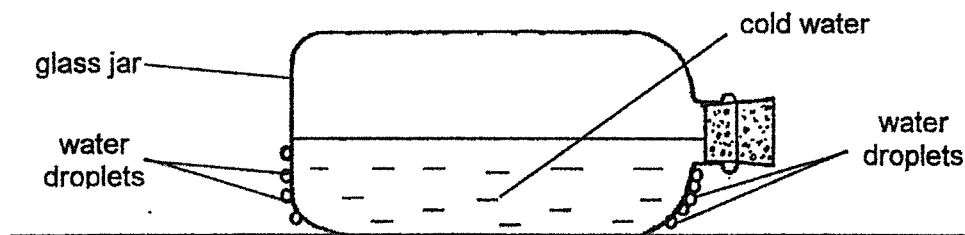
- (b) If Farhan had not placed any ice cubes on the plastic sheets at the start of the experiment, how would the amount of water collected in both containers change? Give a reason for your answer. [1]

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10. Ephraim filled a glass jar with cold water from the refrigerator. He observed that water droplets formed on the outside of the glass jar.



Explain why water droplets were formed on the outside of the glass jar. [2]

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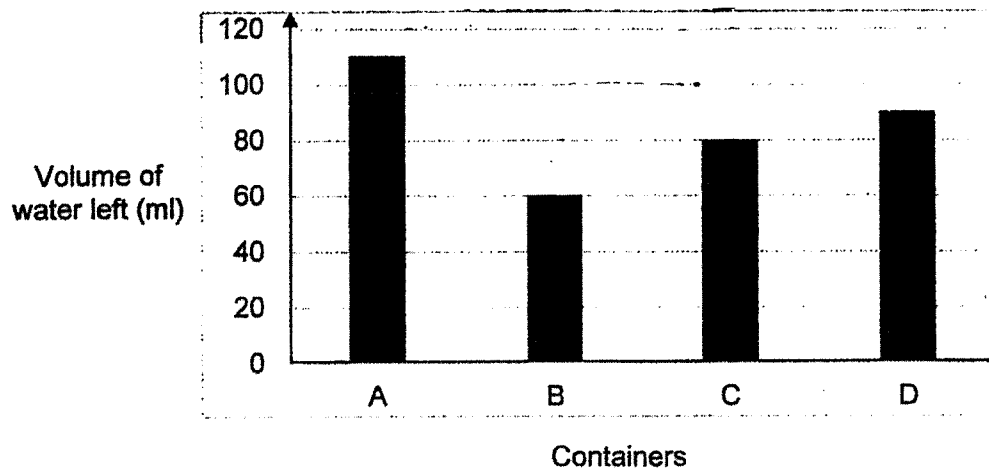
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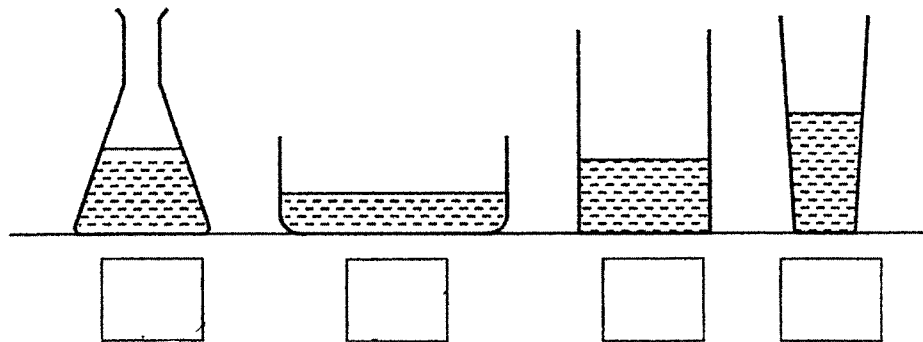
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SCORE	
	5

11. Lidia filled four containers, A, B, C and D, made of the same material but of different sizes and shapes with 300ml of water each. She placed them out in an open field. After three hours, she recorded the volume of water left in each container in the bar graph as shown.



- (a) The diagram shows containers A, B, C and D. Identify containers A and B by filling in the boxes. [1]



- (b) Name two other factors that will increase the rate of evaporation. [1]

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- (c) What is the aim of Lidia's experiment? [1]

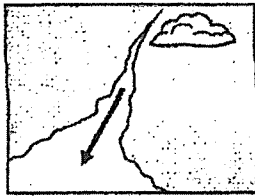
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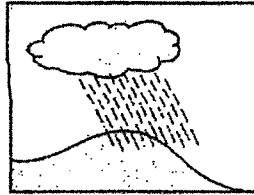
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SCORE	3
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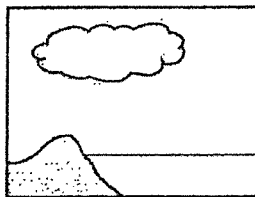
12. The diagrams show the various stages of the water cycle.



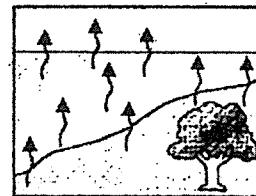
W: Water flows to various water bodies.



X: Rain falls.

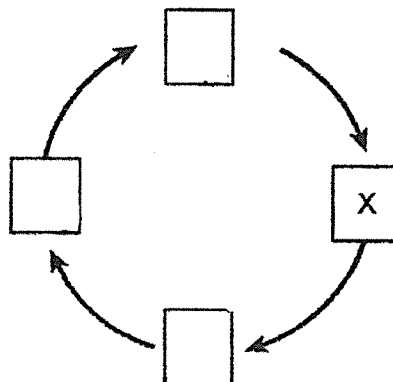


Y: Clouds form.



Z: Water vapour rises from various water bodies.

- (a) Arrange the stages in the correct order by filling in the boxes with the letters W, Y and Z. [1]



- (b) Name the processes happening in stages Y and Z. [1]

(i) Y : \_\_\_\_\_

(ii) Z : \_\_\_\_\_

- (c) Draw a line to match the following activities to the correct method of water conservation. [1]

Turning off the tap when not in use •	• Reusing
Treating used water to make it safe for drinking •	• Reducing
Washing the toilet with water used to wash rice •	• Recycling

End of Paper

SCORE	
www.sgexam.com	9



## ANSWER KEY

YEAR : 2021  
 LEVEL : PRIMARY 5  
 SCHOOL : ANGLO-CHINESE SCHOOL (JUNIOR)  
 SUBJECT : SCIENCE  
 TERM : BITE-SIZED ASSESSMENT 2

Q1	There is more carbon dioxide in the blood in blood vessel A than B.				
Q2	a)	Heart			
	b)	Blood vessel X contains blood that comes from the heart, which comes from the lungs. So the blood in blood vessel X is oxygenated but in blood vessel Z, oxygen in the blood has already been used up by the body so it deoxygenate.			
	c)	Digested food and water			
Q3	a)	Belle. Her heart rate increased before Eugene's heart rate so Belle started running first as her heart pumped faster.			
	b)	When we are exercising, our heart pumps faster so that blood containing more digested food and more oxygen can be transported to all parts of the body to release more energy to undergo a greater rate of respiration. This is also to remove carbon dioxide away from the body faster.			
Q4	a)	A	B	C	D
		X	W	Y	Z
	b)	As his breathing rate increased, his heart rate also increased indicating that his heart pumped faster when he exercised.			
Q5	a)	(i)	Candice. When water is boiling, it reaches its boiling point at 100°. Its temperature would not rise and instead, heat gained by the water is used for the change in state from liquid to gas.		
		(ii)	Bruno. Steam is a gas and is invisible		
Q6	Evaporation does not produce bubbles but boiling produces bubbles.				
Q7	a)	Melting			
	b)	Liquid and solid and gas,			
	c)	The contents in the beaker gained heat from the surrounding air and its temperature increase.			
Q8	Water gained heat and evaporated from the wet soil and was also lost through the stomata of the leaves as water vapour. When warmer water vapour touched the inner surface of the glass bottle, water vapour lost heat and condensed into water droplets. Water droplets would fall back into the soil and the cycle repeats				

Q9	a)	Container X is smaller than Container Y. Thus, the water in Set-up P had a greater amount of exposed surface area so the water in the seawater in set-up P could gain heat and evaporate faster, indicating that the rate of evaporation of water in set-up P is higher than Set-up Q.
	b)	The amount of water collected in each container decreases. Without the ice cubes, the plastic sheet would not be cold enough for water vapour to lose heat and condense into water droplets. Thus, it would take a longer time for condensation to take place.
Q10	Warmer water vapour from the surrounding air touch the cooler outer surface of the glass jar, lose heat and condense into water droplets.	
Q11	a)	A, B, C, D
	b)	Strength of wind Higher surrounding temperature
	c)	To find out how the amount of exposed surface area of water affects the rate of evaporation of water.
Q12	a)	X → W → Z → Y
	b)	(i) Y: condensation
		(ii) Z: evaporation
	c)	Turning off the tap when not in use → Reducing Treating used water to make it safe for drinking → Recycling Washing the toilet with water used to wash rice → Reusing