NANYANG PRIMARY SCHOOL

2024
PRIMARY 4
END-OF-YEAR EXAMINATION

SCIENCE
(BOOKLET A)

Total Time for Booklets A and B: 1 h 45 min

INSTRUCTIONS TO CANDIDATES

1. Write your name and index number in the space provided.
2. Do not open this booklet until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. For each question from 1 to 28, four options are given.
   Indicate your choice in this booklet.
   Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet provided.

Name: _____ ( )

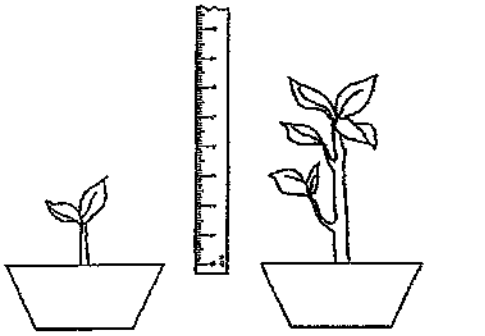
Class: Primary 4 ( )

Booklet A consists of 16 printed pages including this cover page.

Section A: Multiple Choice Questions [56 marks]

For each question from 1 to 28, four options are given. One of them is the correct answer. Indicate your choice in this booklet and shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet provided.

1. Sam found a plant in the garden and measured its height.
After two weeks, he measured its height again.



at the start after two weeks

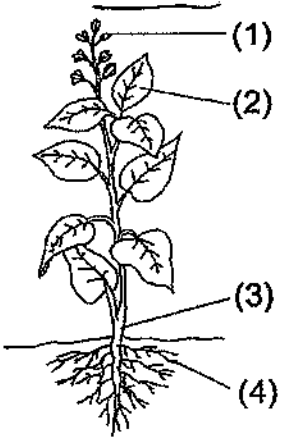
From his observation, Sam concluded that the plant is a living thing because it can _____.

(1) grow
(2) breathe
(3) respond
(4) reproduce

2. Which statement is true about most mammals?

(1) They can swim.
(2) They have wings.
(3) They produce milk.
(4) They have four legs.

3. Which part, (1), (2), (3) or (4), makes food for the plant?



4. Which one of the following shows the correct order when food moves through some parts of the digestive system?

(1)

stomach → small intestine → large intestine

(2)

stomach → large intestine → small intestine

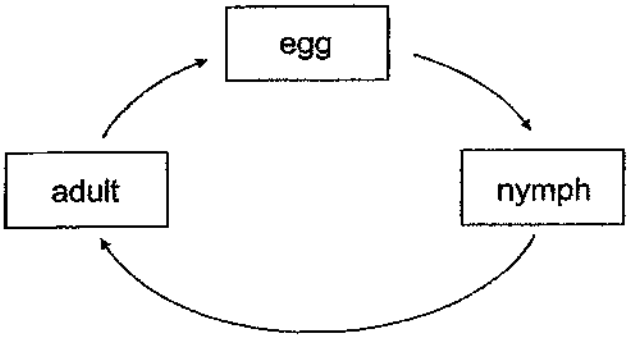
(3)

large intestine → stomach → small intestine

(4)

small intestine → large intestine → stomach

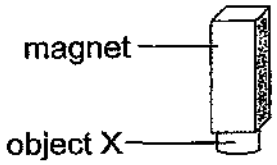
5. The diagram below shows the life cycle of an animal.



Which animal is likely to have the life cycle as shown above?

(1) beetle
(2) butterfly
(3) chicken
(4) cockroach

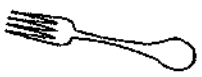
6. Object X was attracted to a magnet, as shown in the figure below.

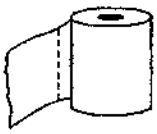


Object X is made of _____.

(1) steel
(2) wood
(3) plastic
(4) rubber

7. Which of the following objects is **not** made of waterproof material?

(1) 
metal fork

(2) 
toilet paper

(3) 
rubber gloves

(4) 
plastic umbrella

8. Which one of the following is a source of light?

(1) 

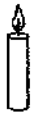
the moon

(2) 

an orange

(3) 

a leaf

(4) 

a candle flame

9. Which one of the following is **not** a source of heat?

(1) the Sun
(2) a lighted bulb
(3) a woollen cap
(4) a candle flame

10. Which one of the following substances has a fixed shape?

(1) air
(2) oil
(3) stone
(4) water

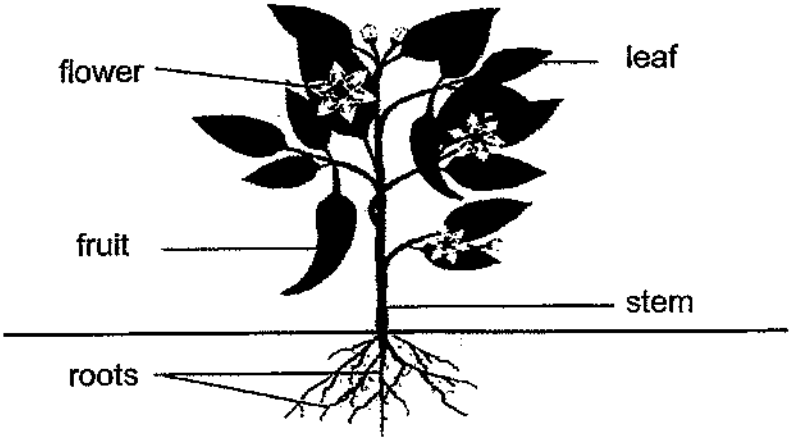
11. The table below shows the classification of some living and non-living things.

Living Things	Non-living Things
grass	toy car
yeast	mushroom
butterfly	fan

Which of the following has been **wrongly** classified?

(1) fan
(2) grass
(3) yeast
(4) mushroom

12. The diagram below shows a plant.

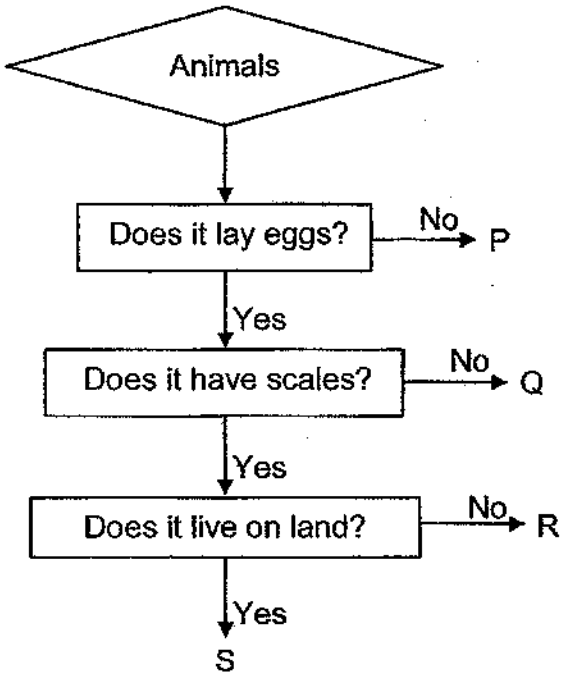


Which of the following, A, B, C or D, correctly represents the plant in the diagram above?

Plant	Grows on Land		Grows in Water	
	Reproduces by Seeds	Reproduces by Spores	Reproduces by Seeds	Reproduces by Spores
A		✓		
B	✓			
C			✓	
D				✓

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

13. Study the flowchart below.



Which one of the following correctly represents P, Q, R and S?

	P	Q	R	S
(1)	bird	amphibian	bird	insect
(2)	mammal	insect	fish	reptile
(3)	reptile	bird	insect	amphibian
(4)	mammal	reptile	amphibian	fish

14. Pauline made some observations of a living thing and listed them as shown below.

- It does not make its own food.
- It needs air, food and water to survive.
- It can only be seen using a microscope.

Which of the following living things could Pauline have observed?

(1) bird
(2) fern
(3) bacteria
(4) mushroom

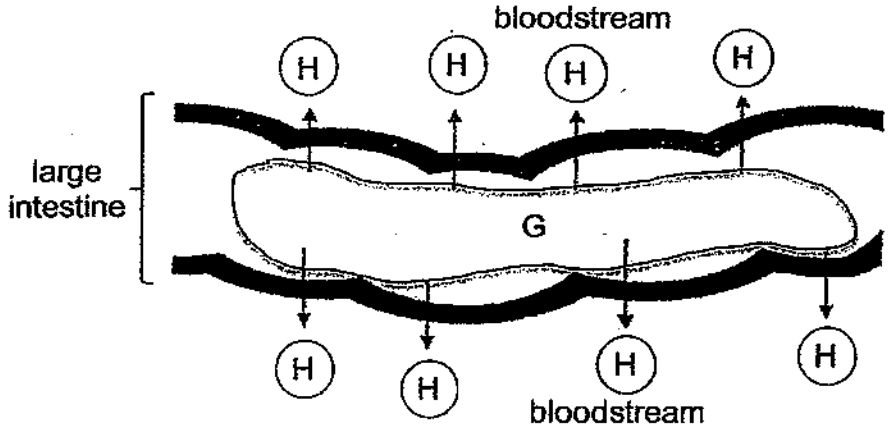
15. Mr Murray tried to remove some unwanted plants from his garden. He found that they were difficult to pull out from the soil.

unwanted plants

Which of the following made it difficult for him to remove the plants?

(1) The stem held the plants upright.
(2) The roots absorbed water and mineral salts.
(3) The roots held the plants firmly to the ground.
(4) The stem transported food to various parts of the plants.

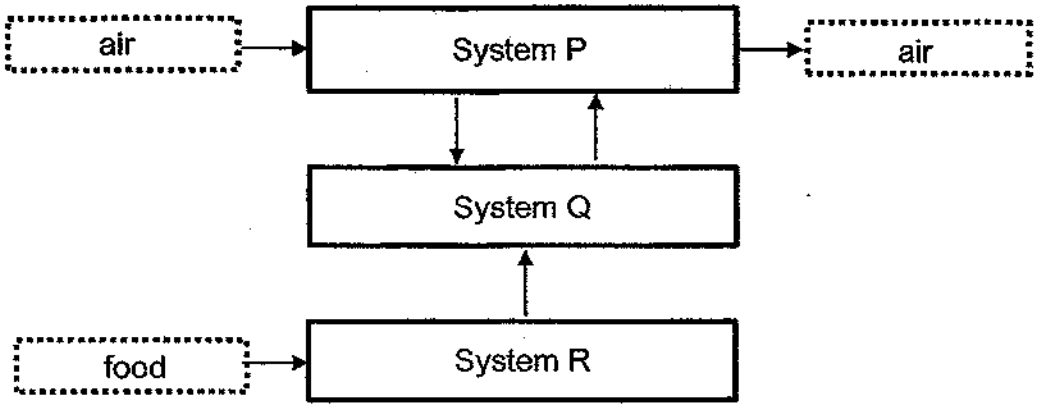
16. The diagram below shows part of the large intestine in the digestive system. Substances G and H are found in the large intestine. Substance G moves through the large intestine while substance H is removed from it.



Based on the information given above, what substances could G and H be?

	Substance G	Substance H
(1)	water	digested food
(2)	water	undigested food
(3)	digested food	water
(4)	undigested food	water

17. The flowchart below shows how food and air are transported in the human body.



Based on the flowchart above, identify systems P, Q and R.

	System P	System Q	System R
(1)	skeletal	circulatory	respiratory
(2)	respiratory	circulatory	digestive
(3)	respiratory	digestive	circulatory
(4)	circulatory	skeletal	digestive

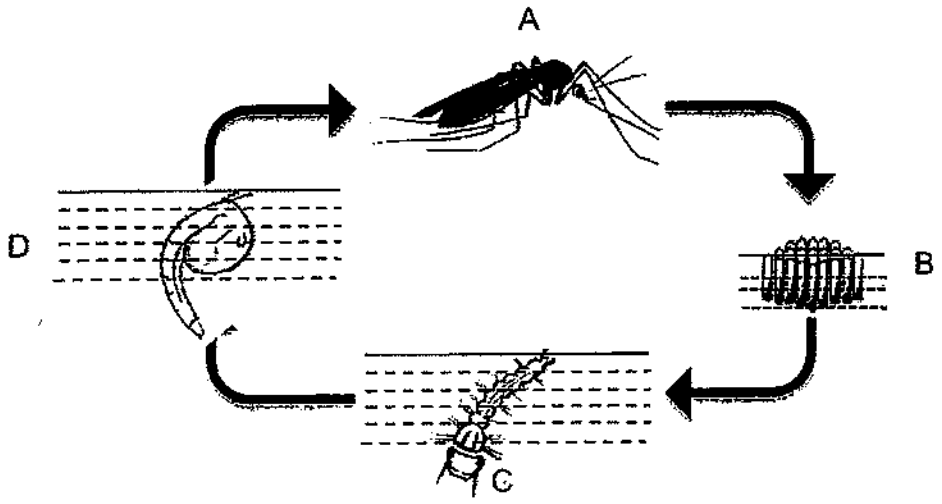
18. The table below describes the life cycle of animals A, B, C and D.

Description	A	B	C	D
The young spends its time in water.	Yes	Yes	No	No
It has 4 stages in its life cycle.	Yes	No	Yes	No
The young looks like the adult.	No	No	No	Yes

Which of the following is likely to be a butterfly?

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

19. The diagram below shows the life cycle of a mosquito.

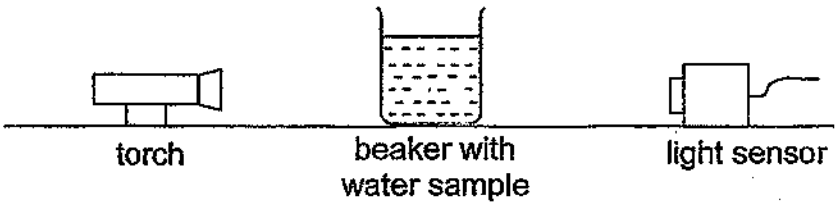


Which of the following statements is true?

(1) The mosquito in stage D eats a lot.
(2) The mosquito in stage A can spread harmful diseases.
(3) The mosquito in stage C will start developing its wings.
(4) The mosquito in stage B can move to protect itself from harm.

For questions 20 and 21, please refer to the diagram and table below.

Enzo set up the following experiment with 3 water samples, A, B and C, placed in a beaker.



He used a light sensor to measure the amount of light that passed through each water sample. He recorded the data in the table below.

Water sample	Amount of light (unit)
A	140
B	230
C	185

20. Which of the following shows the water samples arranged in the correct order?

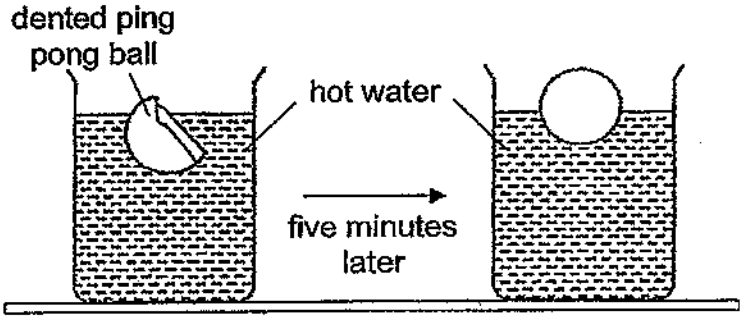
	most clear ⟶ least clear
(1)	A , B , C
(2)	A , C , B
(3)	B , C , A
(4)	B , A , C

21. Which of the following variables in this experiment should Enzo keep constant in order to carry out a fair test?

W Type of torch
X Material of beaker
Y Volume of water sample
Z Amount of light detected by the sensor

(1) W, X and Y only
(2) W, X and Z only
(3) W, Y and Z only
(4) X, Y and Z only

22. A dented ping pong ball was placed in a beaker of hot water. There was no hole in the ping pong ball. Five minutes later, it returned to its original shape.

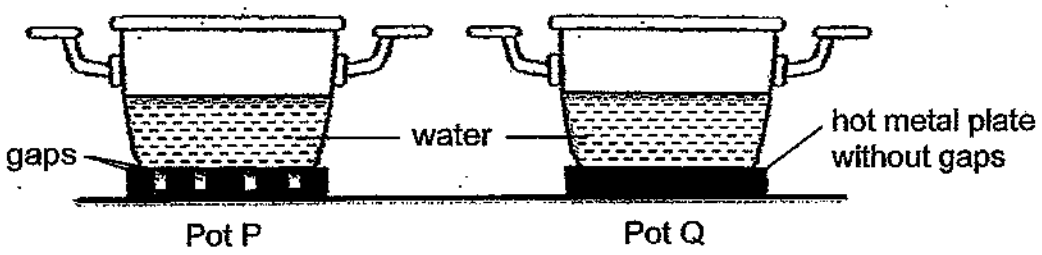


Which of the following explains the change in the shape of the ping pong ball?

(1) Air moved out of the dented ping pong ball.
(2) Air entered the dented ping pong ball and it expanded.
(3) Air in the dented ping pong ball lost heat to the hot water and contracted.
(4) Air in the dented ping pong ball gained heat from the hot water and expanded.

23. Chai filled two identical pots, P and Q, with 500 ml of water at room temperature. Pot P was placed on a hot metal plate with gaps while pot Q was placed on a hot metal plate without gaps as shown in the diagram below.

She wanted to find out which pot of water will boil first.



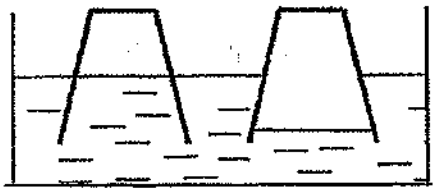
Which of the following reasons correctly explains Chai's observation?

	Pot of water that boiled first	Explanation
(1)	P	Water gained heat faster from the metal plate with gaps.
(2)	Q	Water gained heat faster from the metal plate without gaps.
(3)	P	Water lost heat faster with the gaps in the plate.
(4)	Q	Water lost heat faster without the gaps in the plate.

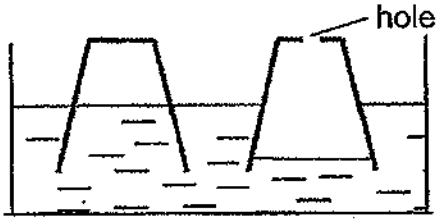
24. Two similar plastic cups, C and D, were pushed downwards with the same strength into a basin of water. The water level in cup C was higher than the one in cup D.

Which of the following shows a possible set-up for the observation?

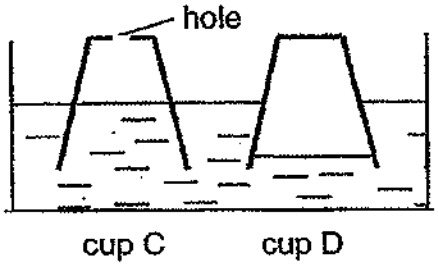
(1)



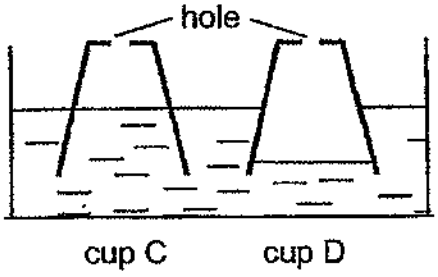
(2)



(3)



(4)



25. Anna placed substances X and Y in identical glass beakers as shown in diagram 1. Diagram 2 shows what happened to the substances when she tilted both beakers.

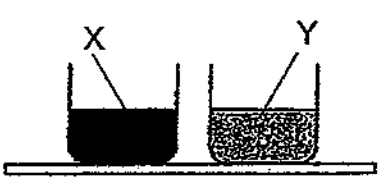


Diagram 1

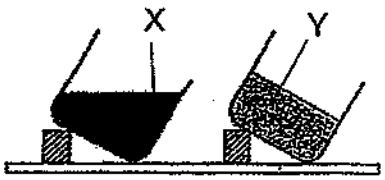
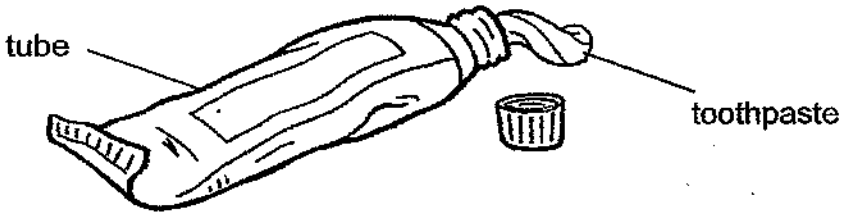


Diagram 2

Which of the following explains the difference in the observation of substances X and Y?

(1) Both X and Y have a definite shape.
(2) Y has a definite shape but X does not.
(3) X has a definite volume but Y does not.
(4) Both X and Y do not have a definite volume.

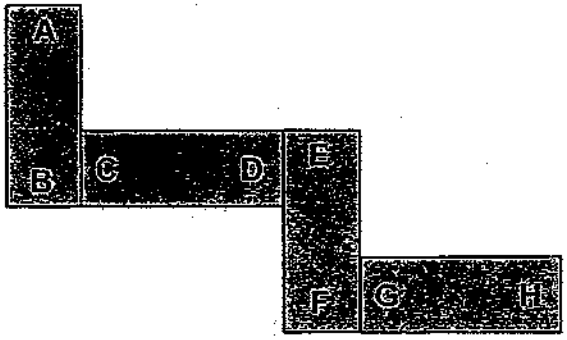
26. The diagram below shows a tube containing toothpaste.



Which of the following properties should the tube have for the toothpaste to be squeezed out easily?

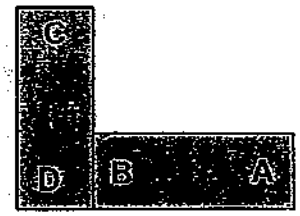
(1) flexible
(2) absorbs water
(3) floats on water
(4) allows most light to pass through

27. Andrew arranged four bar magnets as shown in the diagram below.



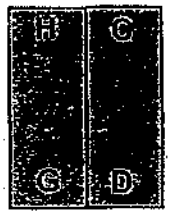
Which of the following diagrams correctly shows the interaction between two of the magnets when placed together?

(1)

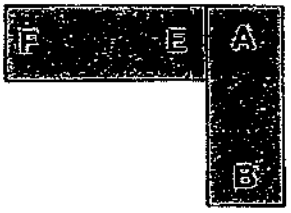


(2)

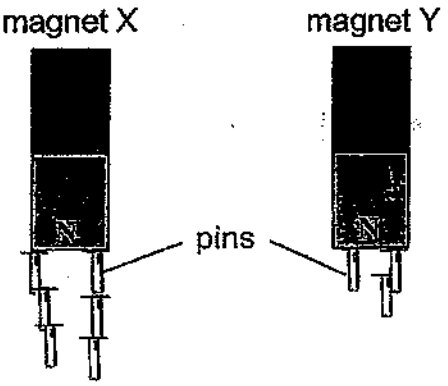
(3)



(4)



28. Sandie conducted an experiment to identify which magnet, X or Y, has a greater magnetic strength. She used similar magnets as shown below.



The magnets attracted different numbers of identical pins.

Based on the aim, what can be concluded from her observations?

(1) The pins are made of plastic.
(2) Magnet X is an electromagnet.
(3) Both magnets X and Y have the same magnetic strength.
(4) Magnet X has a greater magnetic strength than magnet Y.

~ END OF BOOKLET A ~

NANYANG PRIMARY SCHOOL

2024
PRIMARY 4
END-OF-YEAR EXAMINATION

SCIENCE
(BOOKLET B)

Total Time for Booklets A and B: 1 h 45 min

INSTRUCTIONS TO CANDIDATES

1. Write your name and index number in the space provided.
2. Do not open this booklet until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Write your answers to Questions 29 to 41 in the spaces provided.

Booklet A:		**56**
Booklet B:		**44**
Total:		**100**

Name: _____ ( )

Class: Primary 4 ( )

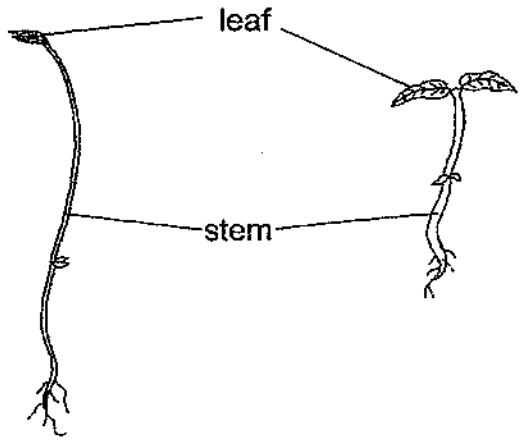
Parent's signature: _____

Please sign and return the paper the next day. Any queries should be raised at the same time when returning the paper.

Booklet B consists of 13 printed pages including this cover page.

Section B: Open-Ended Questions [44 marks]
Write your answers to questions 29 to 41 in the spaces provided.

29. The diagram below shows two plants.



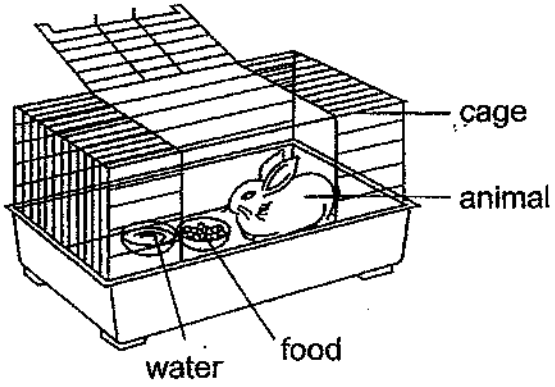
Plant A Plant B

(a) What is one difference between the stem of plant A and the stem of plant B? [1]

The stem of plant A is _____ than the stem of plant B.

(b) The leaves help both plants make _____ in the light. [1]

30. Study the diagram below.



(a) After a few days, will the amount of food in the bowl *increase, decrease* or *remain the same*? [1]

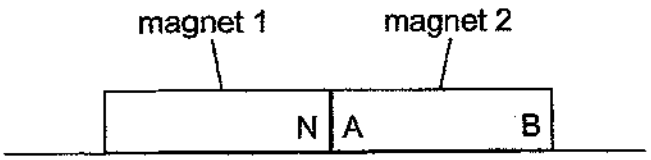
_____

(b) Based on the diagram above, name one substance this animal needs so that it remains alive. [1]

_____

4

31. Two magnets are placed together as shown below.



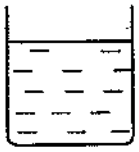
The north pole of magnet 1 is labelled N.

Name the poles labelled A and B of magnet 2. [2]

A: _____

B: _____

32. The diagram shows a beaker of water.



Fill in the blanks using the correct words in the box.

decreases	gas	solid
remains unchanged		increases

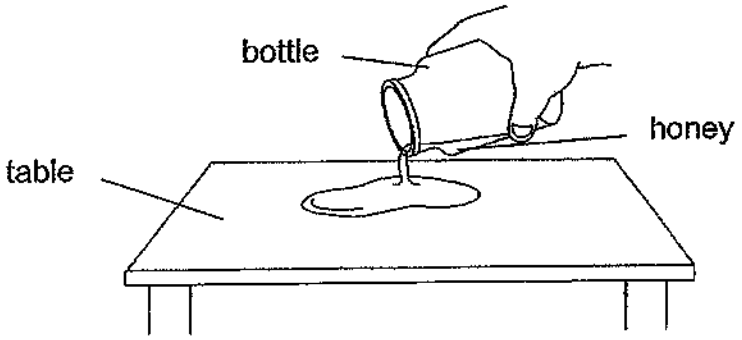
(a) When water loses heat, its temperature _____ . [1]

(b) The beaker of water is put in the freezer. After some time, the water will change its state from liquid to _____. [1]

33. Choose the correct words from the box to fill in the blanks below.

solid	liquid	gas

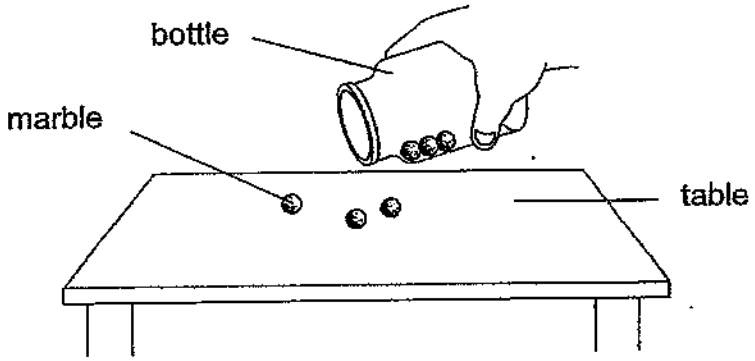
(a) Ali pours honey from a bottle onto a table as shown below.



The volume of honey remains the same but its shape changes.

This shows that honey is a _____. [1]

(b) Ali pours some marbles from a bottle onto a table as shown below.

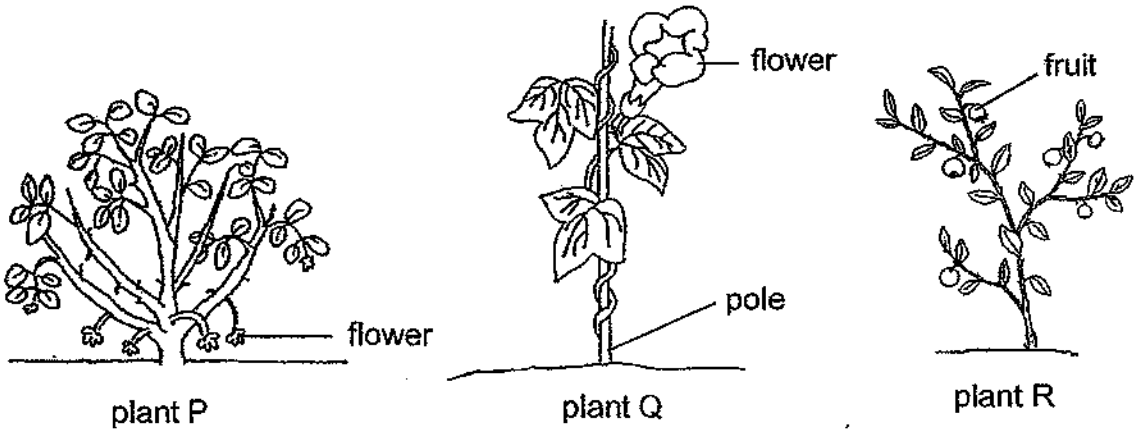


The shape and volume of the marbles remain the same.

This shows that a marble is a _____. [1]

2

34. The diagram below shows plants P, Q, and R.



(a) Based only on what is observed from the diagram above, state the headings in (i) and (ii). Then, classify plants P, Q and R, in (iii) or (iv) shown in the table below. [2]

(i) _____	(ii) _____
(iii)	(iv)

(b) State three conditions needed for plants to grow well. [1]

(i) _____

(ii) _____

(iii) _____

(c) Other than to make food, state another function of the leaves. [1]

_____

35. Study the classification table below.

Outer Covering		
D	**Scales**	**Hair**
bird	fish	mammal

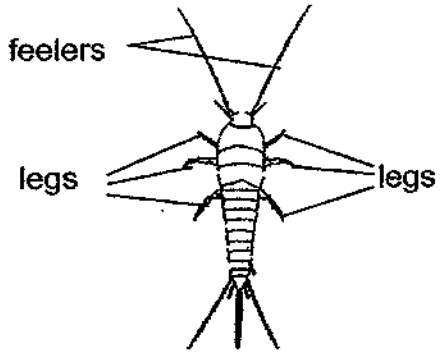
(a) State what D represents.

_____

(b) State an animal group that has dry scales as their outer covering. [1]

_____

The diagram below shows animal P.



(c)(i) Based only on the diagram, which animal group does animal P belong to? [1]

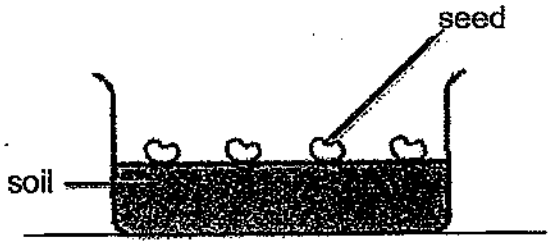
_____

(ii) Give a reason for your answer in (i). [1]

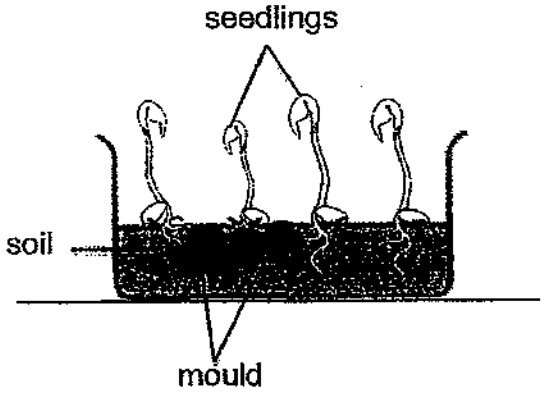
_____

4

36. The diagram below shows the green beans Alicia planted.



The green bean plants were grown in a cupboard. Water was added to it daily. After five days, Alicia noticed mould growing on the seedlings and the surface of the soil shown in the diagram below.



(a) State the group of living things mould belongs to. [1]

(b) How does mould reproduce? [1]

Alicia noticed that the seedlings stopped growing taller and the growth of mould increased. She concluded that the mould was harmful to the seedlings.

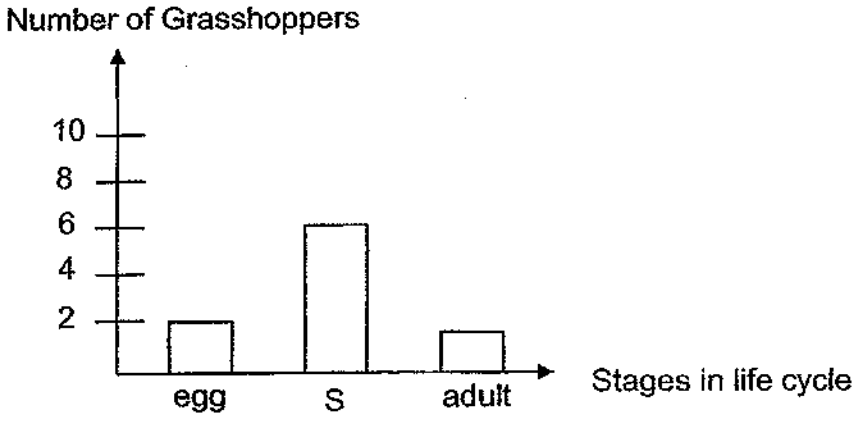
(c) Which observation allowed her to make this conclusion? [1]

(d) State the way that the mould obtains food to grow. [1]

4

37. Jenny bought 10 grasshopper eggs and placed them in a tank of plants.

The graph below shows the number of grasshoppers at each stage after 5 weeks.



None of the grasshoppers died and they developed at different speed.

(a) State the stage that is best represented by S. [1]

_____

(b) (i) At which stage is the grasshopper harmful to plants? [1]

_____

(ii) Explain your answer in (b)(i). [1]

_____

_____

(turn over to continue Qn 37)

3

(Qn 37 - continued from previous page)

The diagram below shows the life cycles of the grasshopper and the frog.

life cycle of grasshopper

life cycle of frog

(c) State two **differences** between the life cycles of the grasshopper and the frog. [2]

(i) _____

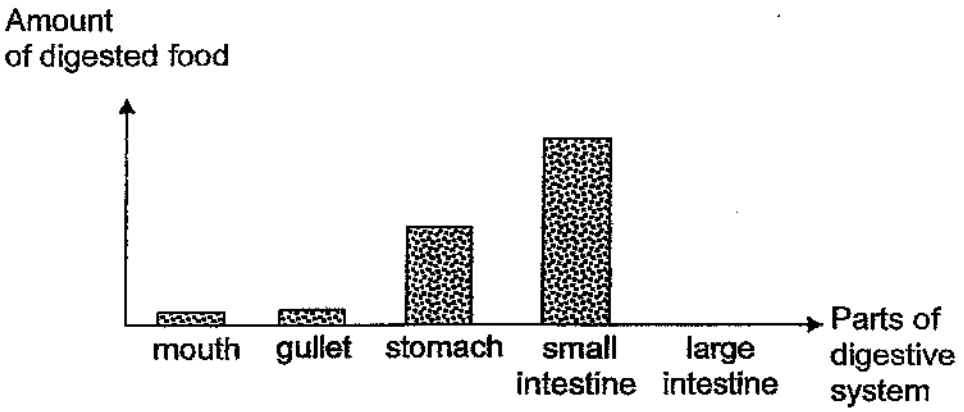
_____

(ii) _____

_____

2

38. The graph below shows the amount of digested food leaving each part of the digestive system.



(a) What is the function of teeth in the process of digestion? [1]

(b) The amount of digested food leaving the mouth is the same as the amount leaving the gullet. Give a reason for this. [1]

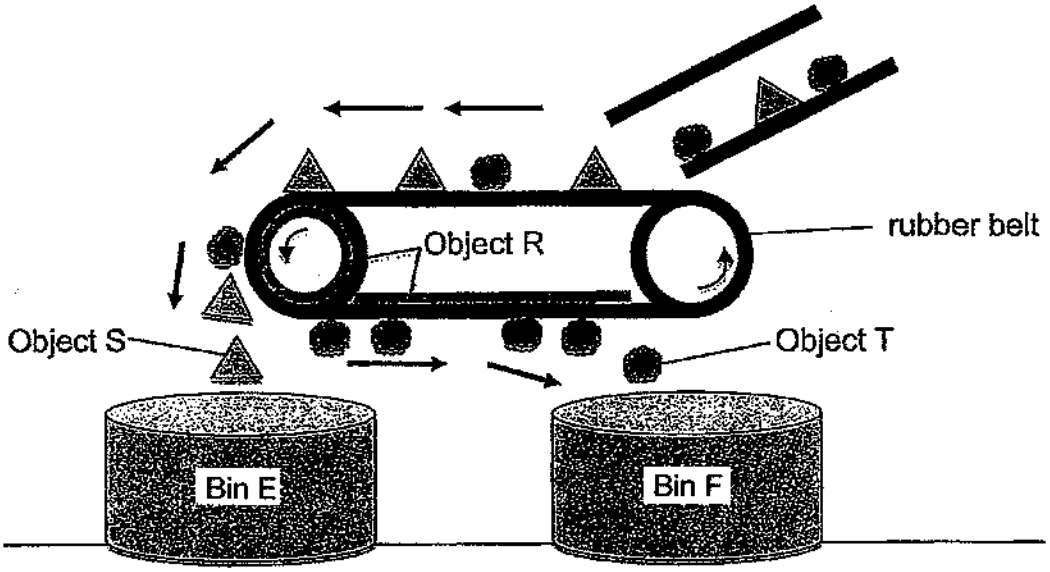
(c) Other than digested food, name two substances that can be found in the stomach. [1]

There was no digested food leaving the small intestine to enter the large intestine.

(d) State what had happened to the digested food in the small intestine. [1]

4

39. The diagram below shows a moving rubber belt system that separates magnetic and non-magnetic objects. The separated objects are collected in bins E and F.



(a) Based on the diagram above, what is object R? [1]

_____

(b) Explain why object T drops into bin F but not object S. [2]

_____

_____

_____

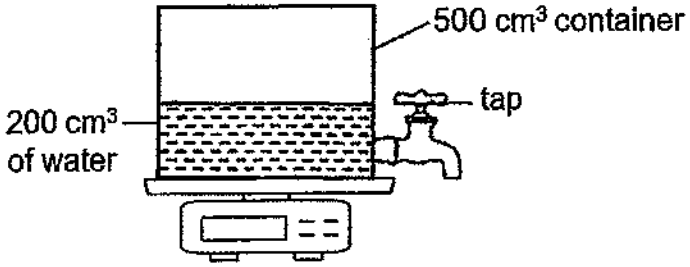
(c) Name 2 magnetic materials. [1]

(i) _____

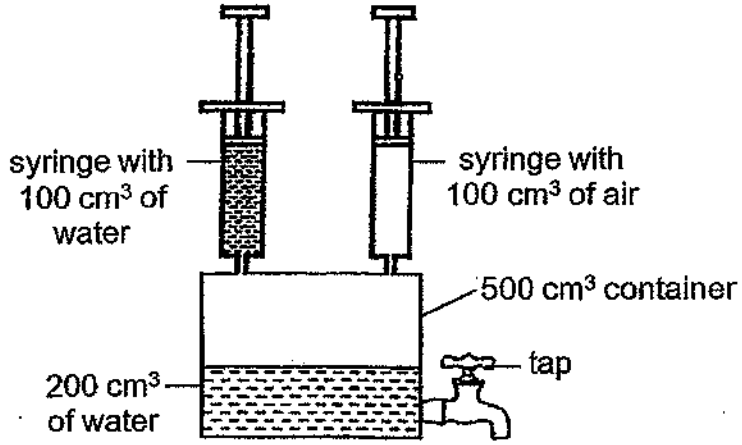
(ii) _____

4

40. The set-up below shows a 500 cm^3 container with 200 cm^3 of water in it. The set-up weighs Z grams.



(a) If more air is pumped into the container, what will happen to the mass of the set-up? Give a reason for your answer. [1]



100 cm^3 of water and 100 cm^3 of air are pumped into the container using the syringes.

(b) Record the volume of water and air in the container after pumping. [1]

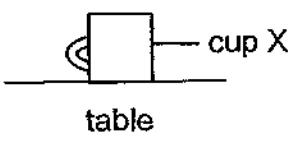
	Volume of substance in the container (cm^3)	
	water	**air**
Before pumping	200	300
After pumping	(i)	(ii)

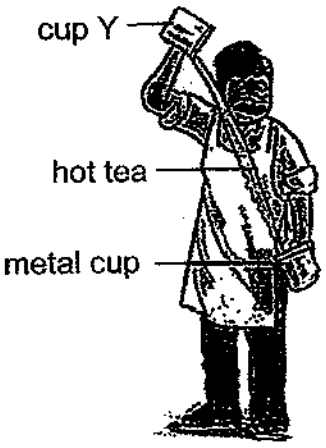
(c)(i) Without changing the container and syringes, suggest a way to increase the volume of air in the container. [1]

(ii) Explain why your method in (i) will work. [1]

4

41. Mr Sammy poured the same volume of hot tea into 2 identical metal cups, X and Y. He left cup X on a table. He poured the tea from cup Y back and forth into another metal cup for 1 minute. Then he measured the temperature of the tea in both cups.





Temperature of the tea (°C)	Cup X	Cup Y
At first	80	80
After 1 minute	75	64

(a) What happened to the temperature of the tea in cup Y after 1 minute? [1]

(b) Give a reason why the temperature of the tea in cup Y was different from that in cup X after 1 minute. [1]

(c) Suggest another method for Mr Sammy to cool down the tea in the cup faster. [1]

Mr Sammy's friend likes his tea hot. He said that using glass cups instead of metal cups would keep the tea warm for a longer time.

(d) Do you agree with Mr Sammy's friend? Why? [2]

~ END OF BOOKLET B ~

5

Nanyang Primary School
P4 Science End-of-Year Examination 2024
Answer Key

Section A

1	1	6	1	11	4	16	4	21	1	26	1
2	3	7	2	12	2	17	2	22	4	27	3
3	2	8	4	13	2	18	3	23	2	28	4
4	1	9	3	14	3	19	2	24	3		
5	4	10	3	15	3	20	3	25	2		

Section B

Qn	Answer
29(a)	thinner
(b)	food
30(a)	decrease
(b)	air/ food/ water
31	A: south B: north
32(a)	decreases
(b)	solid
33(a)	liquid
(b)	solid
34(a)	(i) Strong stem (ii) Weak Stem (iii) P and R (iv) Q
(b)	(i) air (ii) food (iii) water
(c)	They enable the plant to exchange gases with the surroundings.
35(a)	Feathers
(b)	Reptiles
(c)	(i) Insects (ii) It has six legs.
36(a)	Fungi
(b)	By spores

(c)	The seedlings stopped growing taller.
(d)	It obtains food from the seedlings that it grows on.
37(a)	Young/ Nymph
(b)	(i) S/ Adult
	(ii) It feeds on plants.
(c)	(i) The young of a grasshopper looks like the adult but the young of the frog does not.
	(ii) The life cycle of the grasshopper is fully on land while the life cycle of the frog is partially in water.
38(a)	Teeth break food up into smaller pieces.
(b)	No digestion takes place in the gullet.
(c)	Undigested food, digestive juices
(d)	Digested food had been absorbed into the blood.
39(a)	A magnet
(b)	Object T is made of a magnetic material and would be attracted to object R while object S is made of a non-magnetic material and would not be attracted to object R.
(c)	Iron, steel
40(a)	The mass will increase because air has mass.
(b)	(i) 300
	(ii) 200
(c)	(i) Remove some water from the container.
	(ii) Air does not have a definite volume. Hence, it will take up the space previously occupied by the water.
41(a)	The temperature decreased.
(b)	The tea in cup Y lost heat to the surroundings faster.
(c)	Add a fan to blow at the tea.
(d)	Yes, I agree. Glass is a poorer conductor of heat than metal. Hence, it would conduct heat from the hot tea to the surroundings slower.

END