

# Anglo-Chinese School (Junior)



## SEMESTRAL ASSESSMENT 1 (2021)

PRIMARY 4

SCIENCE

BOOKLET A

Tuesday

1 hr 45 min

Name: \_\_\_\_\_

### INSTRUCTION:

- 1 Do not turn
- 2 Follow all in
- 3 There are 28
- 4 Answer ALL qn
- 5 Shade your ans  
Answer Sheet (OAS) provided.

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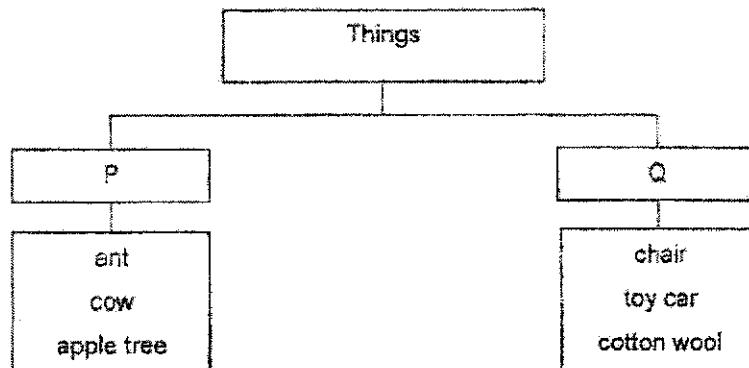
This question paper consists of 16 printed pages (inclusive of cover page).



For each question from 1 to 28, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade your answer on the Optical Answer Sheet.

(56 marks)

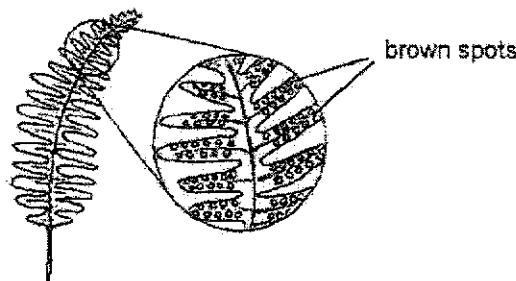
1. The diagram shows how some things are grouped.



What is P and Q?

	P	Q
(1)	cannot grow	can grow
(2)	can reproduce	cannot reproduce
(3)	can live without air	cannot live without air
(4)	cannot respond to changes	can respond to changes

2. Mrs Lee showed her students a green leaf which she found in the school eco-garden. They observed some brown spots on the underside of the leaf, as shown.



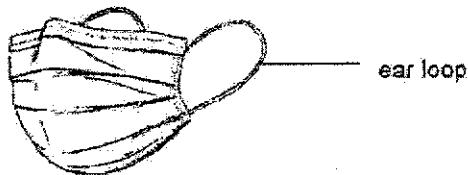
Which of the following conclusion(s) can be made about the plant that the green leaf is from?

- A It does not bear fruits.
  - B It reproduces by seeds.
  - C It can make its own food.
- 
- (1) C only
  - (2) A and C only
  - (3) A and B only
  - (4) B and C only

3. Which of the following statements are true about bacteria and yeast?

- A Both feed on other living things.
  - B Both can only be seen under a microscope.
  - C Bacteria reproduce by spores but yeast does not.
  - D Yeast is useful to us but all bacteria is harmful to us.
- (1) A and B only
  - (2) C and D only
  - (3) A, B and D only
  - (4) B, C and D only

4. The diagram shows a disposable face mask.



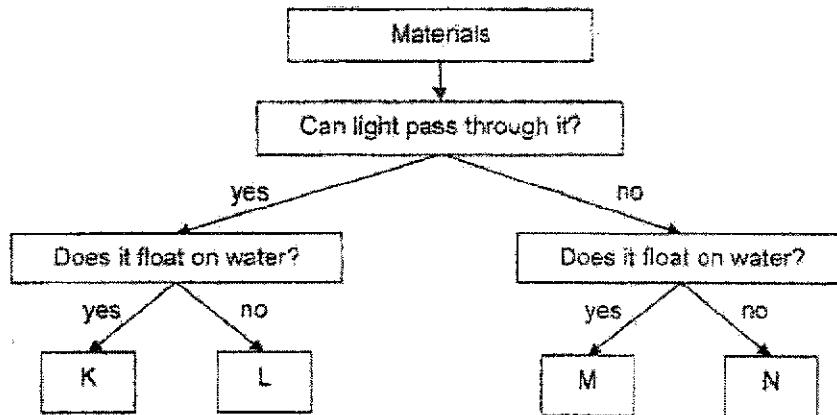
What property must the material of the ear loop have so that it can be worn around our ears?

- (1) flexibility
- (2) waterproof
- (3) transparency
- (4) ability to float on water

5. Which statement(s) about the human digestive system is/are correct?

- A Saliva helps to digest food.
  - B Digested food is absorbed at the stomach.
  - C No digestive juice is produced in the gullet.
  - D The large intestine does not absorb any water.
- (1) B only
  - (2) D only
  - (3) A and C only
  - (4) B and D only

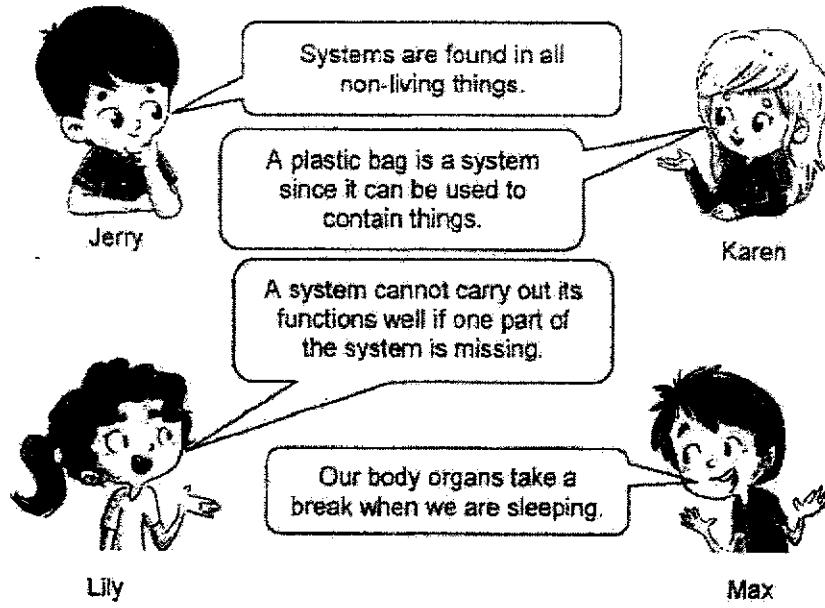
6. Lucien classified four solid blocks made of materials K, L, M and N as shown



Which material is clear glass?

- (1) K
- (2) L
- (3) M
- (4) N

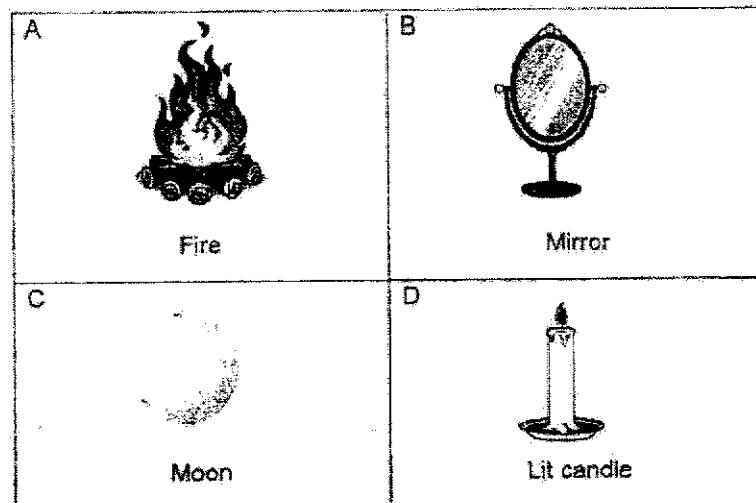
7. Four students made some statements about a system.



Who made a correct statement?

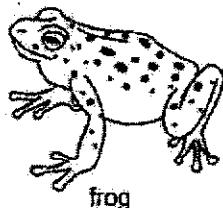
- (1) Jerry
- (2) Karen
- (3) Lily
- (4) Max

8. Which of the following is/are not source(s) of light?

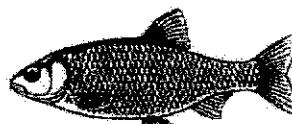


- (1) B only
- (2) B and C only
- (3) A and D only
- (4) A, C and D only

9. The pictures show two animals.



frog

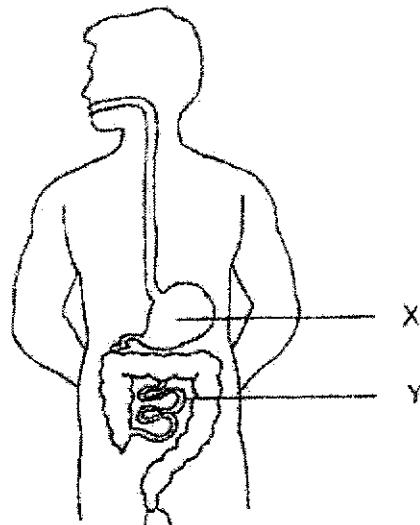


fish

What is the similarity between them?

- (1) They live in water only.
- (2) They reproduce by laying eggs.
- (3) They breathe through moist skin.
- (4) They have scales as their outer body covering.

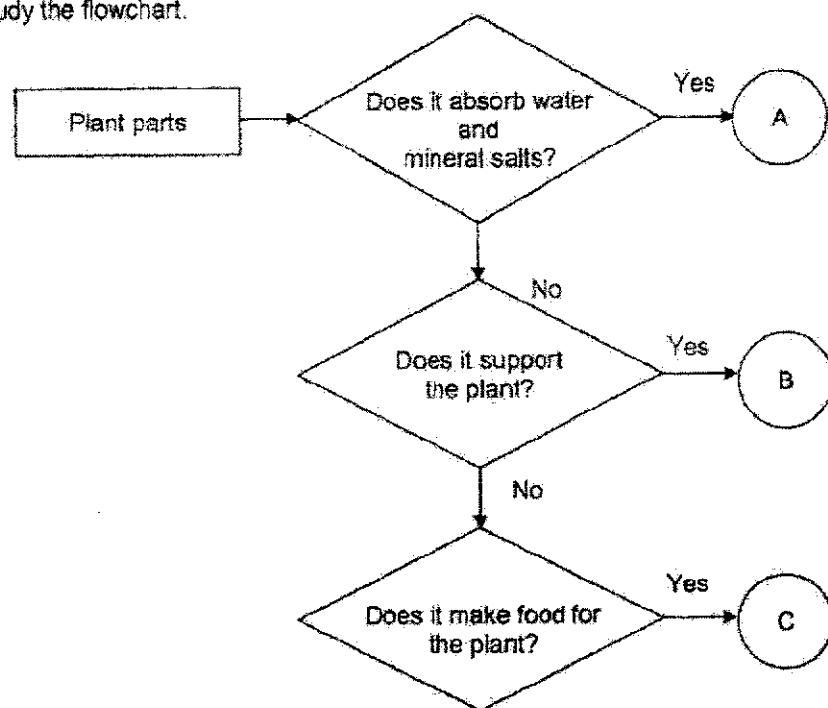
10. The diagram shows the human digestive system.



Which of the following describes the functions of the parts X and Y?

	X	Y
(1)	Digested food is absorbed into the bloodstream	Water from undigested food is absorbed here
(2)	Food is broken down into simpler substances	Undigested food is absorbed into the bloodstream
(3)	Digested food is absorbed into the bloodstream	Undigested food is stored here before it is passed out of the body
(4)	Food is broken down into simpler substances	Digestion is completed here

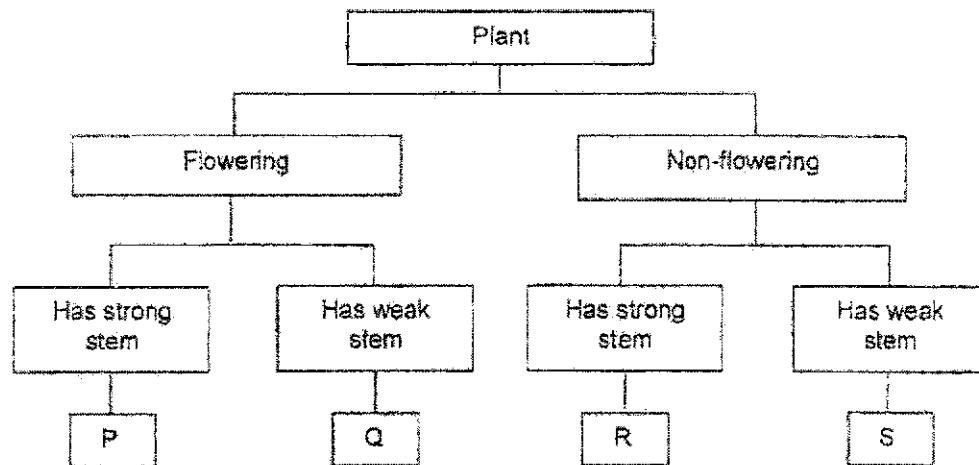
11. Study the flowchart.



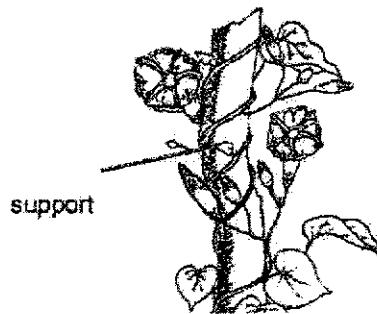
Which of the following represents plant parts A, B and C?

	A	B	C
(1)	stem	root	leaf
(2)	stem	root	flower
(3)	root	stem	fruit
(4)	root	stem	leaf

12. Study the classification chart.

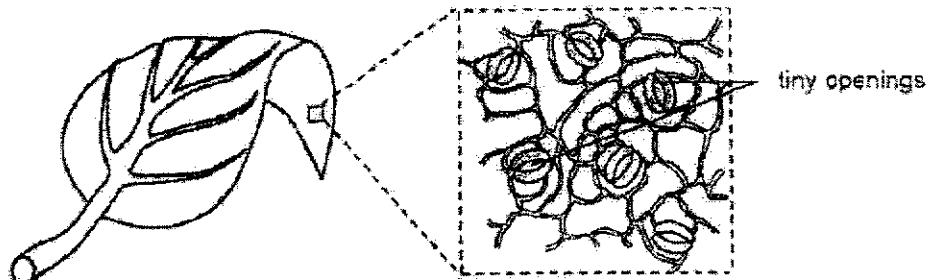


Which group does the plant shown belong to?



- (1) P
- (2) Q
- (3) R
- (4) S

13. The diagram shows the tiny openings on a leaf.



What is the function of these tiny openings?

- (1) To store food
- (2) To make food
- (3) To take in and give out gases
- (4) To absorb water and mineral salts

14. Harris observed animals Q and R over a period of time and recorded his observations as shown.

Observations	Animal Q	Animal R
It has four stages in its life cycle.	Yes	No
The young resembles the adult.	No	No
The eggs are laid in water.	No	Yes

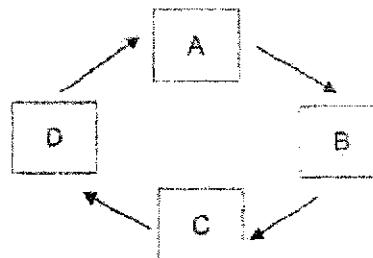
Which one of the following correctly represents animals Q and R?

	Animal Q	Animal R
(1)	Frog	Mosquito
(2)	Mosquito	Cockroach
(3)	Beetle	Frog
(4)	Cockroach	Beetle

15. When does a young plant become an adult plant?

- (1) When the plant develops flower
- (2) When the roots of the plant grow
- (3) When the shoot of the plant grows
- (4) When the leaves start making food for the plant

16. The diagram represents the different stages, A, B, C and D, of a butterfly's life cycle.



The butterfly is able to reproduce at stage C.

At which stage of its life cycle is the butterfly considered a pest to farmers?

- (1) A
- (2) B
- (3) C
- (4) D

17. Hannah observed the young of animal X in a container for five weeks. She recorded the weekly mass of food consumed by animal X in the table.

Week	Mass of food consumed per week (g)
1	112
2	128
3	0
4	0
5	124

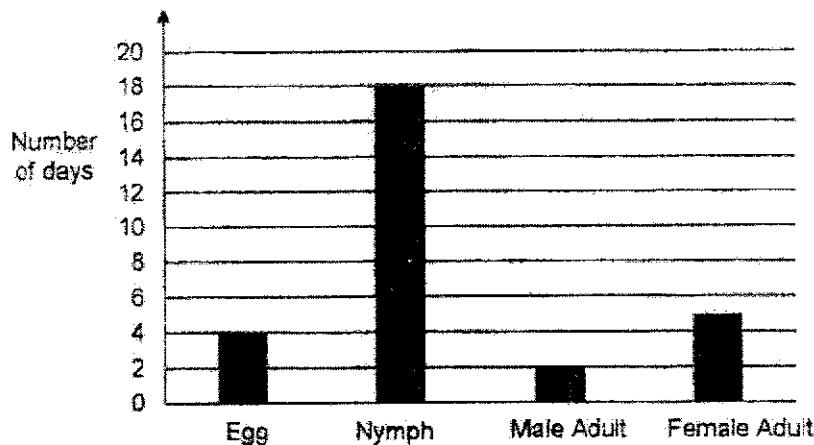
From her observations, Hannah made the following conclusions about animal X:

- A It died in week 3.
- B It can reproduce in week 5.
- C It is developing in its pupal case in weeks 1 and 2.

Which of the following conclusion(s) is/are true?

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

18. The graph shows the number of days in each stage of the life cycle of animal Z.



Samuel made the following conclusions about animal Z.

- A It has a three-stage life cycle.
- B It hatches two days after the egg is laid.
- C It spends most number of days as an adult.
- D It becomes an adult 18 days after the egg hatches.

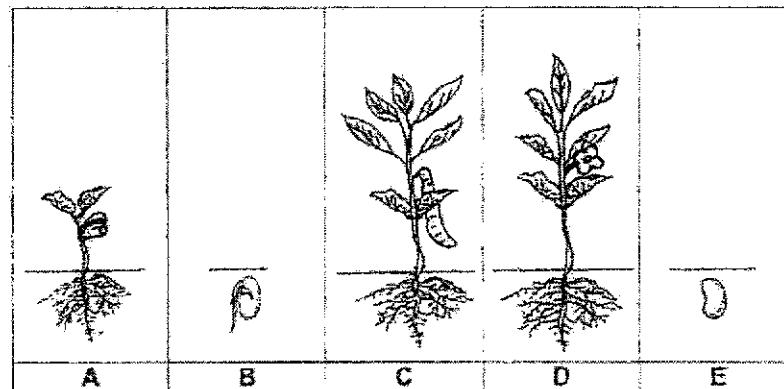
Based on the graph, which statement(s) about animal Z is/are correct?

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

19. Which of the following is an example of matter?

- (1) Light
- (2) Sound
- (3) Smoke
- (4) Shadow

20. The diagrams show the different stages of growth of a bean plant.



Which three diagrams show the correct order of the seed germinating into a young plant?

- (1) A → D → C
- (2) B → A → D
- (3) A → E → C
- (4) E → B → A

21. Shuqin placed four identical seeds into four identical containers, A, B, C and D. She provided different conditions for each of the containers as shown in the table.

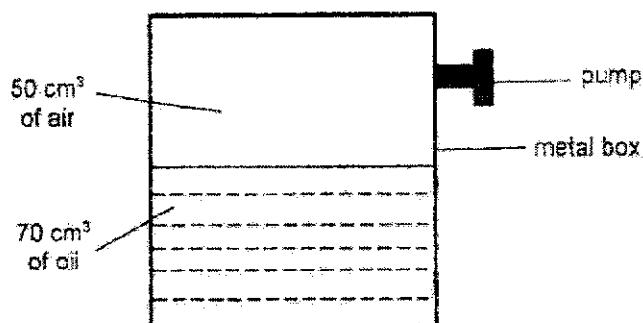


Container	Amount of water given daily (ml)	Location
A	5	In a freezer
B	0	Next to a window
C	10	Next to a window
D	5	In the cupboard

Which two containers should she use to find out if warmth is needed for germination?

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

22. The diagram shows a sealed metal box of volume  $120 \text{ cm}^3$ . It contains  $70 \text{ cm}^3$  of oil and  $50 \text{ cm}^3$  of air.

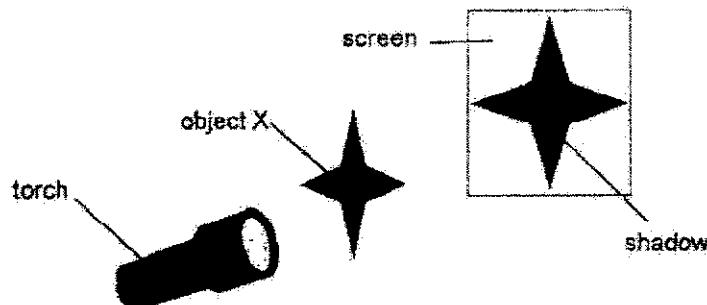


Mr Tan then added  $30 \text{ cm}^3$  of oil and pumped  $30 \text{ cm}^3$  of air into the metal box.

What is the final volume of oil and air in the metal box?

	Volume of oil ( $\text{cm}^3$ )	Volume of air ( $\text{cm}^3$ )
(1)	70	80
(2)	100	80
(3)	100	50
(4)	100	20

23. The diagram shows how the shadow of object X is formed.



How can a smaller shadow be formed?

- (1) Move object X nearer the torch.
- (2) Move the torch nearer to object X.
- (3) Move object X nearer to the screen.
- (4) Move the screen further away from object X.

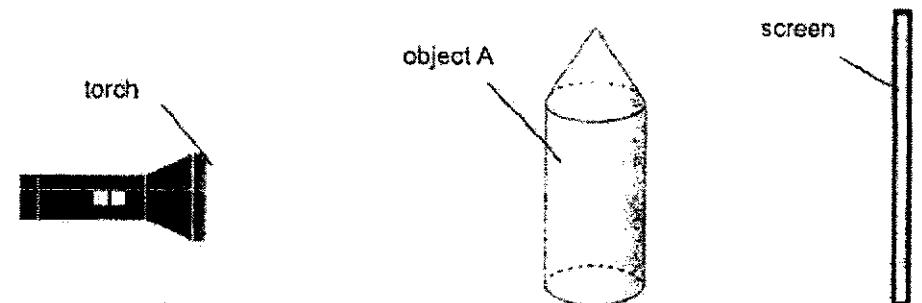
24. The table shows the property of three matter, J, K and L. A tick(✓) shows that the matter has the property.

Matter	Characteristics	
	Has an indefinite shape	Can be compressed
J	✓	
K	✓	✓
L		

What are J, K and L?

	J	K	L
(1)	solid	gas	liquid
(2)	liquid	solid	gas
(3)	gas	liquid	solid
(4)	liquid	gas	solid

25. Denise tried to form different shadows of object A by placing object A between a torch and a screen.



Which of the following shadows could not be formed on the screen?

(1)



(2)



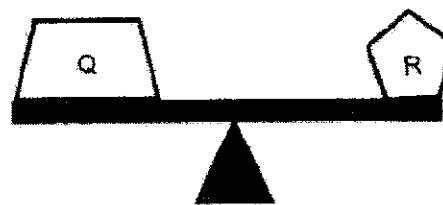
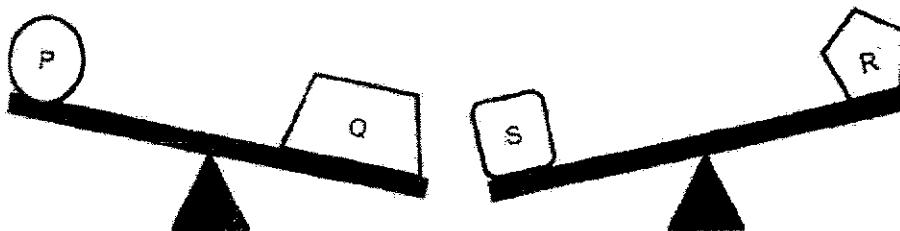
(3)



(4)



26. Benjamin compared the mass of four objects, P, Q, R and S, by placing two objects at a time on a balance as shown.



Benjamin made the following conclusions:

- A P has the greatest mass.
- B S has a smaller mass than P.
- C Q has a smaller mass than S.
- D The total mass of P and R is greater than Q.

Which of the following conclusion(s) is/are true?

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

27. Leonard left an orange on the kitchen table. A week later, he observed mould growing on it.



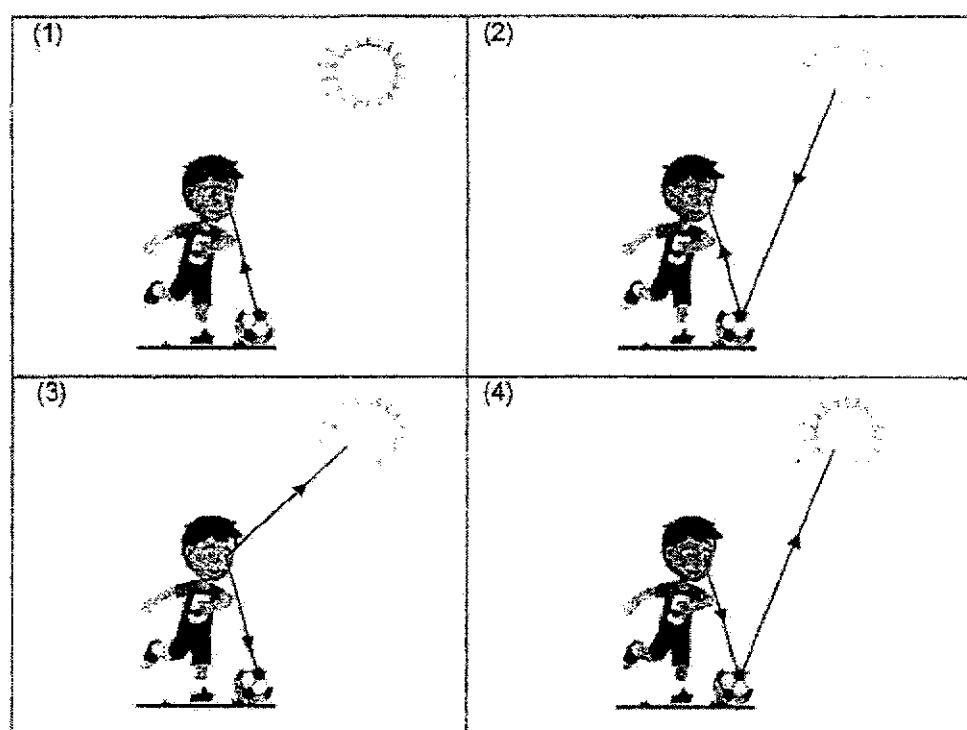
Which is the best method to decrease the chances of mould growing on the orange?

- (1) Stored the orange in a container.
- (2) Kept the orange in the refrigerator.
- (3) Placed the orange in the cupboard.
- (4) Covered the orange with a food netting.

28. The diagram shows Jerry playing soccer during the day.



Which of the following correctly shows how Jerry is able to see the soccer ball?



**End of Booklet A**

**Anglo-Chinese School (Junior)**



**SEMESTRAL ASSESSMENT 1 (2021)**

**PRIMARY 4**

**SCIENCE**

**BOOKLET B**

**Tuesday**

**18 May 2021**

**1 hr 45 min**

**Name:** \_\_\_\_\_

**Parent's Signature:** \_\_\_\_\_

**INSTRU**

- 1 E
- 2 F
- 3 T
- 4 A
- 5 T

each question or part question.

Booklet	Possible Marks	Marks Obtained
A	56	
B	44	
Total	100	

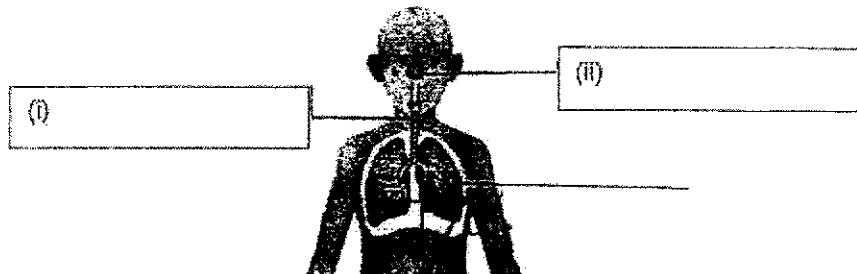
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**This question paper consists of 14 printed pages (inclusive of cover page).**

For questions 29 to 41, write your answers in this booklet.

The number of marks available is shown in brackets [ ] at the end of each question or part question. **(44 marks)**

29. (a) The diagram shows a human organ system. Label the parts of this system by filling in the boxes provided. [1]



- (b) Identify the organ system and state its function. [2]

Organ system: \_\_\_\_\_

Function: \_\_\_\_\_

\_\_\_\_\_

30. Sanjay observed a seedling growing.



He placed the seedling in a plastic cup, watered it daily and placed it next to a window. He then recorded the height of the seedling over seven days as shown.

Day	1	3	5	7
Mass of seed leaves (g)	6	5	3	1

- (a) What happened to the mass of the seed leaves during the seven days? Explain why. [2]

\_\_\_\_\_

\_\_\_\_\_

- (b) On day 8, Sanjay moved the seedling into a dark cupboard. Predict what would happen to the seedling after another week. Explain why. [1]

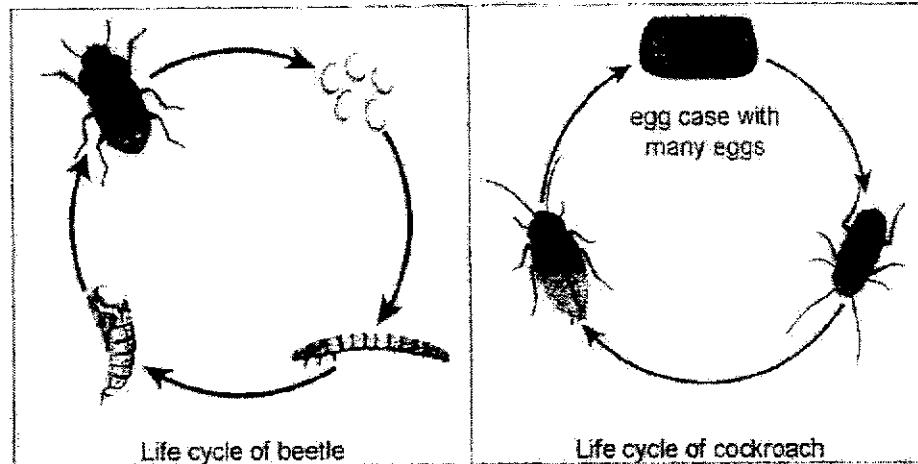
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\_\_\_\_\_

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SCORE	6
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31. Study the life cycles of the beetle and the cockroach.



- (a) State one similarity between their life cycles. [1]

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- (b) State one difference between their life cycles. [1]

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- (c) Explain why both the adult beetle and adult cockroach lay many eggs at a time. [1]

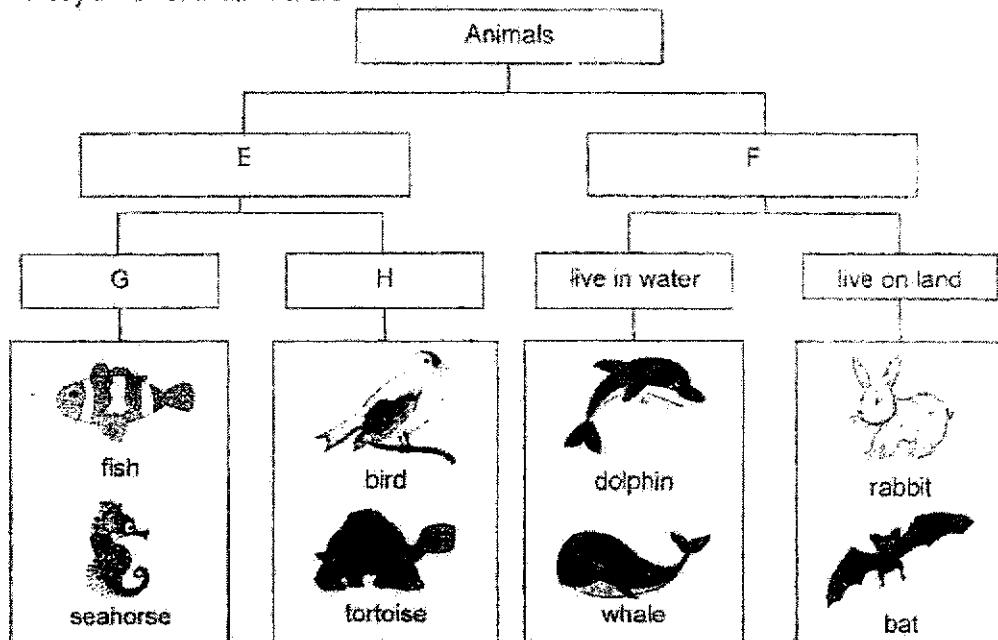
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SCORE	
	3

32. Study the classification chart.



- (a) Suggest suitable sub-headings for E and F based on the animals' characteristics. [1]

E: \_\_\_\_\_

F: \_\_\_\_\_

- (b) The pictures show two animals:



grasshopper



ant

- (i) Based on the classification chart, which group, G or H, would you classify the grasshopper in? Give a reason for your answer. [1]

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- (ii) State a similarity in the physical characteristic of the grasshopper and ant. [1]

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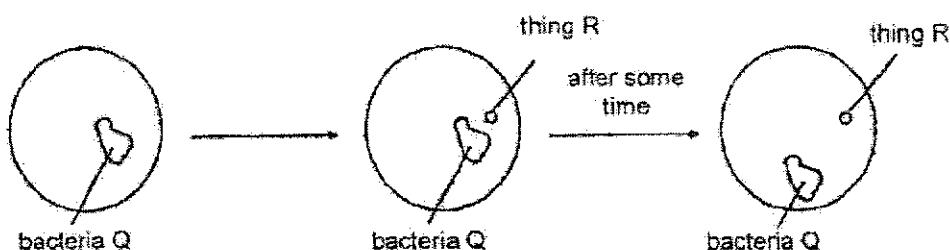


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SCORE	
	3

33. Larry placed some bacteria Q on a plate. He added thing R to the plate as shown and observed what happened to bacteria Q under the microscope.



- (a) Which characteristic of living things did Larry observe about bacteria Q? [1]
- 

- (b) Larry wanted to find out how quickly bacteria Q reproduces at different temperatures. He prepared four plates, A, B, C and D, with the same amount of bacteria Q. Use the results shown to answer (i) and (ii).

Dish	Temperature (°C)	Amount of bacteria Q (unit)	
		At the start of experiment	24 hours later
A	25	1	220
B	30	1	170
C	35	1	120
D	40	1	90

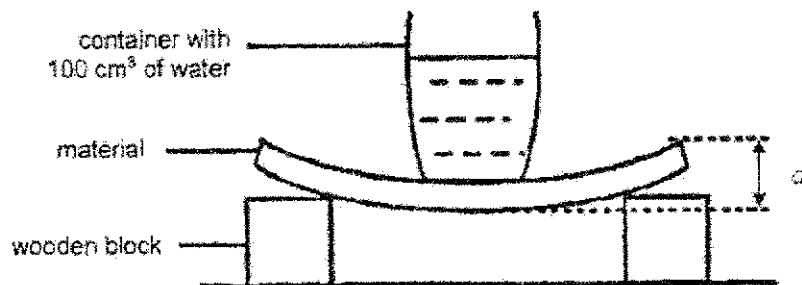
- (i) What is the relationship between temperature and how quickly bacteria Q reproduces? [1]
- 
- 

- (ii) Bacteria Q which can be found on food, can cause illnesses when present in a large amount. Suggest why it is not good to leave food out for too long at a room temperature of 25°C. [1]
- 
- 

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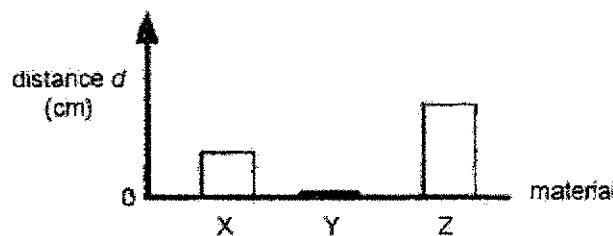
SCORE	
	3

34. Seow Wei set up an experiment as shown using three materials, X, Y and Z, of the same thickness.



He placed the same container with  $100 \text{ cm}^3$  of water on each material and measured  $d$ , which is the distance between the highest and lowest points of the materials.

His results are shown in the graph.



- (a) State the property of materials that Seow Wei is testing. [1]
- 

- (b) What can Seow Wei conclude about the property of material Z based on the graph? [1]
- 
- 

- (c) Materials Y and Z are either rubber or ceramic. Match the materials by filling in the table with 'Y' and 'Z'. [1]

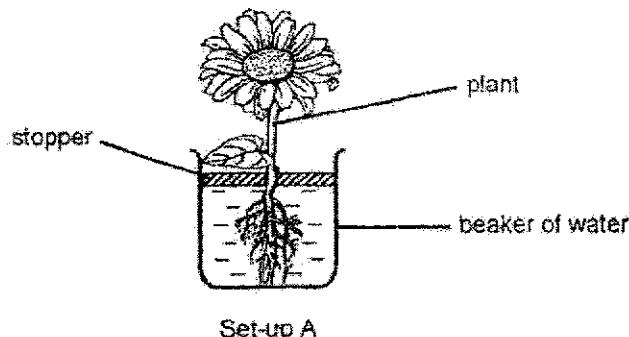
Material	
rubber	
ceramic	

- (d) Seow Wei repeated the experiment with  $200 \text{ cm}^3$  of water instead. State what will happen to the distance  $d$  recorded for all the materials. [1]
- 

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SCORE	
	4

35. Yvette wanted to find out if a plant takes in water using its roots. She prepared the following set-up and placed it by the window for 12 hours.



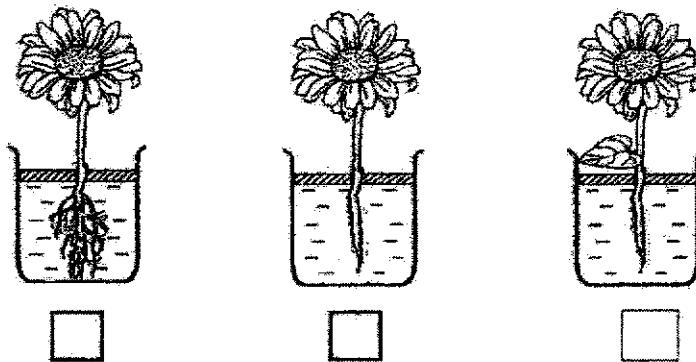
She recorded the amount of water in the beaker at the start and at the end of the experiment in the table.

Time	Amount of water in the beaker (ml)
At 7 am	250
At 7 pm	190

- (a) Explain why the amount of water in the beaker decreased. [1]
- 

- (b) Based on the aim of her experiment, which set-up should Yvette choose to compare with Set-up A for her experiment? [1]

Tick (✓) in the box provided.

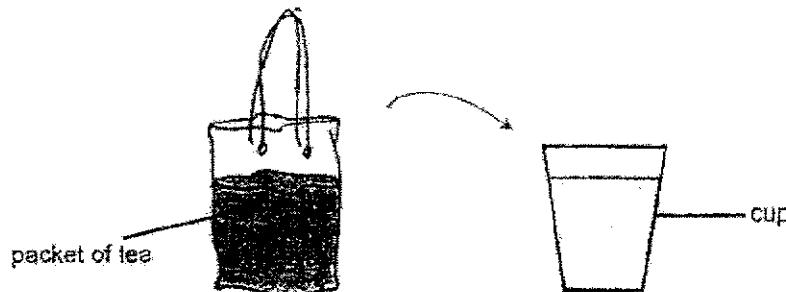


- (c) State another function of the roots of a plant. [1]
- 
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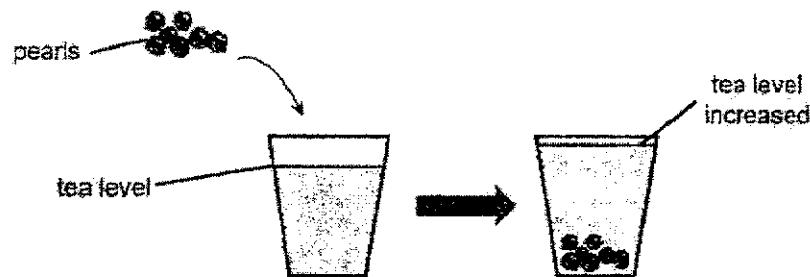
SCORE	3
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36. Yaseen wanted to drink bubble tea. He poured a packet of tea into a cup as shown.



- (a) Using the property of matter, explain why the tea can be poured into the cup. [1]
- 

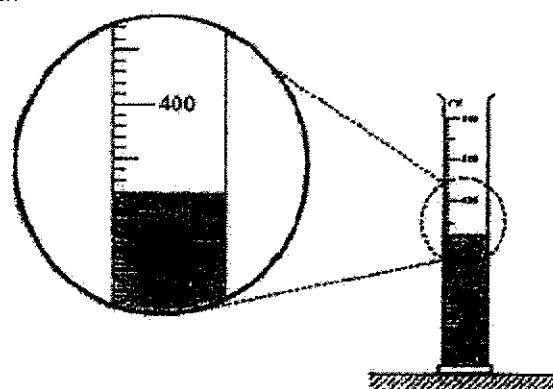
- (b) Yaseen then added some pearls into the cup of tea to make the bubble tea. He observed that the tea level in the cup increased.



Using the property of matter, explain why the tea level in the cup increased. [1]

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- (c) The tea in the cup was poured into a measuring cylinder as shown. What is the volume of tea? [1]

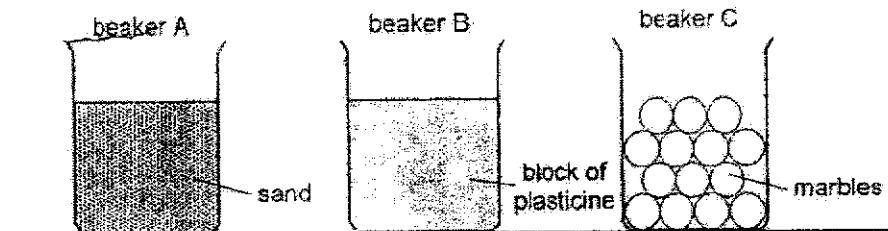


Volume of tea = \_\_\_\_\_ ml

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SCORE	
	3

37. The diagram shows three identical beakers, A, B and C containing different matter in the solid state.



- (a) Edgar poured some water into each beaker to fill up the beaker to the brim.

Order beakers A, B and C by writing the letters in the boxes provided, starting from the beaker which will need the least amount of water to fill it up to the brim. [1]

beaker  → beaker

→ beaker

→ beaker

*least water needed*

*most water needed*

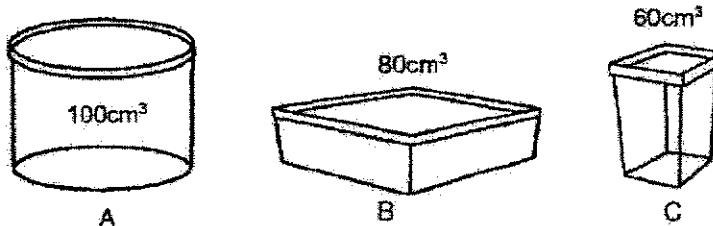
- (b) If the plasticine in beaker B was re-shaped into many smaller cubes, would the amount of water needed to fill the beaker to the brim be more, less or the same as before the plasticine was re-shaped? Explain your answer. [1]

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- (c) Edgar had three containers, P, Q and R, with volumes of  $100\text{ cm}^3$ ,  $80\text{ cm}^3$  and  $60\text{ cm}^3$  respectively as shown. He was able to fill all the containers with  $100\text{ cm}^3$  of matter Z.



- (i) What is the state of matter Z? [1]

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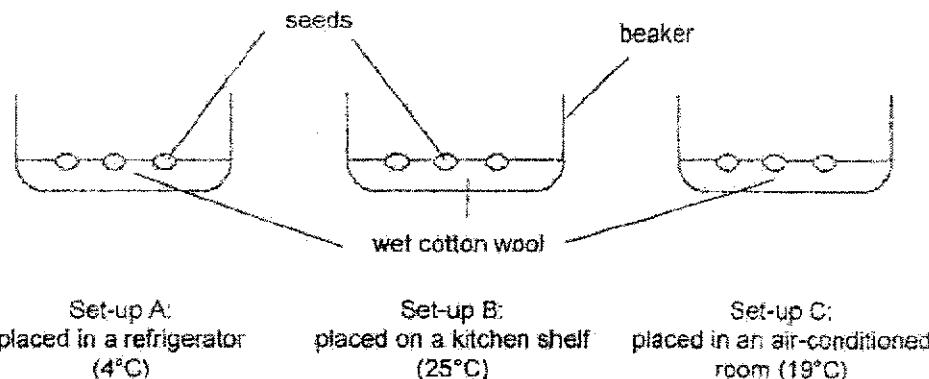
- (ii) State one property of matter Z. [1]

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SCORE	<input type="text"/>
	4

38. Yang Zhou conducted an experiment to find out how different temperatures affect the germination of seeds. He prepared three different set-ups as shown.



- (a) Tick(✓) the variable that Yang Zhou should change to test his aim. [1]

Variables	Change
Type of seeds	
Number of seeds	
Type of beaker	
Amount of water	
Location of set-up	

- (b) Which location, the freezer, kitchen shelf or air-conditioned room, will the seed germinate first? Explain your answer. [1]

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- (c) Yang Zhou decided to use set-ups B and C to find out if seeds need water to germinate.

What change(s) should he make to set-ups B and C to achieve his new aim? [2]

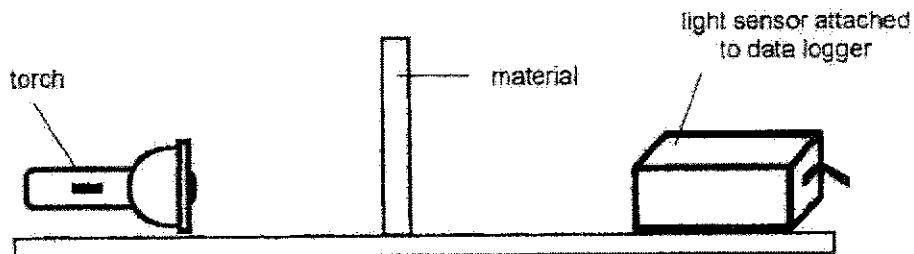
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**SCORE**

39. Jessica prepared the set-up as shown to find out the degree of transparency of materials X, Y and Z.



She carried out the experiment in the Science lab, using identical torches and data loggers, and tested out each material before recording the results in the table.

Materials	Amount of light detected by the light sensor (units)
X	343
Y	0
Z	820

- (a) State two other variables she should keep the same to ensure that her experiment is fair. [1]

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- (b) Based on the results, order materials X, Y and Z, starting with the material that allows most light to pass through. [1]



- (c) Which material, X, Y or Z, is most suitable for making the door in the school toilet? Explain why. [1]

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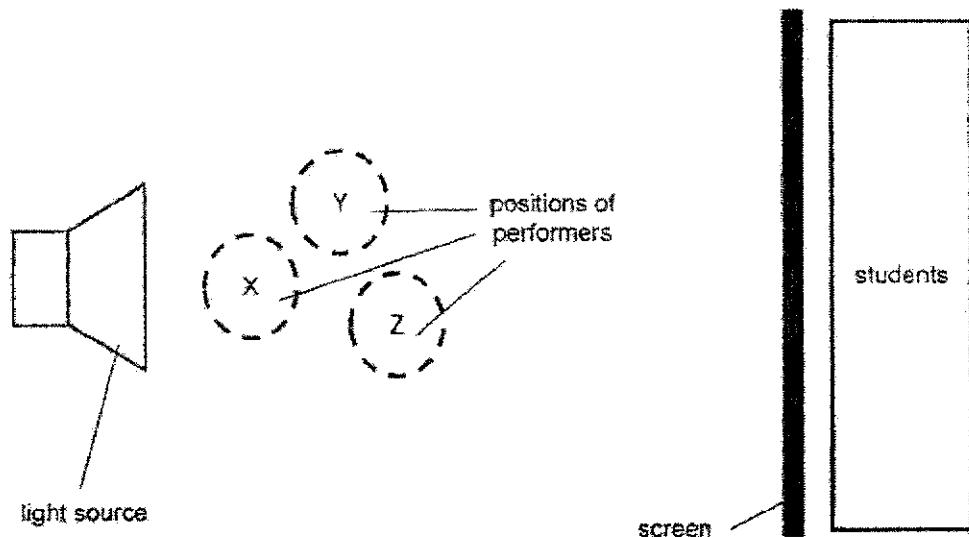


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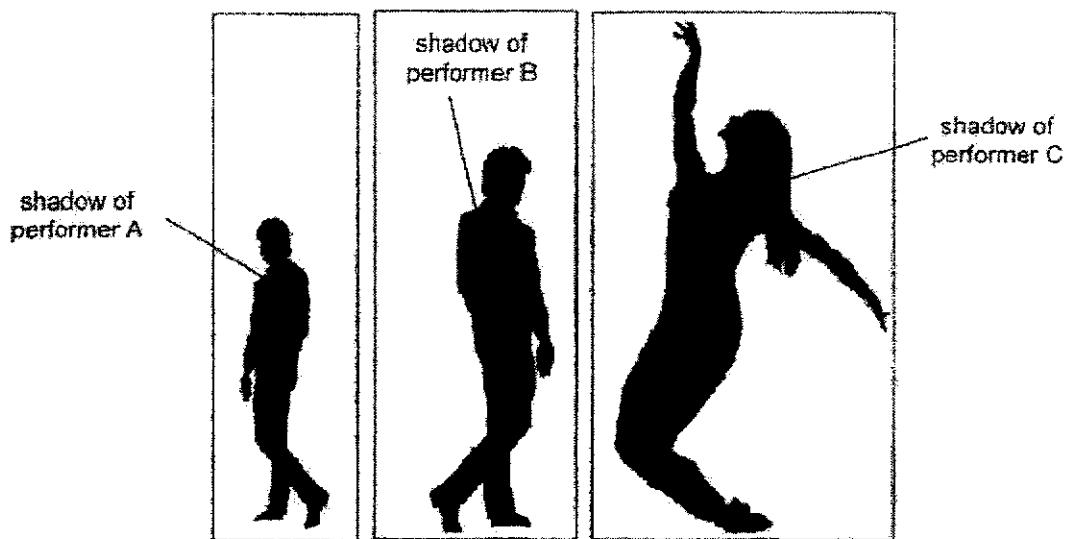
SCORE	
	3

40. The diagram shows the layout of the stage for a shadow performance.



- (a) Explain how shadows are formed. [1]
- 
- 

Performers A, B and C were at positions X, Y and Z. They were of the same height. The students saw the shadow of each of the performers as shown.



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SCORE	
	1

- (b) At which positions, X, Y or Z, were performers A and C standing at? [1]

Performer A: \_\_\_\_\_

Performer C: \_\_\_\_\_

- (c) Without moving the performers, suggest what can be done to increase the size of their shadows. [1]

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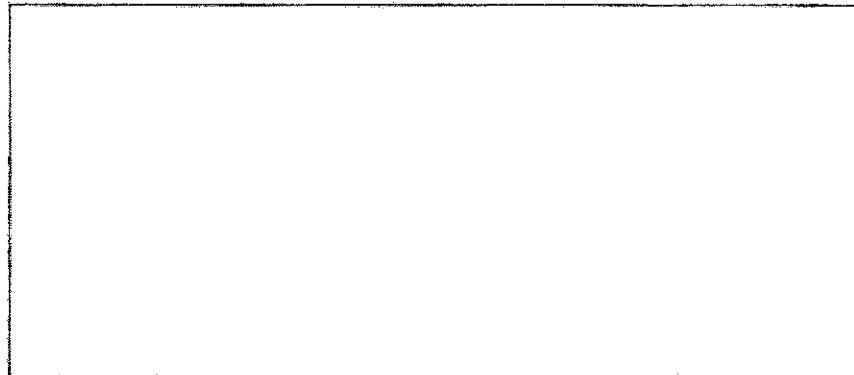
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- (d) What is the property of the material of the screen that allows the students to see the performance? [1]

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41. Mosquitoes can be harmful to humans.

- (a) Draw the life cycle of a mosquito in the box provided. Label the stages clearly. [1]  
(Do not draw the animal)



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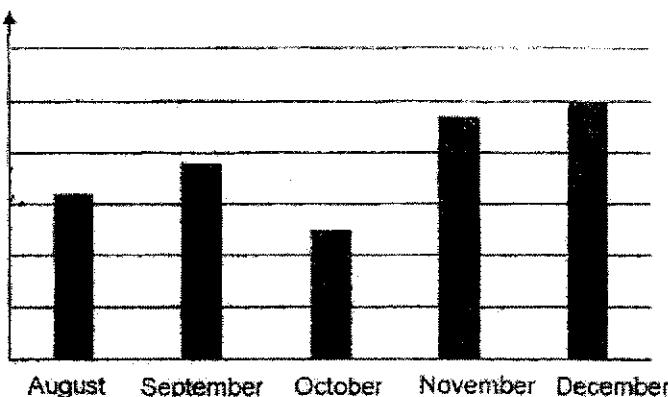
SCORE	
	4

Aisyah decided to investigate on mosquitoes. She recorded the average amount of rainfall from August to December in the table.

Month	August	September	October	November	December
Average amount of rainfall (mm)	103	150	78	220	253

She also plotted a bar graph on the number of mosquitoes found from August to December as shown.

Number of mosquitoes



- (b) Based on the table and graph, how does the amount of rainfall affect the number of mosquitoes?

[1]

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- (c) It was observed that the number of mosquitoes was the least in October when the average rainfall was the least. Explain why this is so.

[1]

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- (d) Aisyah's house has a pond with aquatic plants. She noticed that there were many mosquito larvae in her pond in November and December.

Suggest how Aisyah can get rid of the mosquito larvae without harming the pond's environment.

[1]

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End of Paper

SCORE	
	3



**SCHOOL :** ANGLO CHINESE SCHOOL (JUNIOR)  
**LEVEL :** PRIMARY 4  
**SUBJECT :** SCIENCE  
**TERM :** SA 1

**BOOKLET A**

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
2	2	1	1	3	2	3	2	2	4
Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
4	2	3	3	1	1	2	2	3	4
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
2	4	3	4	4	3	2	2		

**BOOKLET B**

Q29	a) i) windpipe ii) nose b) Organ system: respiratory system Function: To allow the exchange of gases between the human body and the surroundings.
Q30	a) Mass of the seed leaves decreases. The seedling gets food from the seed leaves to grow. b) The seedling will die. The seedling had no more stored food and the true leaves has no light to make food. Hence, the seedling would die.
Q31	a) Both lay eggs b) The cockroach has a three-staged life cycle while the beetle has a four staged life cycle. c) To ensure that some of the eggs will hatch into young even if predators ate some eggs.
Q32	a) E: Lay eggs F: Give birth to young alive  b) i) Group H, it lives on land ii) Both have six legs
Q33	a) Living things respond to changes in the surroundings. b) i) As the temperature of the surroundings increases, the amount of bacteria 24 hours later decreases. ii) There is most amount of bacteria at 25°C
Q34	a) Flexibility b) Material Z is the most flexible c) Rubber: Z Ceramic: Y  d) It would increase
!35	a) The roots absorbed the water in the beaker.

	<p>b)</p>
Q36	<ul style="list-style-type: none"> <li>a) Tea has no definite shape</li> <li>b) The pearls occupied space in the cup.</li> <li>c) 320ml</li> </ul>
Q37	<ul style="list-style-type: none"> <li>a) B---A---C</li> <li>b) The same as before the plasticine was re-shaped. Plasticine has a definite volume.</li> <li>c) i) Gas ii) Gas can be compressed.</li> </ul>
Q38	<ul style="list-style-type: none"> <li>a) Location of setup</li> <li>b) The kitchen shelf as it has the highest temperature.</li> <li>c) Place set-up C on the kitch shelf 25°C</li> </ul>
Q39	<ul style="list-style-type: none"> <li>a) The distance between the torch and the material must remain the same. The distance between the datalogger and the torch must remain the same.</li> <li>b) Z----X---Y</li> <li>c) Material Y. it allows no light to pass through, giving the user more privacy.</li> </ul>
Q40	<ul style="list-style-type: none"> <li>a) Shadows are formed when light is blocked by an opaque or translucent object.</li> <li>b) Performer A; position Z Performer C: position X</li> <li>c) Move the screen further from the performers.</li> <li>d) Allow some light to pass though</li> </ul>
Q41	<p>a)</p> <p>b)</p> <ul style="list-style-type: none"> <li>b) As the amount of rain increases, the amount of mosquito increases.</li> <li>c) There will be least amount of stagnant water for the eggs to be laid.</li> <li>d) By installing fountain.</li> </ul>