NANYANG PRIMARY SCHOOL

PRIMARY 4 SCIENCE

2022

PRACTICE PAPER 1

BOOKLET A

Suggested duration:	**40 minutes**
Actual duration:	
Did I exceed the suggested duration?	☐ **Yes (I need to work on my time management)** ☐ **No (I did my work carefully and was able to check through)**

Name: _____( )

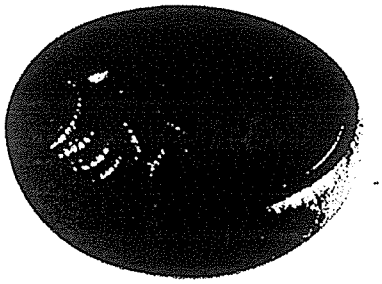
Class: 4 ( )

Date: _____

Section A

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

1. Germaine observed some worms in a dish.



She wrote down some statements about the worms in her Science Journal.

A They ate the food in the dish.
B They are light brown in colour.
C They grew bigger after a week.
D They moved away when touched.
E They have many legs and many body parts.

Which of Germaine's observations are characteristics found in all living things?

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

2. Study the classification table below.

Living Things	Non-Living Things
goldfish	table
monkey	bottle
elephant	mould

Which one of the following items above has been classified wrongly?

(1) bottle
(2) mould
(3) monkey
(4) goldfish

3. The characteristics of plants X and Y are listed below.

Characteristics	Plant X	Plant Y
Able to make its own food	Yes	Yes
Reproduce by spores	No	Yes
Bear fruits	Yes	No

Three children made the following statements.

Anna : Plant X is a flowering plant.
Brian : Plant Y reproduce by seeds.
Charlie : Only Plant X absorbs sunlight to make food.

Which of the statements above are correct?

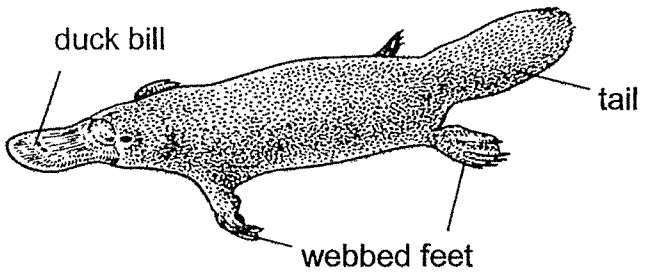
(1) Anna only
(2) Anna and Charlie only
(3) Brian and Charlie only
(4) Anna, Brian and Charlie

4. Jeremy found an animal that he had never seen before at the pond.
Which one of the following characteristics can he use to classify it correctly as an amphibian?

(1) It lays eggs
(2) It has moist skin.
(3) It suckles its young.
(4) It needs air, food and water.

5. The diagram below shows animal P. It is a unique animal with the following characteristics:-

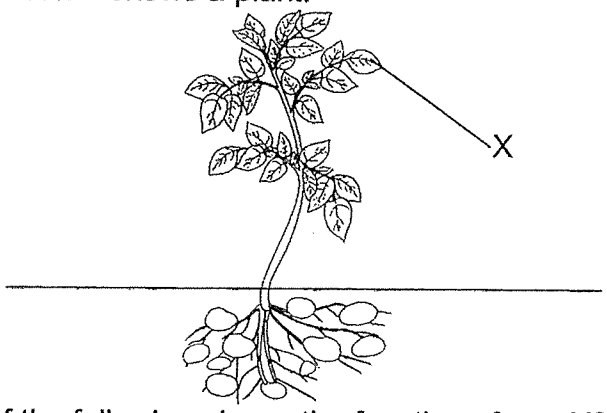
- It has fur as an outer covering.
- It lays eggs, and it suckles its young.
- It has lungs and nostrils for breathing.
- It has a duck bill, webbed feet and a tail for swimming.



Which one of the following characteristics helps us classify animal P as a mammal?

(1) It lays eggs.
(2) It has a duck bill.
(3) It suckles its young.
(4) It has webbed feet and a tail.

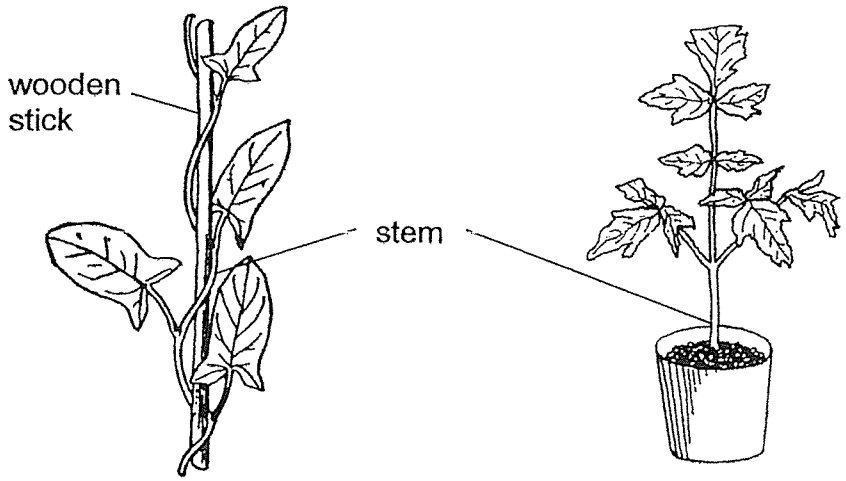
6. The diagram below shows a plant.



Which one of the following shows the function of part X?

(1) It helps the plant to reproduce
(2) It anchors the plant firmly to the ground.
(3) It holds the plant upright to get more sunlight
(4) It absorbs sunlight and makes food for the plant.

7. Rezal observed 2 different plant stems. He wrote down some observations about the stems.



Which one of the following observations is true?

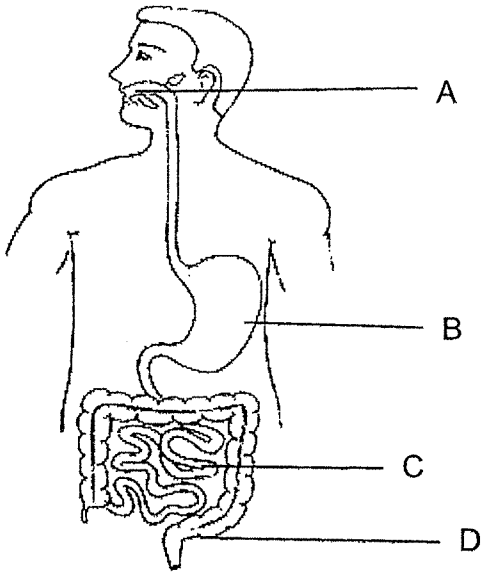
(1) Plant B will grow faster than plant A.
(2) Plant A has a stronger stem than plant B stem.
(3) The stems of both plant help the plant to grow upright to obtain sunlight.
(4) The stems of both plant only help to transport water from the roots to the leaves.

8. Alan observed some plants in school which did not have any flowers. However, he still concluded that they were flowering plants.

Which one of the following could have helped him to make this conclusion?

(1) The plant had flower-shaped leaves.
(2) The plant had a strong and sturdy stem.
(3) The plants had small fruits hanging on branches.
(4) There were spores on the underside of the leaves.

9. The diagram below shows the human digestive system.



In which part does the food start getting broken down into smaller pieces?

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

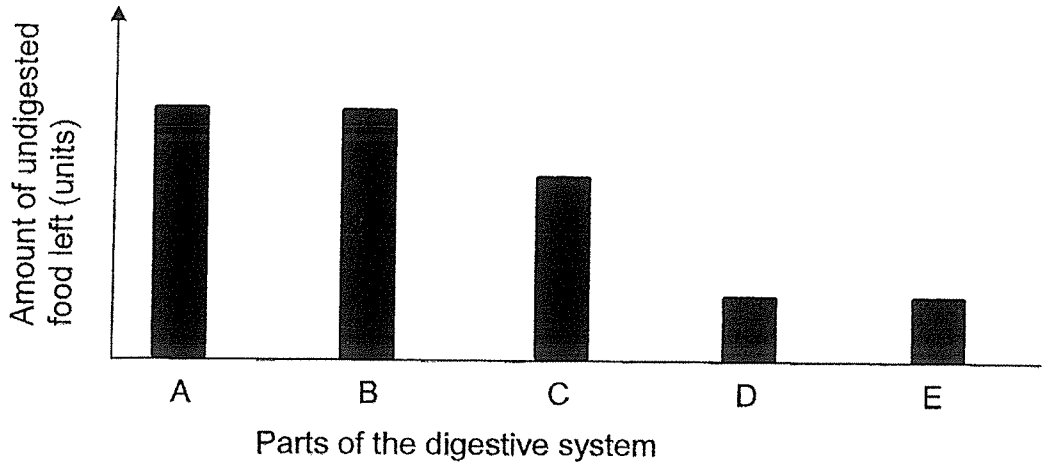
10. Which one of the following systems directly help humans to take in air from the surroundings?

(1) Skeletal system
(2) Digestive system
(3) Circulatory system
(4) Respiratory system

11. Which one of the following is not a part of the skeletal system?

(1) Skull
(2) Ribcage
(3) Stomach
(4) Backbone

12. The graph below shows the amount of undigested food leaving different parts of the digestive system.



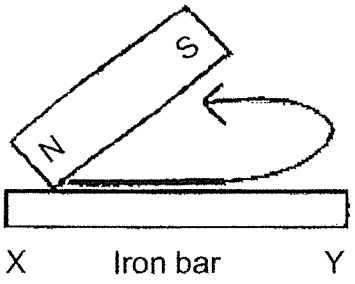
Which one of the following organs most likely represent organ B?

(1) gullet
(2) stomach
(3) small intestine
(4) large intestine

13. Which one of the following statements about magnets is **true**?

(1) Magnetic strength of a magnet is weakest at the poles.
(2) The like poles of 2 magnets facing each other will repel each other.
(3) The bigger the size of a magnet, the stronger its magnetic strength is.
(4) The unlike poles of 2 magnets facing each other will repel each other.

14. Dinesh turned an iron bar into a temporary magnet as shown below and was able to attract 10 paper clips with it.



What can he do next to increase the number of paper clips attracted by the iron bar?

(1) Use a bigger iron bar.
(2) Use the south pole to stroke the magnet.
(3) Increase the number of strokes of magnet.
(4) Decrease the number of strokes of magnet.

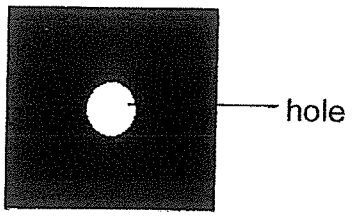
15. Study the classification table below.

Objects that give out light	**Objects that do not give out light**
Sun	battery
star	wires
cloud	matchbox

Which one of the following objects was classified wrongly?

(1) star
(2) wire
(3) cloud
(4) matchbox

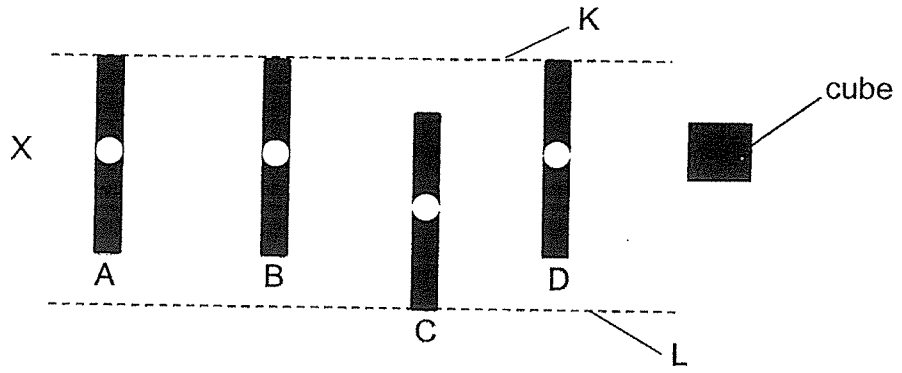
16. Macy cut out a hole from the middle of a card as shown in the diagram below.



card

She placed 4 identical cards in front of a cube and stood at position X.
She could not see the cube from her position.

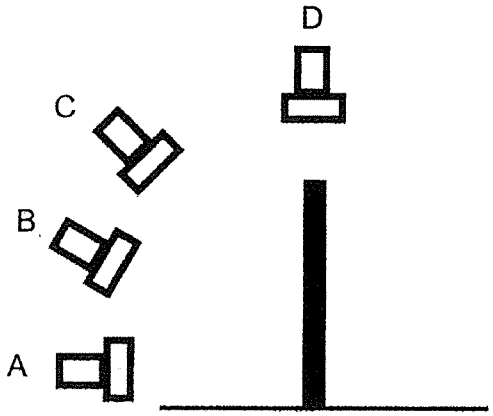
The diagram below shows the top view of her set-up.



Which one of the following actions should Macy do to enable her to see the cube?

(1) Move card C upwards to touch dotted line K.
(2) Move card B downwards to touch dotted line L.
(3) Move cards B, D downwards to touch dotted line L.
(4) Move cards A, B and D downwards to touch dotted line L.

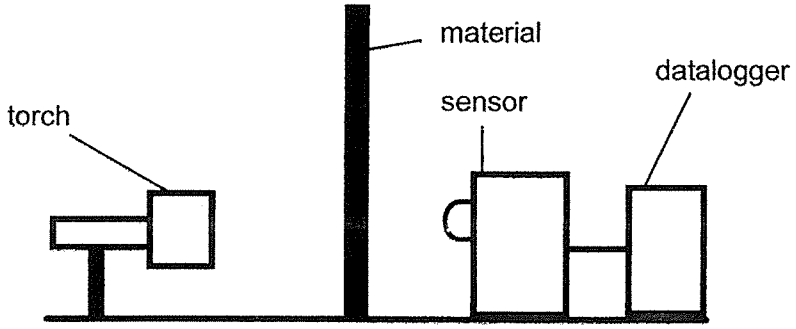
17. A pole was placed on the table as shown below.



At which position should the torch be placed such that the shadow of the pole would be the shortest?

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

18. Michelle set up the experiment as shown below. The torch was switched on and the sensor recorded how much light had passed through the material.



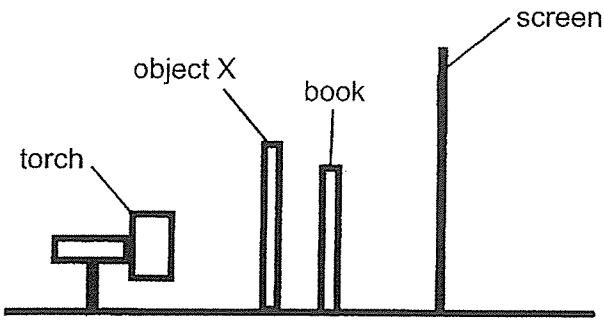
She repeated the experiment using different materials and the results of her experiment is shown in the table below.

Material	Amount of light detected by sensor (units)
W	750
X	600
Y	920
Z	0

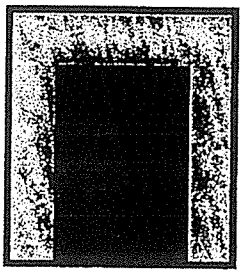
Based on the results above, which material should Michelle use to make the doors of a toilet such that a person using the toilet would not be seen?

(1) W
(2) X
(3) Y
(4) Z

19. Jason did an experiment with object X and a book. He placed the book behind object X as shown below.



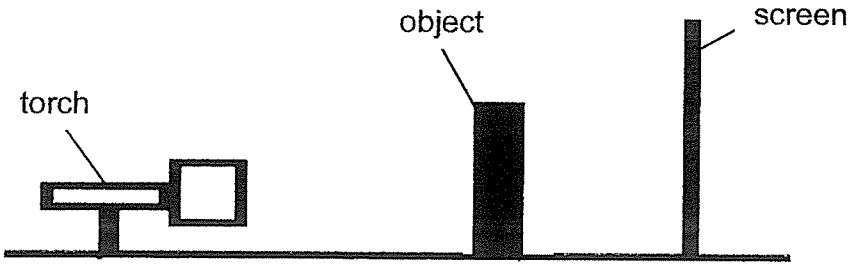
Shadow observed on screen



Based on Jason's observation, which one of the following could object X be?

(1) Tracing paper
(2) Wooden board
(3) Aluminium sheet
(4) Clear plastic sheet

20. Study the set-up as shown below.

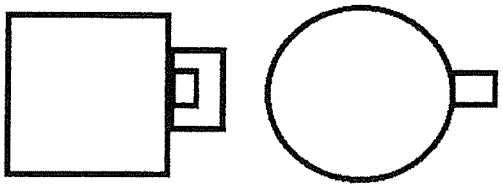


Which of the following changes should be made in order to observe a smaller shadow on the screen?

A Use a brighter torch.
B Move the object nearer to the torch.
C Move the torch away from the object.
D Move the object nearer to the screen.

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

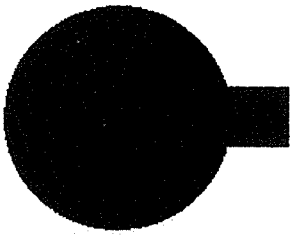
21. Mick used a torch and shone at a cup from various positions. The cup is as shown below.



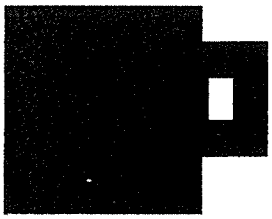
Side View **Top View**

Which one of the following shadows **cannot** be caused by the cup?

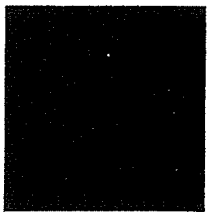
(1)



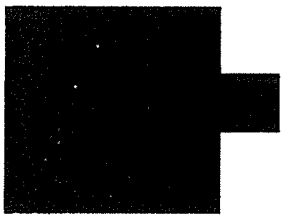
(3)



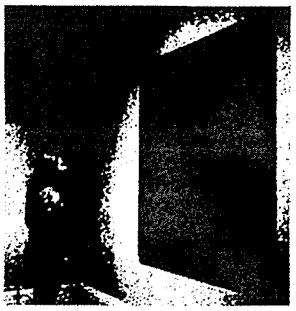
(2)



(4)



22. Study the diagram below.



Which of the following properties of light explain how the person can see the dark painting?

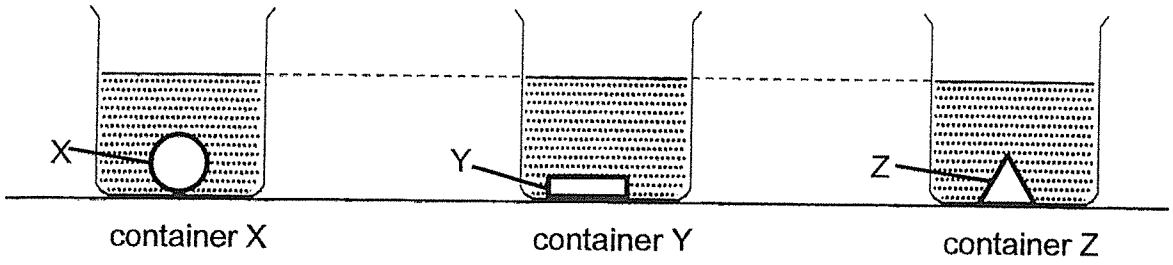
A Light can be reflected.
B Light was given out by the painting.
C Light can pass through transparent object.

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

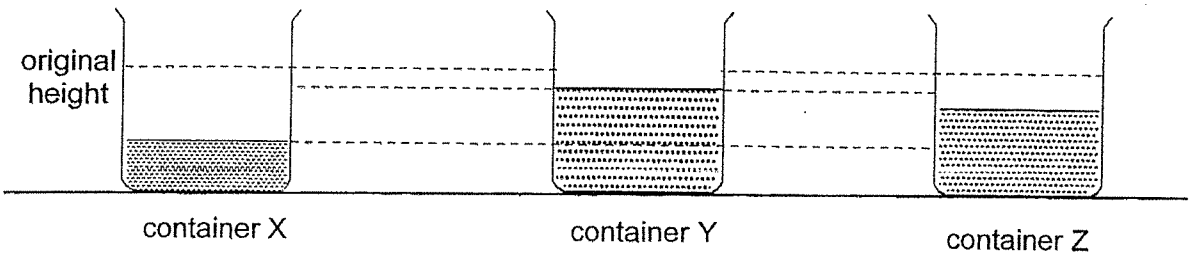
23. Which one of the following statements about the properties of water and air is **incorrect**?

(1) Water and air have definite mass.
(2) Water and air do not have a definite shape.
(3) Water takes up space but air does not take space.
(4) Water cannot be compressed but air can be compressed.

24. Xihan placed 3 objects, X, Y and Z, into 3 identical containers, X, Y and Z. She then filled up the tank with water to reach the same level as shown in the diagram below.



She then removed the 3 objects from the containers and the amount water left in each container is shown below.

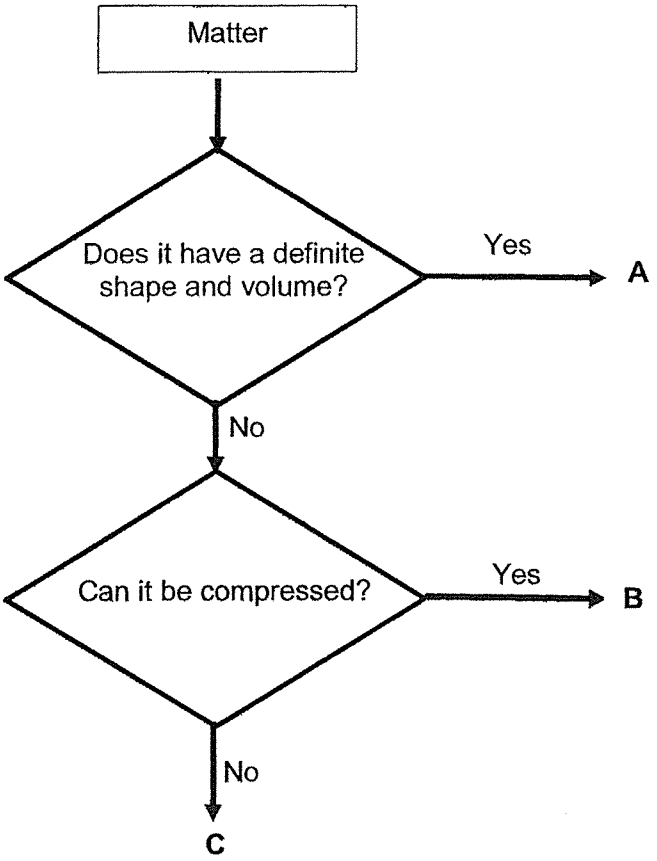


Based on the diagrams above, which of the following statements are correct?

A Object Y has the largest volume.
B The 3 objects have definite volume.
C The 3 objects have the same volume.
D Object X has a bigger volume than object Z.

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

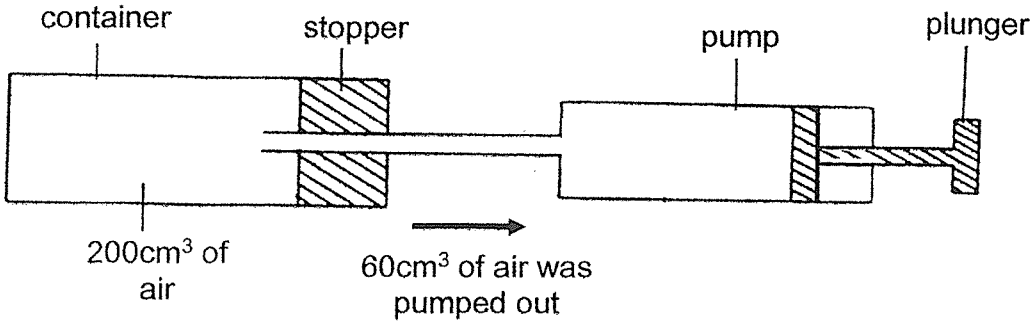
25. Study the flowchart below.



Which one of the following correctly represents A, B and C?

	A	B	C
(1)	paper clip	air	oil
(2)	milk	apple	oxygen
(3)	fork	water	Air
(4)	nail	honey	book

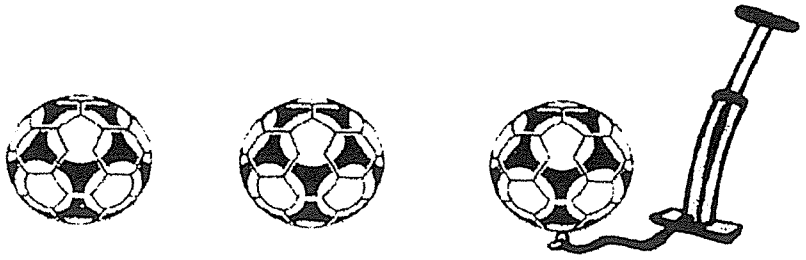
26. The container shown below has a capacity of 200cm^3 and was filled with air. Ashley inserted a pump into the container and pumped out 60cm^3 of air. The pump has a capacity of 100 cm^3.



Which one of the following correctly shows the final volume of air in the container and the pump?

	Volume of air in container (cm^3)	Volume of air in pump (cm^3)
(1)	140	60
(2)	140	100
(3)	200	60
(4)	200	100

27. Bing Hong has 3 identical soccer balls which are inflated. Each soccer ball has the same mass at first. He then pumped in different volumes of air into each soccer ball.



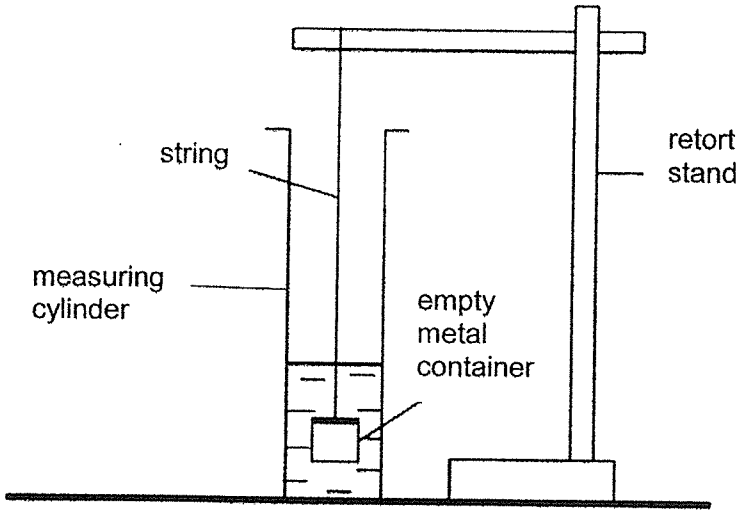
Ball A Ball B Ball C

He observed that the size of the soccer ball remained the same.

Which one of the following statements is **incorrect** after Bing Hong pumped in different volumes of air into the 3 soccer balls?

(1) With every pump of air into the soccer ball, the mass of the soccer ball increases.
(2) The 3 soccer balls have the same mass since the size of the soccer ball remains the same.
(3) The 3 soccer balls have the same volume of air since the size of the soccer ball remains the same.
(4) The ball with the biggest mass is the one which Bing Hong pumped in the greatest volume of air.

28. Farah conducted an experiment shown in the diagram below.
She lowered a [100g] empty metal container with an air-tight lid into a measuring cylinder containing 400 cm^3 of water. She noted the new water level in the measuring cylinder.



She recorded her observation in the table below.

Mass of empty metal container (g)	Original water level in measuring cylinder (cm^3)	New water level in measuring cylinder (cm^3)
100	400	650

She then filled up the metal container with some marbles and repeated the experiment.

Next, she removed the marbles, filled the container with water and repeated the experiment again.

Which of the following show her most likely result?

	Container filled with	New mass of container (g)	Original water level in measuring cylinder (cm^3)	New water level in measuring cylinder (cm^3)
A	Marbles	200	400	650
B	Marbles	200	400	950
C	Water	300	400	650
D	Water	300	400	800

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

~ END OF BOOKLET A ~

NANYANG PRIMARY SCHOOL

PRIMARY 4 SCIENCE

2022

PRACTICE PAPER 1

BOOKLET B

Suggested duration:	**1 hour 5 minutes**
Actual duration:	
Did I exceed the suggested duration?	☐ **Yes (I need to work on my time management)** ☐ **No (I did my work carefully and was able to check through)**

Name: _____( )

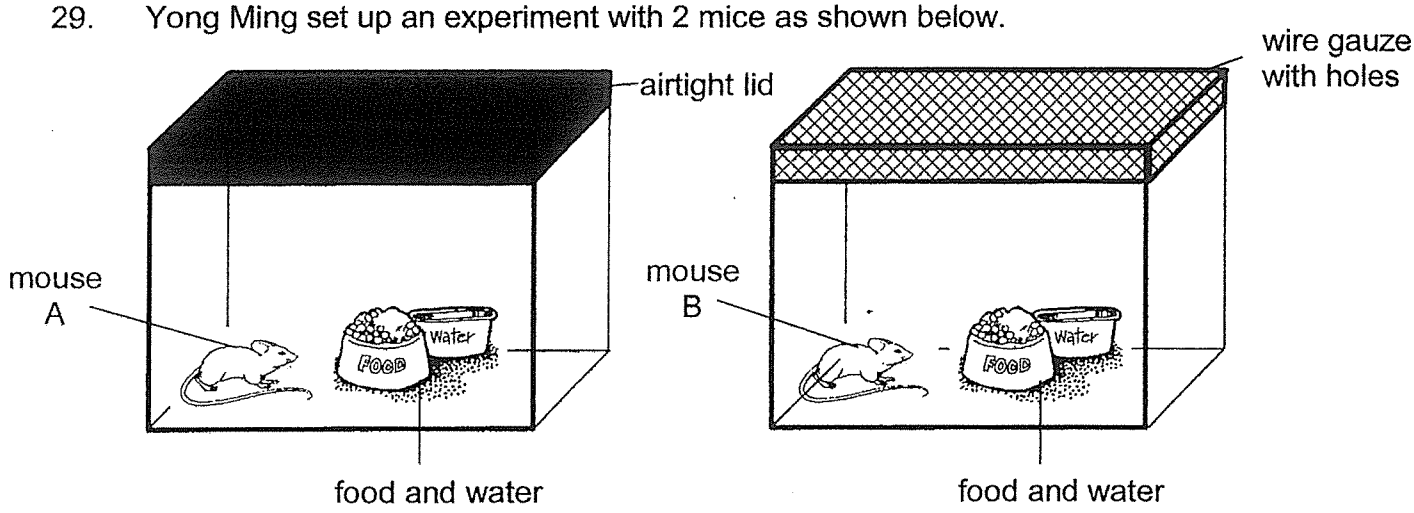
Class: 4 ( )

Date: _____

Section B

Write your answers to questions 29 to 40 in the spaces provided.

29. Yong Ming set up an experiment with 2 mice as shown below.



(a) Explain why mouse A died after a few days but not mouse B. [2]

_____

_____

(b) Which characteristic of living things does this experiment show? [1]

_____

_____

(c) State another characteristic of living things which is not shown in the experiment. [1]

_____

_____

30. Four plants have been classified in a table as shown below.

(a) Observe the plants and complete the headings in the plant classification table below. [1]

(i) _____	(ii) _____
	

(b) Describe another method, not stated in part (a), to classify all plants. [1]

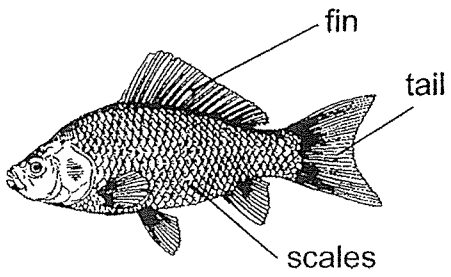
_____

(c) A science class gathered some leaves together. Observe the leaves below and group them based on similarities in their characteristics. [1]

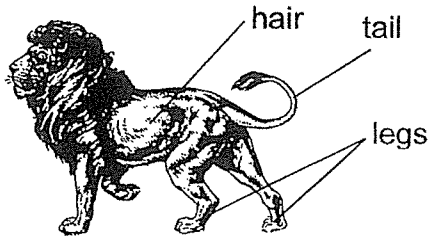
A B C D E

Group 1	Group 2

31. The diagram below shows 2 animals



animal X



animal Y

(a) State the animal group which animal Y belongs to. [1]

_____

(b) Based only on what you can observe in the diagram state 2 differences between animal X and animal Y. [2]

(i) _____

_____

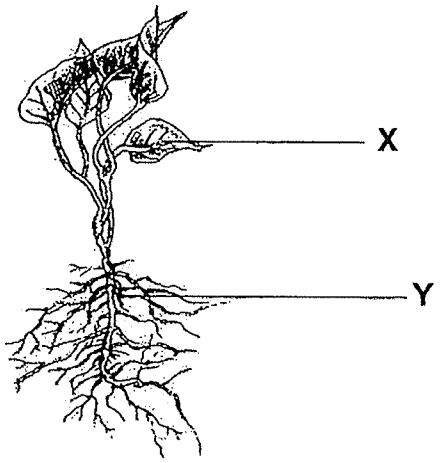
(ii) _____

_____

(c) What is the function of the scales on animal X? [1]

_____

32. Study the plant diagram below.



(a) Name the plant parts labelled X and Y. [1]

X: _____

Y: _____

(b) Explain why the plant died several days after all of part Y were removed. [1]

_____

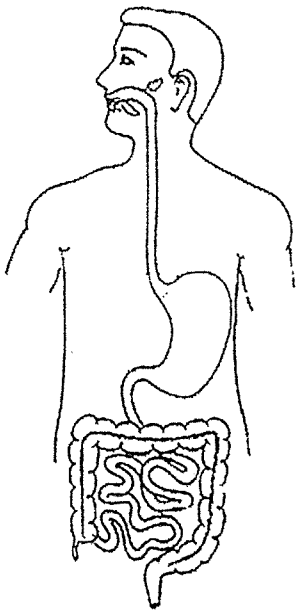
_____

(c) State another function of part Y. [1]

_____

_____

33. The diagram below shows the human digestive system.



(a) In the diagram **above, label** [2]
(i) **X**, where digestion starts
(ii) **Y**, where digestion ends

(b) State the function of the large intestine. [1]

_____

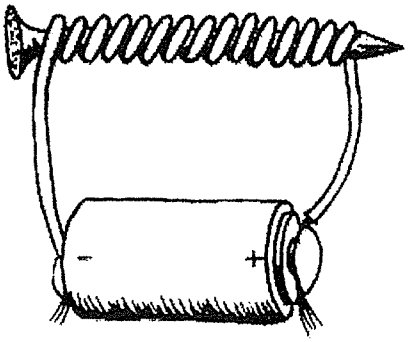
_____

(c) How does chewing our food help in the process of digestion? [1]

_____

_____

34. Benjamin set up the experiment below and created a temporary magnet that was able to attract 10 steel clips.



(a) What type of magnet did Benjamin create? [1]

_____

(b) Suggest 2 ways for Benjamin to increase the number of steel clips that the magnet attracted. [2]

(i) _____

_____

(ii) _____

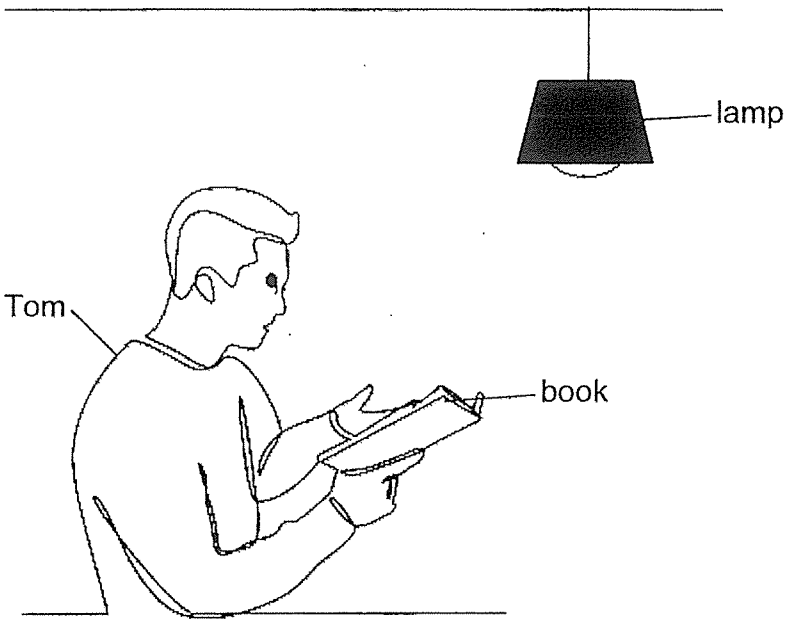
_____

(c) State **another** way to create a temporary magnet. [1]

_____

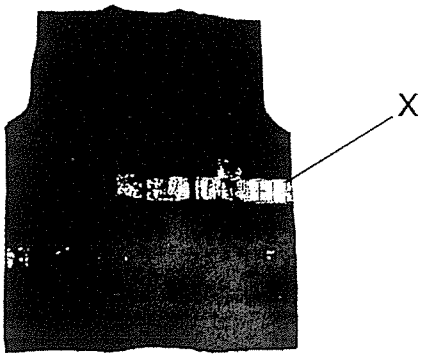
4

35. Study the diagram below.



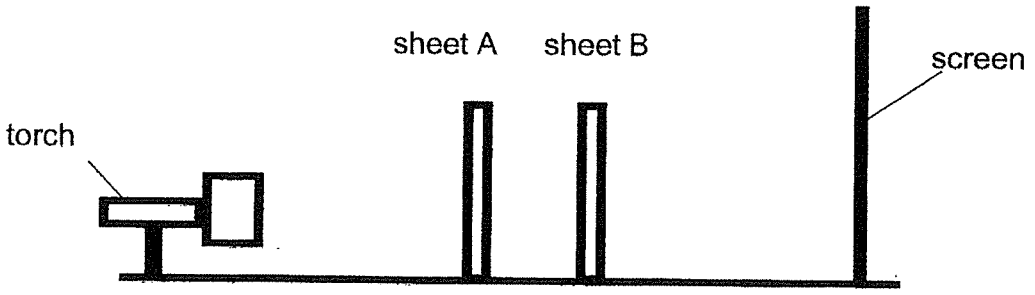
(a) In the diagram above, **draw** and **indicate** the direction of the light ray which enables Tom to read the book. [1]

The diagram below shows a safety vest with reflective part X.

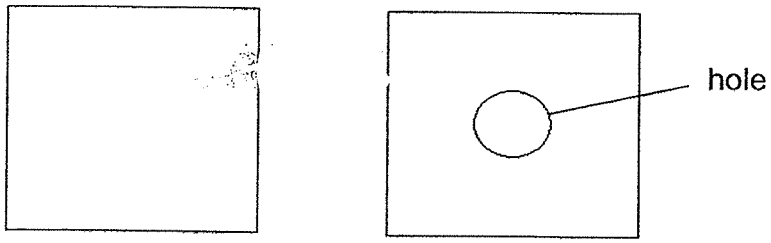


(b) Explain why we can see part X better than the rest of the vest when a torch was shone at the vest. [1]

36. Jason carried out an experiment as shown below.

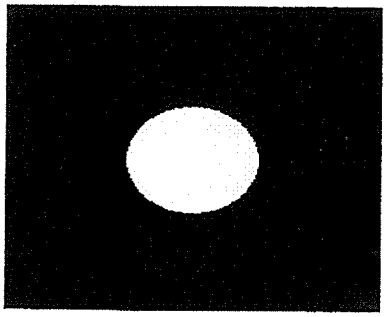


Two sheets made of different materials, A and B, were used. They are of equal size and thickness. The diagram below shows the front view of the two sheets.



sheet A sheet B

When the torch was switched on, Jason observed the following shadow on the screen.



(a) Based on his observation, circle the material which most likely represent sheets A and B. [2]

Sheet A: wood / clear glass / tracing paper

Sheet B: wood / clear glass / tracing paper

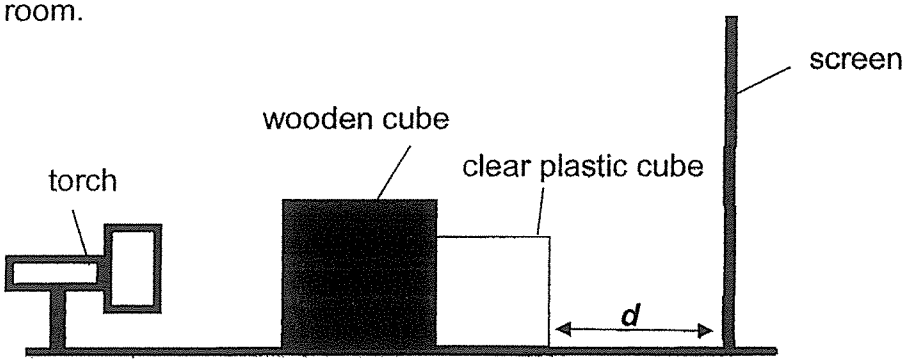
(b) Explain why it is important for Jason to use only one torchlight in his experiment. [1]

_____

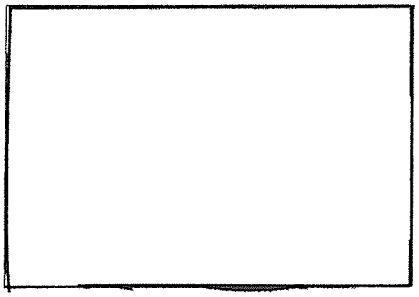
_____

3

37. Mark set-up an experiment as shown below. The experiment was carried out in a dark room.



(a) In the space below, draw what Mark would most likely observe on the screen. [2]



Mark repeated the experiment by changing distance d and measuring the height of the shadow. He recorded the height of the shadow in the table shown below.

Distance, ***d*** (cm)	Height of Shadow (cm)
5	15
6	(i)
7	19

(b)(i) In the table above, **state** what would be the height of the shadow when the distance, ***d*** is 6cm. [1]

(ii) Without moving the cubes and the screen, suggest a change that Mark can make if he wants to observe a bigger shadow. [1]

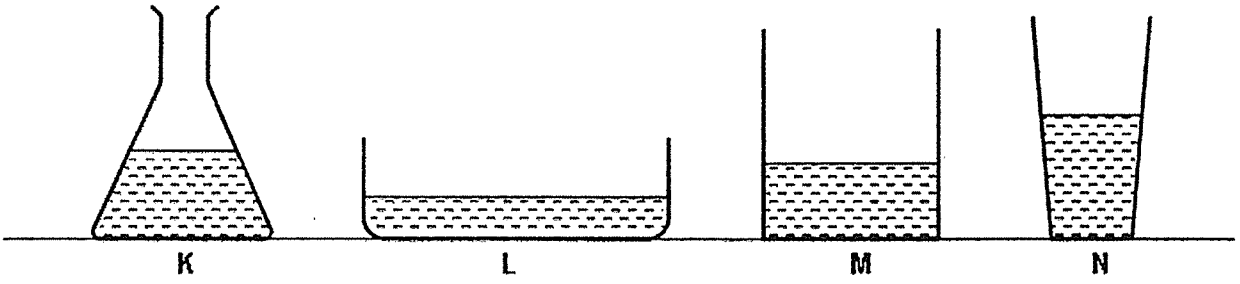
_____

(c) Mark replaced the wooden cube with a similar cube made of tracing paper. He observed that the shadow on the screen is now lighter. Explain his observation. [1]

_____

_____

38. Mei Ling has 4 different containers, K, L, M and N. Each container was filled with 200 ml of water.

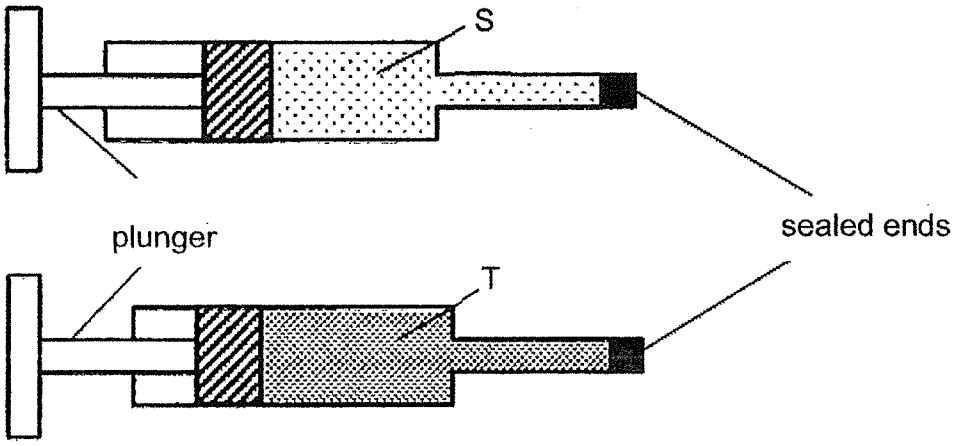


(a) State a property of liquids that is shown in the diagram above. [1]

_____

_____

Mei Ling carried out another experiment with 2 identical syringes. She filled each syringe with different substances, S and T, and sealed the ends of the syringes. She then tried to push the plunger of each syringe further. She discovered that she could push the syringe containing substance S but not the syringe containing substance T.

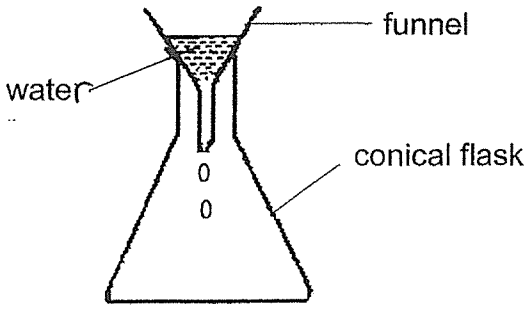


(b) Identify the **state** of substances, S and T. [2]

S : _____

T : _____

39. Naim placed a funnel on a conical flask and poured some water in quickly.



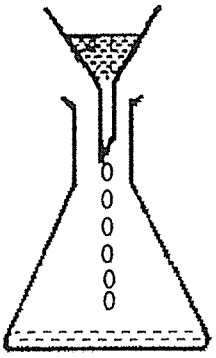
He noticed that the water did not flow into the flask quickly as expected. Instead, the water in the funnel dripped into the flask slowly.

(a) (i) Give a reason why the water dripped down slowly. [1]

_____

_____

Naim's mother told him to lift the funnel up so that the water in the funnel would flow quickly into the flask.



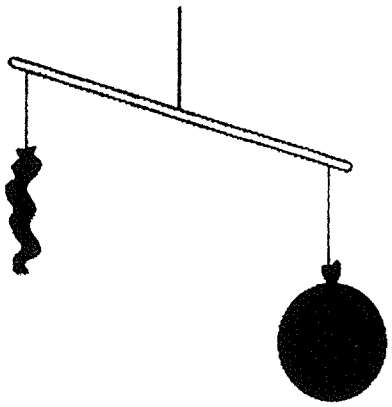
(ii) Explain why the water in the funnel flowed quickly into the flask when the funnel was lifted. [1]

_____

_____

2

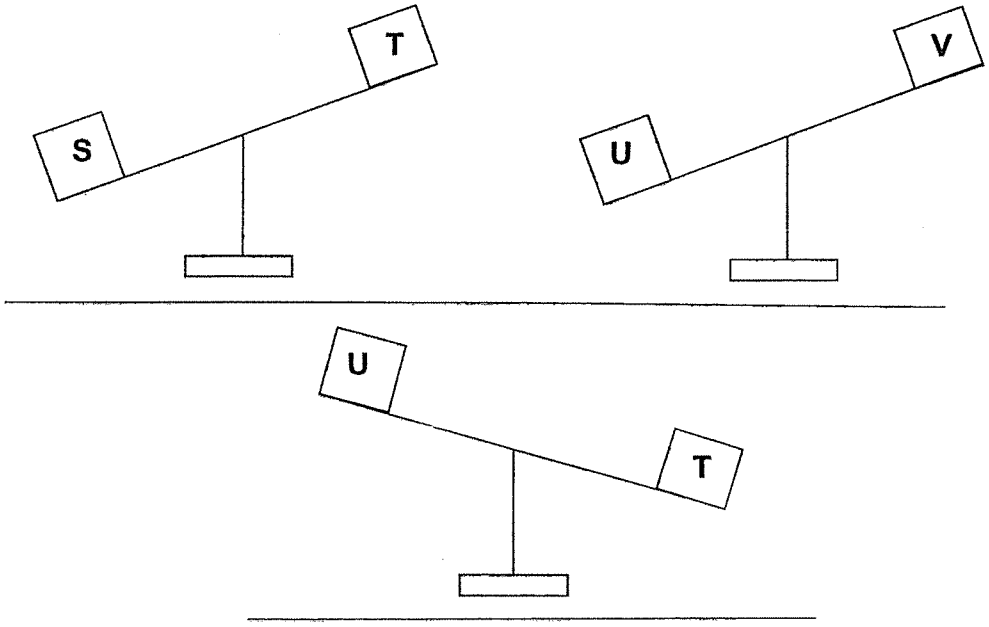
Arif balanced 2 inflated balloons on a balance. He then deflated one of the balloons and observed the results in the diagram below.



(b) What conclusion can Arif make about the property of air from the observation above? [1]

_____

Arif then used another lever balance to carry out an experiment with 4 different blocks, S, T, U and V. The diagrams below show his observations.



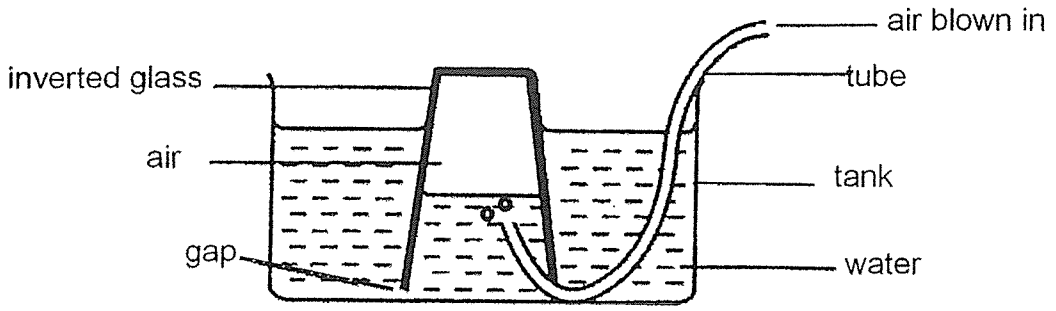
(c) Arrange the objects, S, T, U and V from the object with the greatest mass to the one with the smallest mass. [1]

Greatest mass ⟶ Smallest mass

☐ , ☐ , ☐ , ☐

2

40. Kimberly set up an experiment as shown in the diagram below.



Kimberly then blew air into the tube. She noticed that the water level in the inverted glass decreased.

(a) Explain why the water level in the glass decreased. [2]

_____

_____

(b) What will she observe about the water level in the tank? [1]

_____

(c) Explain what will happen to the total volume of water in the whole set-up. [1]

_____

_____

(d) Based on the experiment above, state a property of matter. [1]

_____

~ END OF BOOKLET B ~

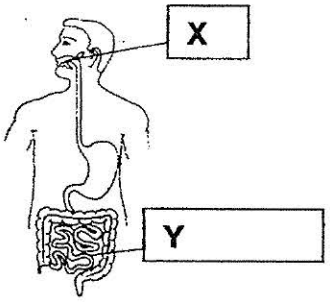
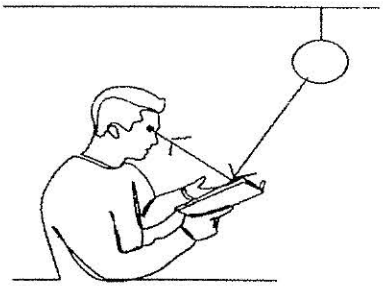
Nanyang Primary School
P4 SCIENCE Practice Paper 1
Suggested Answer Key

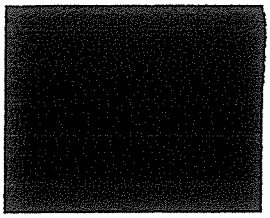
Section A

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

Section B

Qn No	Acceptable Answers
29. a	Mouse **A did not have enough air to survive** as the tank was covered with an air-tight lid but mouse **B had air**, food and water **to survive** as air could enter the wire gauze with holes.
b	Living things **need air** (food and water**) to survive.**
c	Living things **grow / reproduce.**
30. a	**Flowering plants / Non-flowering plants** or **Reproduce by seeds / Reproduce by spores**
b	**Weak stem and strong stem** or **Grow on land and grow in water**
c	<table><tr><th>Group 1</th><th>Group 2</th></tr><tr><td>**A** **D**</td><td>**B** **C** **E**</td></tr></table>
31. a	**Mammals**
bi	**Animal X does not have legs, but animal Y has legs.** or **Animal X has fins but animal Y does not have fins.**
bii	**Animal X has scales but animal Y has hair.**
c	The scales **protect** the soft body of **the animal.**

32. a	X: **leaf** Y: **root**
b	The plant died because **it does not have roots/part Y to absorb water and mineral salts for survival.**
c	Roots/ Part Y **anchor the plant firmly to the ground.**
33. a	
b	To **absorb water from the undigested food.**
c	It **breaks down food into smaller pieces, increasing the surface area of the food to mix with the digestive juices** so that digestion can take place faster.
34. a	**Electromagnet**
bi	**Increase the number of batteries to the set up.**
bii	**Increase the number of coils of the same wire around the nail.**
c	The **stroke method.**
35. a	
b	Part X **reflects more light** into our eyes.
36. a	Sheet A: **clear glass** Sheet B: **wood**
b	To **ensure** that **only one shadow is formed.**

37. a	
bi	**17cm** (answer ranges from 15.1cm to 18.9cm)
bii	**Move the torch closer to the cubes.**
c	**More light can pass through the cube made of tracing paper.** Hence, the shadow appears to be lighter.
38. a	Liquid **has no definite shape.**
b	S: **gas** T: **liquid**
39. ai	There is **air in the conical flask** that **occupies space.**
aii	When he lifted the funnel, **air in the flask will be able to escape** to allow the water in the funnel **to occupy the space previously occupied by the air quickly.**
b	**Air has mass.**
c	**S, T, U, V**
40. a.	When Kimberly blew air into the glass, the **air occupied space in the glass** and **water is being pushed out of the glass**, causing the water level in the glass to decrease.
b.	The water level in the tank **increased.**
c.	The total volume will **remain the same** because **no water was added or removed.**
d.	**Matter occupies space.**

END