



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

Name: \_\_\_\_\_ Index No: \_\_\_\_\_ Class: P 6!

6<sup>th</sup> May 2011

**SCIENCE**

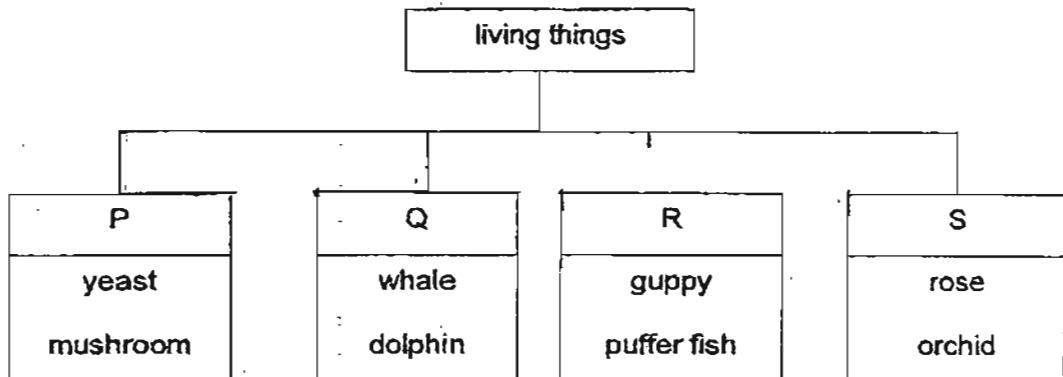
Att: 1 h 45 min

Your score out of 100 marks		
	Class	Level
Highest score		
Average score		
Parent's signature		

**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 (OAS) provided.

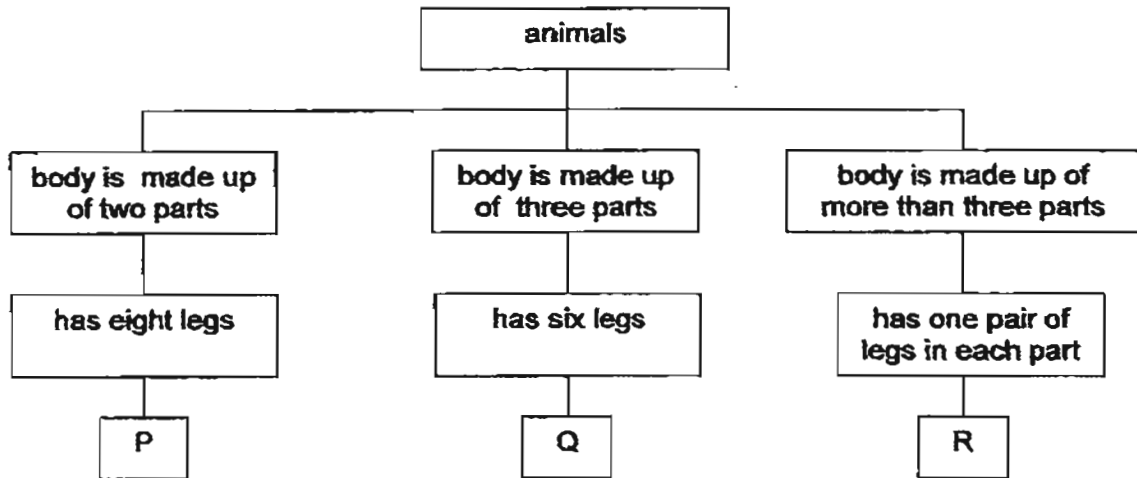
1. The table below shows how some living things are classified.



Based on the table above, which one of the following sets of organisms is classified correctly?

	P	Q	R	S
(1)	cactus	shark	spiny anteater	bread mould
(2)	cactus	spiny anteater	shark	bread mould
(3)	bread mould	shark	spiny anteater	cactus
(4)	bread mould	spiny anteater	shark	cactus

2. Some organisms are differentiated using the table below.



Cindy found two animals and noticed that each had a hard body covering.



X

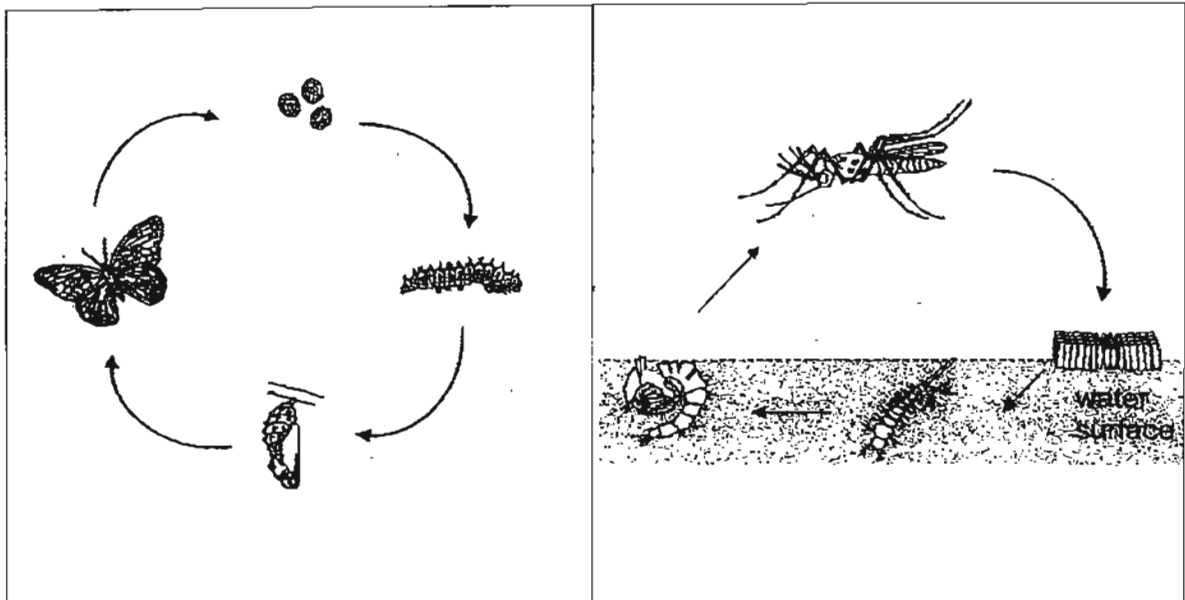


Y

Which group, P, Q or R, does each animal, X and Y, belong to?

	animal X	animal Y
(1)	P	Q
(2)	P	R
(3)	Q	P
(4)	Q	R

3. The diagrams below show the life cycles of 2 animals.



Based on the diagrams above, in what way(s) is/ are the life cycles of the animals similar?

- A Both give birth to live young.
- B Both their young do not resemble the adults.
- C Both need to live in water before the adult stage.
- D Both have to go through the pupal stage before they become adults.

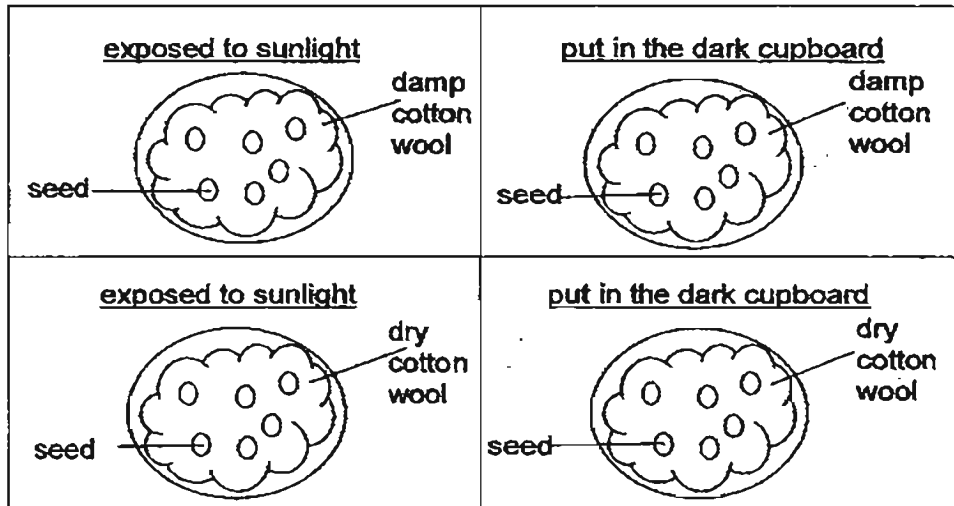
(1) A only

(2) C only

(3) B and D only

(4) B, C and D only

4. David set up an experiment using four different set-ups below.

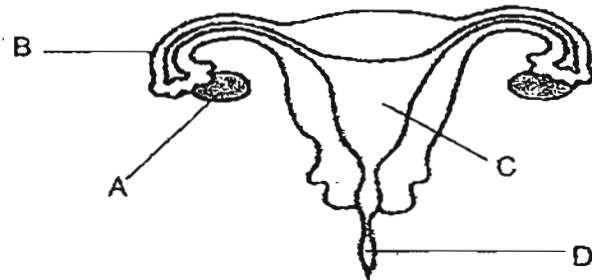


At the end of the experiment, David observed that the seeds grew into seedlings in some dishes but not in others.

What was David trying to find out from his experiment?

- (1) whether seedlings can grow in cotton wool
- (2) whether seedlings need light for photosynthesis
- (3) whether seeds need water and light to grow into seedlings
- (4) whether seeds need water, light and cotton wool to grow into seedlings

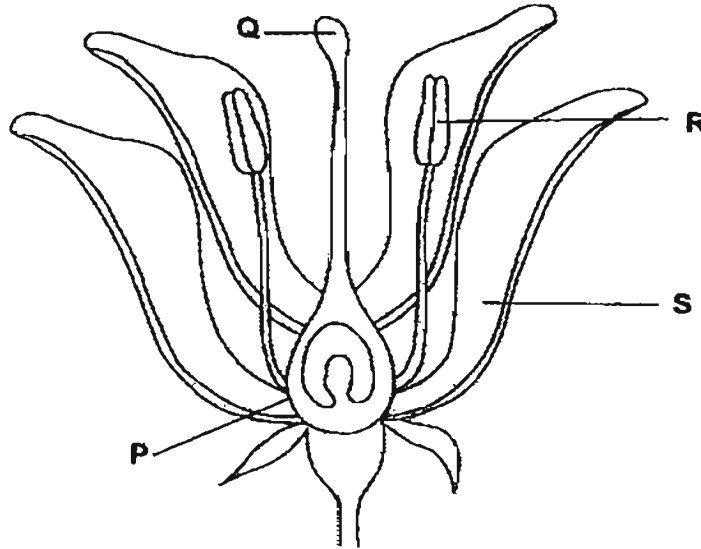
5. The diagram below shows the labelled parts of a human female reproductive system.



Which one of these parts, A, B, C or D, produces the female sex cells?

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

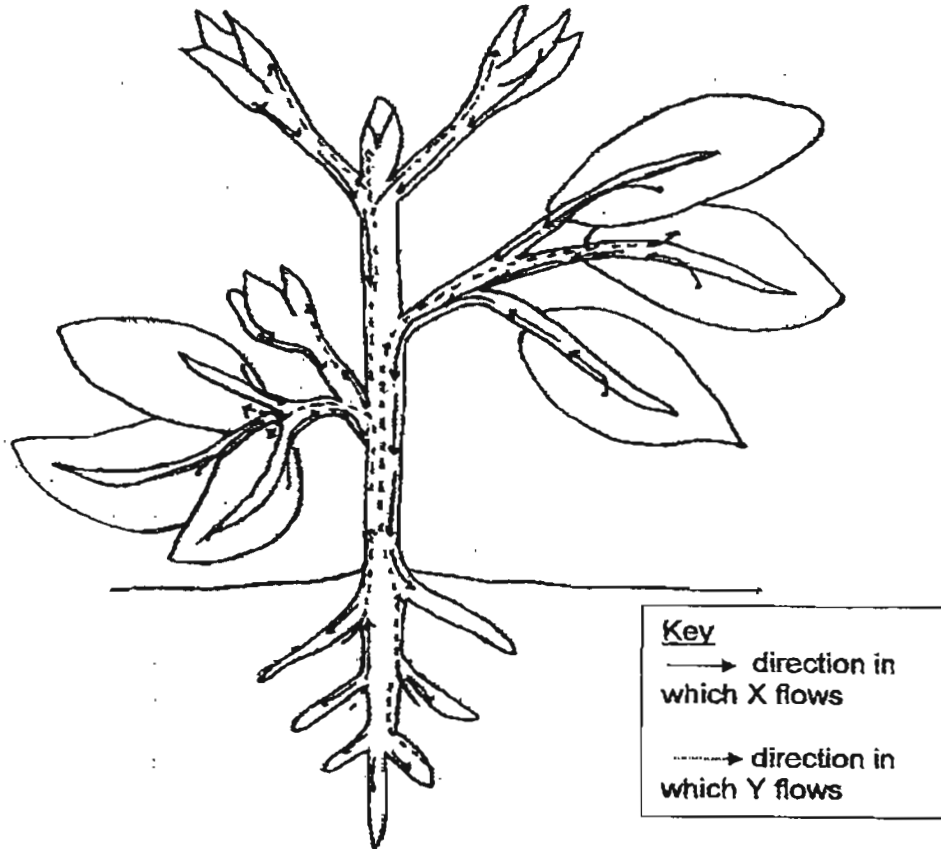
6. The diagram below shows the cross section of a flower.



Which part of the flower becomes a fruit after fertilisation has taken place?

- (1) P
  - (2) Q
  - (3) R
  - (4) S
7. The lungs and the heart are two organs in the human body.
- Which one of the following statements about the functions of the lungs and/ or heart is true?
- (1) The lungs remove carbon dioxide from the body.
  - (2) The heart removes carbon dioxide from the lungs.
  - (3) The lungs transport oxygen produced to the heart.
  - (4) The heart takes in oxygen from the surroundings directly into the body.

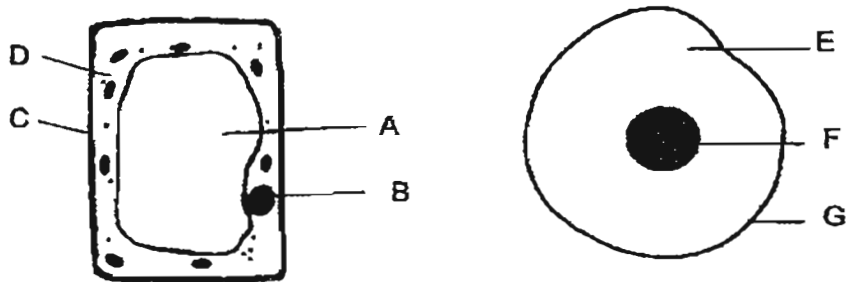
8. The diagram below shows how substances X and Y are transported from one part to another in a plant.



Which one of the following identifies substances X and Y correctly?

	X	Y
(1)	water	nutrients
(2)	water	sugar
(3)	sugar	dissolved mineral salts
(4)	dissolved mineral salts	water

9. The two cells shown below are examined under a microscope.

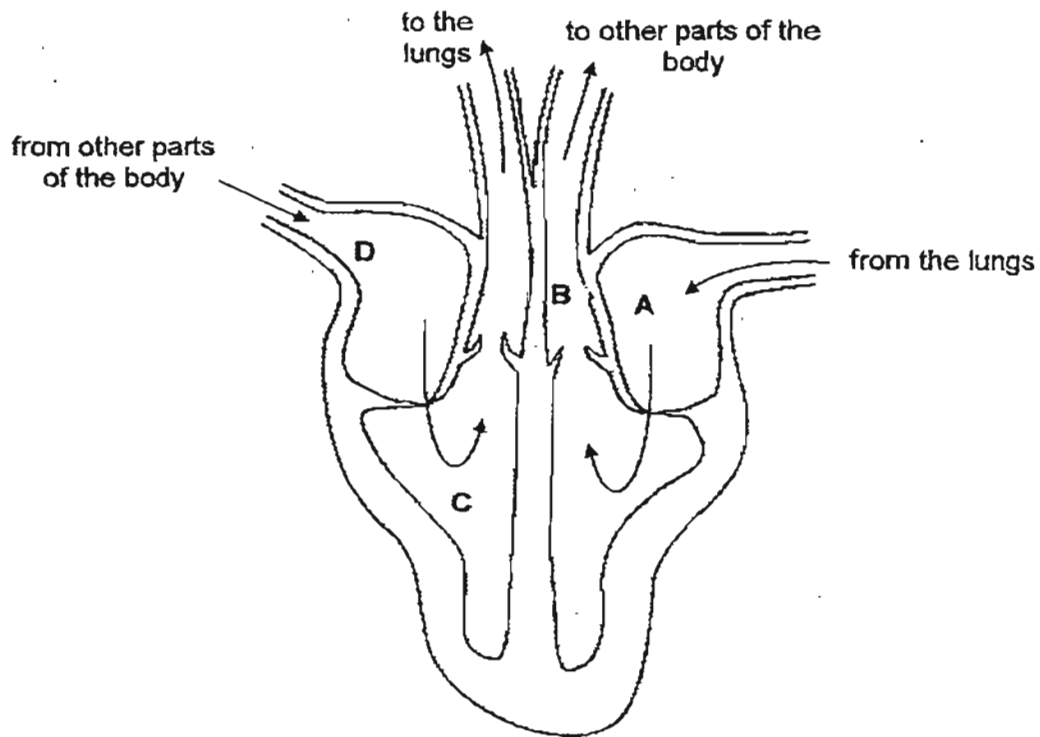


Which one of the following parts matches correctly to their functions?

	parts of the cell	function
(1)	A, F	The jelly-like substances allow food and oxygen to move around within the cells.
(2)	B, F	They control everything that happens inside the cells.
(3)	C, G	They keep the cells firm.
(4)	D, E	They hold the cytoplasm inside the cells and control substances that go in or out of them.



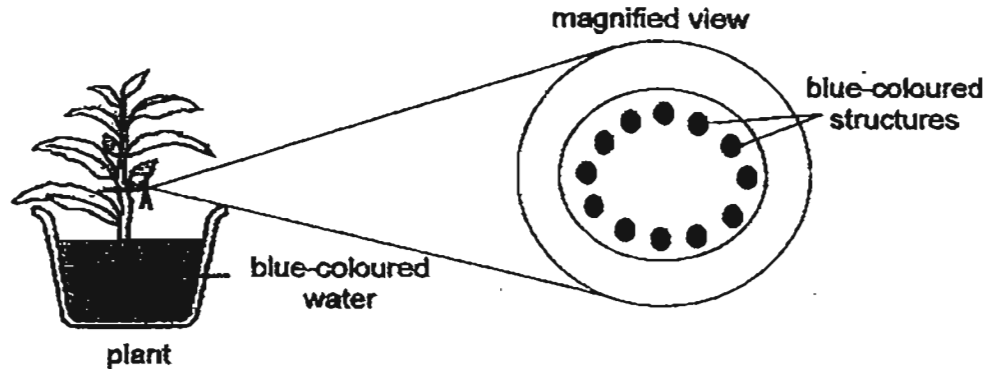
10. The diagram below shows how blood flows within a human heart.



Which one of the following describes correctly the blood found in each of these parts?

	A	B	C	D
(1)	oxygen-rich blood	oxygen-rich blood	carbon dioxide-rich blood	carbon dioxide-rich blood
(2)	oxygen-rich blood	carbon dioxide-rich blood	carbon dioxide-rich blood	oxygen-rich blood
(3)	carbon dioxide-rich blood	carbon dioxide-rich blood	oxygen-rich blood	oxygen-rich blood
(4)	carbon dioxide-rich blood	oxygen-rich blood	oxygen-rich blood	carbon dioxide-rich blood

11. Susan put a healthy plant in a beaker of blue-coloured water. The next day, she cut a cross section of the stem of the plant at position A.



Susan saw that parts of the stem had turned blue.

Susan made the following conclusions:

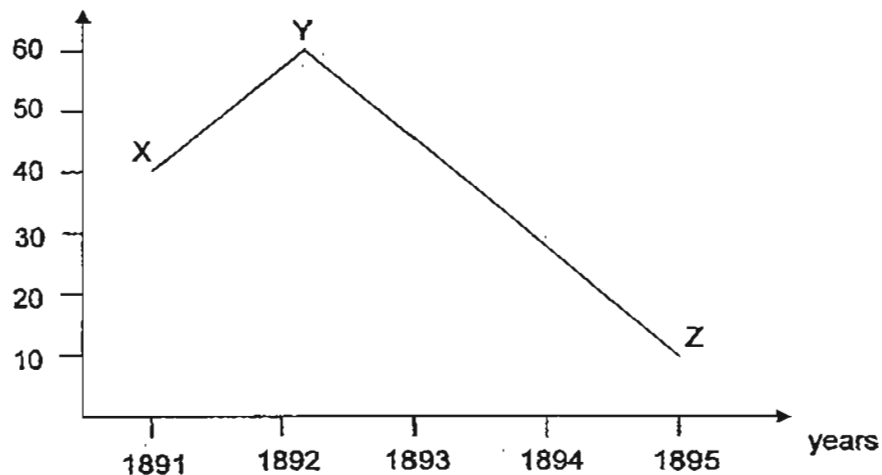
- A Only food-carrying tubes were found in the stem.
- B Only water-carrying tubes were found in the stem.
- C The blue-coloured structures were food-carrying tubes.
- D The blue-coloured structures were water-carrying tubes.

Which of the above conclusions is/ are correct?

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

12. In 1891, forty rabbits of the same species were introduced on an island with an abundant supply of grass. There were only some migratory birds on the island that did not prey on these rabbits. The graph below shows the change in population size of rabbits over the years.

number of rabbits



Based on the information above, which of the following could possibly explain the part(s) of the graph correctly?

- A From X to Y, the birth rate of the rabbits was the same as its death rate.
- B From X to Y, the birth rate of the rabbits was greater than its death rate.
- C From Y to Z, the number of rabbits decreased due to a drought.
- D From Y to Z, many rabbits died because the migratory birds spread diseases to them.

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

13. Wai Yin wanted to conduct an experiment to find out if detergent has an effect on the growth of duckweeds. She collected some water from ponds S and T and prepared four different set-ups, A, B, C and D, as shown below.

set-up	water from pond	number of duckweeds	amount of pond water (ml)	amount of detergent added (ml)
A	S	15	100	15
B	S	15	100	0
C	S	20	200	15
D	T	20	200	0

Which of these set-ups should Wai Yin use to conduct a fair test for her experiment?

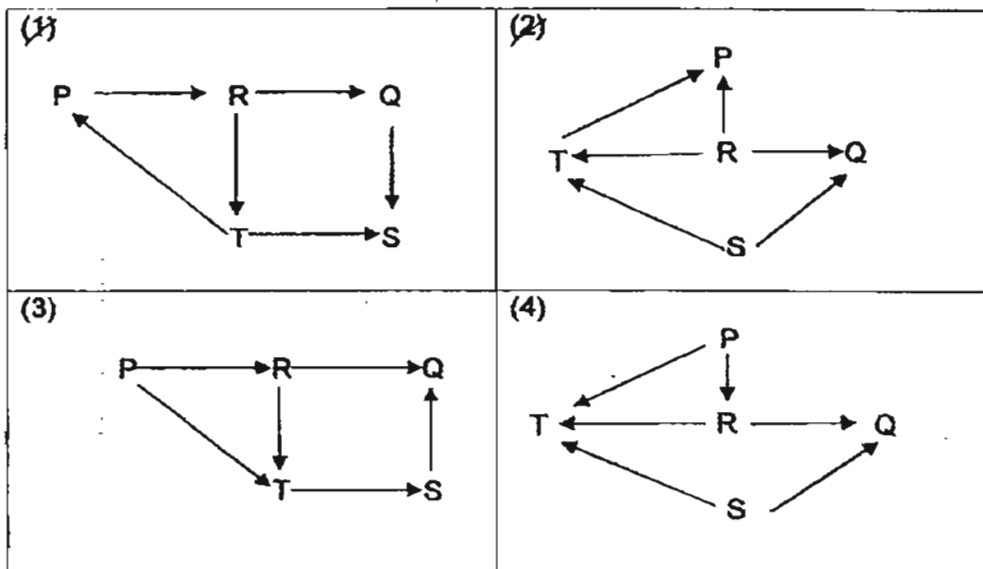
- (1) A and B only
- (2) A and C only
- (3) B and C only
- (4) C and D only

14. P, Q, R, S and T are five types of organisms.

The following statements describe the food relationships between these organisms.

P is a producer and is eaten by R and T.  
 Q is a predator of both R and S.  
 S preys on T.  
 T preys on R.

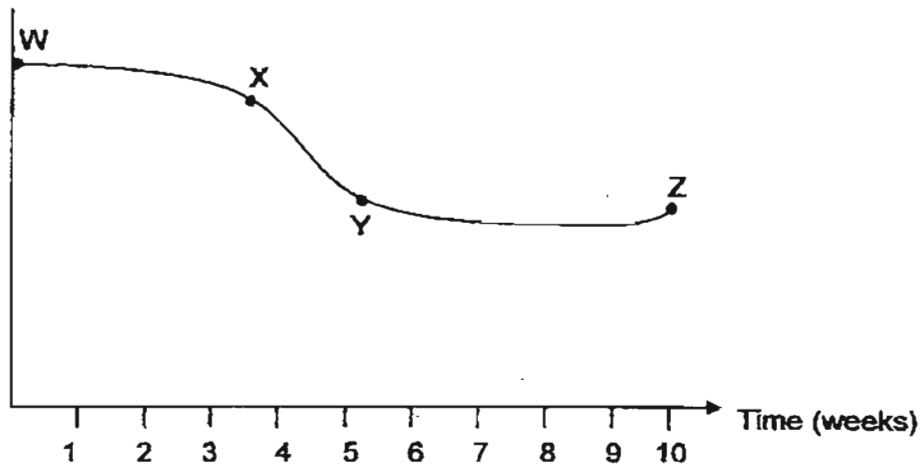
Which one of the following food webs shows the correct food relationships of these organisms?



15. A farmer planted crop X on his farm. After some time, he realised that aphids had attacked his crop. The farmer then introduced some ladybirds to his farm.

The graph below shows the changes in the area covered by crop X.

Area covered by  
crop X ( $\text{m}^2$ )



At which point, W, X, Y or Z, did the farmer introduce the ladybirds to his farm?

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

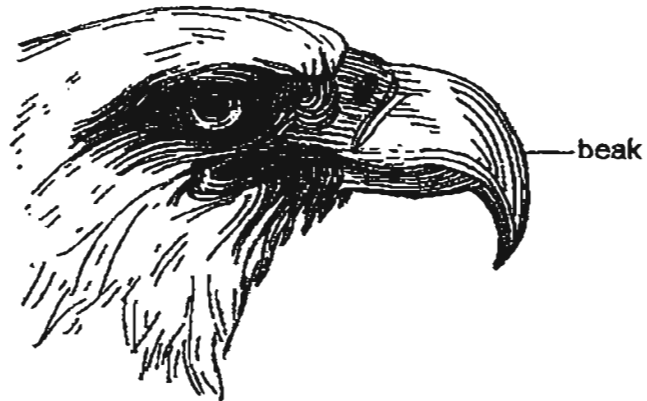
- 16 Some pupils took photographs of the following plants and animals from the same community.

<b>Animals</b>	<b>Plants</b>
ant	clovers
spiders	lallang
butterfly	mimosa
caterpillar	love grass
grasshopper	angsana tree

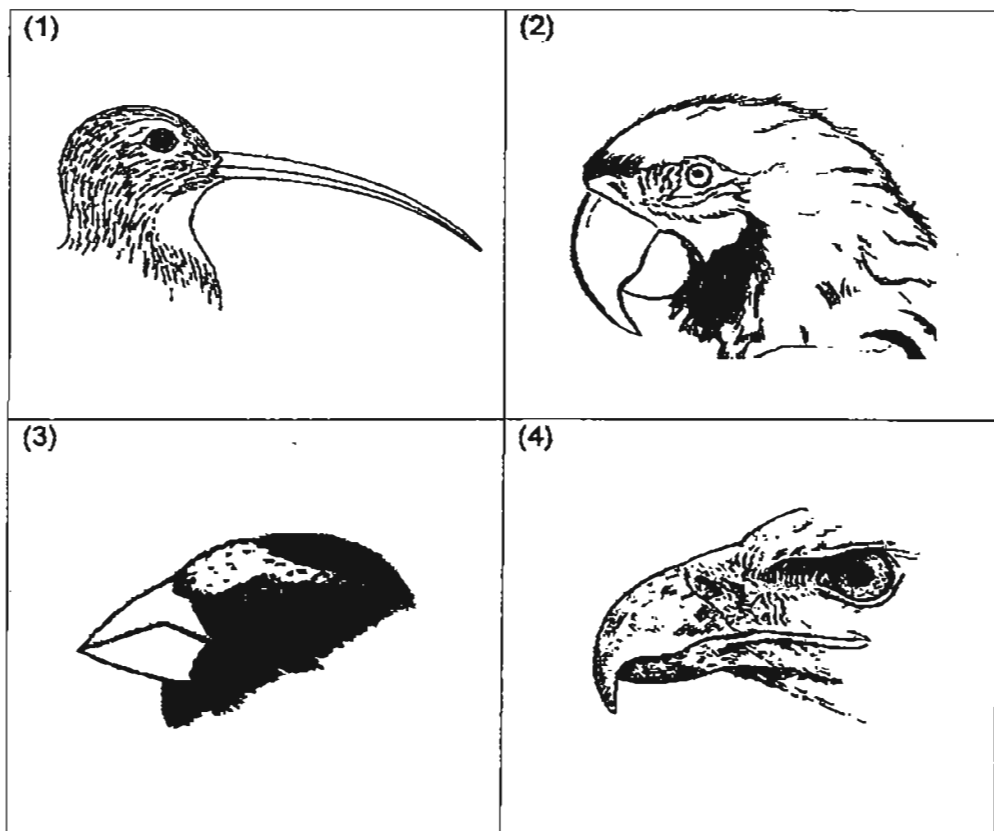
Based on the table above, which one of the following statements is true?

- (1) The pupils studied a field community.
- (2) The pupils studied a single tree community.
- (3) The pupils found an equal number of plants and animals.
- (4) The pupils collected five populations of animals and five populations of plants.

17. The diagram below shows the beak of a bird.

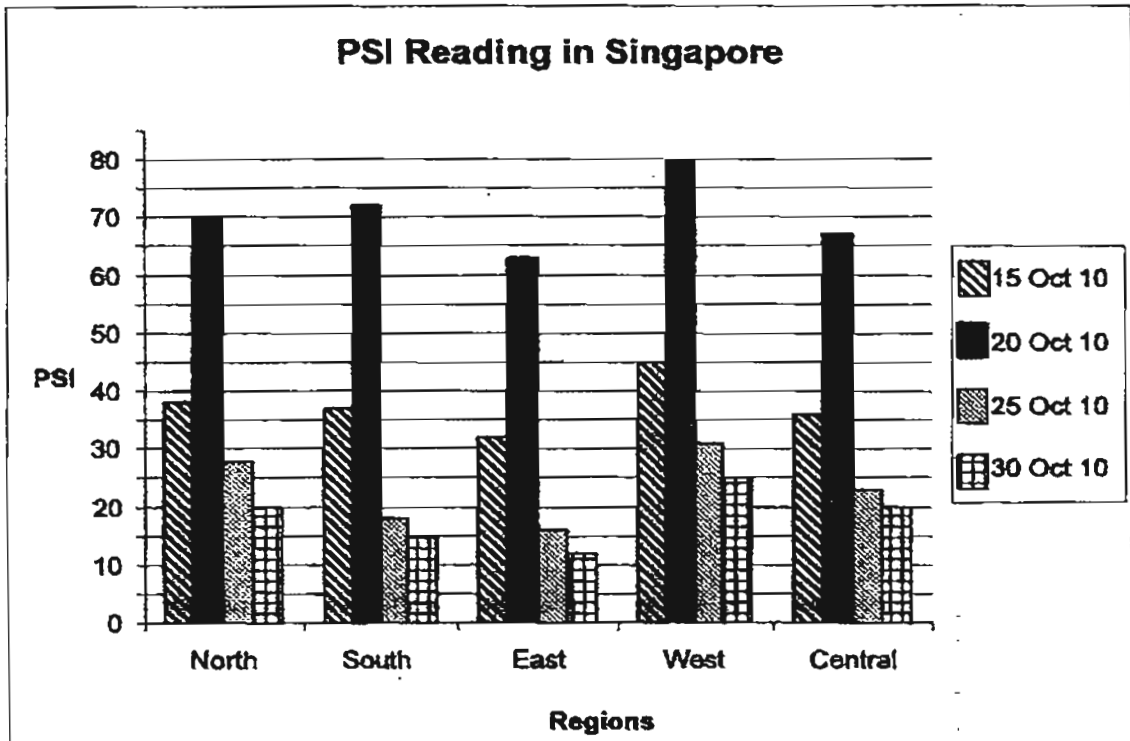


Which one of the following birds has a similar method of feeding as the bird shown above?





18. The graph below shows the Pollutant Standards Index (PSI) readings of the North, South, East, West and Central regions in Singapore.



PSI	Up to 50	51 - 100	101 - 200
PSI descriptor	good	moderate	unhealthy

[Note: PSI is a measure of concentrations of pollutants in the air.]

Based on the information above, which of the following statements are likely to be true?

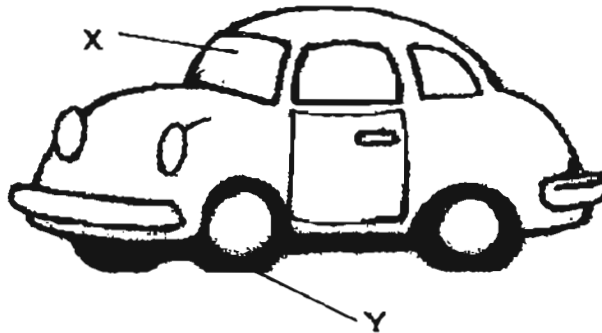
- A The PSI on all 4 days were within the good range.
- B The PSI on all 4 days was lower in the East than in the West.
- C The winds could possibly carry smoke particles from the forest fires in the neighbouring countries.

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

19. John observed four materials, P, Q, R and S, based on the following properties:  
A tick (✓) in the box indicates the property which the material has.

material	waterproof	transparent	flexible	floats on water
P	✓		✓	
Q			✓	✓
R	✓	✓		
S	✓	✓	✓	✓

Based on his observations, which one of the following is most suitable to make parts X and Y of the car as shown below?



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

20. Which of the following statements about matter are true?

- A Wind is matter.
- B Sound is matter.
- C Some matter can be compressed.
- D Some matter has mass but does not occupy space.

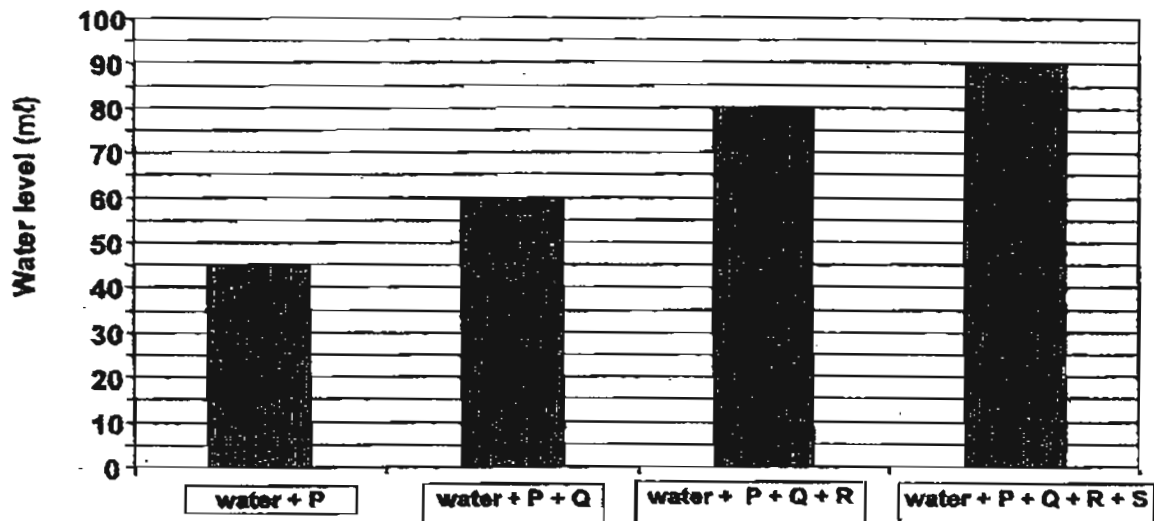
- (1) A and B only
- (2) A and C only
- (3) C and D only
- (4) B and C only

21. Zara conducted an experiment to find out the volume of some objects.

First, she filled up a measuring cylinder with 30 ml of water. Next, she lowered P completely into the water in the measuring cylinder and recorded the new water level.

She repeated the same steps for Q, R and S.

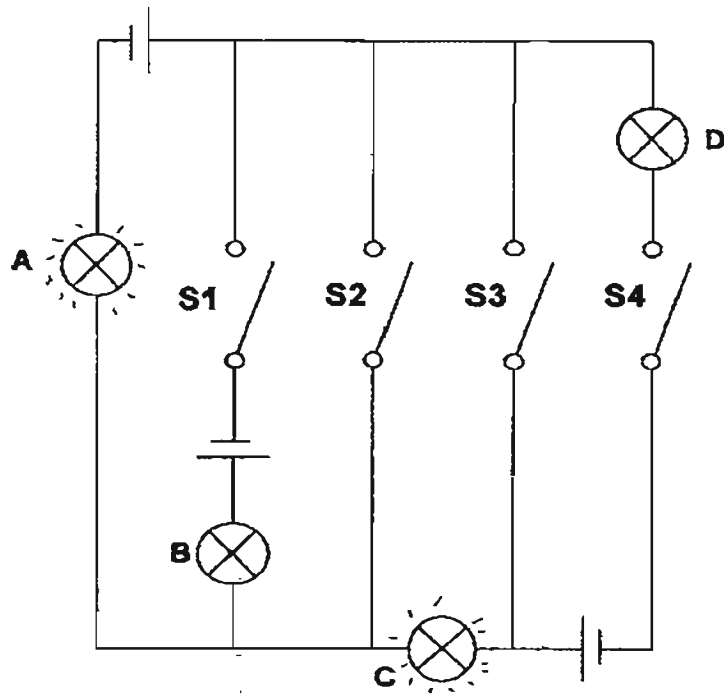
Zara drew the bar graph below to represent her findings.



From the graph shown above, which 2 objects were of the same volume?

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

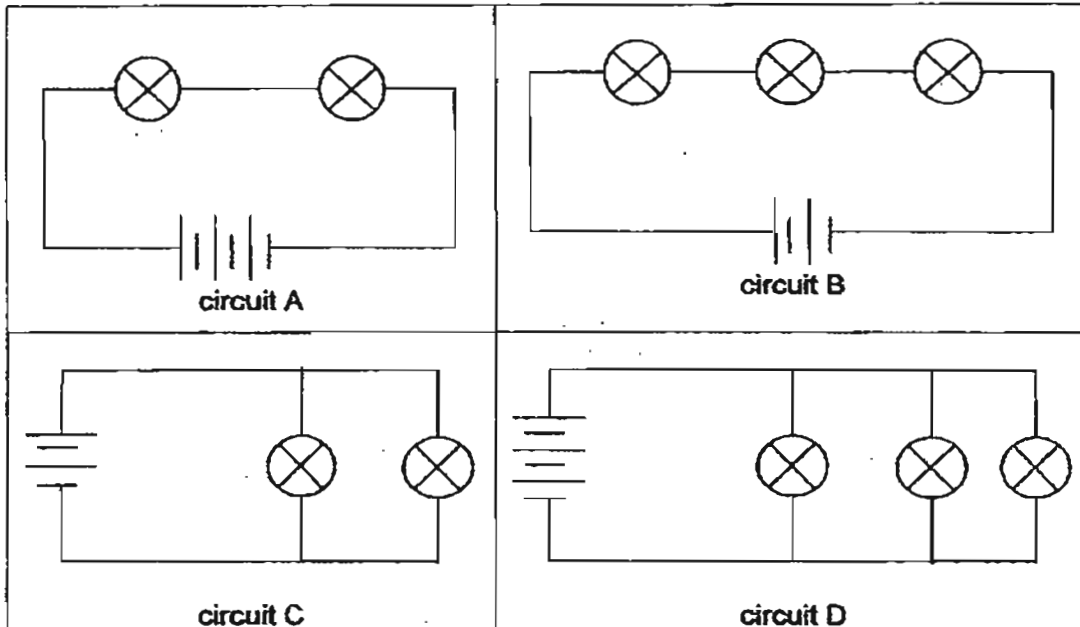
22. Andrew set up an electric circuit using identical bulbs A, B, C and D as shown in the diagram below.



Which switch should be closed to light up only bulbs A and C?

- (1) S1
- (2) S2
- (3) S3
- (4) S4

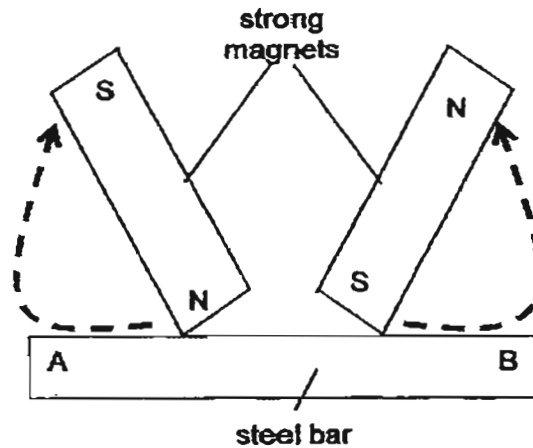
23. The diagrams below show four different circuits, A, B, C and D, using identical batteries, bulbs and wires.



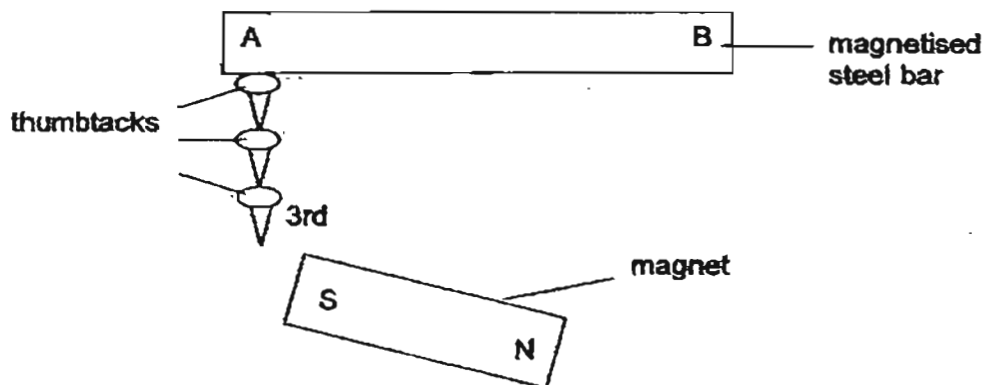
In which one of these circuits do the bulbs glow most brightly?

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

24. Peter magnetised a steel bar, AB, with two strong magnets as shown below.



Three thumbtacks were attracted to the magnetised steel bar. Peter brought one end of a strong bar magnet close to the tip of the 3rd thumbtack as shown below.

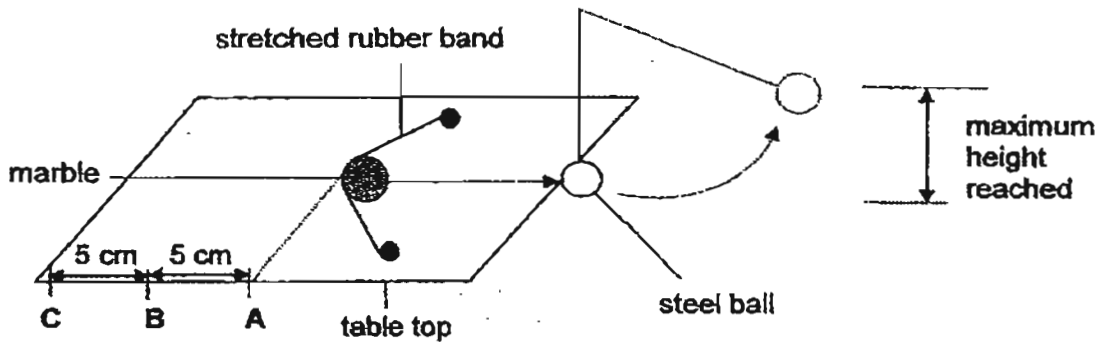


Which one of the following was possibly observed by Peter?

- (1) The 3<sup>rd</sup> thumbtack did not move.
- (2) The 3<sup>rd</sup> thumbtack fell to the ground.
- (3) The 3<sup>rd</sup> thumbtack moved towards the magnet.
- (4) The 3<sup>rd</sup> thumbtack moved away from the magnet.



26. Raju hung a steel ball at the edge of the table as shown below.



Raju stretched the rubber band to the starting point at A and released a marble to hit the steel ball. He recorded the maximum height reached by the steel ball when it swung away from the edge of the table.

He repeated his experiment with different starting points at B and C, ONE at a time, and recorded his results.

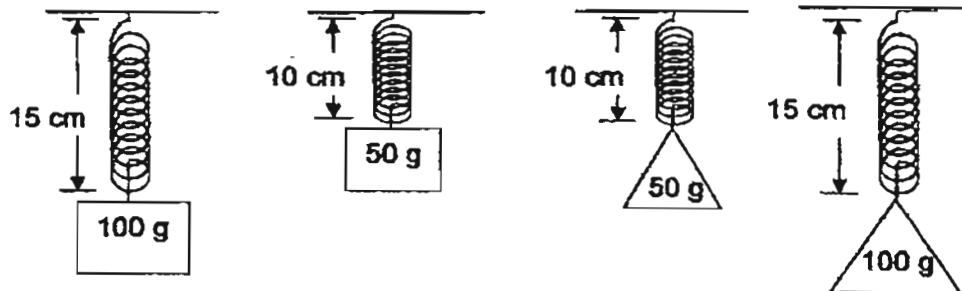
starting point	A	B	C
maximum height reached by steel ball (cm)	?	14	?

Which one of these readings could possibly be the maximum height reached by the steel ball when the starting points were at A and C?

maximum height reached by steel ball (cm)		
	at A	at C
(1)	10	7
(2)	10	18
(3)	17	20
(4)	20	9



27. Rachel conducted an experiment to compare the extension produced by objects hung on an identical spring. The diagrams show the force required to stretch the spring from its initial length of 5 cm.



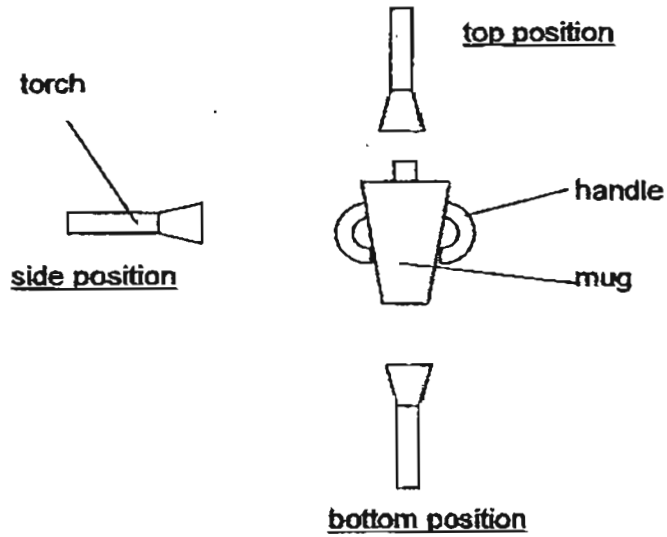
Rachel wrote the following conclusions:

- A The length of the spring increased when the mass of the object increased.
- B Every additional 50 g of mass resulted in an increased length of 5 cm of the spring.
- C The extension of the spring was more when the triangular object was used than when the rectangular object was used.

Which of Rachel's conclusions is/ are correct?

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

28. The set-up below shows a torch shining on a mug from different positions.



Which one of the following sets of shadows was observed?

	top position	side position	bottom position
(1)			
(2)			
(3)			
(4)			

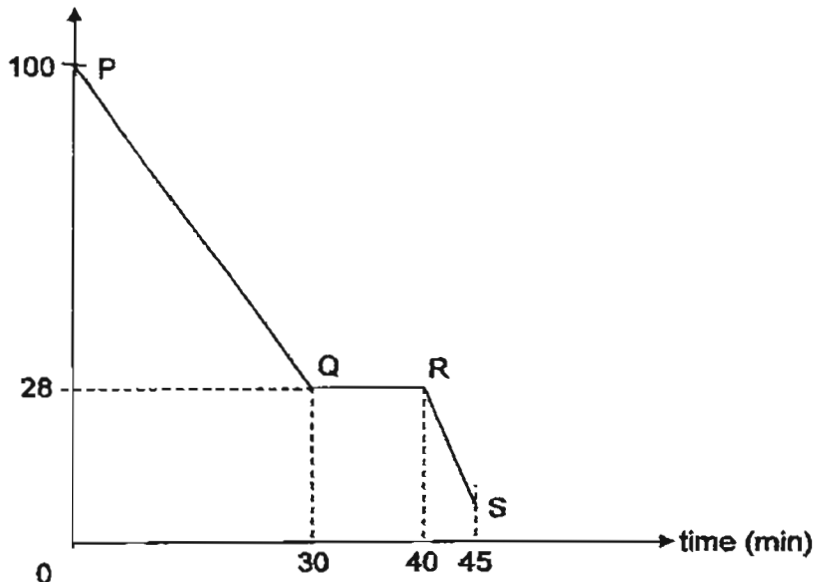
29. An object, X, has a melting point of  $60^{\circ}\text{C}$  and a boiling point of  $83^{\circ}\text{C}$ .

Which one of the following identifies the correct states of matter for X at the specific temperatures?

	at $50^{\circ}\text{C}$	at $100^{\circ}\text{C}$
(1)	solid	gas
(2)	liquid	gas
(3)	liquid	solid
(4)	gas	liquid

30. Sheryl put a beaker of boiling water on a table to cool down. When the water reached the room temperature for a while, she added some ice cubes to the contents in the beaker. She recorded her results in the graph below.

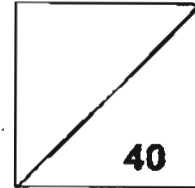
temperature of water( $^{\circ}\text{C}$ )



Based on the information above, which of the statements below are correct?

- A Condensation took place in the first 30 minutes only.
  - B The beaker of water took 30 minutes to cool down to room temperature.
  - C Ice cubes were added to the water 40 minutes after the start of the experiment.
  - D The water in the beaker became ice between 40<sup>th</sup> and 45<sup>th</sup> minute.
- (1) A and B only  
(2) A and D only  
(3) B and C only  
(4) C and D only

Name : \_\_\_\_\_ Index No : \_\_\_\_\_ Class : P6

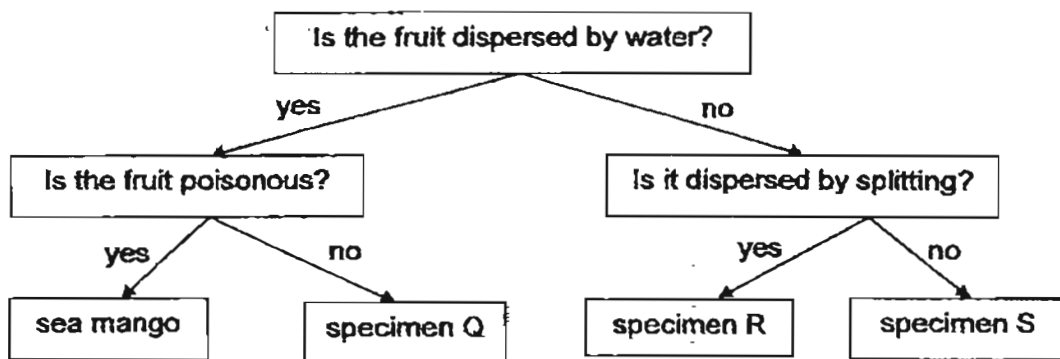


**SECTION B ( 40 marks)**

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

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

31. The flow chart below shows how some specimens are distinguished.

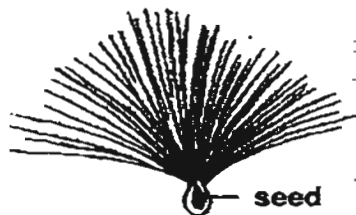


Based on the information above, answer the following questions:

(a) Identify the specimen below. Write letter Q, R or S ONLY. State its method of seed dispersal.

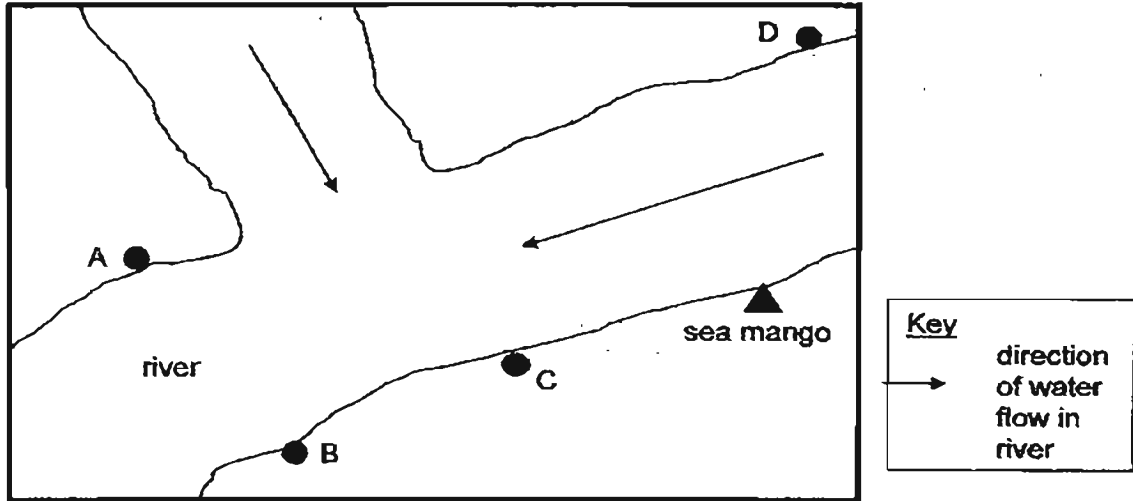
[1]

specimen	method of seed dispersal
	by



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The diagram below shows the different parts, A, B, C and D, of a river where sea mango was found growing.



(b) Name the most unlikely part of the river where the young of sea mango plant is found. Explain your answer. [2]

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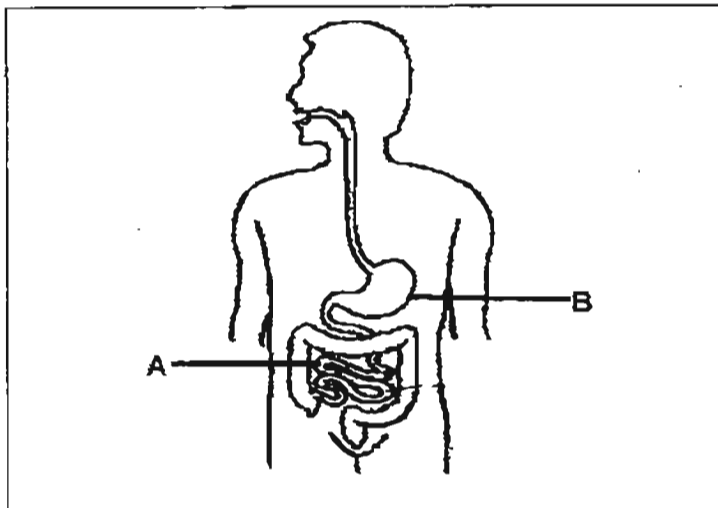
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(c) The fruit of the sea mango has a fibrous husk. Explain how this feature enables it to be dispersed by water. [1]

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



Based on the diagram above, answer the following questions:

(a) Name the parts A and B and state one function of each organ. [2]

part	function
A:	
B:	

(b) **MARK** and **LABEL** clearly on the diagram the part(s) of the system where each of the following processes take place: [1]

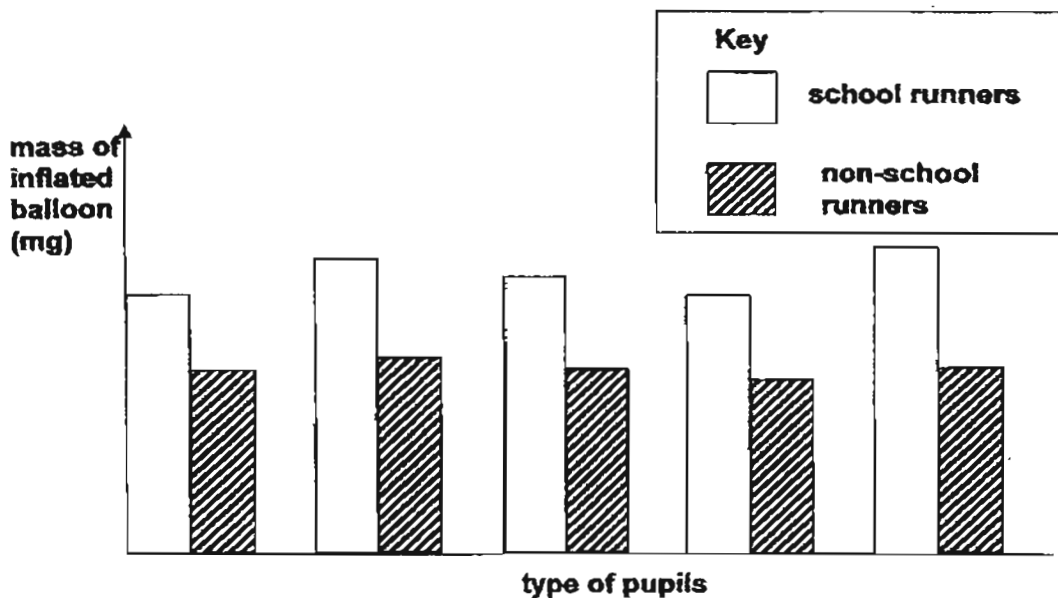
- (i) X, where digestion starts
- (ii) Y, where digestion ends





34. Khalid wanted to find out if school runners had a bigger lung capacity than those who were not. The term "lung capacity" refers to the amount of air the lungs of a person can hold.

He selected five school runners and five non-school runners of similar age group to conduct his experiment. Each pupil took a deep breath and blew into a deflated balloon in which its initial mass was recorded. The mass of the inflated balloon was measured. Khalid plotted a graph based on his results as shown below.



- (a) Which group of pupils, school runners or non-school runners, has a bigger lung capacity? Explain your answer. [1]

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To be continued on the next page

Khalid conducted another experiment using the same groups of pupils. He asked each pupil to stop breathing for 30 seconds by pinching his nose and closing his mouth. He was only allowed to breath after 30 seconds.

- (b) Khalid observed that both groups of pupils breathed much faster after they had stopped breathing for 30 seconds. Explain his observation. [2]

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35. The table below shows some facts on an animal X.

physical characteristics of X	has: <ul style="list-style-type: none"><li>• a rounded head</li><li>• small ears</li><li>• sharp teeth</li><li>• a body length of about 42 - 57cm long</li><li>• short legs</li><li>• a long tail</li><li>• soft, thick, brown fur</li><li>• a slender long tongue (12.7 cm), which is used in reaching for nectar</li></ul>
diet of X	feeds mainly on: <ul style="list-style-type: none"><li>• fruits</li><li>• nectar of flowers</li><li>• termites</li></ul>
predators of X	<ul style="list-style-type: none"><li>• P</li><li>• Q</li><li>• R</li><li>• S</li></ul>

Based on the information given above only, answer the following questions:

(a) Describe how animal X and the flowering plants depend on one another.

Animal X depends on the flowering plants: [1]

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Flowering plants depend on animal X:

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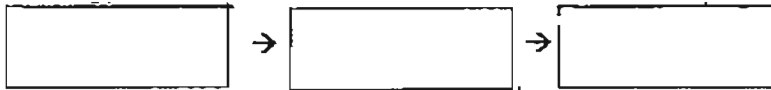
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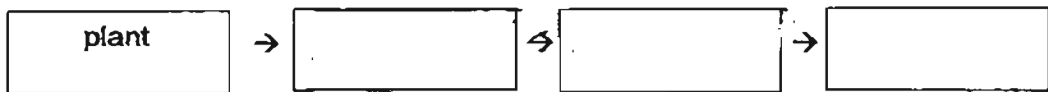
(b) Write down two different food chains involving animal X.

[2]

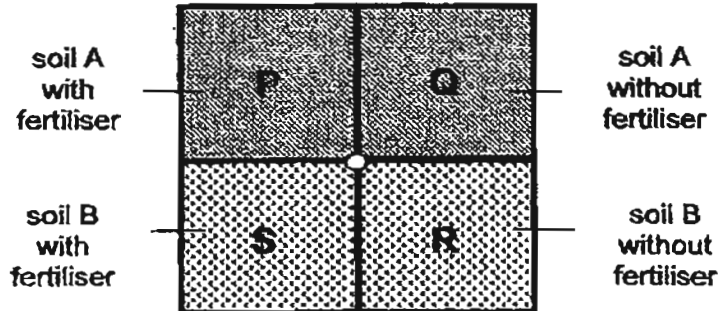
(i)



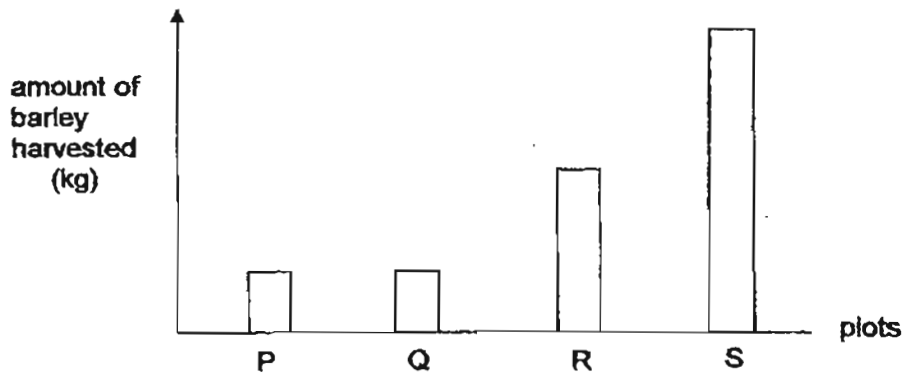
(ii)



36. Ali planted barley of the same variety in four identical plots of land, P, Q, R and S, as shown below.



He measured the amount of barley harvested and recorded the results in the graph below.



Based on the information above, answer the following questions:

- (a) Which type of soil, A or B, was more suitable for planting barley? Give a reason for your answer. [1]
- (b) Compare plots P and S. State one conclusion about each type of soil which Ali could draw from his results. [2]

type of soil	conclusion
A	
B	

37. Bird X does not make her nest but lays her eggs in the nest of another bird known as the 'host'.

The eggs of bird X look very much like the eggs of its host as shown below.

egg of host



egg of bird X

Bird X is able to get the parent host to incubate and rear its offspring.

- (a) Give a reason why the parent host fails to detect the difference. [1]

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The young of bird X is much larger than the young of the host. The young of bird X often kicks the host chick from its nest.

- (b) Give a reason why this behaviour is an advantage to the young of bird X when there is limited food supply. [1]

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38. Meili took a plastic air-tight container with its lid on to heat it in the microwave oven.

However before she could do so, her mother told her the covered plastic air-tight container would 'explode' in the microwave oven if she were to heat it that way.

- (a) What would happen to the air in the air-tight container when Meili heated it in the microwave oven? [1]

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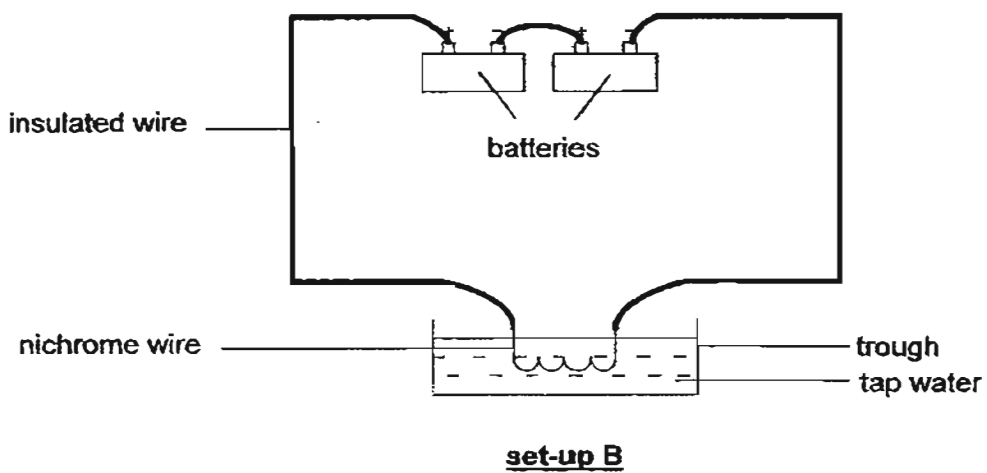
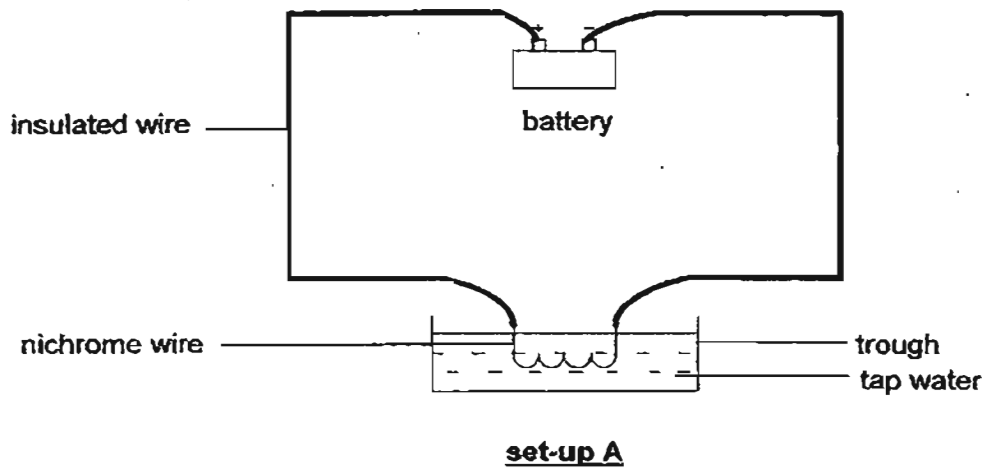
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- (b) What should Meili do to the air-tight container to prevent the 'explosion' as her mother had told her? Explain your answer. [2]

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39. Isaac used the following apparatus to find out which set-up would take a shorter time to heat up the same amount of water to 50°C.

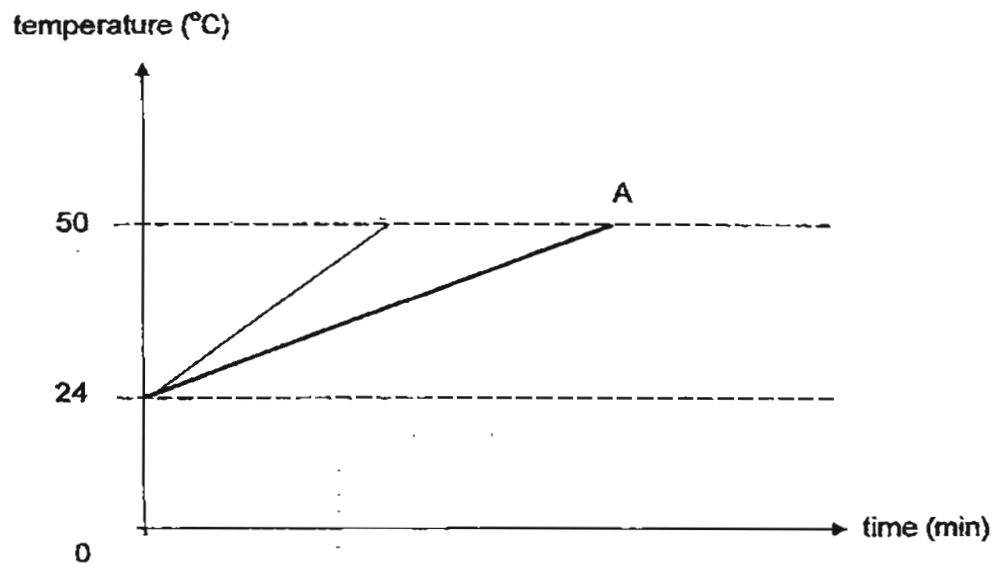


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Continued from page 40

- (a) **DRAW** and **LABEL** the line graph, B, to show the change in temperature of tap water in set-up B. [1]



To be continued on the next page



Based on the information on **page 42**, answer the following questions:

- (b) Classify liquids P, Q, R and S using the table below.  
Write letters, P, Q, R and S **ONLY**.  
Next, write a suitable sub-heading for each group of liquids.

[1]

<b>type of liquids</b>	
sub-heading:	sub-heading:

Isaac's teacher told him that he did **NOT** conduct a fair test for his experiment.

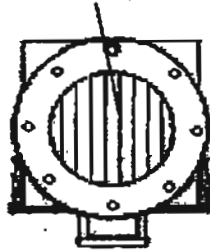
- (c) Suggest what Isaac should do to conduct a fair test for his experiment. [1]

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- 40 The diagram below shows a magnetic drawer which is used to remove fine iron and other magnetic substances from products such as sugar, tea and grains.

magnetic stainless steel  
tubes in opening



top view of magnetic drawer



side view of magnetic drawer

A mixture of fine iron and tea leaves are poured through the opening of the magnetic drawer.

Explain how the fine iron and tea leaves are separated.

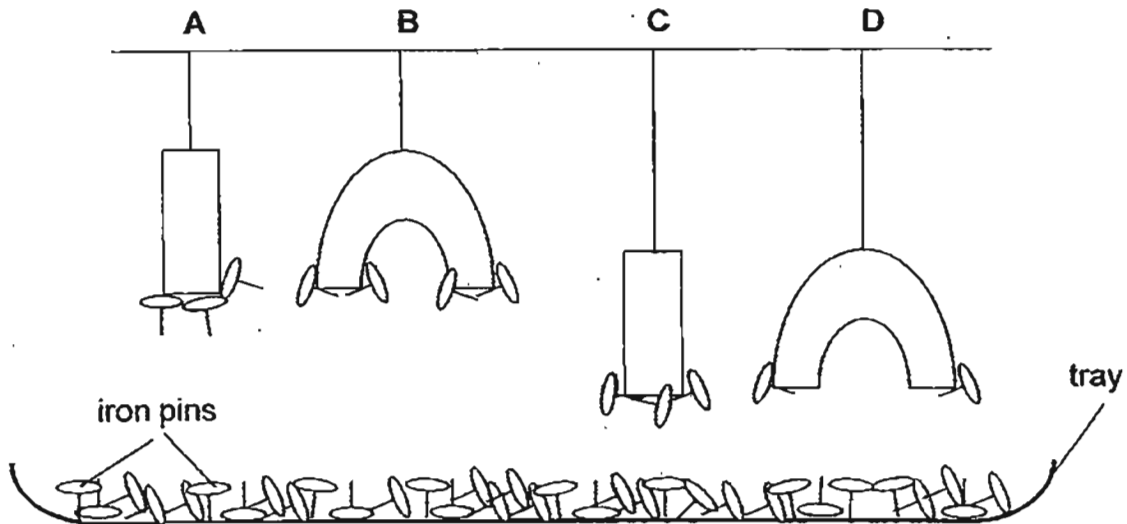
[2]

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41. Jane suspended 4 magnets above a tray of pins. Her observations were shown in the diagram below.



Based on her observations, Jane concluded that magnet B had the greatest magnetic strength.

Do you agree? Explain your answer.

[2]

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42. Takashi wanted to find out how different matter on tiled floor affects the friction on the floor.

He pulled a block along each type of floor three times and calculated the average applied force.

	type of floor	average applied force needed to pull the block (N)
A	tiled floor	200
B	tiled floor with a layer of oil	150
C	tiled floor with a layer of sand	250
D	tiled floor with a layer of water	180

- (a) Explain why Takashi used set-up A. [2]

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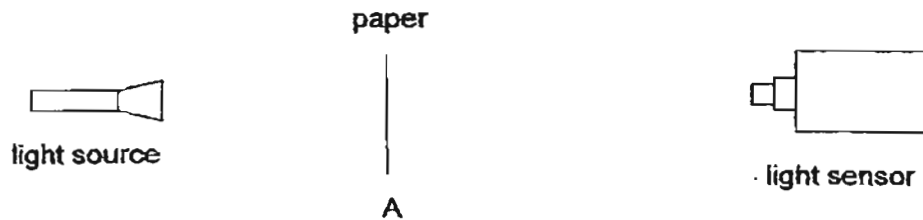
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- (b) Which substance on tiled floor created the least friction?  
Give a reason for your answer. [1]

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43. Dave used a light sensor to detect the amount of light that passes through paper at position A. He repeated his experiment by increasing the number of sheets of the same type of paper at A as shown in the set-up below.



He recorded his observations in the graph below.

number of sheet(s) used	amount of light detected (units)
0	80
1	32
2	13
3	5
4	2
5	1
6	0
7	0
8	0

Based on the information above, answer the following questions:

- (a) State the relationship between the number of sheets of paper and the amount of light detected. [1]

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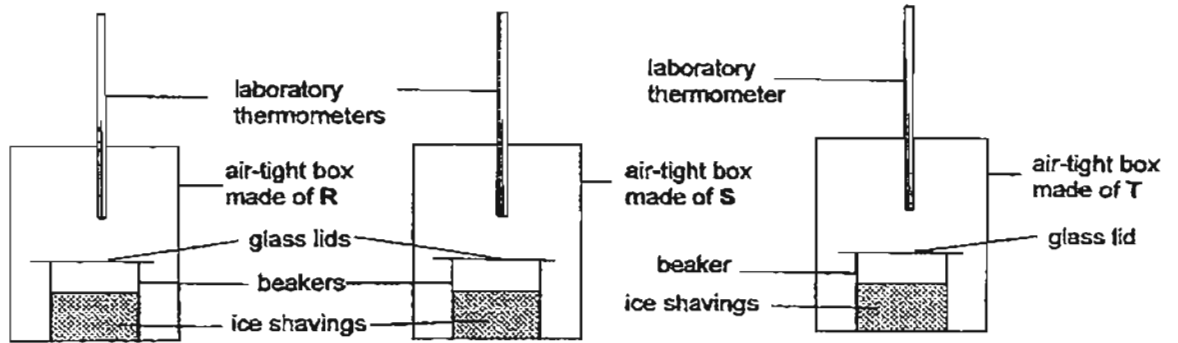
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Dave moved the light source further away from position A and light sensor.

- (b) What would be the amount of light detected by the light sensor for 3 sheets of paper? [1]

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44. Nathaniel placed an equal mass of ice shavings in 3 identical glass beakers. Each beaker was put in an air-tight box, each made of a different material, R, S and T, as shown in the diagrams below.



Based on the information above, answer the following questions:

- (a) Name the object(s) which lost or gained heat.  
Use the objects from the box below to complete the following table. [2]

air-tight box	beaker
ice shavings	glass lid

lost heat	
gained heat	

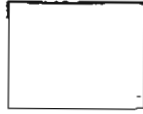
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Nathaniel recorded the temperature of air in each box at the beginning and at the end of his experiment in the table below.

box	temperature of air in box ( $^{\circ}\text{C}$ )	
	at the start	at the end
R	28	8
S	28	12
T	28	5

- (b) Based on Nathaniel's results above, arrange the materials, R, S and T, of boxes according to how each conducted heat as follows: [1]



poorest conductor of heat

- (c) Which material, R, S or T, is most suitable for keeping ice-cream? Explain your answer. [1]

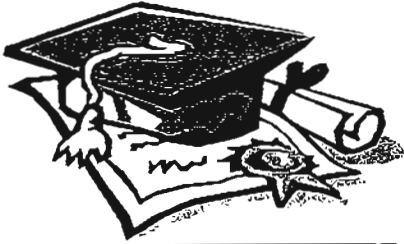
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– END OF PAPER –

Setters: Miss Lim Siew Hoon, Mdm Jane Woon, Mrs Jenine Soh



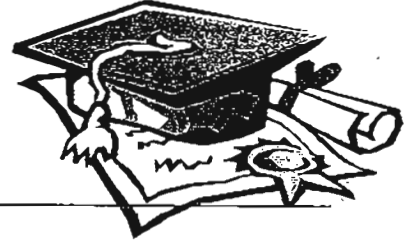


# ANSWER SHEET

**EXAM PAPER 2011**

**SCHOOL : RAFFLES GIRLS' PRIMARY  
SUBJECT : PRIMARY 6 SCIENCE**

**TERM : SA1**



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

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

31)a)S by wind

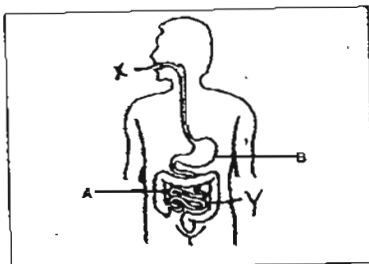
b)Part D. As the sea mango is found near the river the seeds most likely dispersed by water. The seed will follow the current of the water, but the seed will have to go against the current to get from the parent plant to D.

c)The fibrous husk traps air into its air space to allow the fruits of the sea mango to float on water.

32)a)A: small intestine

B: stomach

b)



allows digested food and nutrients to be absorbed into the bloodstream.

produces digestive juices to break down food into simpler substance.

33)a)plant cell: A, C animal cell : B

b)A plant cell has cell wall and chloroplast but an animal cell does not. A and C has cell wall and chloroplast, thus they are plant cell. B does not have cell wall or chloroplast, thus it is an animal cell.

34)a) School runners. The mass of the inflated balloon the school runners blew into were heavier than the mass of the inflated balloon the non-school runners blew into. Thus meaning that there is more air inside as air has mass and the school runners had blown in more air than the non-school runners.

b) When the pupils stopped breathing, they need more oxygen and thus when they started again, they need to breath much faster to make up for the loss of oxygen.

35)a) Animal X depends on the flowing plants for food as it feeds on the nectar in the flower.

Animal X feeds on the termites that feed on the plant, thus helping it get rid of pests and grow more healthily.

b)i) part  $\rightarrow$  animal X  $\rightarrow$  Q

ii) Plant  $\rightarrow$  termites  $\rightarrow$  animal X  $\rightarrow$  P

36)a) Soil B. More amount of barley was harvested on soil B as compared to soil A.

b)A: Soil A with fertilizers is not a suitable soil for the barley to grow in.

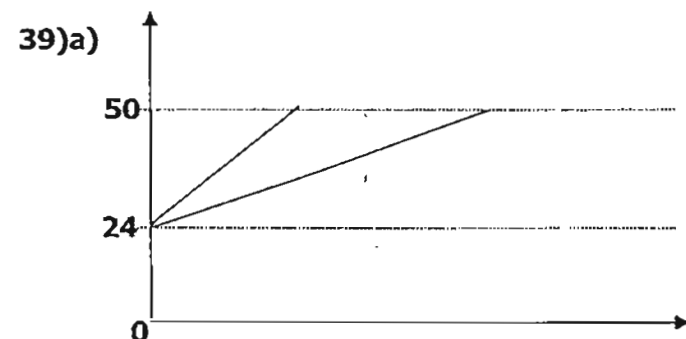
B: Soil B with fertilizers is the best soil for the barley to grow in.

37)a) The egg of host and the egg of bird X look very much alike except that the egg of bird X is only a bit larger.

b) When there is a limited food supply the young of bird X will be able to eat most of the food as when the young of the host is kicked out of the nest, the habitat out of the nest is most likely not favorable for it to survive; it is too young to know how to go back to its nest and the host might not realise it thus most of the food is fed to the young of bird X.

38)a) The air in the air-tight container will expand, until there is no space and will push the container till it 'explodes'.

b) Meili should take out the cover of the container. By doing that the expanded air in the container will be able to move around in the microwave oven and thus the container will not 'explode'.



b) sub-heading: non-conductor of electricity. (P)

sub-heading: conductor of electricity. (Q,R,S)

c) Issac should keep the amount liquid used constant.

40)When the fine iron passes through the magnetic stainless steel tubes, they will get attracted to it, whereas the tea leaves will pass through the tubes into the collector thus all the fine iron is on the tubes while all the tea leaves are in the collector.

41)No. Magnet A has only one pole facing the tray hence it is not a fair test. All the magnets should have both their poles facing the tray.

42)a)Set-up A acts as the control of the experiment to ensure that the matter affects the friction between the floor and the block.

b)A layer of oil. Oil acts as a lubricant to reduce friction between the floor and the block.

43)a)The more number of sheets used, the lesser amount of light detected. However, when there are six or more sheets used the amount of light detected will remain constant at 0 units.

b)3 units.

44)a)lost heat: glass, lid, beaker, air-tight box

Gained heat: ice shavings

b)T R S

c)Material T. It conducts the least heat into the air tight box as the temperature of air in the box is the lowest so it is most suitable for keeping ice-cream.