



**RAFFLES GIRLS' PRIMARY SCHOOL**  
**SEMESTRAL ASSESSMENT (1)**  
**2011**

Section A 60%	Your score out of 100	
Section B 40%		
	Class	Level
Highest score		
Average score		
Parent's signature		

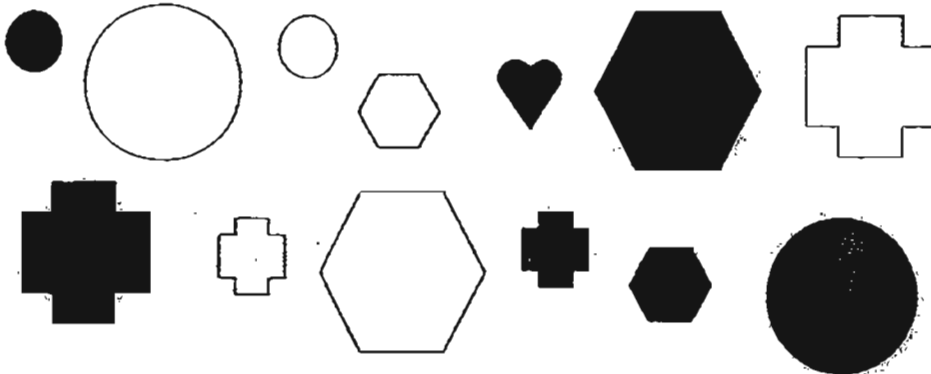
Name : \_\_\_\_\_ Index No: \_\_\_\_\_ Class: P 4 \_\_\_\_\_

Date: 6<sup>th</sup> May 2011 SCIENCE Attn: 1 h 30 min

**SECTION A (30 X 2 marks)**

For each question from 1 to 30, four options are given.  
 One of them is the correct answer. Make your choice (1, 2, 3 or 4).  
 Shade the correct oval on the Optical Answer Sheet.

1. Ali was given the following set of objects.



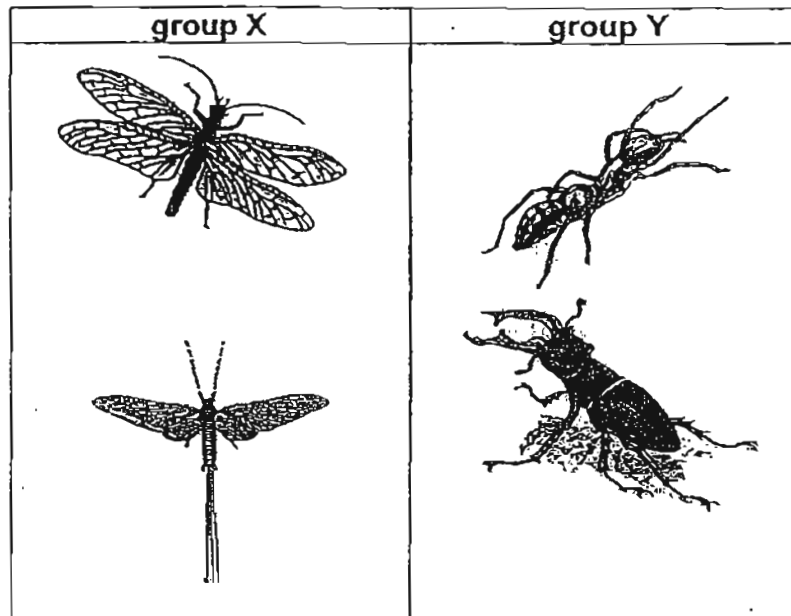
He arranged them according to two different groups, X and Y, as follows:

X							
Y							

How did Ali arrange the set of objects?

- |                         |                          |
|-------------------------|--------------------------|
| (1) according to size   | (2) according to mass    |
| (3) according to shapes | (4) according to colours |

2. The insects as shown below are grouped as follows:



How are these insects grouped?

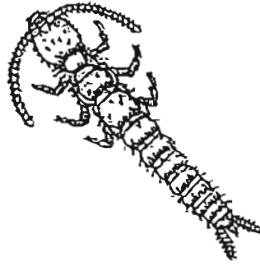
- A according to the number of legs
- B whether they have wings or no wings
- C whether they have feelers or no feelers

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

3. The key below distinguishes the different groups of animals: W, X, Y and Z.

1	(a) It has a pair of feelers longer than its legs.	Go to 2
	(b) It has a pair of feelers shorter than its legs.	Go to 3
2	(a) It has 3 body parts.	W
	(b) Its body is divided into many segments.	X
3	(a) It has two pairs of wings.	Y
	(b) It does not have a pair of wings.	Z

Ravi was given the animal as shown below.



Using the key above, which one of the animals is it?

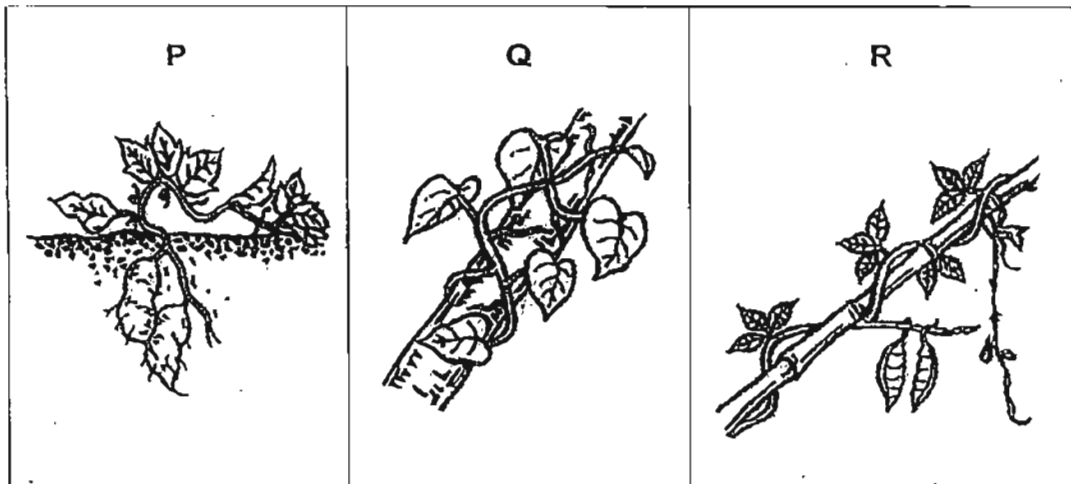
(1) W

(2) X

(3) Y

(4) Z

4. The diagrams below show how plants P, Q and R grow.



Which of these plants have weak stems?

- (1) P and Q only                      (2) P and R only  
 (3) Q and R only                      (4) P, Q and R

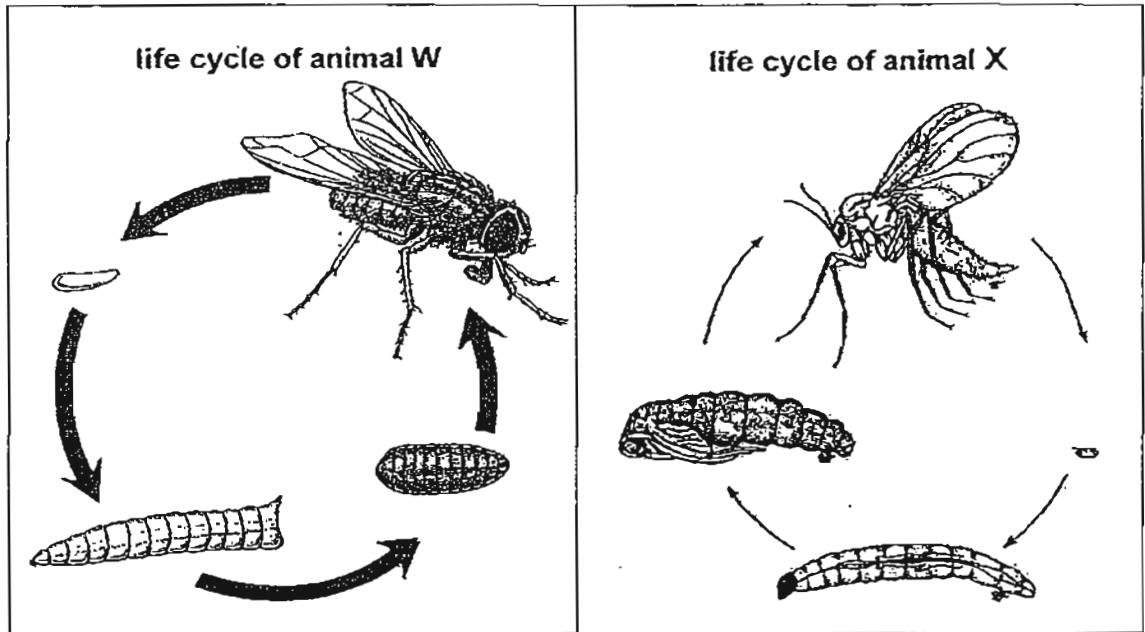
5. Some organisms are classified into three groups, A, B and C, as shown below.

group A	group B	group C
hydrilla	bracket fungus	moss
water lily	button mushroom	bird's nest fern

Which of the following group(s) consist(s) of plants?

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

6. The diagrams below show the stages in the life cycles of two different types of animals, W and X.

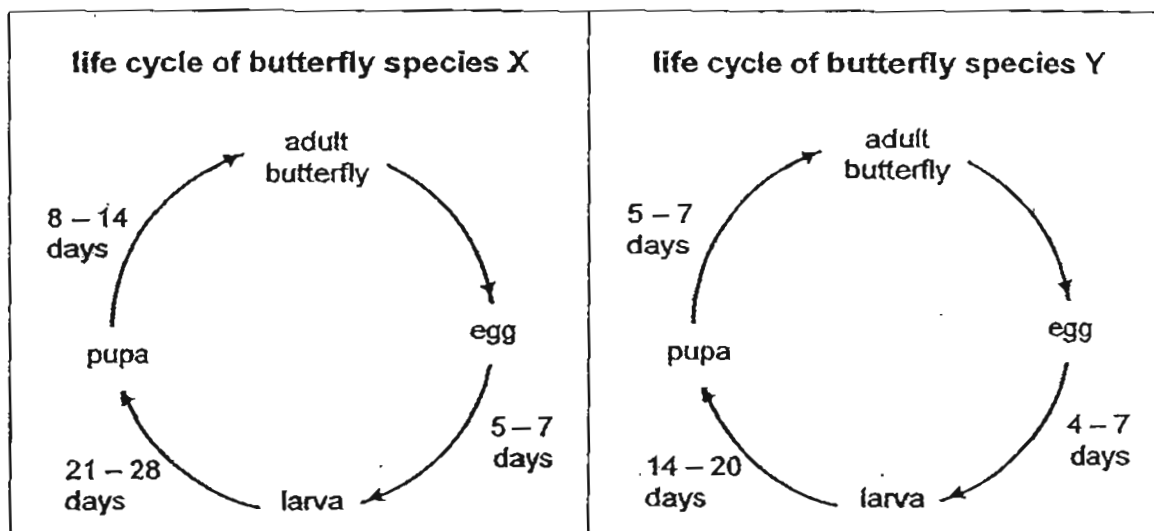


Based on the information above, which one of the following statements about W and X is **NOT** correct?

- (1) Each of their larva develops into a pupa.
- (2) Both of these animals develop from eggs.
- (3) Both animals have four stages in their life cycles.
- (4) The young of both animals look like their parents.

(4)

7. The diagrams below show the stages in the life cycles of two different species of butterflies, X and Y, living in the same area.

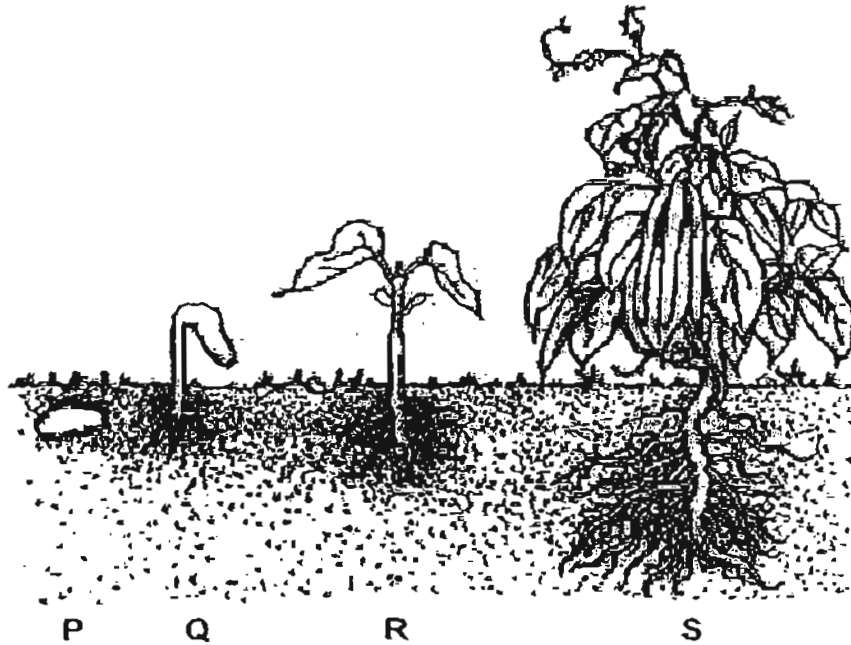


Daily temperature affects the rate at which butterflies grow from egg to adult. Butterflies are able to reproduce as soon as they emerge as adults. These butterflies do **NOT** reproduce in the colder months.

Based on the information above, which one of the following statements is most likely true?

- (1) Adult butterflies of species Y reproduce in colder months.
- (2) The adult butterfly of species X lives longer than the adult butterfly of species Y.
- (3) It takes a shorter time for the young of species Y than of species X to become an adult.
- (4) The larva of species Y takes a longer time than that of species X to develop into a pupa.

The diagram below shows the stages, P, Q, R and S, involved in the life cycle of a flowering plant.



Based on the information above, answer questions 8 and 9.

8. Where does the seedling get its food at stage P?
- |                     |                          |
|---------------------|--------------------------|
| (1) from the soil   | (2) from its roots       |
| (3) from its leaves | (4) from its seed leaves |
9. At which stage(s) of its life cycle does it trap sunlight?
- |                            |                            |
|----------------------------|----------------------------|
| (1) at stage P only        | (2) at stages P and R only |
| (3) at stages P and Q only | (4) at stages R and S only |

10. Pupils A, B, C and D made the following statements about the different systems of a human body:

A : Our skull protects our brain.

B : The circulatory system consists of the heart, blood and blood vessels.

C : The respiratory system consists of the gullet, lungs and stomach.

D : The skeletal system works together with the muscular system to enable body movements.

Which of these pupils made the correct statements?

(1) A and B only

(2) A and C only

(3) C and D only

(4) A, B and D only

11. Which of the following are carried by blood?

A water

B oxygen

C digested food

D carbon dioxide

(1) A and B only

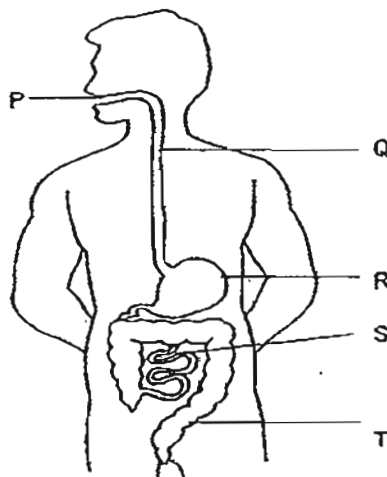
(2) C and D only

(3) A, B and C only

(4) A, B, C and D



The diagram below shows parts of the digestive system of a man.



Based on the diagram above, answer **questions 12 and 13**.

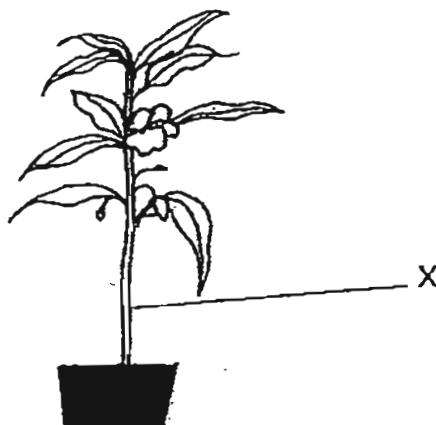
12. In which one of these organs, P, R, S or T, is food completely digested?

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

13. Which one of the following sets best describes what take place at Q, R and T?

	Q	R	T
(1)	allows food to flow through	digestive juices are present	digested food is absorbed
(2)	digestive juices are present	water is being removed	digested food is absorbed
(3)	digested food is absorbed	digestive juices are present	water is being removed
(4)	allows food to flow through	digestive juices are present	water is being removed

14. The flowering plant below shows one of its parts labelled X.



Which of the following is/ are function(s) of X?

- A carries food to the leaves
- B carries water and mineral salts
- C holds the plant firmly to the ground
- D holds the plant upright to receive sunlight

(1) A and C only

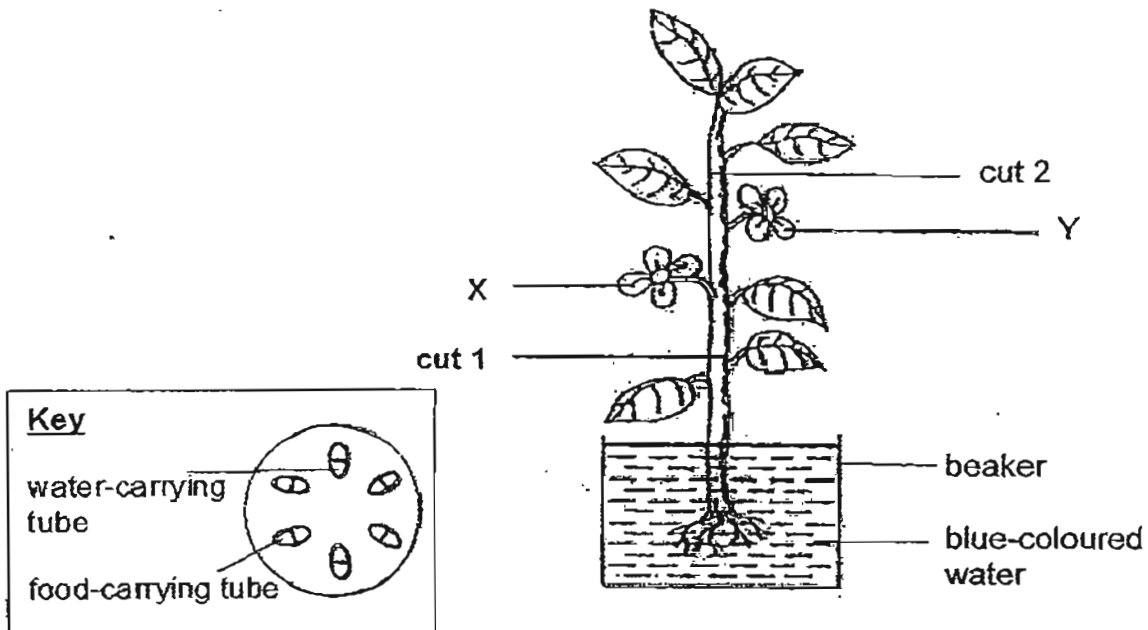
(2) A and D only

(3) B and D only

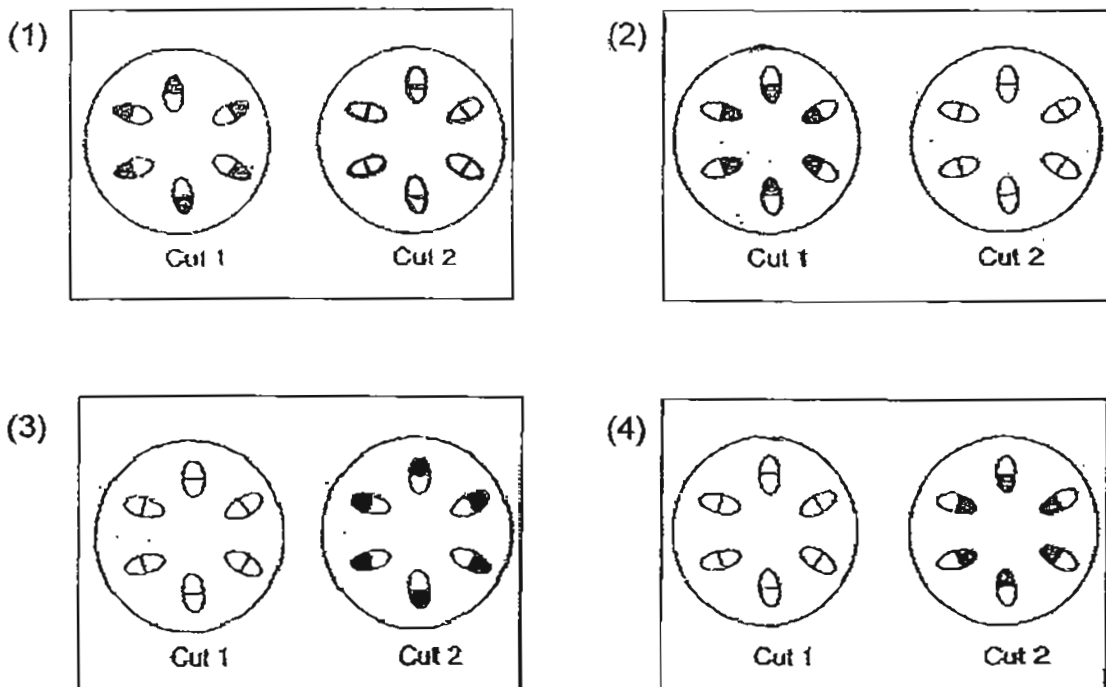
(4) A, B and D only

15. Li Ying placed a plant with two white flowers, X and Y, into a container containing blue-coloured water. After a short while, flower X had turned blue while flower Y remained white.

Li Ying made two cuts as shown in the diagram below.



Which one of the following pairs shows the correct cross-sections of the stems Li Ying made at cuts 1 and 2 respectively?



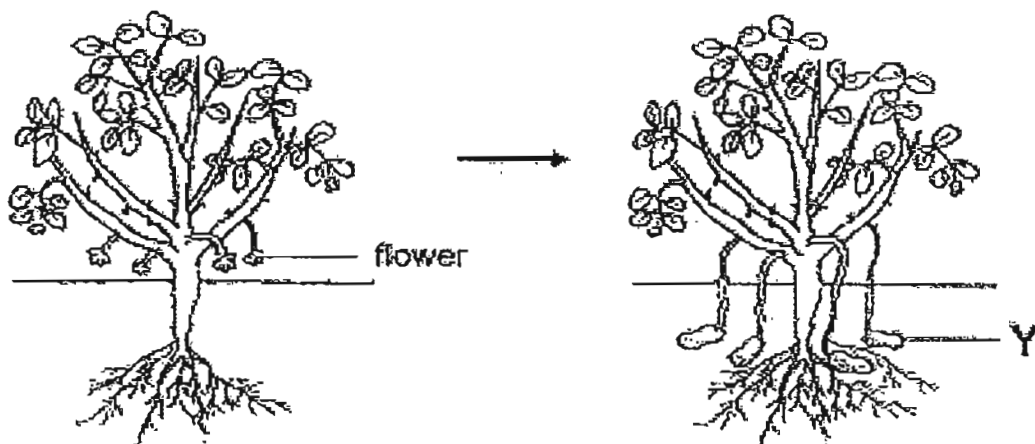
16. Rosalind wanted to find out what type of soil was suitable for growing plants of type P. She planted plants of similar size in each of these pots, X, Y and Z.

pot	X	Y	Z
material of pot	plastic	plastic	plastic
type of soil	sand	clay	garden soil
amount of soil used (cm <sup>3</sup> )	750	800	500
amount of water used everyday (cm <sup>3</sup> )	150	150	150

Why was Rosalind's experiment **NOT** a fair one?

- (1) The pots were made of the same material.
- (2) The amount of soil in each pot was different.
- (3) The type of soil used in each pot was different.
- (4) The three pots were given the same amount of water.

17. The diagrams below show the development of structure Y in a plant.



Which of the following statement(s) about Y is/ are correct?

- A It stores food.
- B It takes in water.
- C It can reproduce.

(1) A only

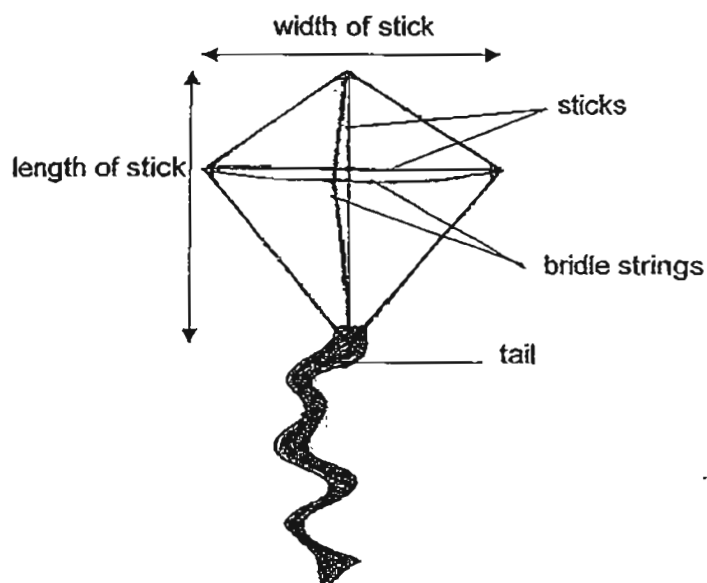
(2) A and C only

(3) B and C only

(4) A, B and C

18. Tim made different kites of the same design and materials.

One of his kites is shown in the diagram below.



The table below shows the dimensions of the different kites which Tim made:

kite	length of stick (cm)	width of stick (cm)	length of bridle string (cm)	length of tail (cm)
1	64	35	76	80
2	64	35	86	160
3	42	20	56	80
4	64	35	76	160
5	42	20	56	160

Tim wanted to find out if varying the length of the bridle string could affect how high the kite could fly.

Which pair of kites should Tim use?

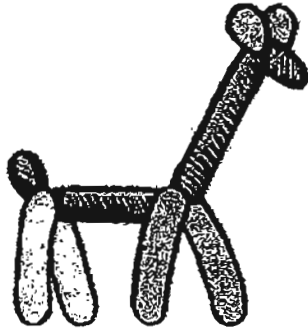
(1) kites 1 and 2

(2) kites 2 and 3

(3) kites 2 and 4

(4) kites 3 and 5

19. Bozo blew air into his long balloon. He then twisted and turned the inflated balloon to form a shape of an animal as shown in the diagram below.

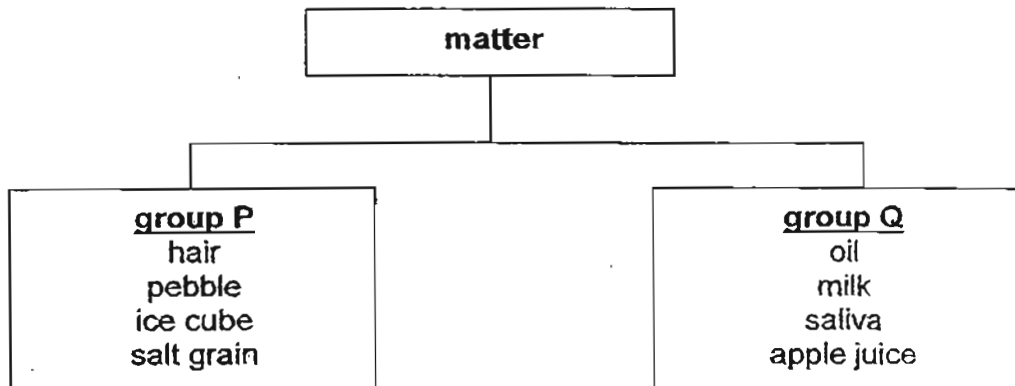


Which of the following property / properties of air allowed Bozo to create the shape of an animal out of his inflated balloon?

- A Air has mass.
- B Air occupies space.
- C Air has no definite shape.

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

20. The matter below are classified according to their common properties.



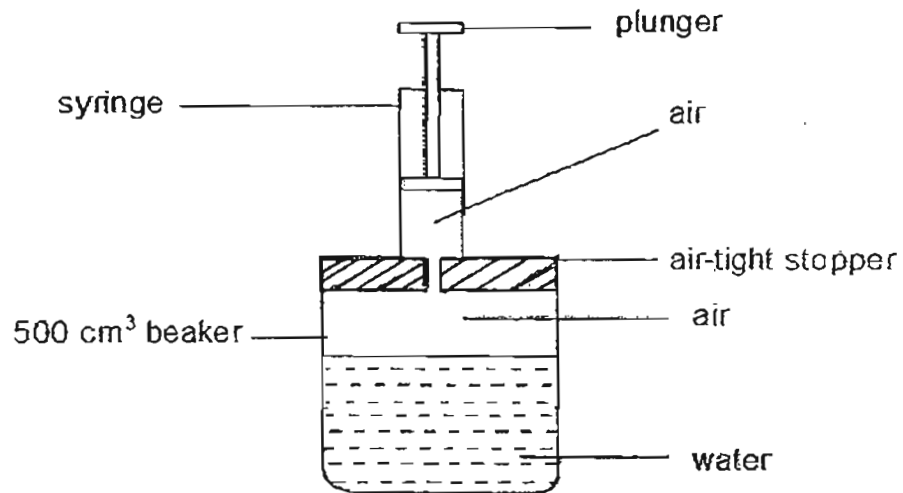
Based on the classification above, which of the following property / properties is / are common for both groups P and Q?

- A have mass
- B occupy space
- C can be compressed
- D have a definite shape

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



21. Carl filled a  $500\text{ cm}^3$  beaker with  $200\text{ cm}^3$  of water. A  $100\text{ cm}^3$  syringe filled with air was inserted into the air-tight stopper as shown below.

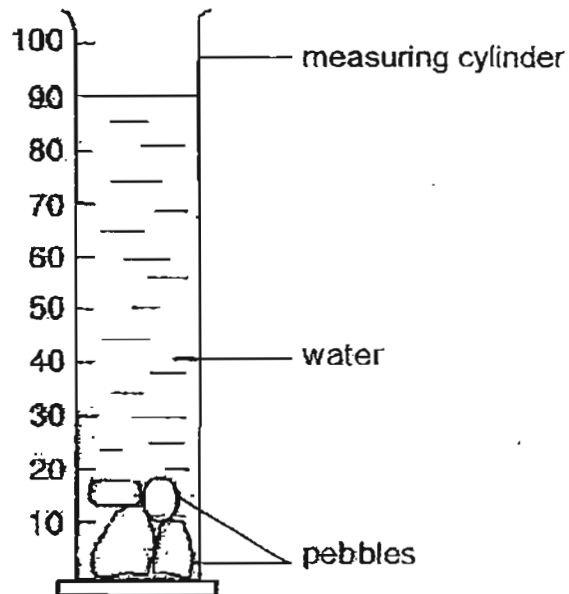


Carl pushed in the plunger of the syringe, allowing all the  $100\text{ cm}^3$  of air into the beaker.

What would be the final volume of air and water in the beaker?

	volume of air / $\text{cm}^3$	volume of water / $\text{cm}^3$
(1)	200	300
(2)	250	250
(3)	300	200
(4)	300	300

22. Raj filled a measuring cylinder with 20 cm<sup>3</sup> of water. He then dropped four pebbles, P, Q, R and S, one at a time into the cylinder. He measured and recorded the water level after he had dropped each pebble of a different size.

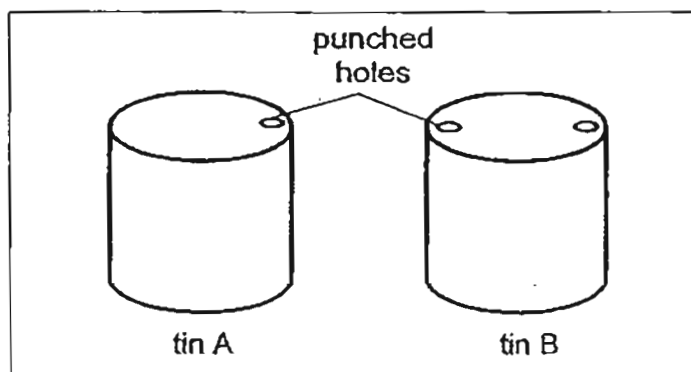


content(s) in measuring cylinder	water level (cm <sup>3</sup> )
P + water	35
P + Q + water	55
P + Q + R + water	60
P + Q + R + S + water	90

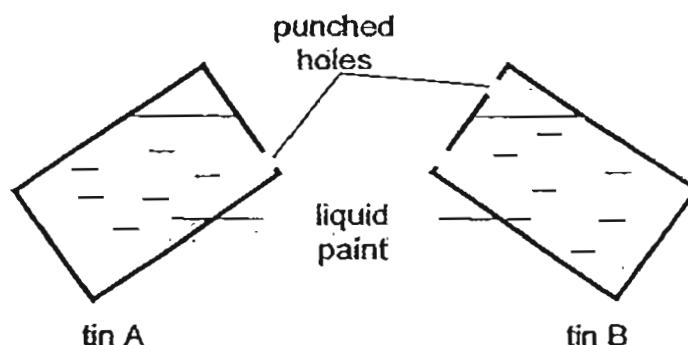
Which one of the following shows the correct order of the size of the pebbles?

	increasing size →
(1)	P, S, R, Q
(2)	Q, R, S, P
(3)	R, P, Q, S
(4)	S, P, Q, R

Aini wanted to pour out liquid paint from two identical tins, A and B. She punched one hole through tin A and two holes through tin B as shown in the diagram below.



She then tilted both tins A and B at the same angle to pour out the liquid paint as shown below.



Based on the information above, answer questions 23 and 24.

23. Which of the following would likely happen?
- (1) Only liquid paint from tin A would flow out.
  - (2) No liquid paint would flow out from both tins A and B.
  - (3) Liquid paint from tin A would flow out as quickly as liquid paint from tin B.
  - (4) Liquid paint from tin B would flow out more quickly than liquid paint from tin A.

to be continued on the next page

24. Which of the following property/ properties can be concluded from Aini's experiment?


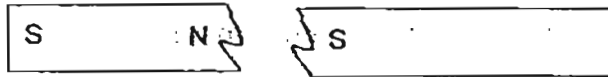
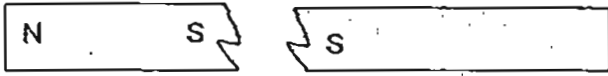
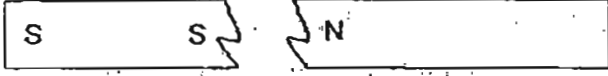
- A Air occupies space.
- B Air cannot be compressed.
- C Liquid paint occupies space.
- D Liquid paint cannot be compressed.

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

25. A bar magnet is broken into two pieces as shown below.

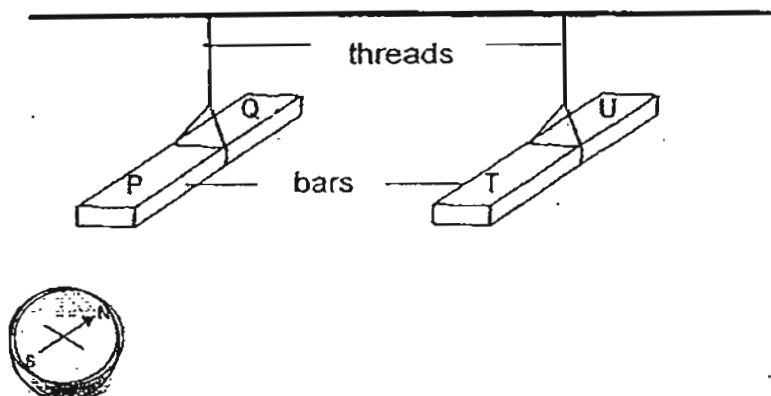


Which one of the following diagrams shows the correct labelling of the ends of the broken pieces of bar magnet?

- (1) 
- (2) 
- (3) 
- (4) 

26. A metal bar PQ, hung by a thread, was allowed to spin freely. Each time bar PQ came to rest, one end of the bar, Q, would point to the North as shown in the diagram below.

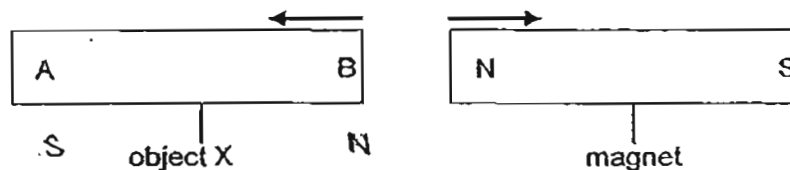
Another metal bar TU came to rest in a different direction each time after it was spun.



Which one of the following is definitely true about the ends of these bars?

- (1) P would attract T and U.
- (2) Q would attract T but repel U.
- (3) Both P and Q would attract T but repel U.
- (4) No attraction and repulsion would take place between P and T.

27. When object X was placed near a bar magnet, the two objects were pushed away from each other as shown below.

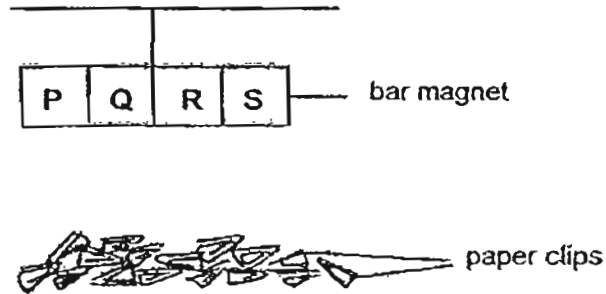


Which of the following statement(s) is/are true of object X?

- A Object X is a magnet.
  - B Object X is made from a non-magnetic material.
  - C S-pole of the magnet can be attracted to part A of object X.
  - D Part B of object X can be attracted to the S-pole of the magnet.
- (1) A only                                      (2) A and D only
- (3) B and C only                              (4) A, C and D only

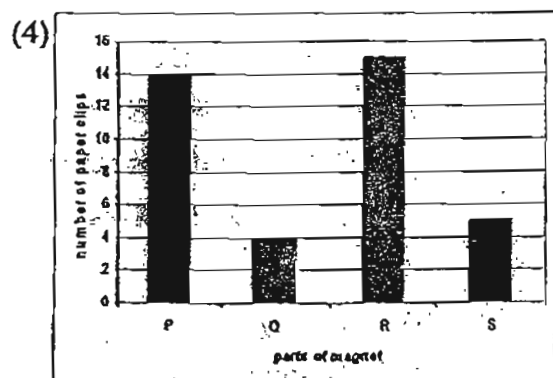
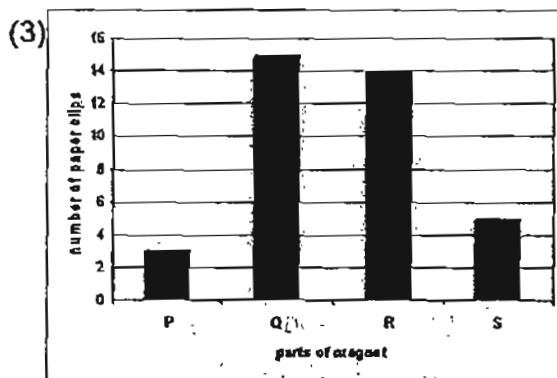
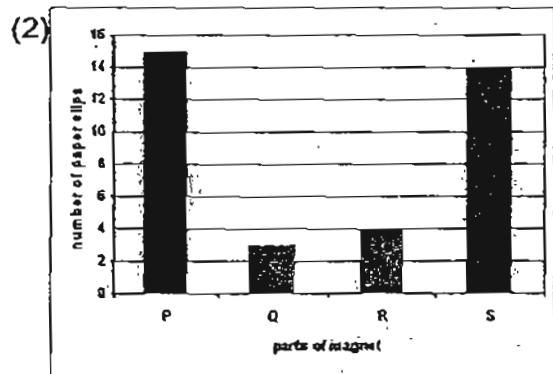
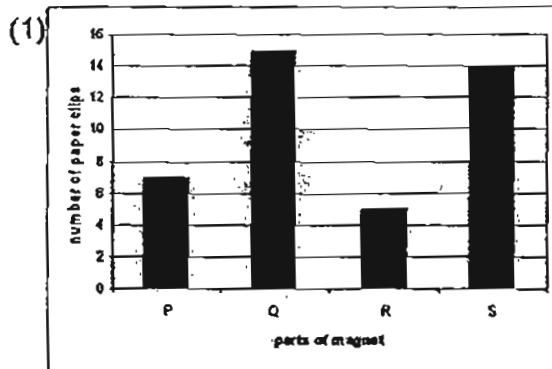
28. Julie marked P, Q, R and S on a strong bar magnet.

She hung the magnet above some paper clips as shown in the diagram below.

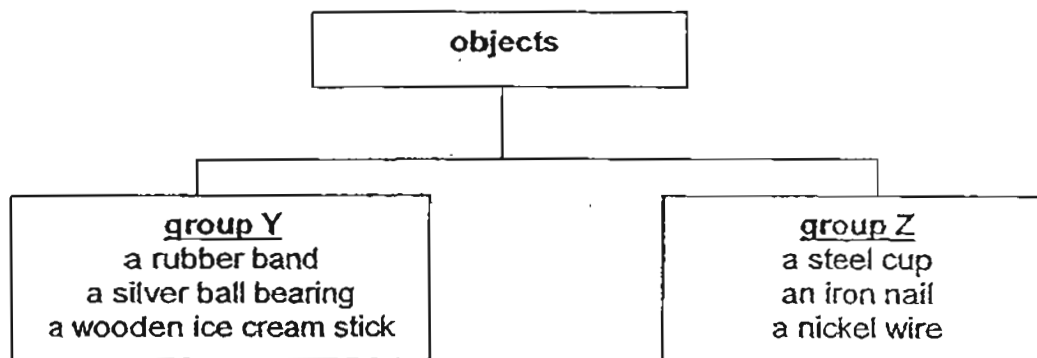


As Julie moved the bar magnet closer to the paper clips, she observed that a different number of paper clips were attracted to each part of the magnet.

Which one of the following graphs could possibly be drawn by Julie to show the results of her experiment?



29. The objects below are classified according to their common properties.



Based on the classification above, which of the following object(s) belong(s) to group Y ONLY?

- A a crayon
- B a gold bracelet
- C a styrofoam ball
- D a button magnet

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

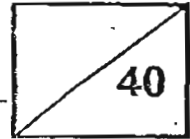
30. Which of the following object(s) do/ does NOT use magnets to store information?

- A doorstop
- B cashcard
- C compass needle
- D compact disc (CD)

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



Name : \_\_\_\_\_ Index No: \_\_\_\_\_ Class: P4

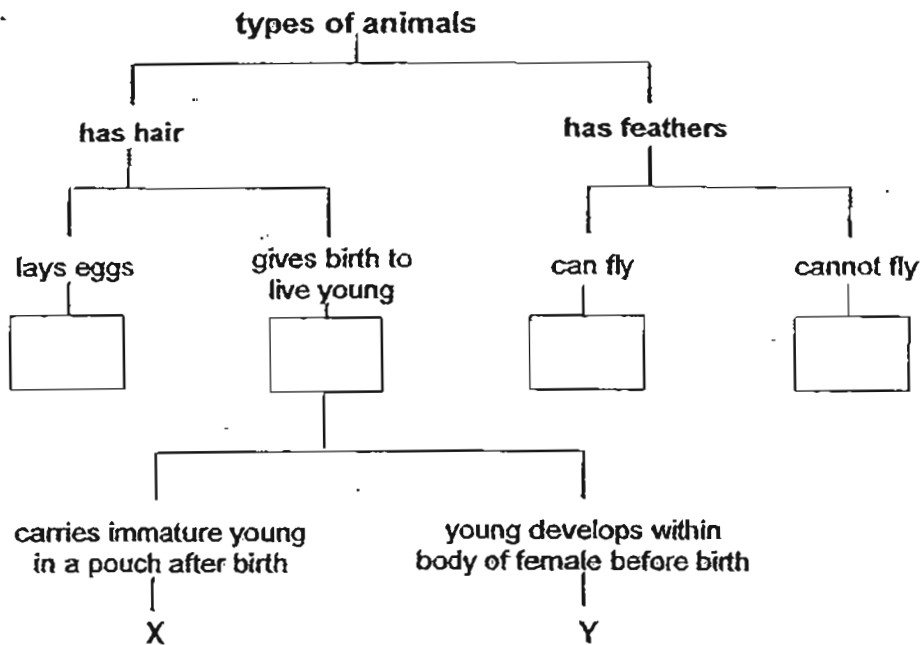


**SECTION B (40 marks)**

For questions 31 to 44, write your answers clearly in the spaces provided.

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

31. The diagram below shows similarities and differences between some animals.



Based on the information above, answer the following questions:

(a) Write letter Z in the appropriate box to show the characteristic(s) of an eagle.

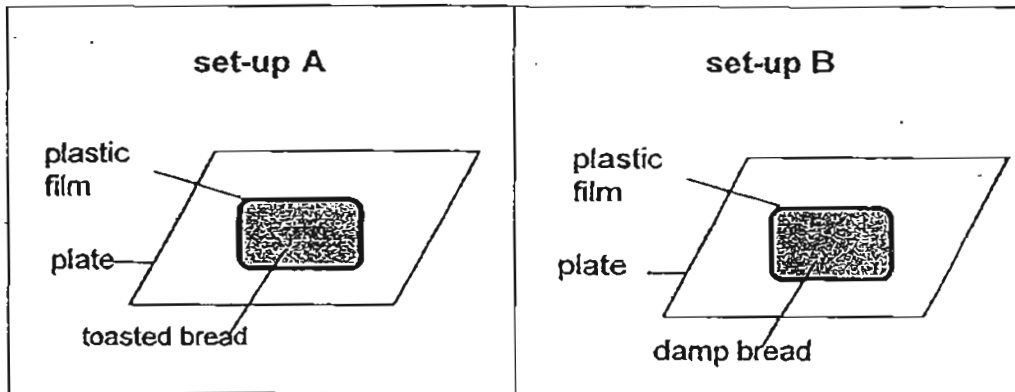
State its **TWO** characteristics.

[3]

Both animals X and Y give birth to their young.

(b) Name one **OTHER** common characteristic between both animals. [1]

32. Alexis took two pieces of bread from a loaf. She toasted one of them. Next, she wrapped each of them with a plastic film as shown in the two-set-ups, A and B, below.



Alexis placed these set-ups in the open air in the same place. After a week, she observed that mould was growing on the piece of bread of one of these set-ups.

Based on the information above, answer the following questions:

- (a) Give a reason why Alexis toasted the bread in set-up A. [1]

---



---

- (b) Name the set-up, A or B, in which mould was found to be growing.

State the condition which encouraged the growth of mould in the set-up mentioned. [1]

set-up	condition which encouraged the growth of mould

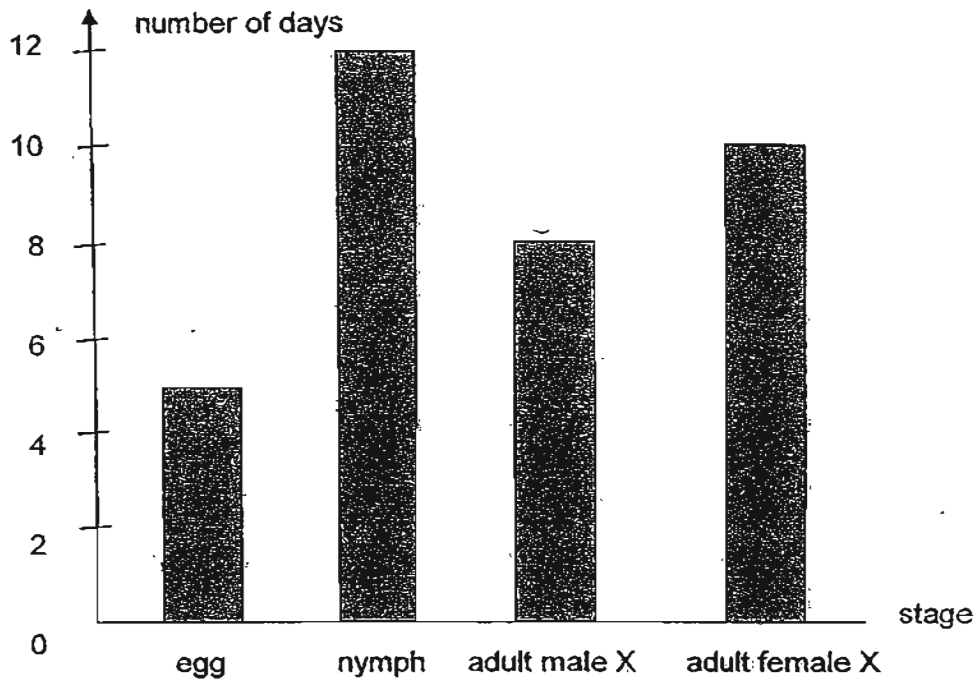
- (c) State one **OTHER** characteristic which shows that mould is a living thing. [1]

---



---

33. The graph below shows the number of days at each stage in the life cycle of an organism X.



Based on the information above, answer the following questions:

- (a) How many days does organism X take to become an adult after the egg is hatched? [1]

\_\_\_\_\_ days

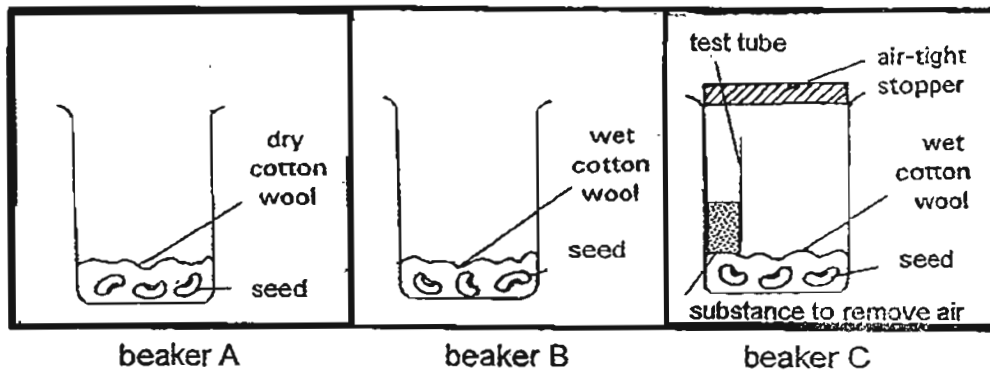
- (b) **DRAW** and **LABEL** the life cycle of organism X in the given box below. Do **NOT** indicate the number of days at each stage. [1]

- (c) Name an organism which has the same stages as the life cycle of organism X.

[1]

\_\_\_\_\_

34. An equal number of seeds of the same type were placed in each of these identical beakers, A, B and C, as shown below.



All the beakers were left in a cupboard for a few days.

Based on the information above, answer the following questions:

- (a) In which of these beakers, A, B and/ or C, would the seeds **NOT** able to grow into seedlings?

Give a reason for your answer.

[2]

---

---

---

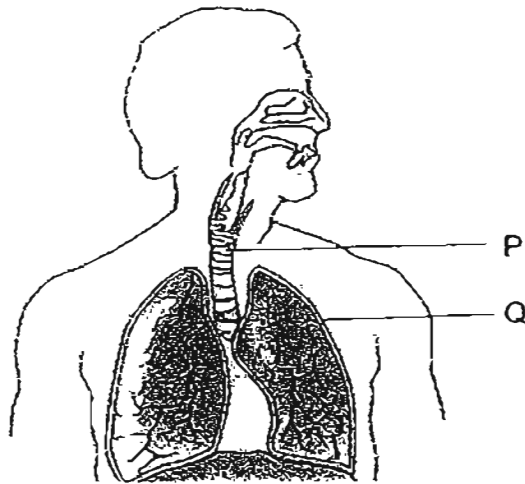
- (b) State one **OTHER** variable which must be kept constant to ensure a fair test for this experiment.

[1]

---

---

35. The diagram below shows one of the body systems in a human.



(a) Which one of these parts, P or Q, allows gaseous exchange to take place?

Write letter P or Q ONLY.

State the two main gases involved. [2]

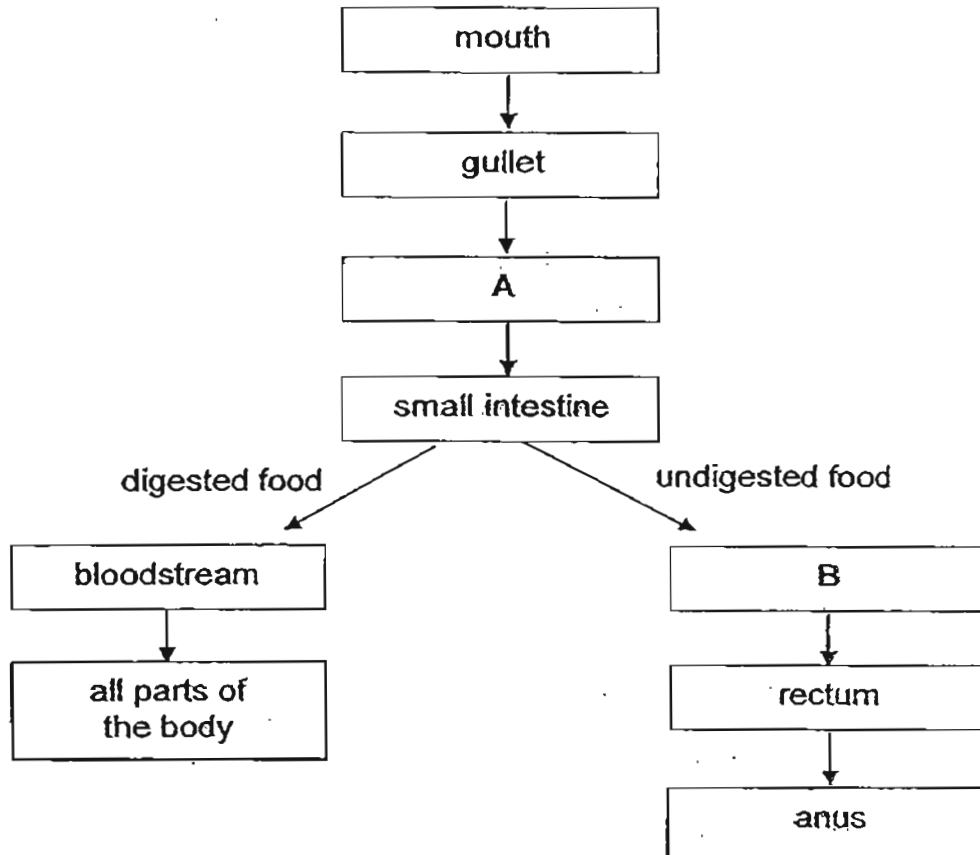
---

---

(b) Name the part of the skeletal system which protects Q. [1]

---

36. The diagram below shows the direction in which food travels from one part to another in the body of a man.



Based on the diagram above, answer the following questions:

(a) Name each of the following parts and state a function for each part: [2]

part		function
A		
B		

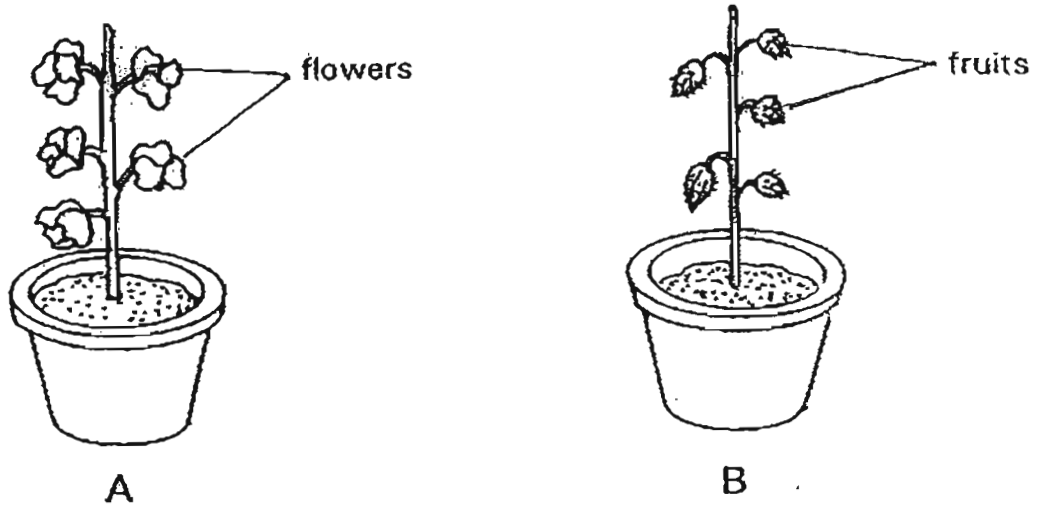
(b) Name the part of the system where food is completely digested. [1]

\_\_\_\_\_

(c) Name two body systems which work together in this diagram. [2]

\_\_\_\_\_

37. Fatimah cut off the leaves from 2 potted plants, A and B, of the same type and size. **ONLY** flowers of plant A and the fruits of plant B remained on the plants as shown in the diagrams below.



Fatimah left both potted plants in the garden and watered them daily.

- (a) Would any of these plants be able to survive after a few days?

Explain your answer.

[1]

---

---

Some blue-dyed water was later used to water plant A.

- (b) State what would happen to the flowers on plant A.

Give a reason for your answer.

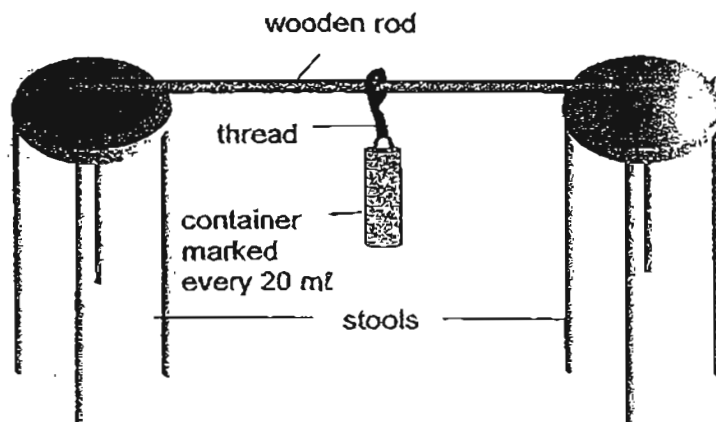
[1]

---

---

---

38. Jin Lian used the following set-up to compare the strength of different types of threads, each made of a different material, W, X, Y and Z.



Using the same set-up with a different thread at a time, Jin Lian added water to the container slowly until the thread broke.

She recorded the greatest amount of water that was added to the container just before the thread broke in the table as shown below:

material of thread	amount of water in the container (mℓ)
W	50
X	30
Y	70
Z	20

Based on the information above, answer the following questions:

- (a) Which one of these materials was the strongest?  
Give a reason for your answer.

[1]

---



---

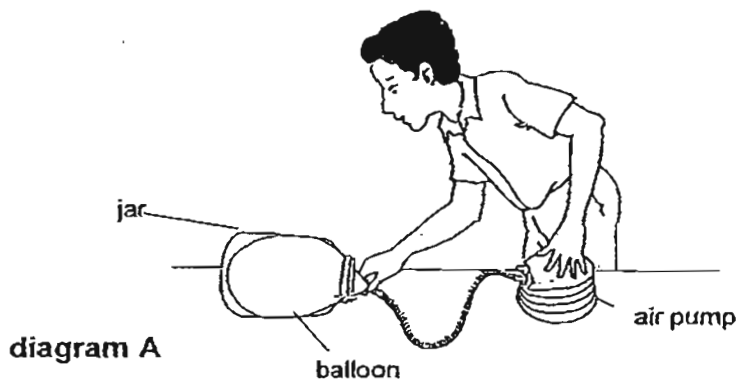
- (b) Name two variables which Jin Lian should keep the same in order to conduct a fair test for her experiment.

[2]

VARIABLE 1	
VARIABLE 2	



39. Mr Tan placed a deflated balloon into a jar and pumped air into the balloon as shown in **diagram A** below.



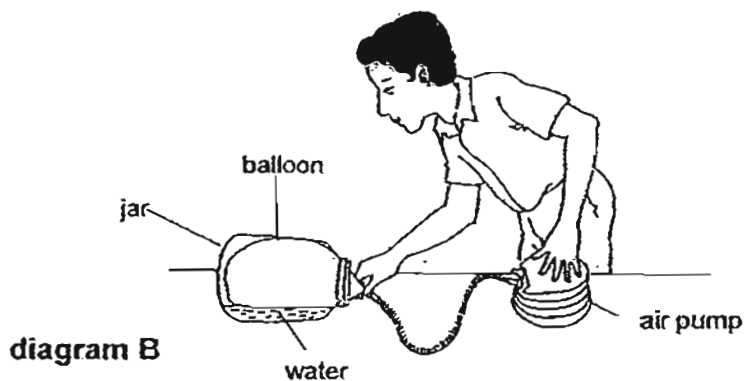
Mr Tan wanted the balloon to fill the jar completely. He continued to pump air into the balloon but he could **NOT** get the balloon to fill the entire jar.

- (a) Give a reason why the balloon could **NOT** fill the jar completely. [1]

---

---

Mr Tan deflated the balloon and removed it from the jar. Then he filled the jar with some water. Using the same deflated balloon, Mr Tan placed it in the jar again and air was pumped into the balloon as shown in **diagram B**.



Mr Tan observed that the size of the balloon was not as big as the one that he had in **diagram A** above.

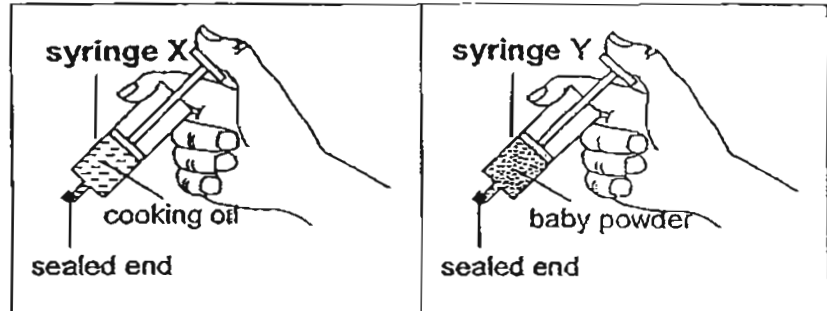
- (b) Explain why the balloon was not as big as the one in **diagram A**. [2]

---

---

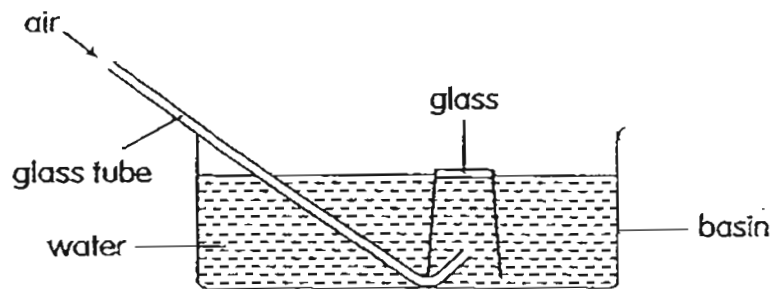
---

40. Kate filled equal volumes of cooking oil and baby powder separately in two identical syringes, X and Y, with one of their ends sealed, as shown in the diagrams below. [2]



(a)	Name the state of matter found in each syringe.	
(b)	<p>Could the plunger be lowered in the syringe?</p> <p>Give a reason for your answer.</p>	

41. June set up an experiment using the apparatus as shown below.



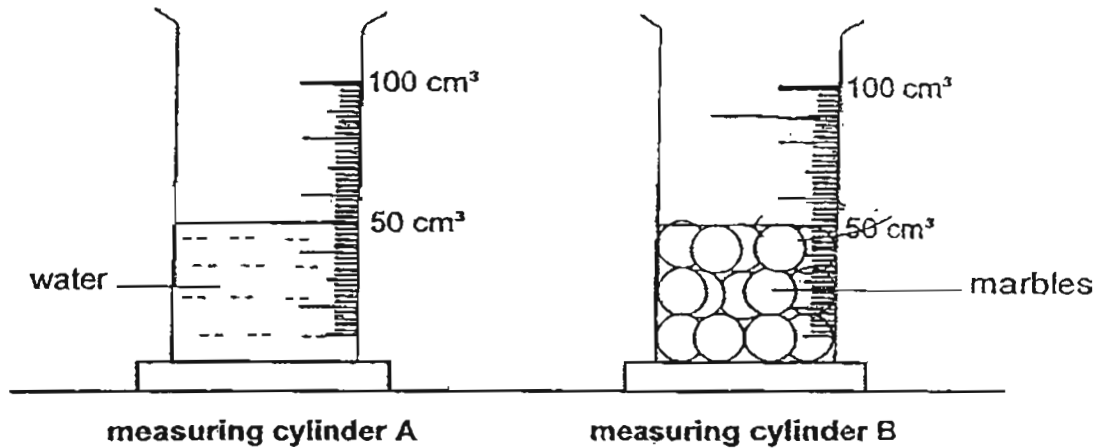
She blew into the glass tube.

List two observations which June would make as she blew into the glass tube.

[2]

<b>OBSERVATION 1</b>	
<b>OBSERVATION 2</b>	

42. Raj filled measuring cylinder A with  $50 \text{ cm}^3$  of water. He filled another identical measuring cylinder B with marbles up to its  $50 \text{ cm}^3$  mark as shown below.



Next, Raj poured  $50 \text{ cm}^3$  of water from measuring cylinder A into measuring cylinder B.

**DRAW** the water level in measuring cylinder B. to show the total volume occupied by both the marbles and water.

Give a reason for your answer.

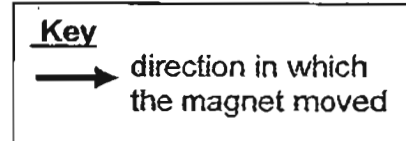
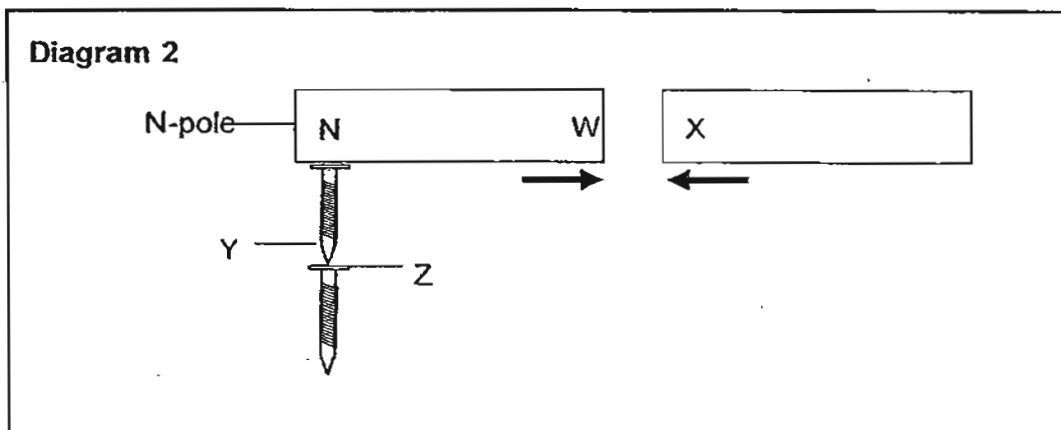
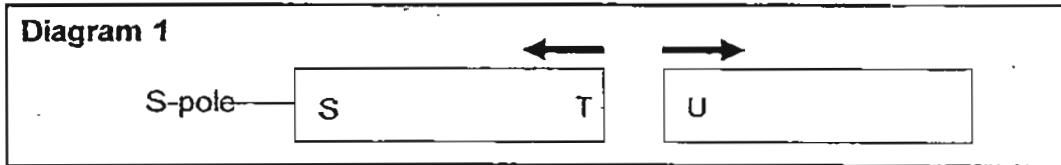
[1]

---

---

43. The diagrams below show four similar strong bar magnets of the same size moving in different directions when two different bar magnets were placed close to each other.

Two iron nails, with ends Y and Z, were temporarily magnetised.



Write S-pole or N-pole for each of the following ends of the bar magnets/ iron nails: [3]

T: \_\_\_\_\_

U: \_\_\_\_\_

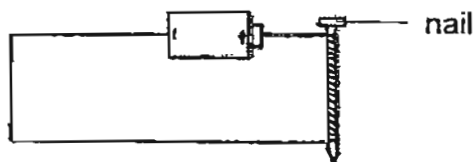
W: \_\_\_\_\_

X: \_\_\_\_\_

Y: \_\_\_\_\_

Z: \_\_\_\_\_

44. The diagram below shows an electromagnet.



(a) Which of the following electromagnets is/ are stronger than the electromagnet shown above?

Put a tick (✓) in the correct box(es) and give a reason for each of your answers.

(Do **NOT** state the reason for the box(es) **NOT** ticked.)

[2]

set-up	Put your tick (✓) here	reason

(b) Suggest a suitable material of the nail.

[1]

- END OF PAPER -

Setters: Ms Aishah, Ms Chong Jieqi, Mrs Sharon Seet



# ANSWER SHEET

**EXAM PAPER 2011**

**SCHOOL : RAFFLES GIRLS'  
SUBJECT : PRIMARY 4 SCIENCE**

**TERM : SA1**



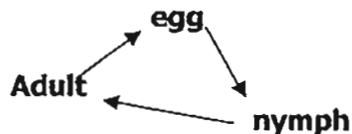
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
1	2	1	4	3	4	3	4	4	4	4	3	4	3	2	2	2

Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
3	3	2	3	3	4	2	2	1	2	2	4	2

- 31)a) Birds have feathers. Birds can fly.  
b) mammals have hair.

- 32)a) She toasted the bread in set-up A to confirm weather mould needs water to grow.  
b) B. The moisture encouraged the growth of mould.  
c) Mould can reproduce.

- 33)a) 12 days.  
b)



- c) The cockroach.

- 34)a) A and C. A does not have water to grow. C does not have air to grow.  
b) Amount of cotton wool used in each beaker.

- 35)a) Q. Oxygen and carbon dioxide.  
b) Ribcage.

- 36)a) A: Stomach / The food is mixed with the digestive juices to become mushy.  
B: Large intestine / It absorbs the water from the undigested food.  
b) Small intestine.  
c) Circulatory system and Digestive system.

37)a)No. The plant has no leaves to trap sunlight for photosynthesis, so it would eventually die.

b)The flowers on Plant A would turn blue. The stem transport the blue water to the flowers, that is why it turned blue.

38)a)Y. It can hold the most amount of water before the string breaker.

b)1)The length of the string.

2)The way the thread is tied.

39)a)The air in the jar took up space, so the balloon could not fill the entire jar.

b)The water took up extra space in the jar so the air in the balloon would compress and squeeze through / lesser amount of air could fill the balloon to take up space in the jar.

40)a)liquid

No.

Liquid cannot be compressed

solid

No.

solid cannot be compressed

41)1)Bubbles will be seen.

2)The water level in the glass will drop.

42)There is air space in between the marbles, so the water didn't reach up to 100cm<sup>3</sup>.

43)T: N-pole

W: S-pole

Y: N-pole

U: N-pole

X: N-pole

Z: N-pole

44)a)

	✓	The electromagnet has more batteries.
	✓	The electromagnet has more batteries

b)Iron.