RAFFLES GIRLS' PRIMARY SCHOOL

SEMESTRAL ASSESSMENT (1)

Section A	60
Section B	40
Your score out of **100** marks	
Parent's signature	

Name : _____ **Index No:** ____ **Class: P4**___

7 May 2015 **SCIENCE** **Att: 1 h 45 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).

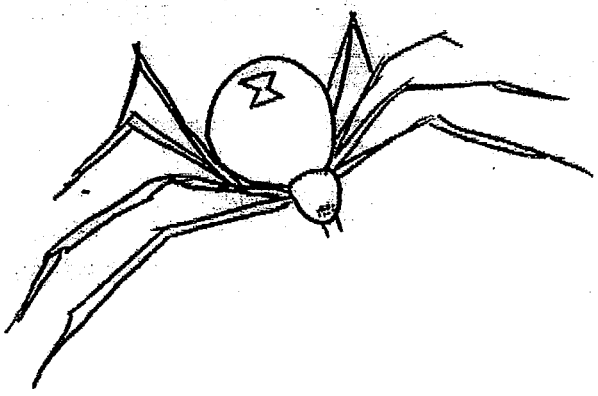
Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet (OAS) provided.

1. What is the common characteristic(s) of all animals?

A They make their own food.
B They give birth to young alive.
C They need air, food and water to survive.
D The respond to changes in their surroundings.

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

2. John observed the animal below and said that it is not an insect.



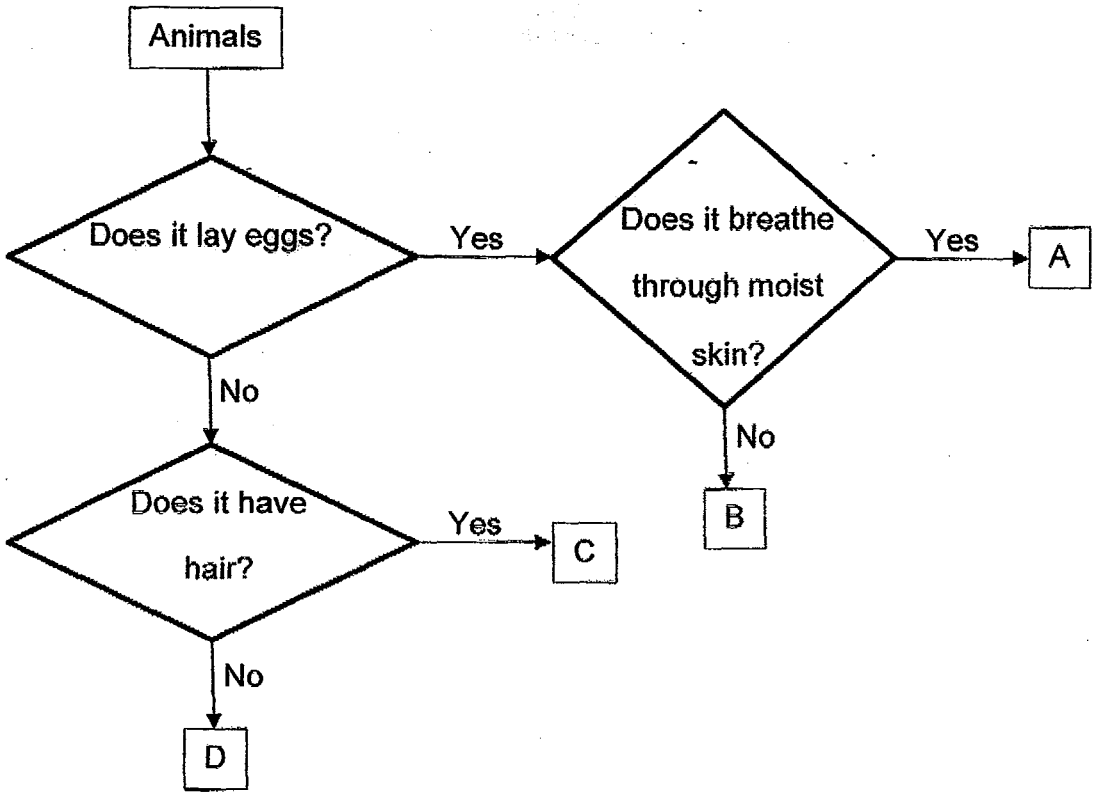
Which of the following statement(s) show(s) why it is not an insect?

The animal _____.

A has 2 feelers.
B has 2 body parts
C more that 6 legs.
D is too big to be an insect.

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

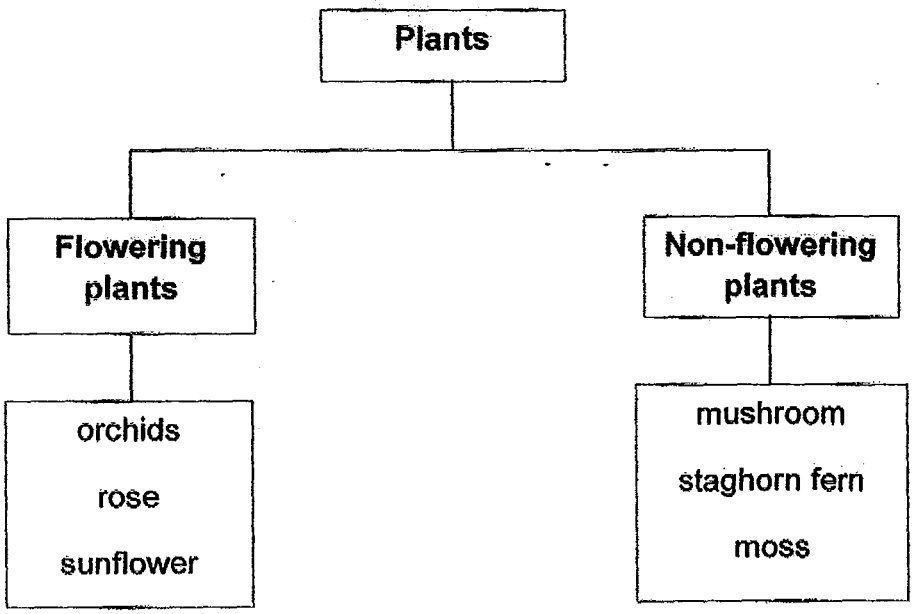
3. The flowchart below shows how some animals are classified.



Based on the flow chart above, which one of the options shows the correct identification of animals A, B, C and D?

	A	B	C	D
(1)	dog	turtle	guppy	frog
(2)	frog	turtle	dog	guppy
(3)	guppy	dog	frog	turtle
(4)	turtle	guppy	dog	frog

4. Jamie found some organisms in the garden and classified them in the table shown below.



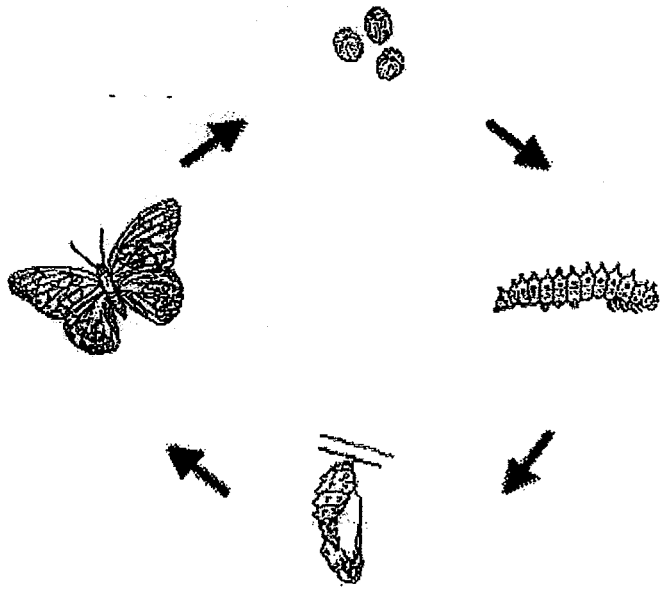
Which one of the above organisms is classified wrongly?

(1) rose
(2) moss
(3) sunflower
(4) mushroom

5. Which one of the following statements is true about fungi?

(1) Fungi produce flowers.
(2) Fungi reproduce by seeds.
(3) Fungi do not respond to changes.
(4) Fungi cannot make their own food.

6. The diagram below shows the life cycle of a butterfly.



The life cycle of a butterfly shows the _____.

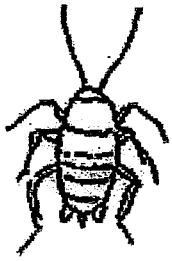
(1) food the butterfly eats.

(2) different body parts of the butterfly.

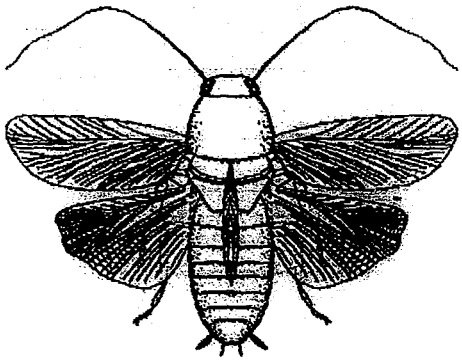
(3) various stages of development of the butterfly.

(4) different types of animals in that animal group.

7. The diagram below shows the nymph and adult of a cockroach.



Nymph



Adult

Study the diagrams above and compare the nymph and adult of the cockroach.

Which of the following statement(s) below is/are correct about the nymph and the adult?

A Both have feelers.

B The nymph resembles the adult.

C The nymph does not have wings but the adult has fully developed wings.

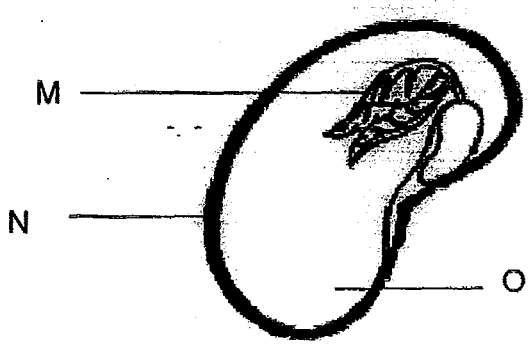
(1) C only

(2) A and B only

(3) B and C only

(4) A, B and C

8. The picture below shows the cross section of a seed with its parts labelled M, N and O.



Which part(s) protect(s) the seed?

(1) N only

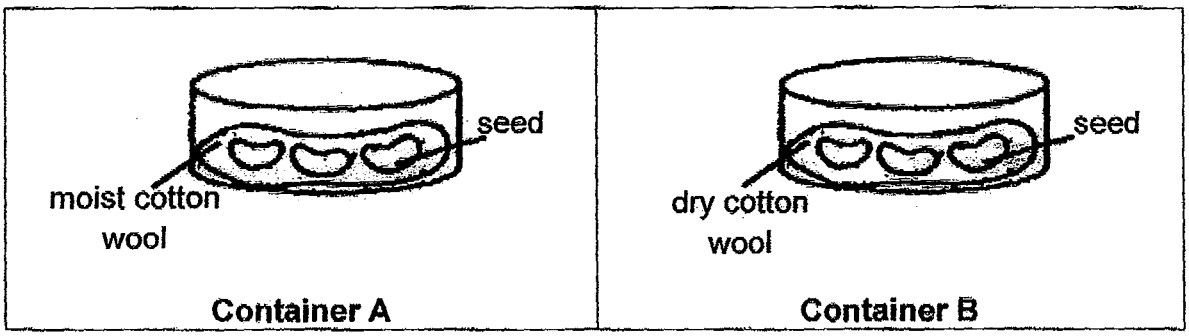
(2) O only

(3) M and O only

(4) N and M only

9. Amy placed 3 similar seeds each on a moist cotton wool in Container A and on a dry cotton wool in Container B as shown below.
She then placed the two containers near a window where there is sunlight.

After two days, the seeds on the moist cotton wool germinated but not the seeds on the dry cotton wool.



What can she conclude from the experiment?

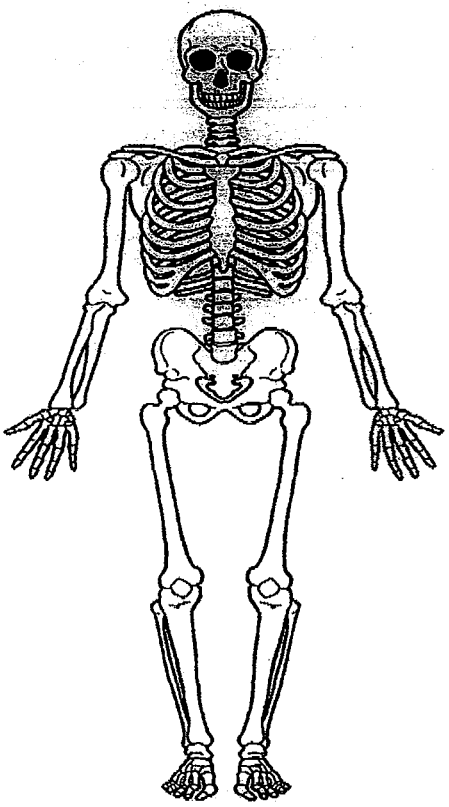
Seeds need _____ to germinate.

(1) air
(2) water
(3) sunlight
(4) cotton wool

10. Which one of these statements is true about the large intestine?

(1) Digestion ends in the large intestine.
(2) Water is absorbed by the body in the large intestine.
(3) The large intestine has muscular walls which churns and breaks down food into simpler substances.
(4) Most of the nutrients from the digested food are absorbed by the body in the large intestine.

11. The diagram below shows the skeletal system of a human body.



Which of these is/are the functions(s) of the skeletal system?

A It supports the body.

B It gives the body its shape.

C It helps in the exchange of gases.

D It helps to transport water and nutrients to all part of the body.

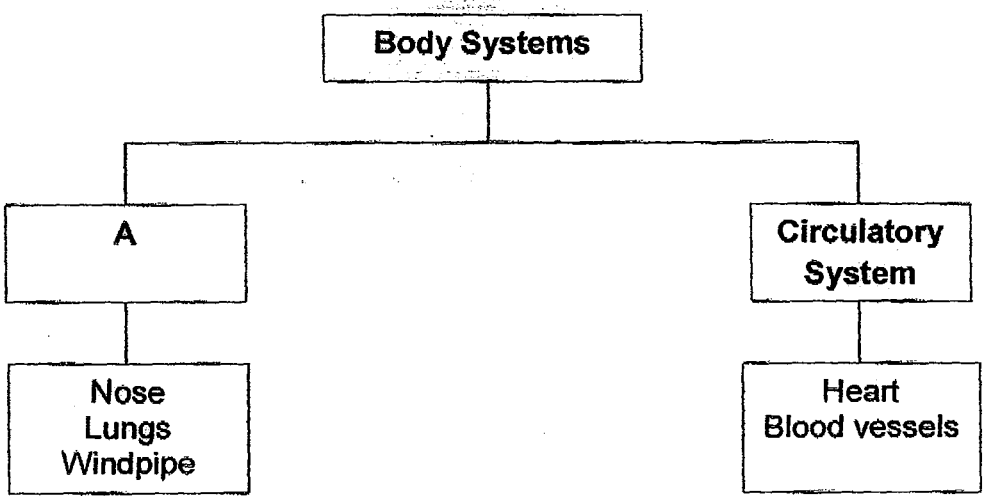
(1) A and B only

(2) C and D only

(3) A, C and D only

(4) A, B, C and D

12. Julia classified some organs as shown in the table below.



Which one of the following best represents "A"?

(1) Skeletal system

(2) Muscular system

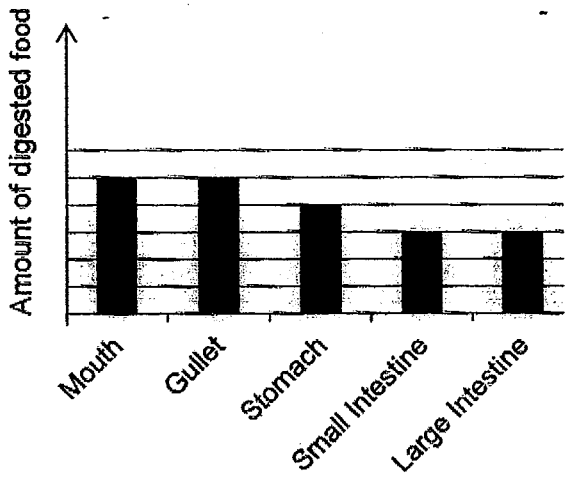
(3) Digestive system

(4) Respiratory system

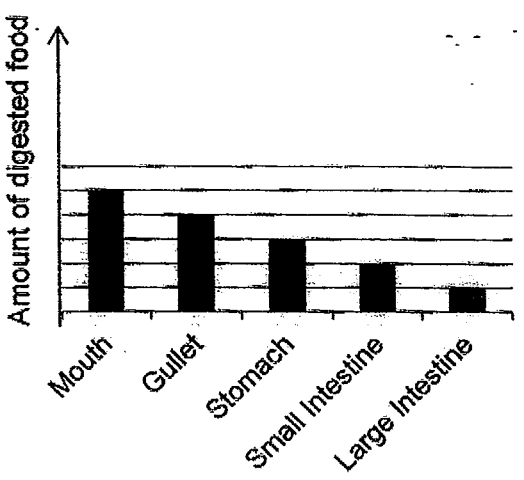
13. Jane had a burger for lunch. She plotted a bar graph to show the amount of digested food in the different organs.

Which one of the following shows the correct amount of digested food in each organ?

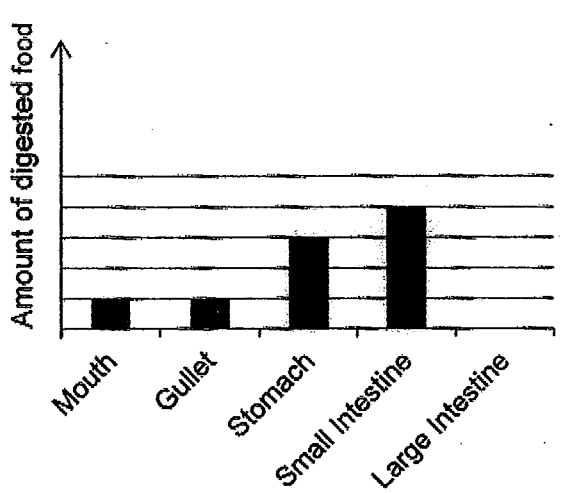
(1)



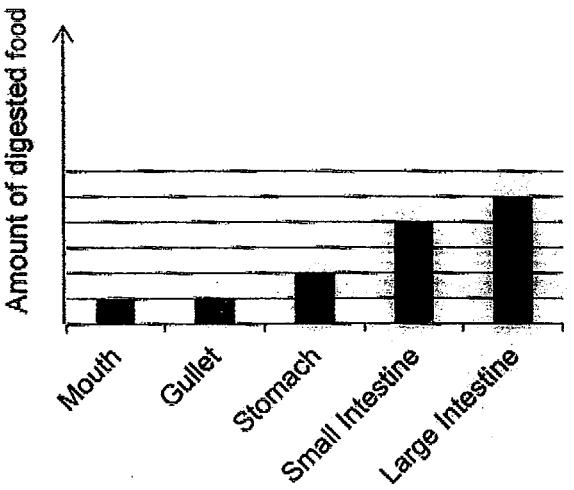
(2)



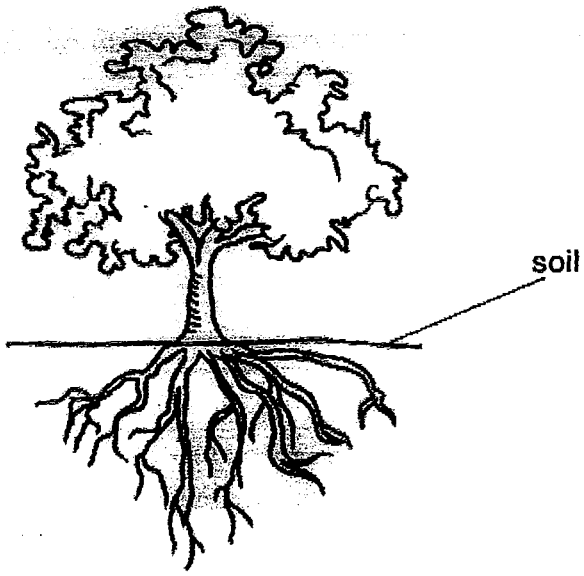
(3)



(4)



14. The diagram below shows a tree.



Which one of the following statements best explains why the tree will not fall easily when there is strong wind?

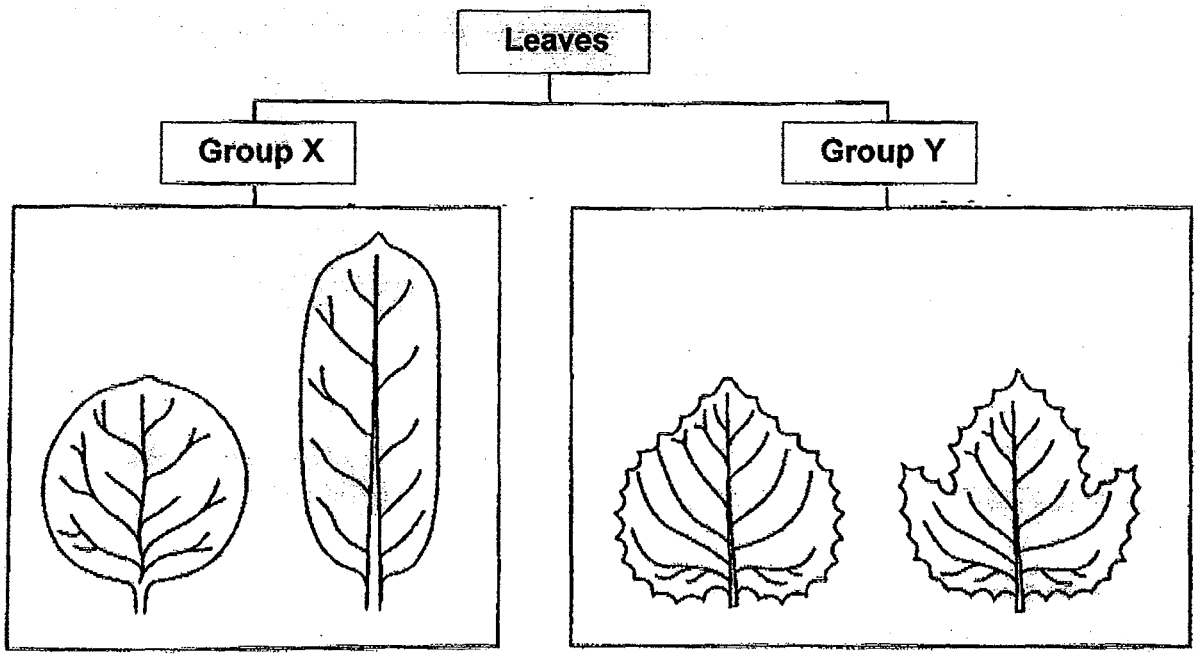
(1) The tree is tall.

(2) The tree has many leaves.

(3) The stem of the tree is thick and woody.

(4) The roots of the tree anchor the tree to the ground.

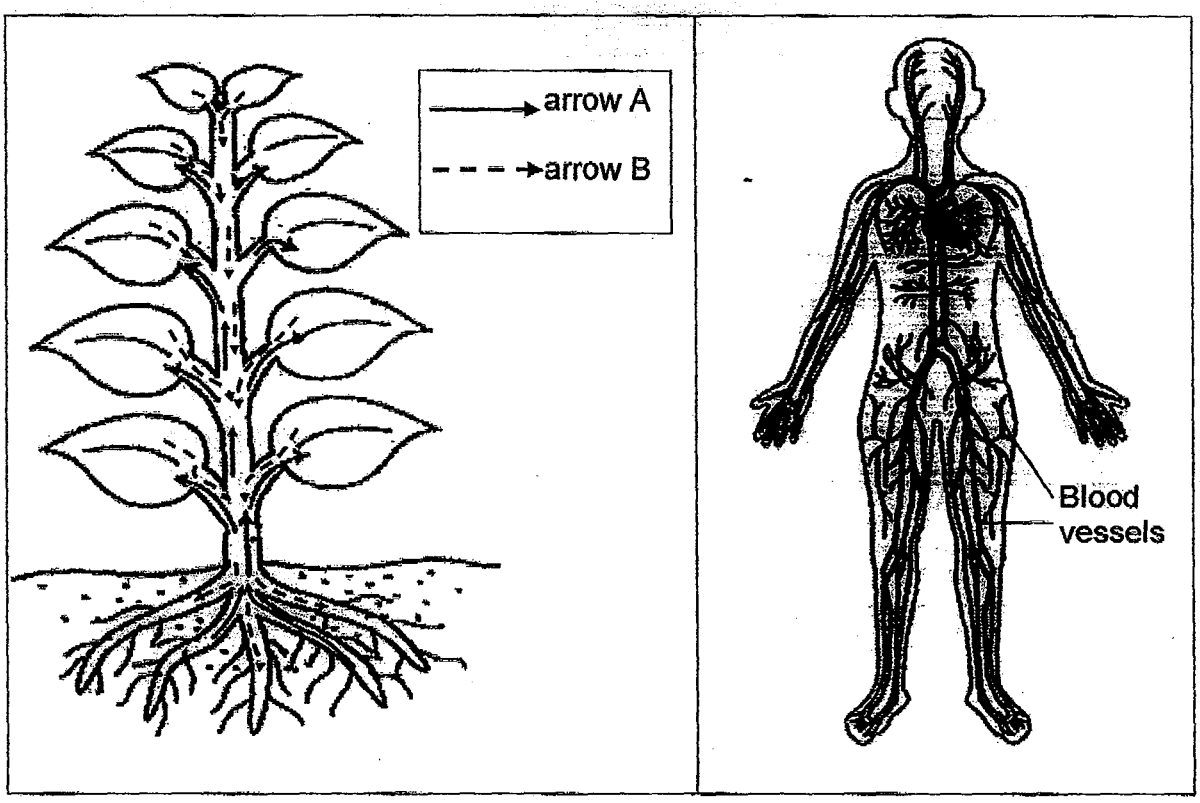
15. Amy compared 4 leaves and classified them into 2 groups, X and Y.



Which one of the following characteristics did Amy use to classify the leaves?

(1) edge
(2) shape
(3) size
(4) texture

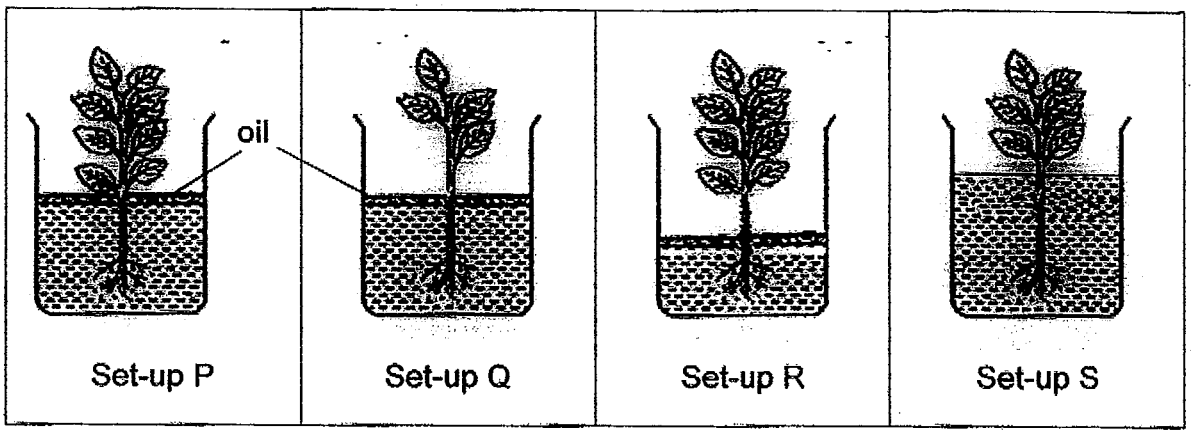
16. The diagrams below show a plant transport system and the human circulatory system.



Which one of the following statements is correct?

	Plant Transport System	Human Circulatory System
(1)	Arrow A shows the transportation of water and mineral salts.	Blood vessel carry blood that transports water only
(2)	Arrow A shows the transportation of food.	Blood vessels carry blood that transport water only.
(3)	Arrow B shows the transportation of water and mineral salts.	Blood vessels carry blood that transport digested food only.
(4)	Arrow B shows the transportation of food.	Blood vessels carry blood that transport digested food, water and waste products.

17. Jack wanted to find out if the number of leaves affects the amount of water taken in by the plant. He set up the experiment using similar types of plants and beakers as shown in the diagram below. He left the beakers of plants near an open window where there was sunlight.



Which two set-ups should Jack use to ensure that it is a fair test?

(1) Set-ups P and Q

(2) Set-ups P and S

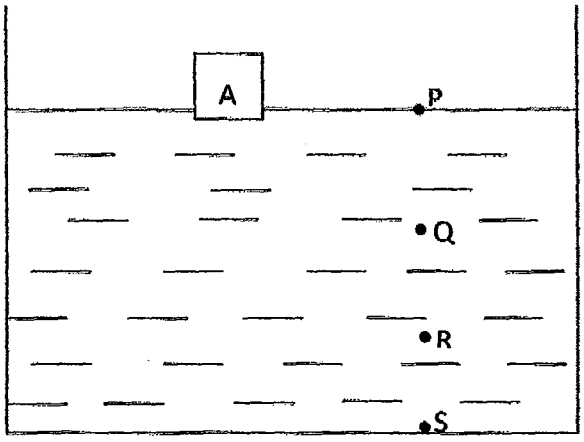
(3) Set-ups Q and R

(4) Set ups Q and S

18. Two solid blocks A and B shown below were of different sizes but made of the same material.

20 cm^3 50cm^3

Block A was dropped into a tank of water and floated to the same height as position P as shown below.



In which position, P, Q, R or S would block B be after it was dropped into the tank of water?

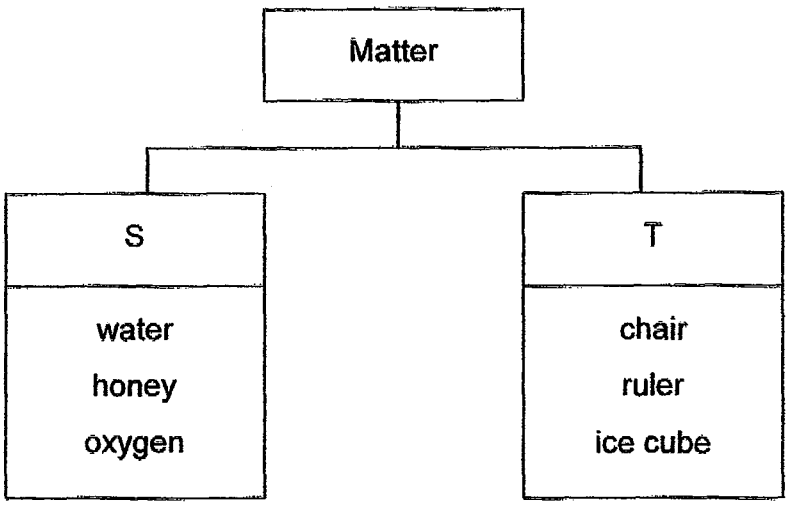
(1) P
(2) Q
(3) R
(4) S

19. Which of the following properties do solids, liquids and gases have in common?

A They have mass.
B They take up space.
C They have definite volume.
D They have definite shapes.

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

20. Six items are classified in the chart below.



Which one of the following could be the headings for S and T?

	S	T
(1)	No mass	Has mass
(2)	No definite shape	Has definite shape
(3)	No definite volume	Has definite volume
(4)	Can be compressed	Cannot be compressed

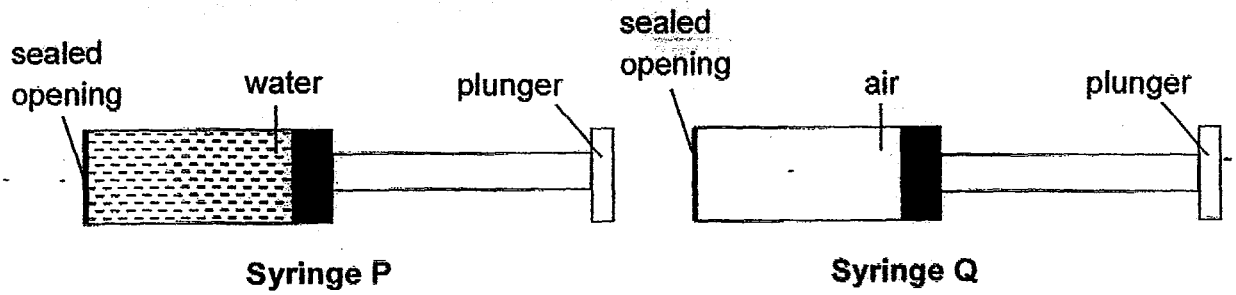
21. Sam investigated the properties of three substances, A, B and C and recorded his findings in the table below.
A tick (✓) indicates the presence of the property in the substance.

	A	B	C
Has mass	✓	✓	✓
Has definite shape			✓
Has definite volume	✓		✓

Which one of the following shows the correct state of each substance?

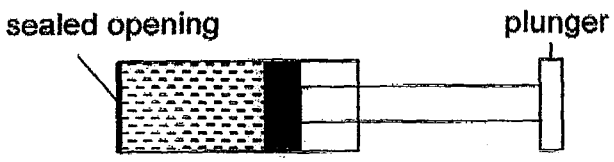
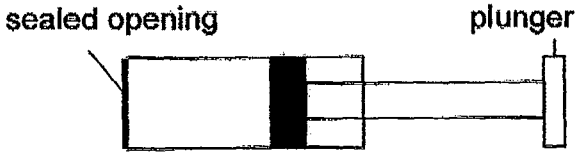
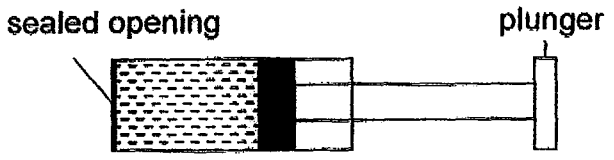
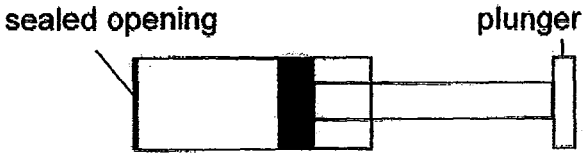
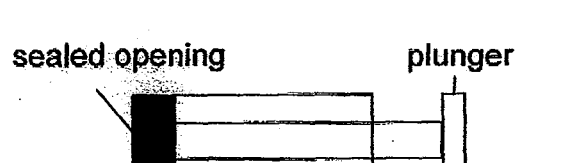
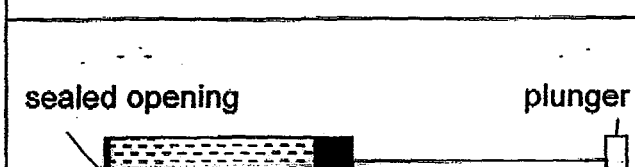
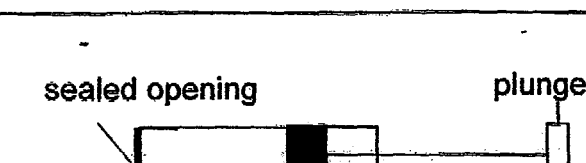
	A	B	C
(1)	Gas	Liquid	Solid
(2)	Liquid	Gas	Solid
(3)	Liquid	Solid	Gas
(4)	Solid	Gas	Liquid

22. Two identical syringes, P and Q, were completely filled with water and air respectively. The openings of both syringes were sealed as shown in the diagram below.

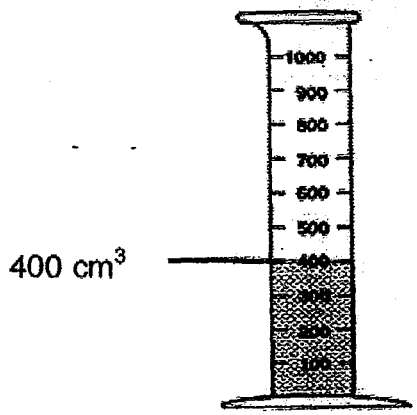


Syringe P **Syringe Q**

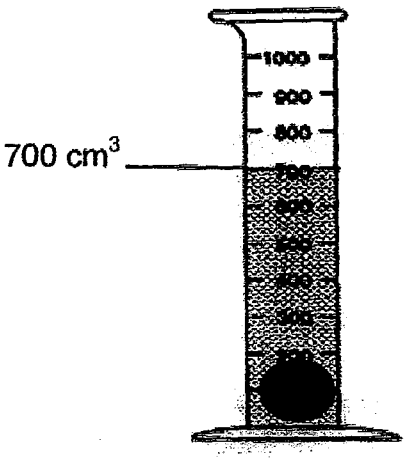
Which one of the following could be Syringe P and Q when the plungers were pushed in?

	Syringe P	Syringe Q
(1)		
(2)		
(3)		
(4)		

23. Jamie filled a measuring cylinder with some water.



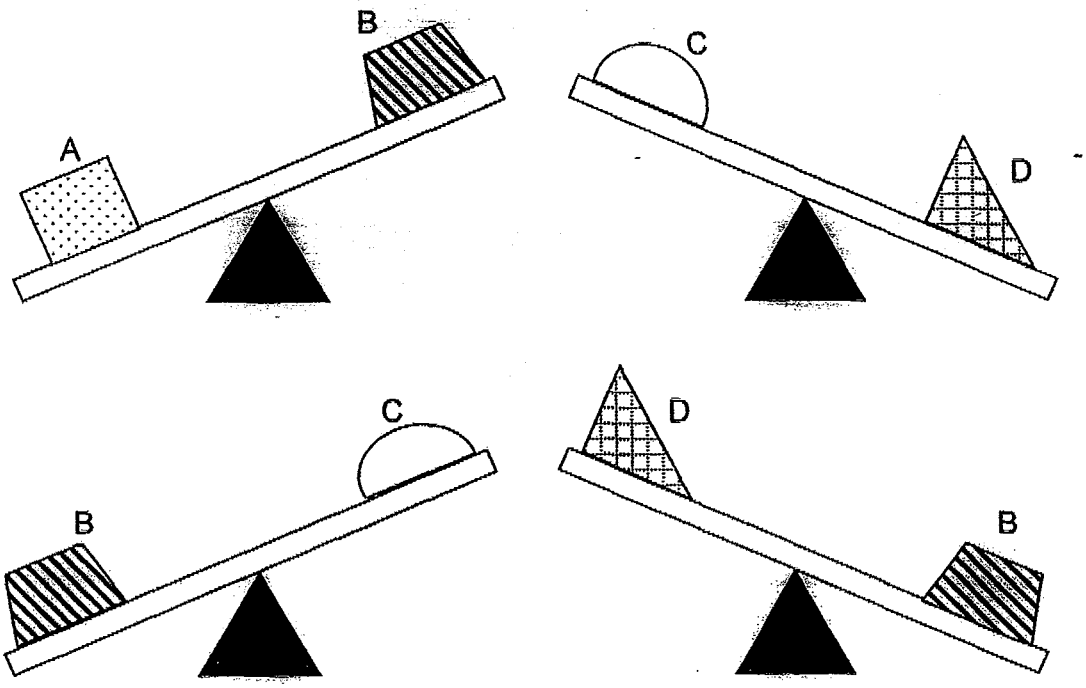
She then placed a metal ball into the same measuring cylinder as shown below.



What is the volume of the metal ball?

(1) 300 cm^3
(2) 400 cm^3
(3) 700 cm^3
(4) 1100 cm^3

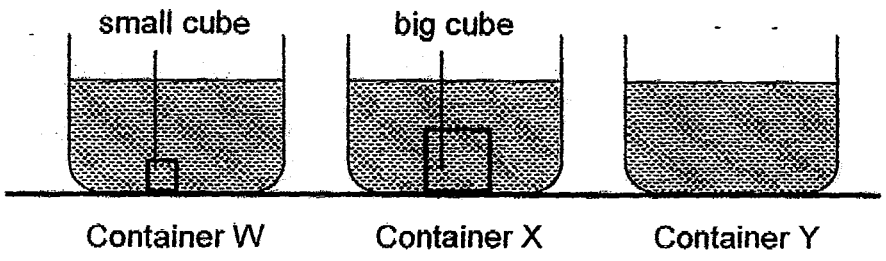
24. Alan wanted to compare the mass of objects A, B, C and D. He placed two objects on a balance each time. The diagrams below show his observation.



Which one of the following arranges the objects A, B, C and D from the greatest mass to the least mass?

	Greatest → Least			
(1)	A	B	D	C
(2)	A	C	B	D
(3)	D	B	C	A
(4)	D	B	A	C

25. Ken had three identical containers, W, X and Y. He placed two cubes of different sizes in containers, W and X. He then poured water into each container until the water levels in the three containers were of the same height as shown below.

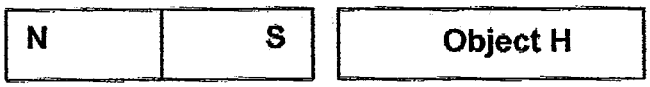


Which one of the following could possibly be the amount of water Ken poured into container W, X and Y respectively?

	Amount of water (ml) in container		
	W	**X**	**Y**
(1)	500	500	500
(2)	500	700	900
(3)	700	500	900
(4)	700	900	500

26. Shane placed the N-pole of a magnet near one end of object H as shown in the diagram below.

He observed that object H moved towards the magnet. He then flipped the magnet and placed the S- pole of the magnet near the same end of object H.



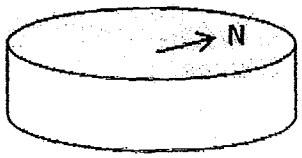
He observed that object H again moved towards the magnet. He repeated the experiment with three other objects, object I, J and K and recorded his observations in the table below.

Object	Movement of object when N-pole of magnet was placed near the object	Movement of object when S- pole of magnet was placed near the object
H	moved towards magnet	moved towards magnet
I	moved towards magnet	moved away from magnet
J	did not move	did not move
K	moved towards magnet	moved towards magnet

Based on Shane's observations, which object(s) is/are made of magnetic material?

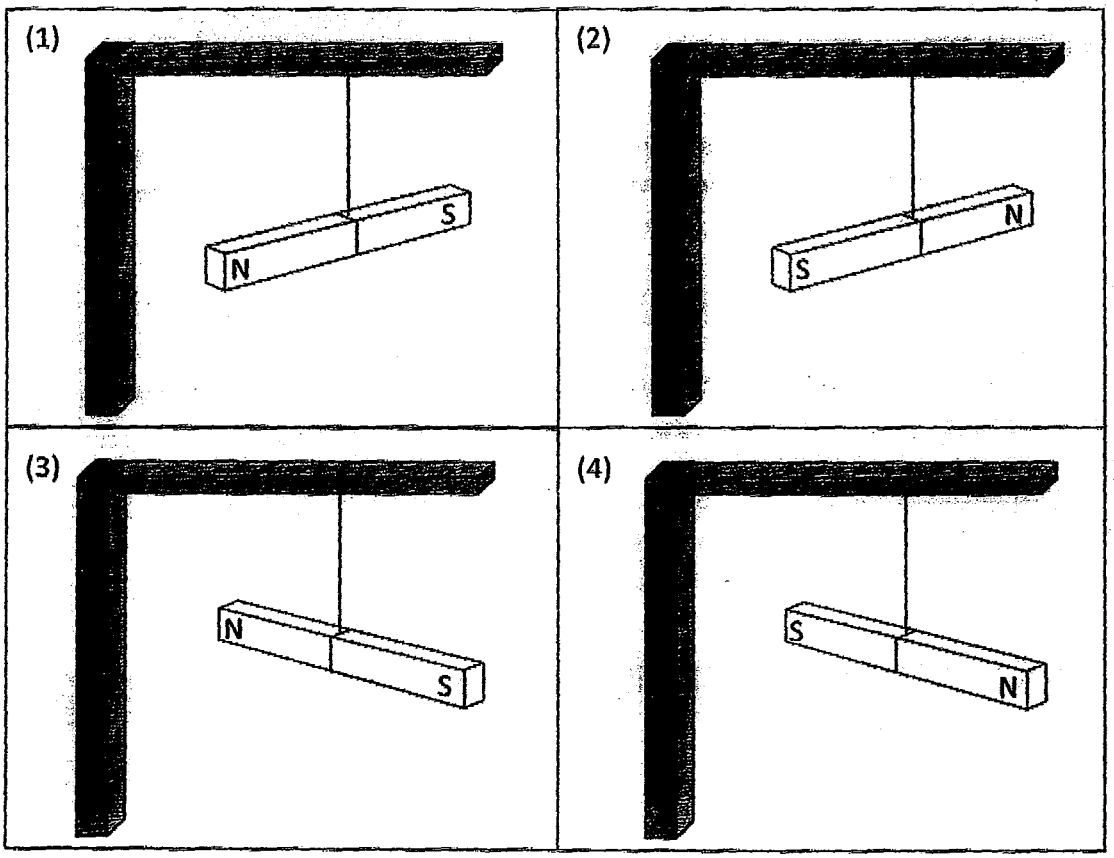
(1) I only
(2) J only
(3) H and K only
(4) H, I and K only

27. The compass below shows the direction of the needle at rest.

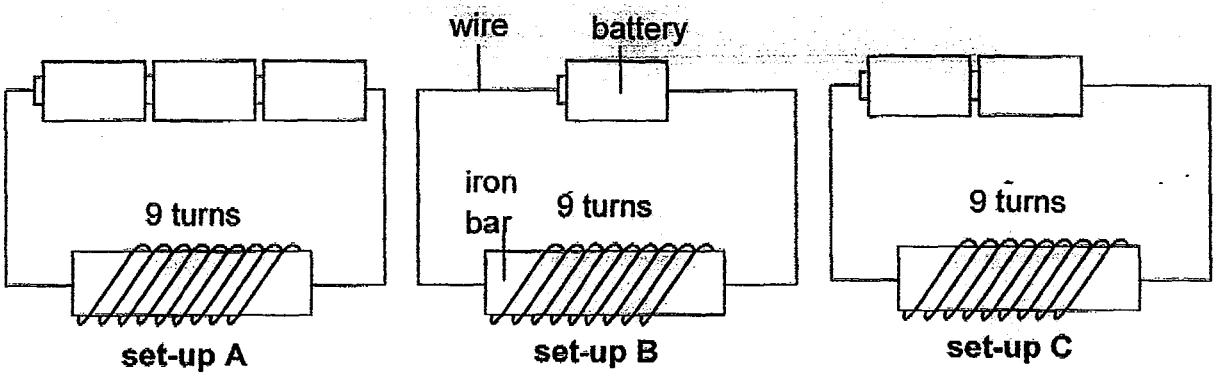


A bar magnet was hung such that it could turn freely.

Which one of the following diagrams below shows the direction of the bar magnet when it comes to rest?



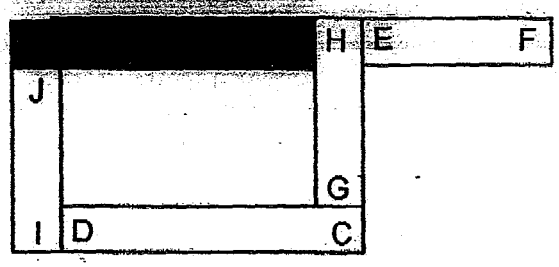
28. Mina set up the following electromagnets using identical iron bars, batteries and wires.



Arrange the set-ups according to the strength of the electromagnet, starting with the one with the greatest magnetic strength.

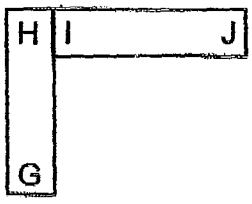
	magnetic strength		
	strongest →		weakest
(1)	C	B	A
(2)	C	A	B
(3)	A	C	B
(4)	A	B	C

29. An iron bar with ends marked A and B and four magnets with ends marked from C to J can be arranged as shown below.

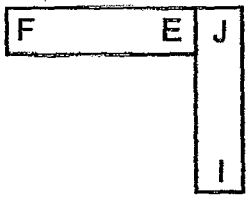


Which one of the following diagrams shows a possible arrangement of two of the bars?

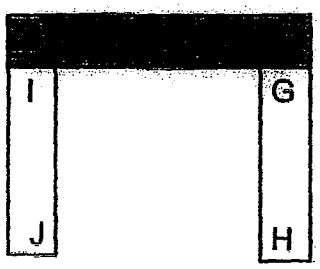
(1)



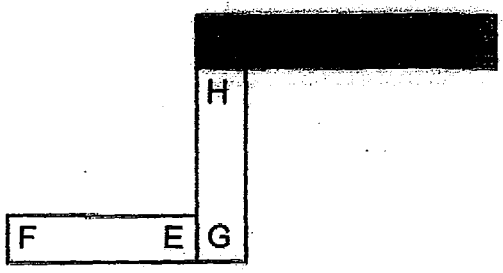
(2)



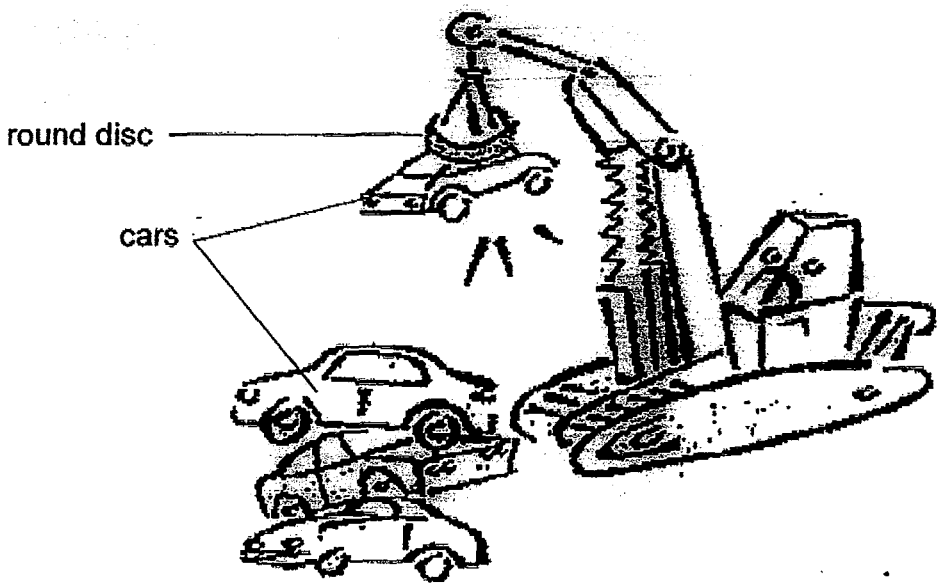
(3)



(4)



30. The picture below shows a crane using electromagnet to move cars.



When the electromagnet was activated, the car was attracted to the disc. The crane then moved the car to another position.

When the electromagnet was not activated, the car was not attracted by the disc and it dropped into the new position.

Which one of the following identified the correct materials that were used to make the disc and cars?

	Disc	Cars
(1)	iron	steel
(2)	steel	aluminium
(3)	copper	steel
(4)	aluminium	aluminium

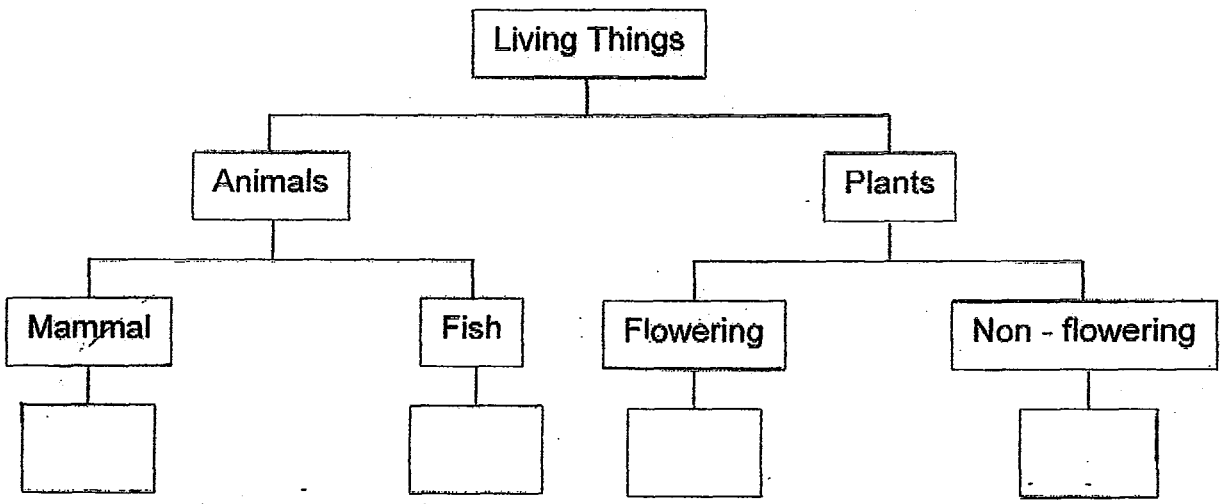
Name : _____ Index No: ____ Class: P4___ 40

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 table below shows some characteristics of 4 living things, A, B, C and D. A tick (√) indicates the presence of the characteristic.

Characteristics	A	B	C	D
Does it have hair?	√			
Can it make its own food?			√	√
Does it reproduce by spores?			√	
Does it breathe through gills?		√		
Does it give birth to live young?	√			
Can it move from place to place?	√	√		

(a) In the classification chart below, classify the living things by writing A, B, C and D in the correct groups. [2]



Score 2

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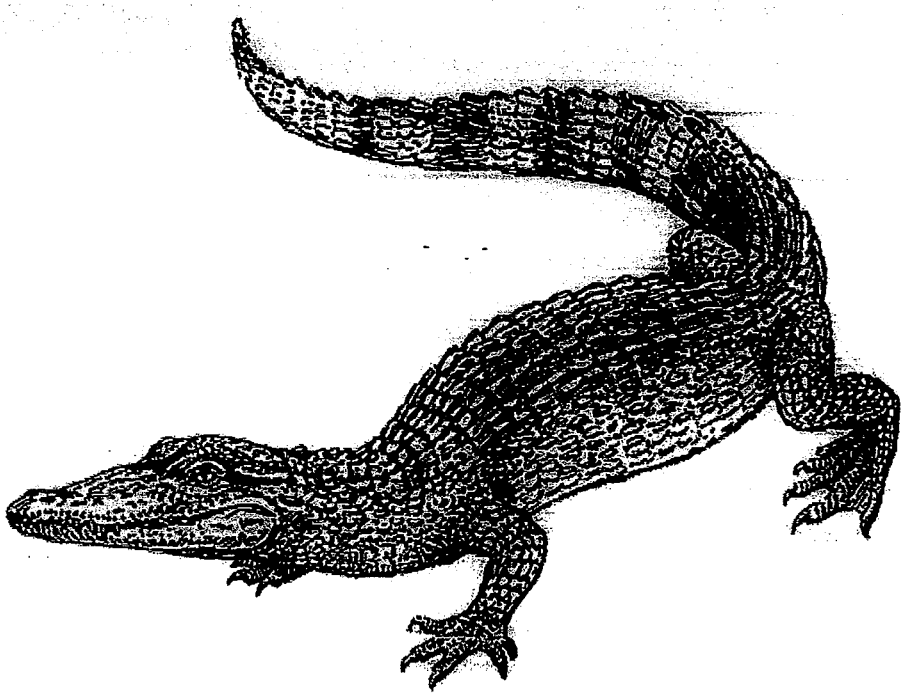
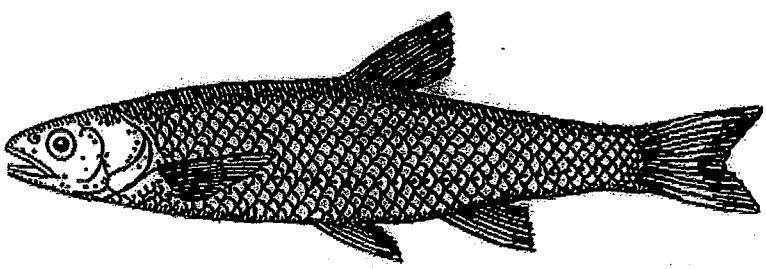
(b) The diagrams below show a crocodile and a fish, not drawn to scale. David said that a crocodile is a fish because it has scales.



crocodile

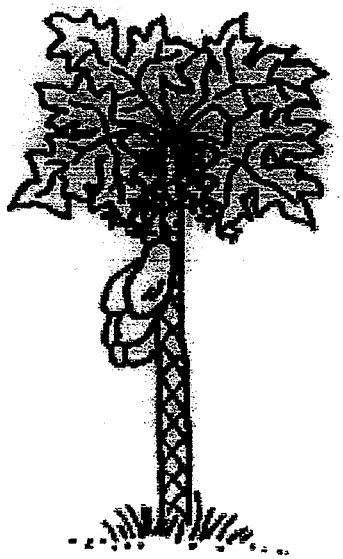


fish

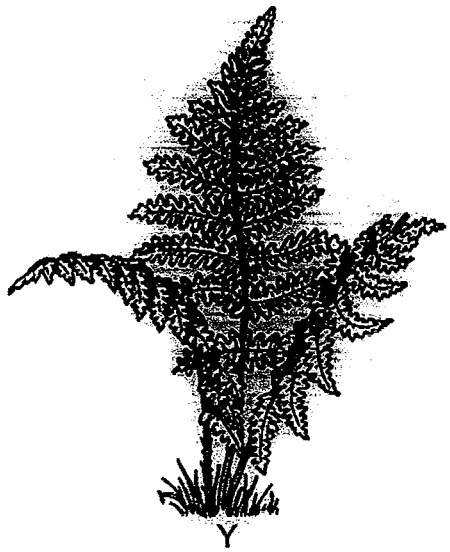
Based on your observation of the crocodile and fish above, do you agree with David? State one reason for your answer. [1]

Score	/ 1

32. The diagrams below show two organisms, X and Y, not drawn to scale.



X



Y

Based on your observation only, state 1 similarity and 1 difference between organisms X and Y. [2]

(Do **NOT** compare shape, size and colour.)

Similarity	
Difference	

Score	/ 2

33. The table below shows the time taken for an animal to develop from egg to adult at different temperatures.

Temperature (°C)	15	21	25	30	33	35
Time taken for egg to develop into adults (days)	30	14	10	15	20	25

(a) What is the most ideal temperature for the animal to grow? Give a reason for your answer. [1]

(b) What is the relationship between the temperature and the number of days taken for the animal to develop into an adult? [2]

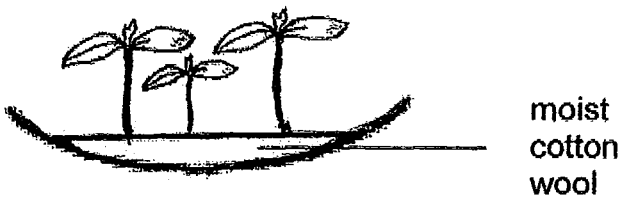
From 15 °C to 25 °C	
From 30 °C to 35 °C	

Score	/ 3

34. (a) The dish below shows some seeds on a moist cotton wool. Amy left the flask shown below in an enclosed cupboard. She watered the seeds every day. After a week, Amy observed that the seeds have germinated.

(i) Explain clearly why the seeds germinated in Amy's cupboard. [1]

Amy observed the seedlings shown below after 10 days.
Even though Amy kept the cotton wool moist, she found that the seedling had wilted and died in the cupboard.



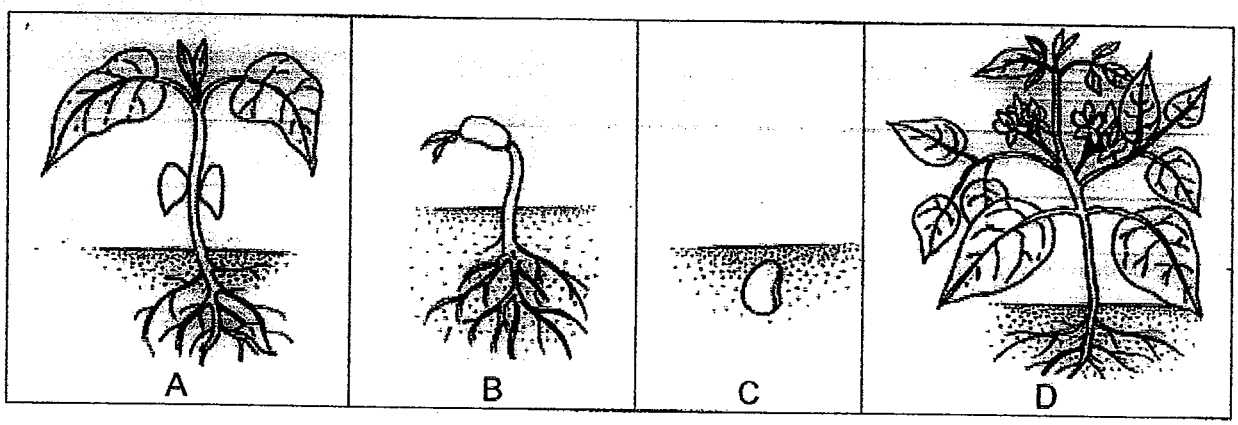
(ii) Explain why the seedling wilted and died. [1]

Score	/ 2

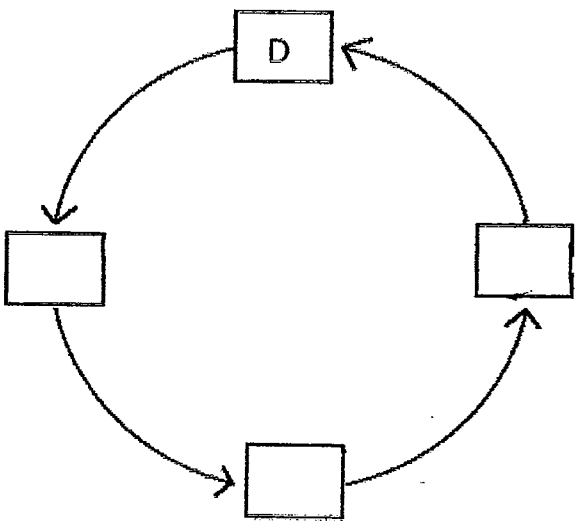
Continue on next page.

Continue from previous page.

The pictures below show the different stages of development of a plant.



(b) Complete the diagram below, with the letters A, B, C and D, to show the correct order of the development stages. [1]



Score	/ 1

35. During PE lesson, Julie had to run around the field.

(a) Name four other systems that work with muscular system to enable Julie to run. [2]

(i) _____

(ii) _____

(iii) _____

(iv) _____

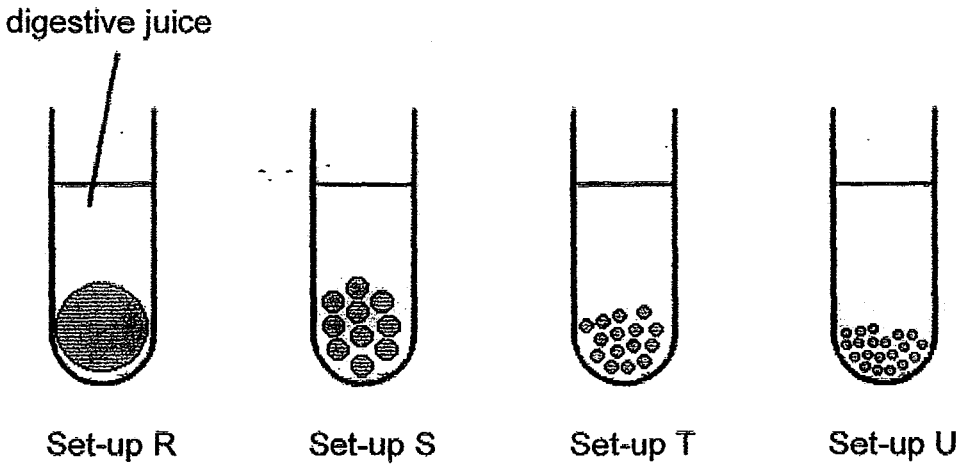
(b) Which body system helps to transport digested food to different part of the body? [1]

_____

_____

Score	3

36. Sam would like to find out if breaking undigested food into smaller pieces helps in digestion. He set up 4 set-ups with the same amount of identical biscuit and equal amount of digestive juice. Each test tube contained the biscuit broken into smaller pieces as shown in the diagram below.



The results are shown in the table below.

Set-up	R	S	T	U
Number of pieces biscuit is broken into	1	10	15	20
Time taken for the biscuit to be digested (min)	25	20	16	8

(a) How is the time taken for the biscuit to be digested affected by the number of pieces the biscuit is broken into? [1]

_____

_____

Score	/ 1

Continue on next page.

Continue from previous page.

(b) Based on Sam's experiment, how does chewing food helps in the digestion process? [2]

_____

_____

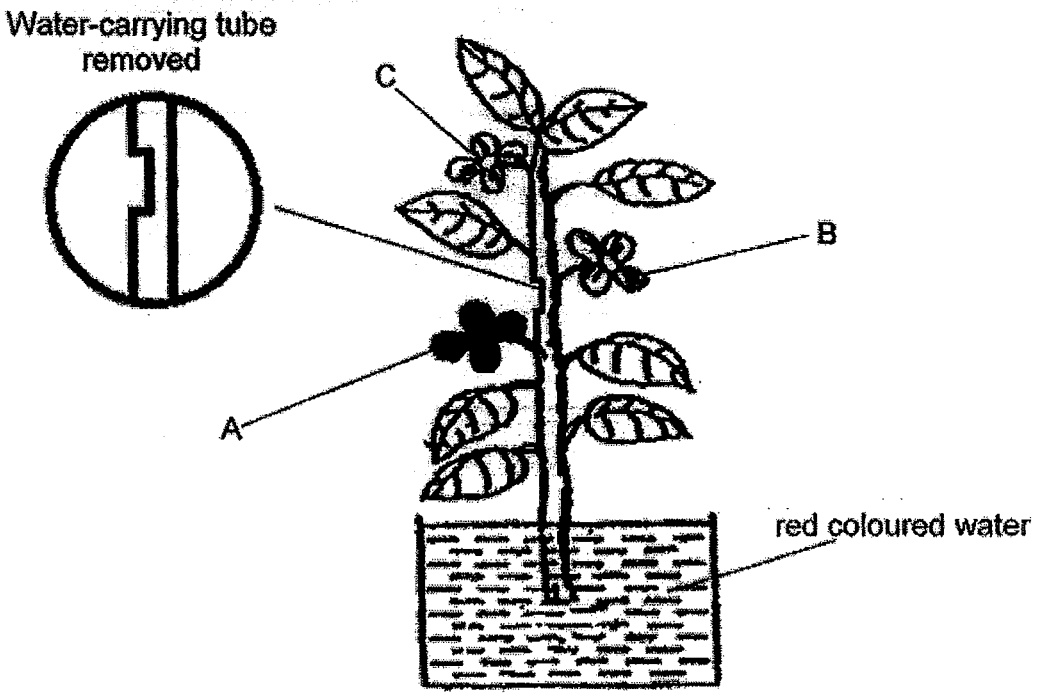
(c) List all the parts in the digestive system which produce digestive juices. [1]

_____

_____

Score	/ 3

37. May placed a plant with white flowers in red coloured water as shown below. She made a cut in the stem and removed the water-carrying tube in the part shown below.



(a) What is the function of the water-carrying tube? [1]

_____

_____

(b) After 12 hours, May observed that flower A has become completely red while flowers B and C have streaks of red. Explain May's observation clearly. [2]

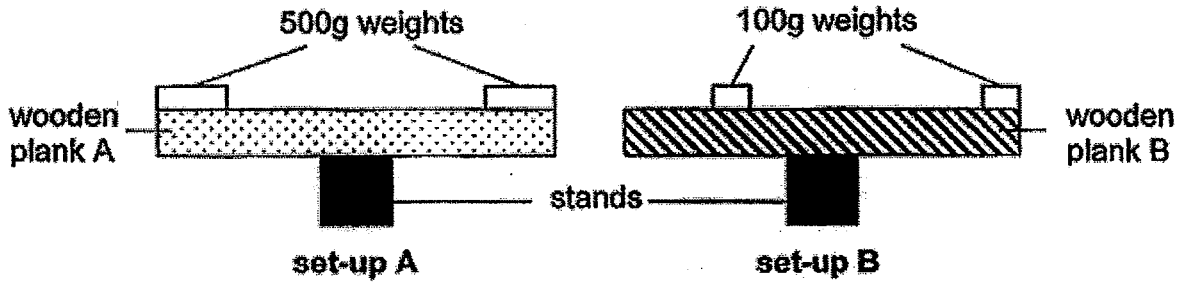
_____

_____

_____

Score	/ 3

38. Ali wanted to find out if wooden plank A is stronger than wooden plank B. He prepared set-ups, A and B, using plank A and B. He placed each plank on a stand and added two identical weights on each plank as shown in the diagram below.



Ali's teacher commented that Ali's experimental set-up is not a fair test.

(a) Describe two changes that Ali should make to set-up B, in order to make the experiment a fair test. [2]

(i) _____

_____

(ii) _____

_____

(b) After making the changes in his set-up, Ali added another two identical weights on each end for each plank. He continued to add identical weights to each plank.

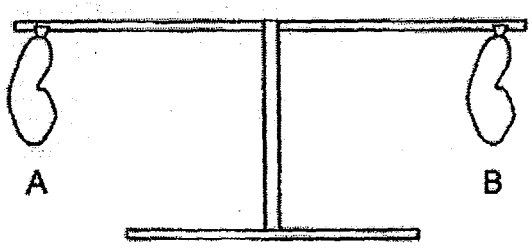
How can Ali determine which plank, A or B, is stronger? [1]

_____

_____

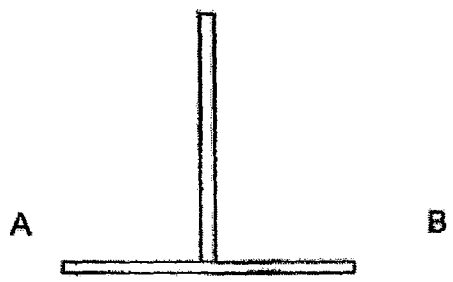
Score	/ 3

39. Jenny hung two identical deflated balloons on a balance as shown below.



Then she inflated balloon B.

(a) In the diagram below, draw how the balance will look like when balloon B is inflated. [1]



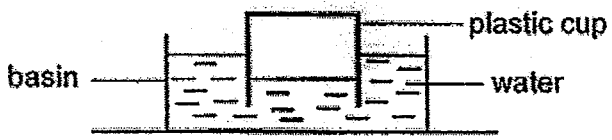
(b) State a property of air that is shown in your answer in (a). [1]

_____

_____

Score	2

40. Tom filled a basin with some water. An empty inverted plastic cup was pushed into the basin of water as shown in the set-up below.



(a) Explain why only some water was able to enter the plastic cup. [1]

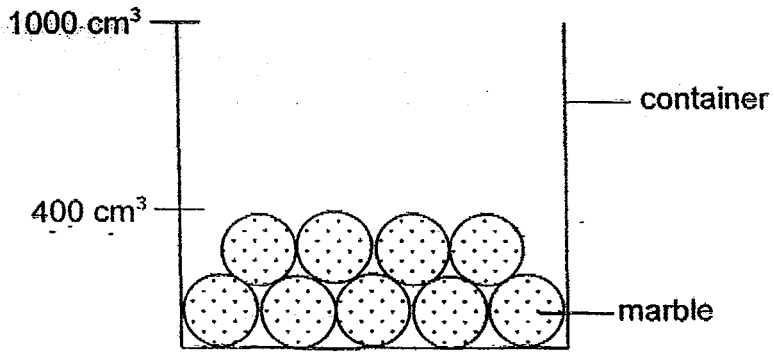
(b) Tom then made a hole at the bottom of the plastic cup and pushed the cup into the basin of water again.

He observed that more water could enter the plastic cup.
Explain clearly for this observation. [1]

(c) Tom predicts that the mass of the water in (b) is smaller. Do you agree? Give a reason for your answer. [1]

Score	/ 3

41. John had an empty container with a capacity of 1000 cm^3. He placed some marbles into the container until the marbles reached the 400 cm^3 mark as shown below.

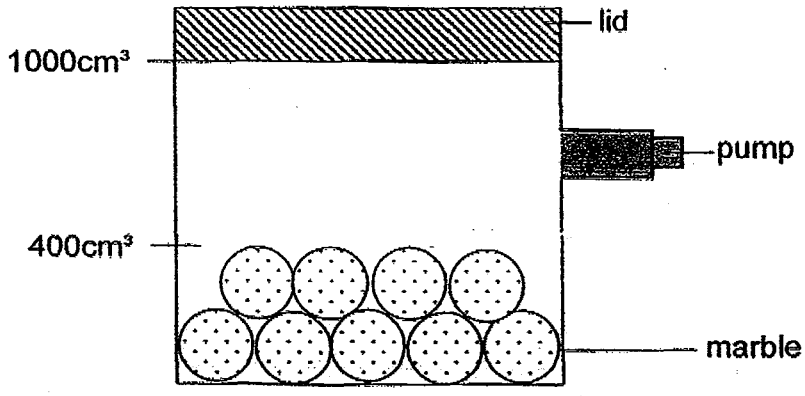


(a) John poured water into the container until the container is full.
He noticed that he could pour in 700 cm^3 of water into the container.
Explain why. [1]

_____

_____

(b) Using another identical set-up, John sealed the container and inserted a pump. He wanted to pump air, instead of water into the container.



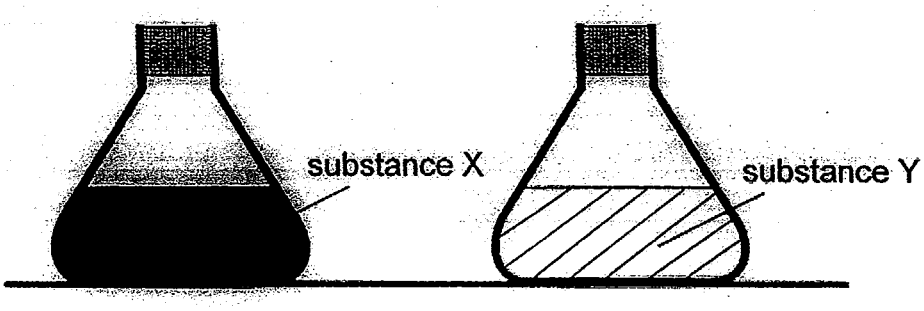
Would John be able to pump in 750 cm^3 of air into the container? Explain your answer. [1]

_____

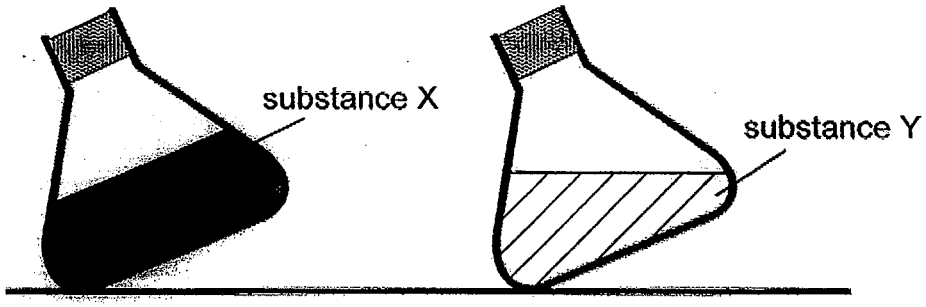
_____

Score	2

42. Fred placed 500 ml of substance X and Y respectively into two identical flasks.



Fred then tilted the flasks.



(a) What is the state of substance X and Y? [1]

X:_____ Y:_____

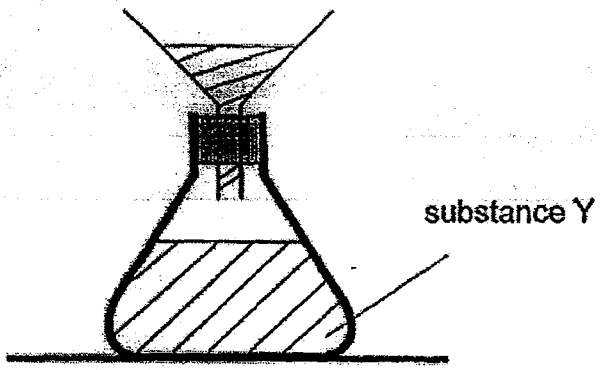
(b) Explain your answer in (a). [1]

_____

_____

Score	/ 2

(c) Fred added more substance Y into the sealed flask as shown below.



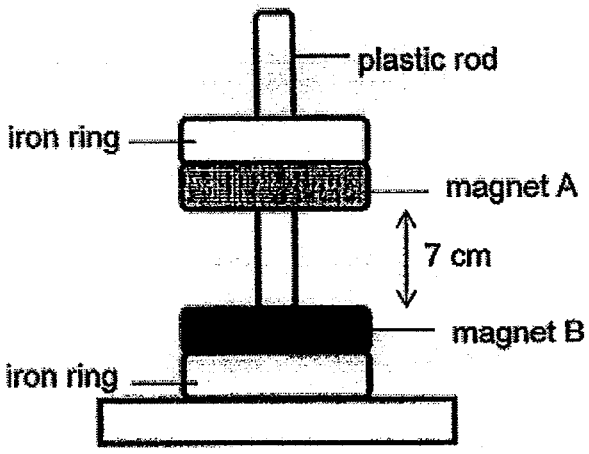
He realized that he was unable to put in additional amount of substance Y into the sealed flask to fill it up **completely**. Explain why. [1]

_____

_____

Score	/ 1

43. Jenny had four rings, A, B, C and D. Only two rings were magnets and the other two rings were made of iron. She placed the four rings through a plastic rod as shown below.



The distance between magnet A and magnet B is 7 cm.

(a) Explain why there was a distance of 7 cm between magnets A and B. [1]

(b) Jenny heated magnet B and placed the rings back in the same order. She noticed that the distance between magnets A and B decreased to 4 cm.
Explain her observation clearly. [1]

Score / 2

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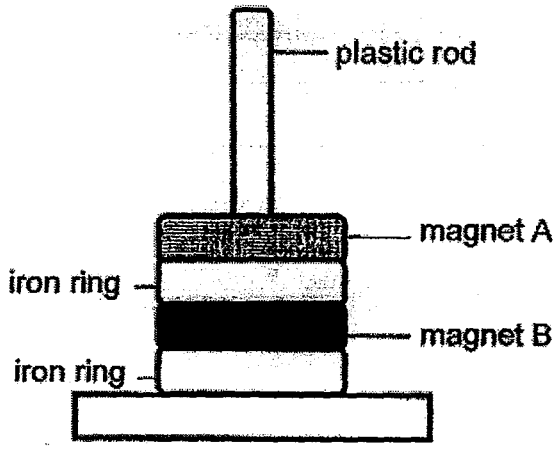
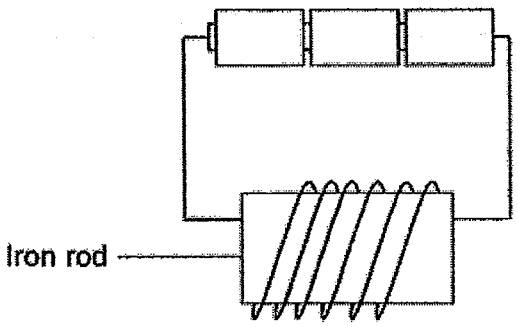
(c) Jenny changed the position of magnet A and the iron ring as shown below.



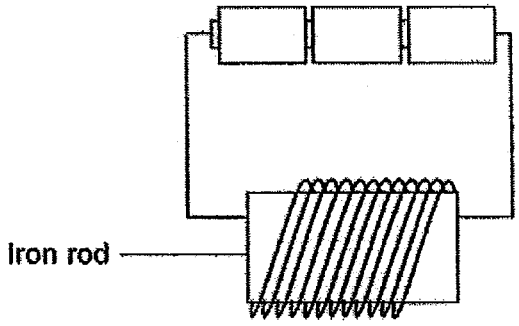
Explain why no space was observed between the four rings. [1]

Score 1

44. Steven had 2 identical iron rods. He wound different number of turns of wire around each iron rod. The ends of the wires were connected to identical batteries as shown in set-ups X and Y below.



Set-up X



Set-up Y

For each set-up, Steven tested the strength of the electromagnet by counting the number of steel paper clips that each could attract. He recorded his results in the table as shown below.

Set-up	Number of turns of wire round the iron rod	Number of paper clips attracted to magnetised iron rod
X	6	7
Y	12	16

(a) What is the relationship between the number of turns of the wire round an iron rod and its magnetic strength? [1]

(b) Name **ANOTHER** variable that Steven must keep the same to ensure that he carried out a fair test. [1]

(c) If the iron rod was replaced with an aluminium rod in Set-up Y, predict how many paper clips will be attracted by the aluminium rod when the number of coils around it was increased to 25? Give a reason for your answer. [1]

- END OF PAPER -

Score	/ 3

Setter : Ms Lim L.S. and Ms Shaheena Kandoth

Answer Key

EXAM PAPER 2015

SCHOOL : RAFFLES GIRLS' PRIMARY SCHOOL

SUBJECT : P4 SCIENCE

TERM : SA1

ORDER CALL : MR GAN @ 92998971 92475053 86065443

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

31） a)A , B , D , C b)No, Crocodile has legs but fish has fins.

32) Similarity= Both have leaves

Difference=X has fruits while Y does not have

33)a)25^{0c}. As it took the least time taken for egg to develop into adult.

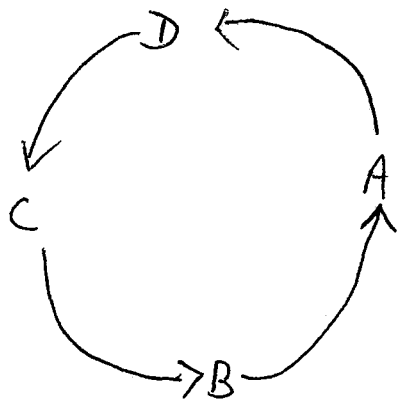
b) From 15^{0c} to 25^{0c}= The higher the temperature ,the less time it takes for egg to develop into adults

from 30^{0c} to 35^{0c}= The higher the temperature, the more time it take for egg to develop into adults.

34)a)i) The seeds had air,water and warmth.

ii)The plant needed light to make food.

b)



35)a)i) Skeletal system ii)Respiratory system

iii)Digestive system iv)circulatory system

b) Circulatory system

36)a) The smaller the pieces are,the less time it takes for the biscuit to be digested.

b)Chewing helps to increase the surface area of the food, so the digestive juices act an it and digest it faster.

c) Mouth, stomach and small intestine.

37)a) It is to carry from the roots to all parts of the plant.

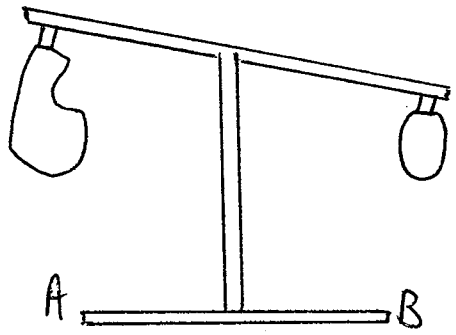
b)The water-carrying tubes to flowers B and C had been damaged. Hence, little water was able to go up to the flowers. The water-carrying tubes leading to flower A is intact and could transport water to flower.

38)a)i) Put the weights at the end of wooden plank B

ii)The mass of the weight on wooden plank B should be the same as the weights on wooden plank B.

b) The stronger plank will be the one which can hold a greater amount of weight before it breaks.

39)a)



b) Air has mass.

40)a)Air that is trapped occupies space un the plastic cup. Since air can be compressed, water could enter the cup to occupy space.

b) Air which occupied space in the plastic cup could scape through the hole,so more water could enter the cup to occupy space.

c) There will be no change in the mass as the volume of water remain in the basin remained the same.

41)a)There were space between the marble which allow water to flow in to occupy the space.

b) The rest of the space in the container was occupied by the marbles and air can be compressed.

42)a) X: Solid Y: Liquid

b) X has a definite shape while Y does not.

c) The air which occupied space in the sealed flask could not escape so there was no space for substance Y to occupy.

43)a) The magnets repelled as like poles were facing each other.

b) Heating causes magnet B to lose some of the magnetism.

c) Iron is magnetic material so the iron rings did not allow magnetism to pass through.

44)a) The greater the number of turn s of wire around the iron, the greater its magnetic strength.

b) the type of wire.

c) O. As aluminium is a non-magnetic material,therefore cannot be magnetized.