RAFFLES GIRLS' PRIMARY SCHOOL

SEMESTRAL ASSESSMENT (1) 2010

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 5 ___

7th May 2010 **SCIENCE** Attn: 1h 45min

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.

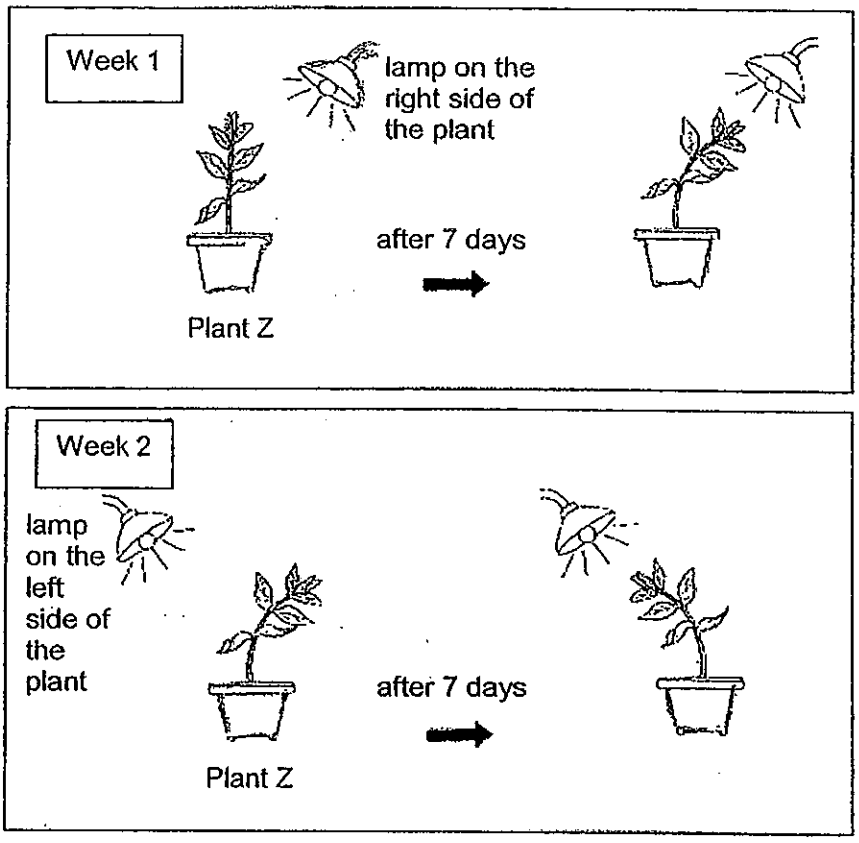
1. The table below shows the characteristics of two organisms, X and Y.

	X	Y
Can it bear flowers?	no	no
Can make its own food?	yes	no

Which one of the following pair of organisms can be represented by X and Y?

	X	Y
(1)	toadstool	grass
(2)	bacterium	cactus
(3)	balsam plant	moss
(4)	bird's nest fern	mushroom

2. Adam conducted the following experiment on Plant Z. He shone a lighted lamp on a plant at a different angle for a week and recorded the following observations:



What characteristics of plants was Adam trying to show in the experiment?

Plants _____ .

A respond to stimuli

B need light to survive

C need water to survive

D need oxygen to survive

E grow in the direction of light

(1) A and E only

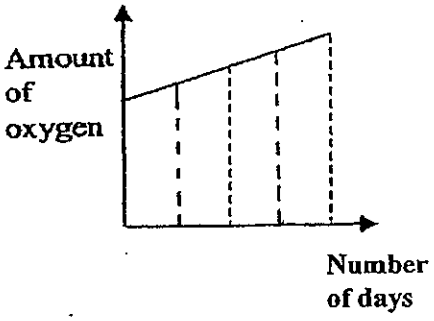
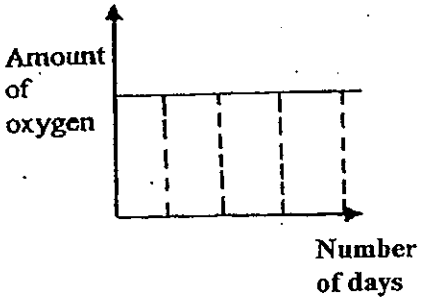
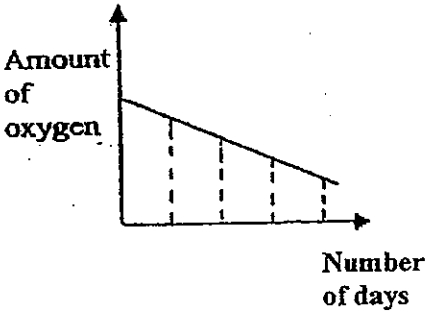
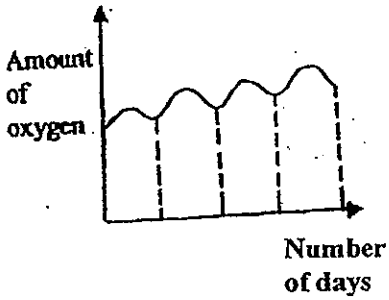
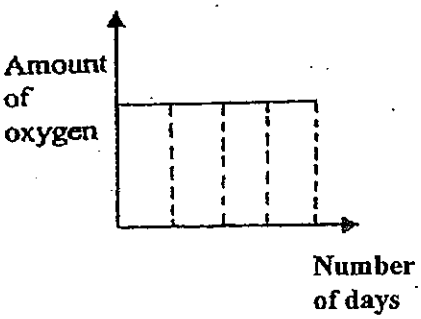
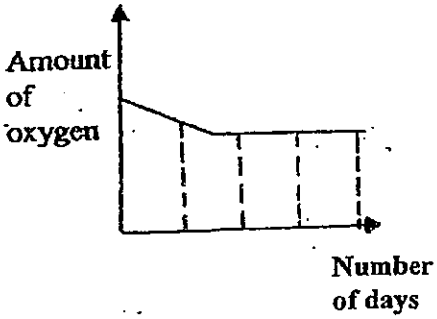
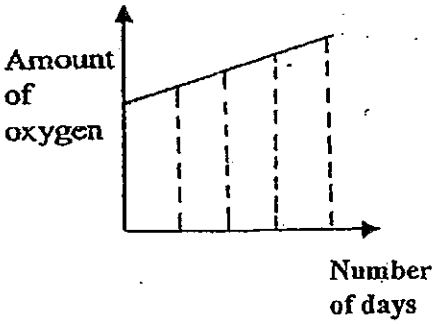
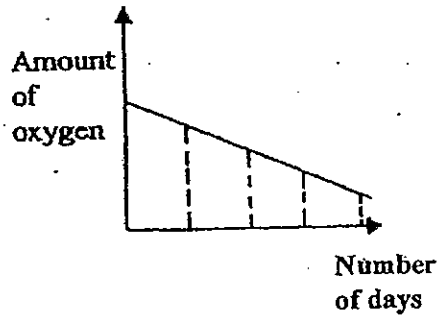
(2) C and D only

(3) A, B and E only

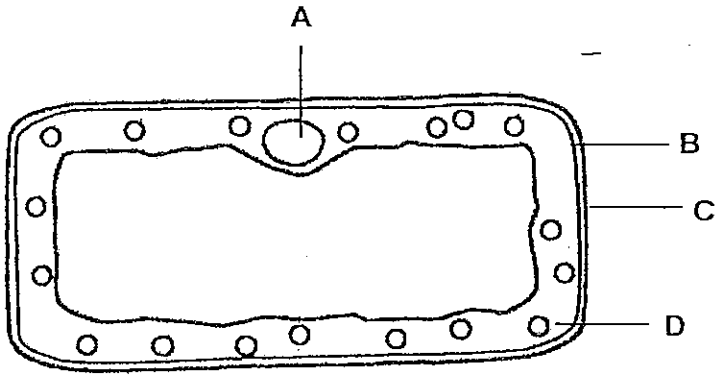
(4) B, C and D only

3. Two identical glass containers were each placed over a toadstool and an elephant fern. Both containers were placed side by side in a field for a period of 4 days and 4 nights.

Which one of the following pairs of graphs represents the change in oxygen level in these two glass containers?

	toadstool	elephant fern
(1)		
(2)		
(3)		
(4)		

4. One of the functions of the brain is to control some of the activities in the body. The diagram below shows a type of cell.



Which one of these cell structures has a similar function as that of the brain?

(1) A (2) B

(3) C (4) D

5. Cell X has **NO** chloroplast. Which of the following statement(s) is/are valid about cell X?

A Cell X cannot carry out photosynthesis.

B It can still be a plant cell although there is no chloroplast.

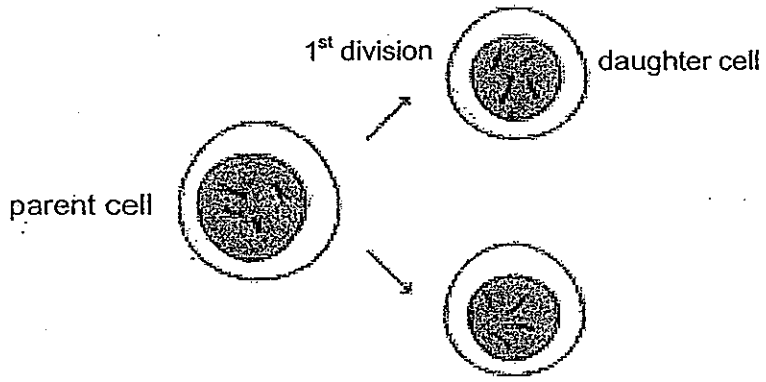
C It cannot be a plant cell since it does not have chloroplasts.

D Since it does not have chloroplasts, it cannot have a cell wall.

(1) A only (2) A and B only

(3) C and D only (4) B, C and D only

6. The diagram below shows the reproduction of amoebae from 1 parent cell.

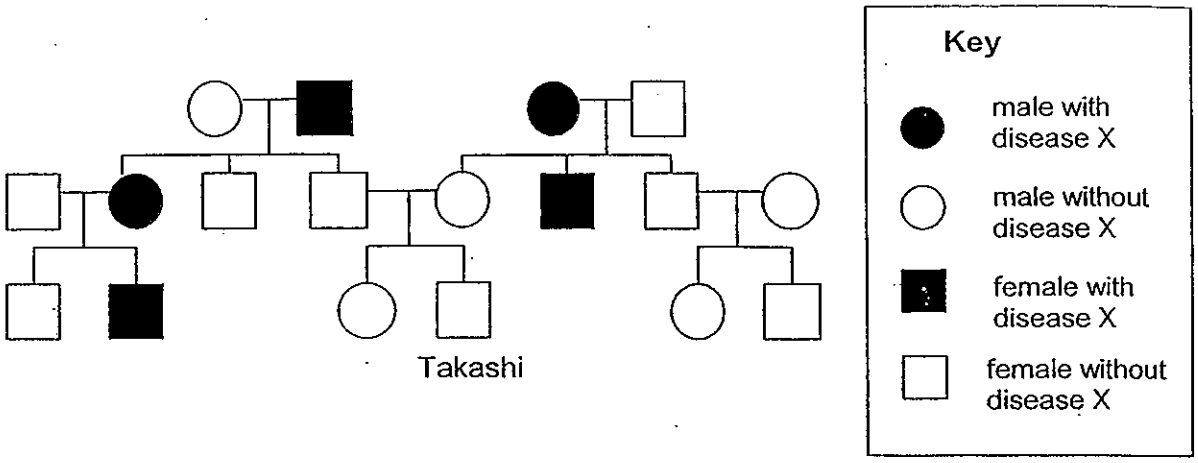


How many amoebae will there be after its 6th division?

(1) 16 (2) 32

(3) 64 (4) 126

The diagram below shows Takashi's family tree.



Based on the diagram above, answer **questions 7 and 8**.

7. Which one of the following information **CANNOT** be obtained from Takashi's family tree?

   (1) the number of uncles Takashi has

   (2) the number of sisters Takashi's mother has

   (3) the number of Takashi's aunts who are still alive

   (4) the number of Takashi's family members with disease

8. How many cousins does Takashi have?

   (1) 5

   (2) 6

   (3) 3

   (4) 4

9. The photographs below show John Lennon and his son, Julian.

John Lennon

Julian Lennon

Three students made the following statements:

Ali : Both men have identical physical traits since they are father and son.

Bob : Julian's physical traits are yet to be identical to John's because Julian has yet to mature.

Charlie : Julian looks similar but not identical to his father because John only contributes some of the physical traits that Julian has.

Which of these students made the correct statement(s)?

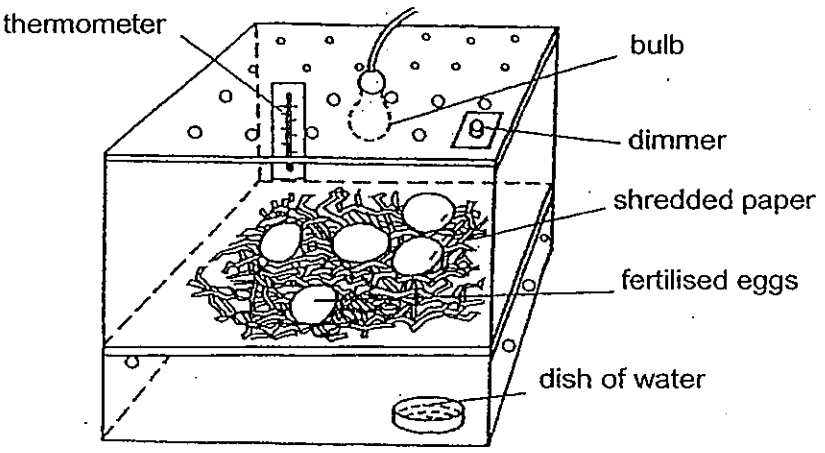
(1) Ali only

(2) Bob only

(3) Charlie only

(4) Ali and Bob only

10. Joyce wanted to find out if the temperature in an incubator will affect the average length of time to hatch an egg. She had two incubators for her experiment. One of them is shown below.

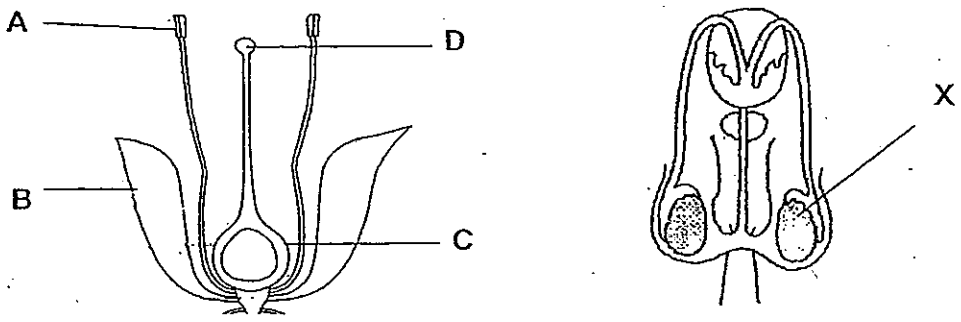


Which of the following variables must Joyce keep constant for both her set-ups to ensure a fair test?

A the day the eggs were laid
B length of time to hatch the eggs
C temperature in the incubators
D place where the incubators are kept

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

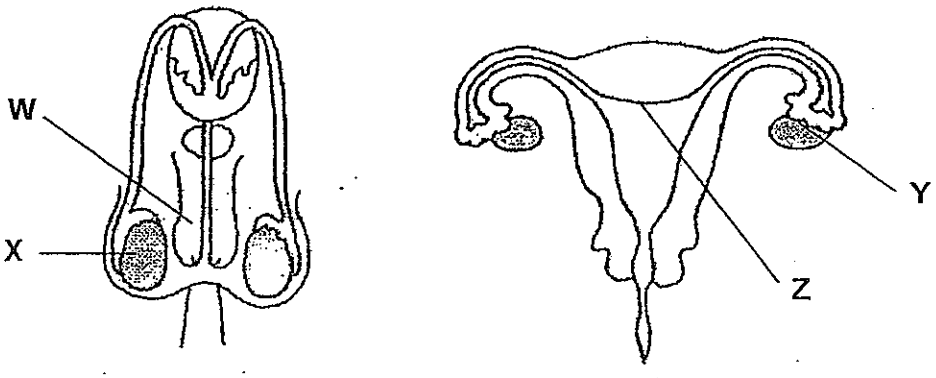
11. The diagrams below show parts of the reproductive systems of a flower and of a man.



Based on the diagrams above, which part of the flower has a similar function as X?

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

12. The diagrams below show the human reproductive systems.



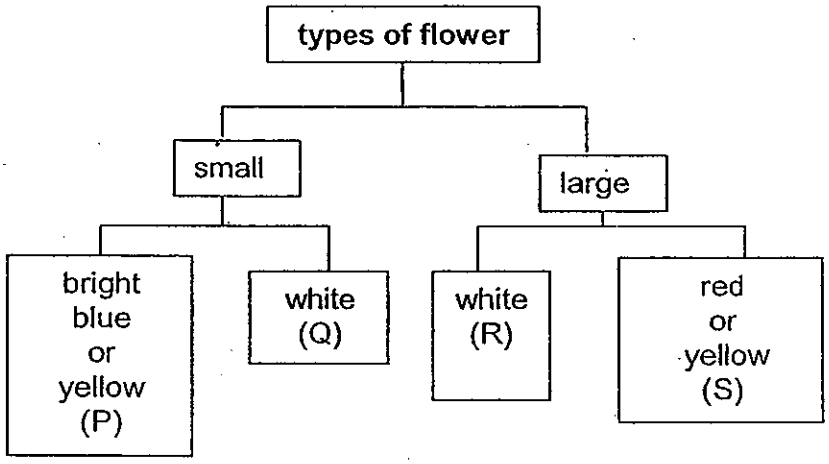
Which parts produce the sex cells?

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

13. The table below shows the characteristics of some flowers that attract specific animals.

type of animal	physical characteristics of flowers that mainly attract the animal		
	size	colour	smell / odour
B	small	bright blue or yellow	-
C	large	white	spicy or foul
D	small	white	-
E	large	red or yellow	-
F	large	white	fruity

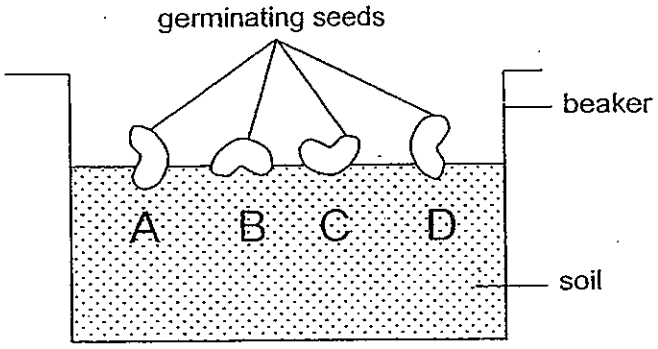
Different types flowers, P, Q, R and S, are classified as shown below.



Which one of the following identifies correctly the types of animals which will be attracted to flowers P and S?

	flower P	flower S
(1)	B	C
(2)	B	E
(3)	D	E
(4)	E	F

14. Shivani took 4 germinating seeds, A, B, C and D of the same type and grew them in 4 different positions as shown in the diagram below.



Which of these seeds would develop their shoots upward and their roots downwards?

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

15. Nicole had 3 seeds with wing-like structures from the same parent plant. She removed some parts of the seeds as shown in the diagrams below.

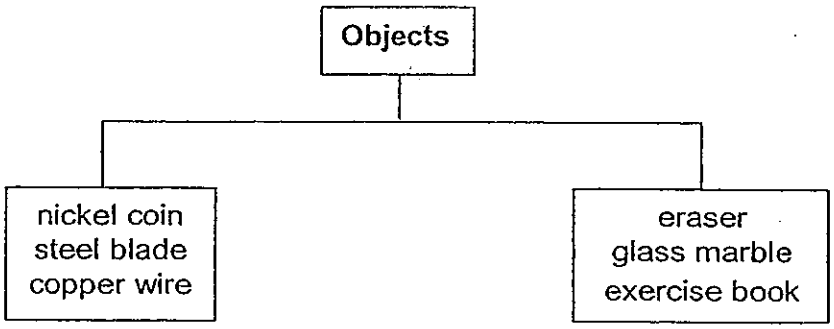
 A	 B	 C
wing-like structure totally removed	wing-like structure partially removed	none of the wing-like structure was removed

Nicole dropped each seed from a height of 10 m at the same time. She observed and recorded the time taken for each seed to reach the ground.

Which one of the following shows the most likely result?

	time taken for the seed to reach the ground (sec)		
	A	B	C
(1)	6	4	2
(2)	3	5	7
(3)	3	5	4
(4)	5	2	7

16. The classification chart below shows how some objects are differentiated.



How are the above objects classified?

A according to their ability to float or sink in water

B according to their metallic or non-metallic property

C according to their magnetic or non-magnetic property

(1) A only (2) B only

(3) C only (4) B and C only

17. Solomon conducted tests on materials P, Q, R and S. He recorded the results in the table below.

A tick (✓) in the box indicates the property which the object has.

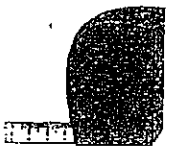
material	It is flexible.	It is fragile.	It does not tear easily.
P	✓		
Q		✓	✓
R	✓		✓
S			✓

Which one of these materials is most suitable for making a wind-resistant jacket?

(1) P (2) Q

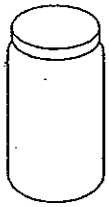
(3) R (4) S

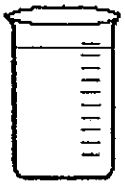
18. Yusuf had only the items below to use for conducting experiments. He had the choice **NOT** to use all the items in his experiments.


measuring tape


wooden cubes


iron cubes


glass jar


beaker of water


screen

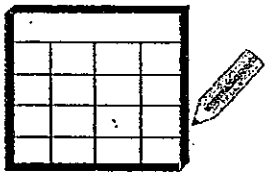
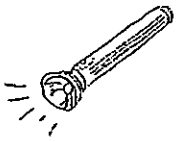
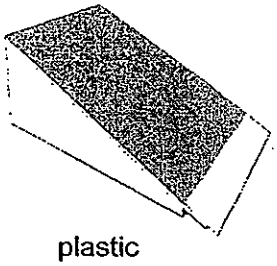


table for recordings


torch


plastic ramp

Which one of the following questions cannot be tested using only the above given items?

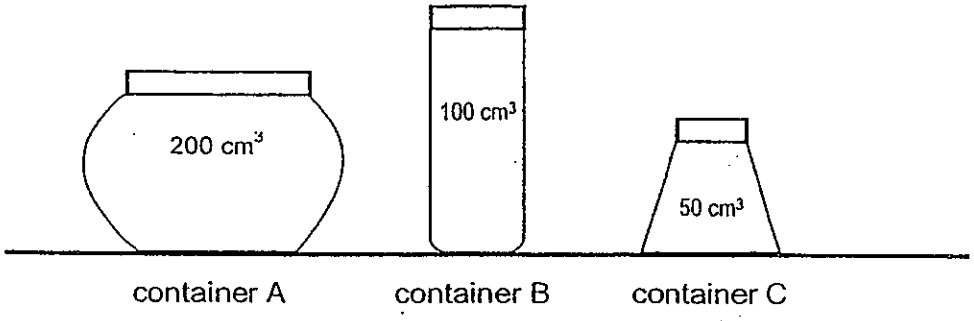
(1) Does the material of a jar affect its shadow cast?

(2) Does the material of a cube affect its ability to float?

(3) Does the amount of water in the jar affect how far it will roll?

(4) Does the distance between a cube and a torch affect the size of its shadow?

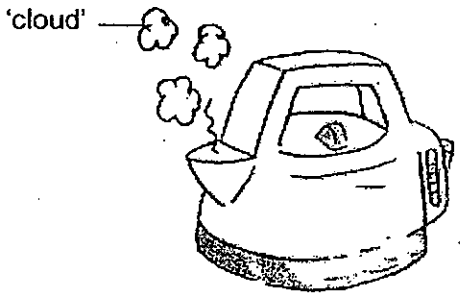
19. Mina wants to store 100 cm^3 of oxygen gas in a container.



Which of these containers can be used to contain the gas completely?

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

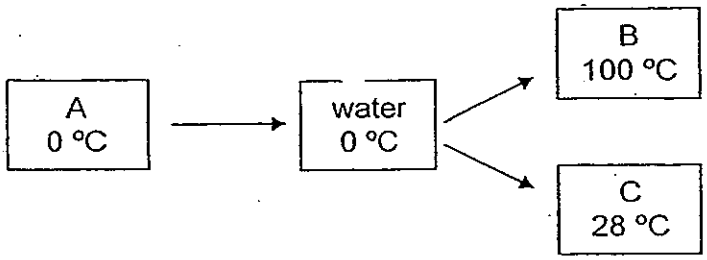
20. Tommy's teacher asked the class to observe the 'clouds' that formed at the mouth of a boiling kettle.



What were these white 'clouds'?

(1) steam
(2) water droplets
(3) hot water vapour
(4) cool water vapour

21. A, B and C in the diagram show the different states of water.

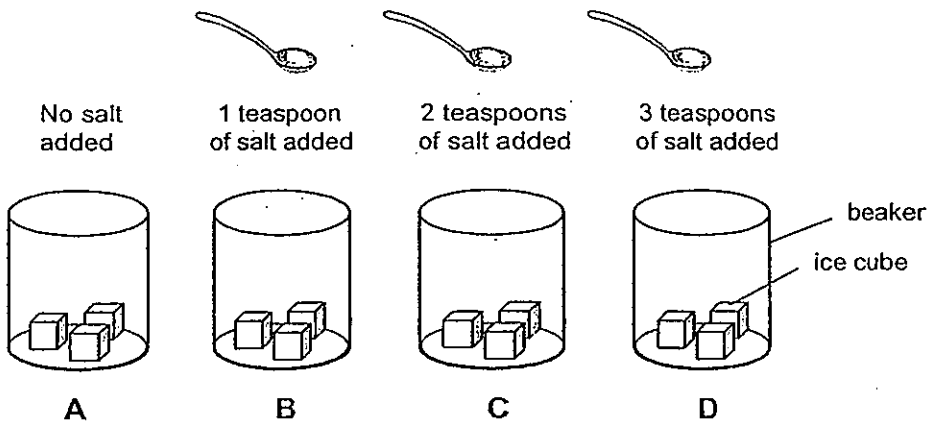


Which one of the following identifies correctly the different states of water, A, B and C, correctly?

	A	B	C
(1)	solid	liquid, gas	solid
(2)	gas	liquid	liquid, gas
(3)	solid	liquid	liquid, gas
(4)	liquid	gas	solid

22. Taufik was told that in countries where it snowed during winter, salt was sprinkled on roads to prevent water from melted snow to turn into ice again, causing danger to motorists.

He conducted an experiment to find out the effect of salt on ice cubes as shown in the set-ups below.



Taufik placed 3 ice cubes in each of the 4 beakers. He added different amounts of salt into each beaker and placed all the beakers near a window.

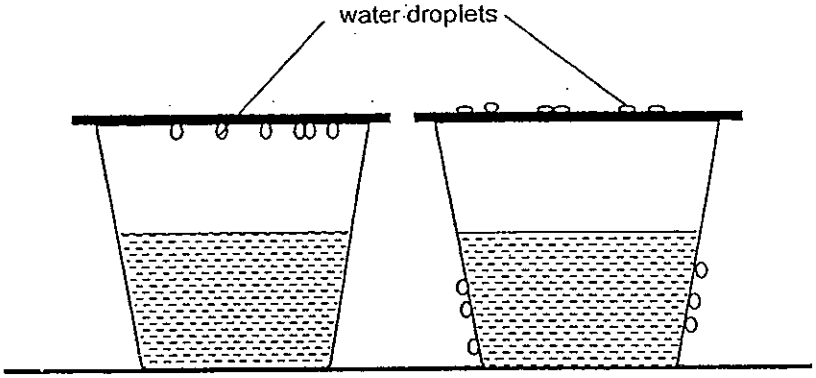
Taufik recorded his observations in a table as shown below.

beaker	time taken for ice cubes to become water completely (minutes)
A	48
B	40
C	35
D	22

What could Taufik conclude from his experiment?

(1) Salt had **NO** effect on the ice cubes.
(2) Salt caused the ice cubes to evaporate.
(3) Salt caused the ice cubes to melt more slowly.
(4) Salt caused the ice cubes to melt more quickly.

23. Megan poured an equal amount of water, each of a different temperature into 2 identical glasses, A and B. She covered them with identical lids. The diagrams below show what Megan observed after 5 minutes.



Which one of the following describes the water in each glass correctly?

	water in glass A	water in glass B
(1)	cold	cold
(2)	cold	hot
(3)	hot	cold
(4)	hot	hot

24. The presence of unwanted substances in water results in water pollution. Which of the following are possible results of water pollution?

A There is a shortage of rain on the land.

B Water becomes too salty for people to drink.

C Sunlight cannot reach water plants for them to carry out photosynthesis.

D Some poisonous pollutants kill the fish and other living things in the water.

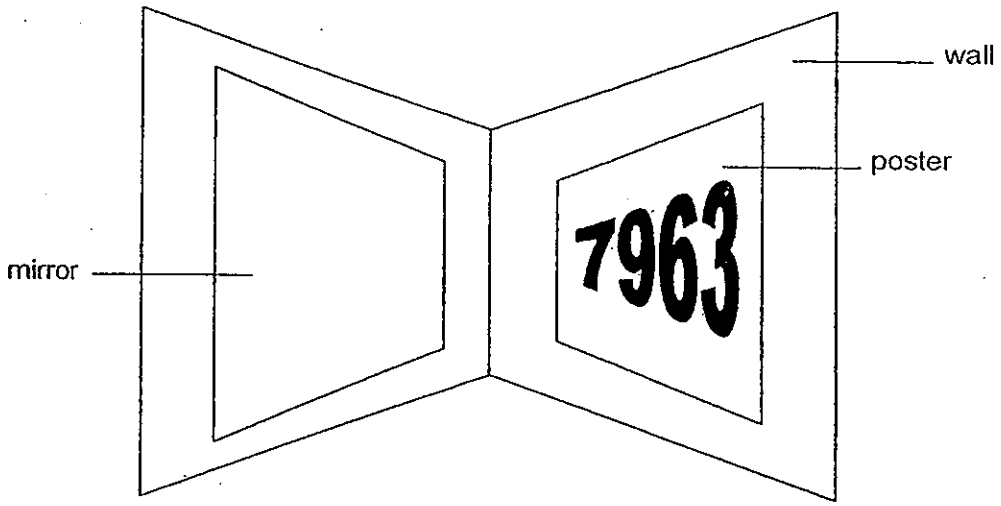
(1) A and B only

(2) C and D only

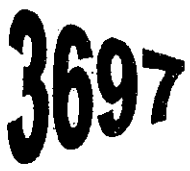
(3) B, C and D only

(4) A, B, C and D

25. Jill put up a four-digit numbered poster on a wall in front of a mirror as shown below.



Which one of the following images shows the correct reflected image of the four-digit number on the mirror?

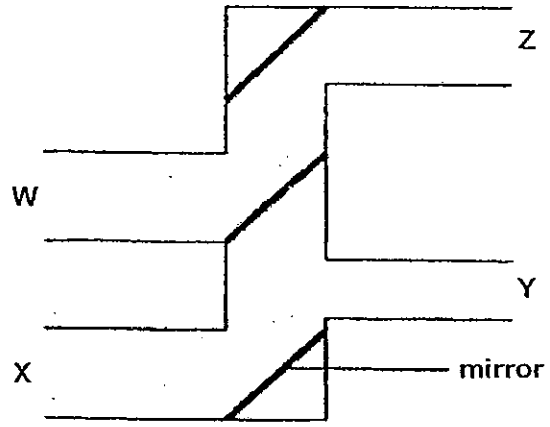
(1) 

(2) 

(3) 

(4) 

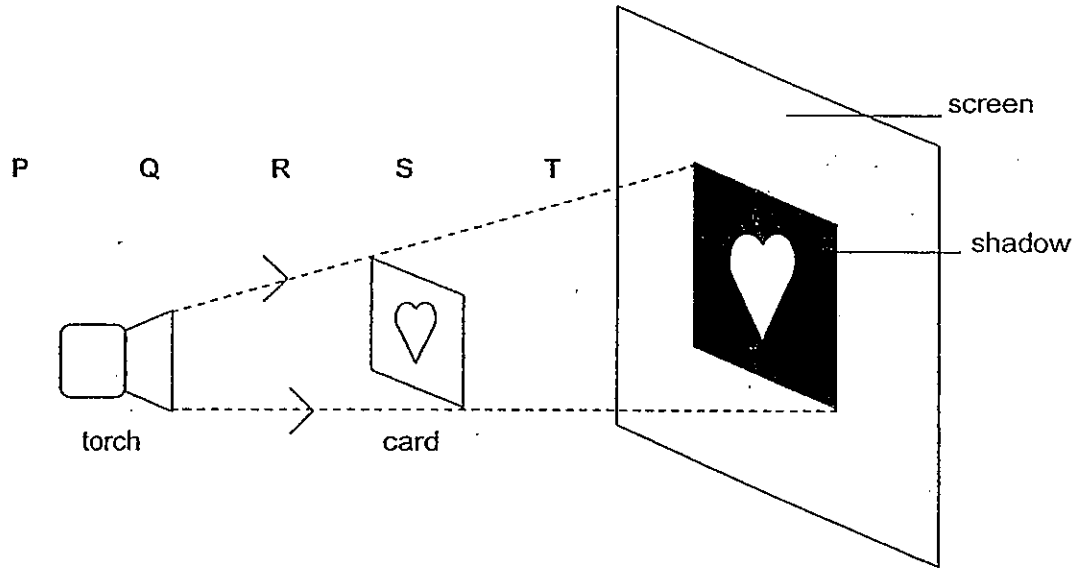
26. The diagram below shows a periscope with 3 mirrors.



In order to see an object through the periscope, where should the position of the eye and the object be respectively?

	position of object	position of eye
(1)	Z	Y
(2)	Y	X
(3)	X	W
(4)	W	Z

27. Raju set up an experiment using the apparatus as shown below.



He wants to find out how to increase the size of the image of the heart on the screen.

At which positions, P, Q, R, S and/or T, should Raju place the lighted torch and the card so as to enlarge the heart formed on the screen?

	position of torch	position of card
A	R	S
B	P	T
C	Q	R
D	P	S

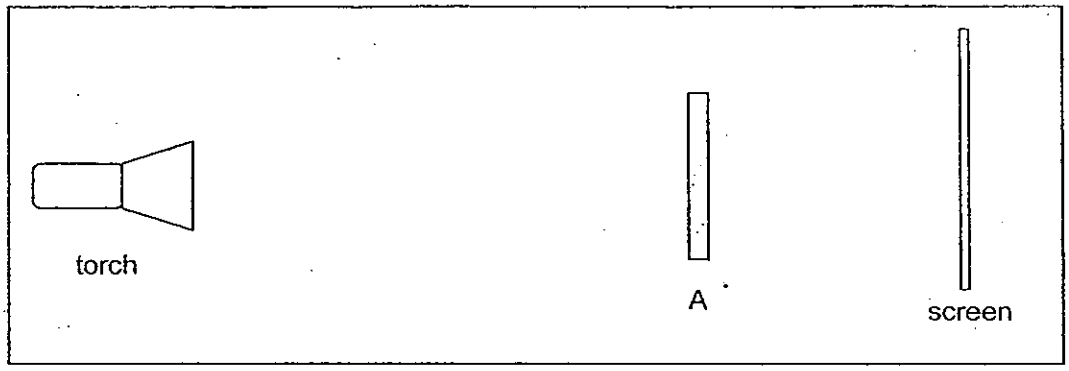
(1) B only

(2) A and C only

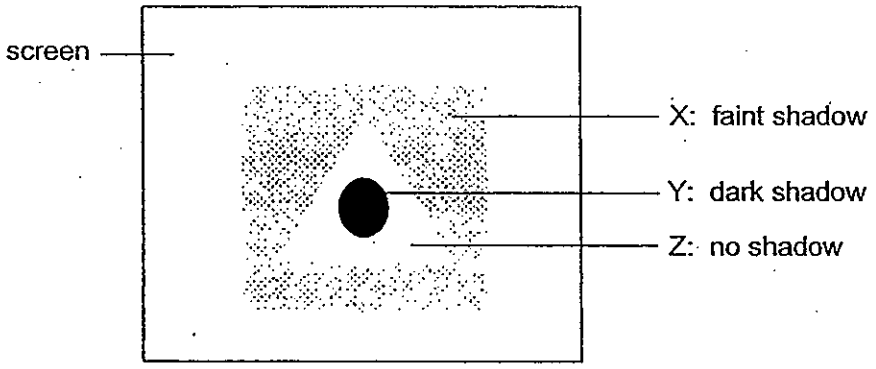
(3) B and D only

(4) A, C and D only

28. Mary shone a lighted torch on object A in the following set-up.



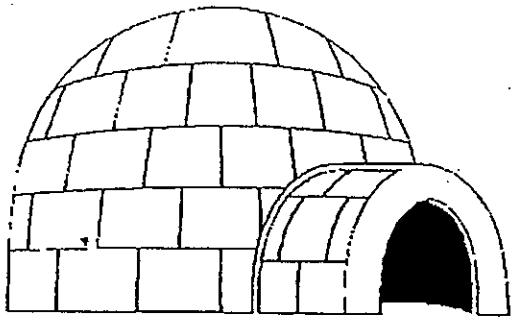
Mary saw the following shadows formed on the screen.



Which one of the following materials could possibly cast the types of shadows, X, Y and Z, formed on the screen?

	X	Y	Z
(1)	cardboard sheet	clear plastic sheet	tracing paper
(2)	tracing paper	clear piece of glass	cardboard sheet
(3)	clear plastic sheet	tracing paper	wooden plank
(4)	tissue paper	wooden plank	clear piece of glass

29. Eskimos live in igloos made of snow as shown in the diagram below.



The children were told by their teacher that snow contains pockets of trapped air.

Samuel, Esther and Gillian made the following statements to explain how an igloo keeps the Eskimos warm.

Samuel said : It protects them from the cold winds.

Esther said : Heat trapped inside the igloo is not easily lost to the environment.

Gillian said : Snow consists of trapped air, which is a good conductor of heat.

Which of these children made the correct statement(s)?

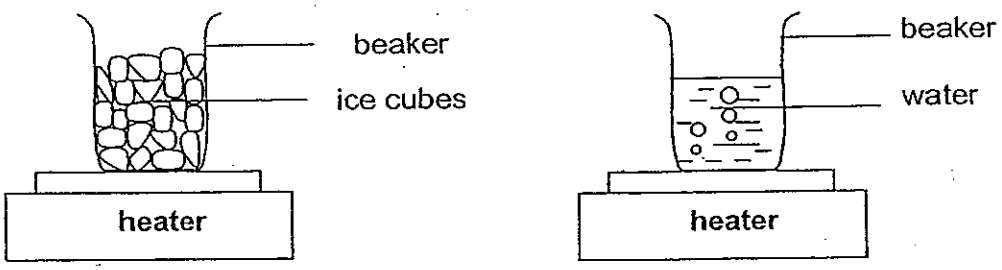
(1) Samuel only

(2) Esther only

(3) Samuel and Esther only

(4) Esther and Gillian only

30. A beaker of ice cubes was heated till the boiling point of water was reached.

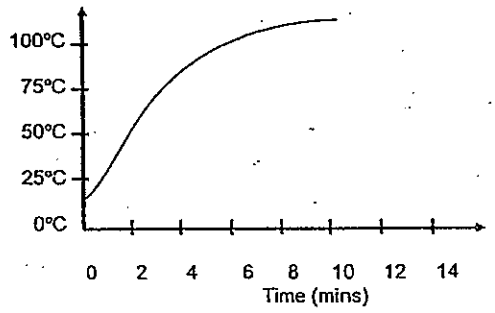


start of experiment

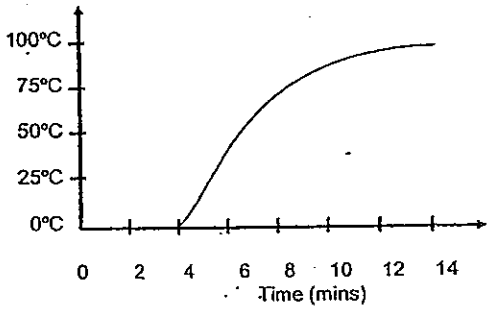
end of experiment

Which one of the following graphs shows the change in temperature of the content in the beaker correctly?

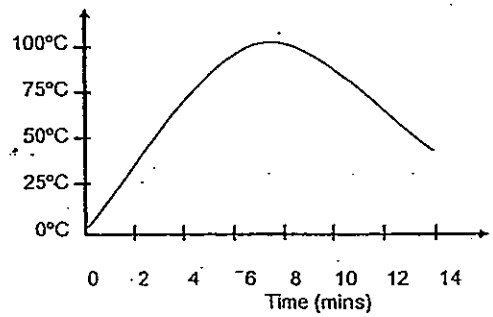
(1)



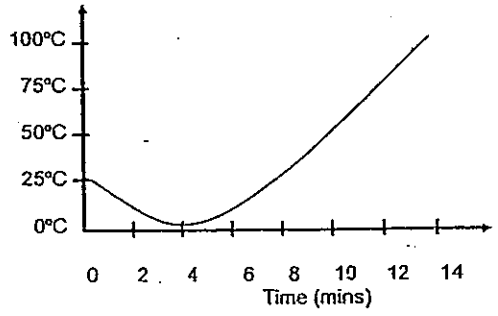
(2)



(3)



(4)



Name: _____ Index No: _____ Class: P5 _____

40

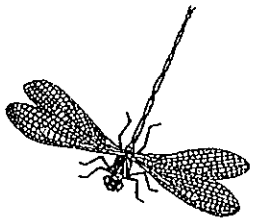
SECTION B (40 marks)

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

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

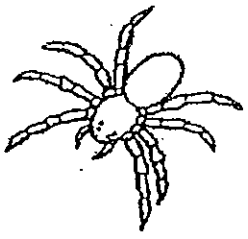
31. The pictures below show four different types of animals, P, Q, R and S.

Animal P



Animal Q

Animal R



Animal S

Based on the diagrams above, answer the following questions:

Name the animal(s) which is/are **NOT** (an) insect(s). Write the correct letter(s), P, Q, R and/or S, in the box provided.

Give two reasons to support your answer. [2]

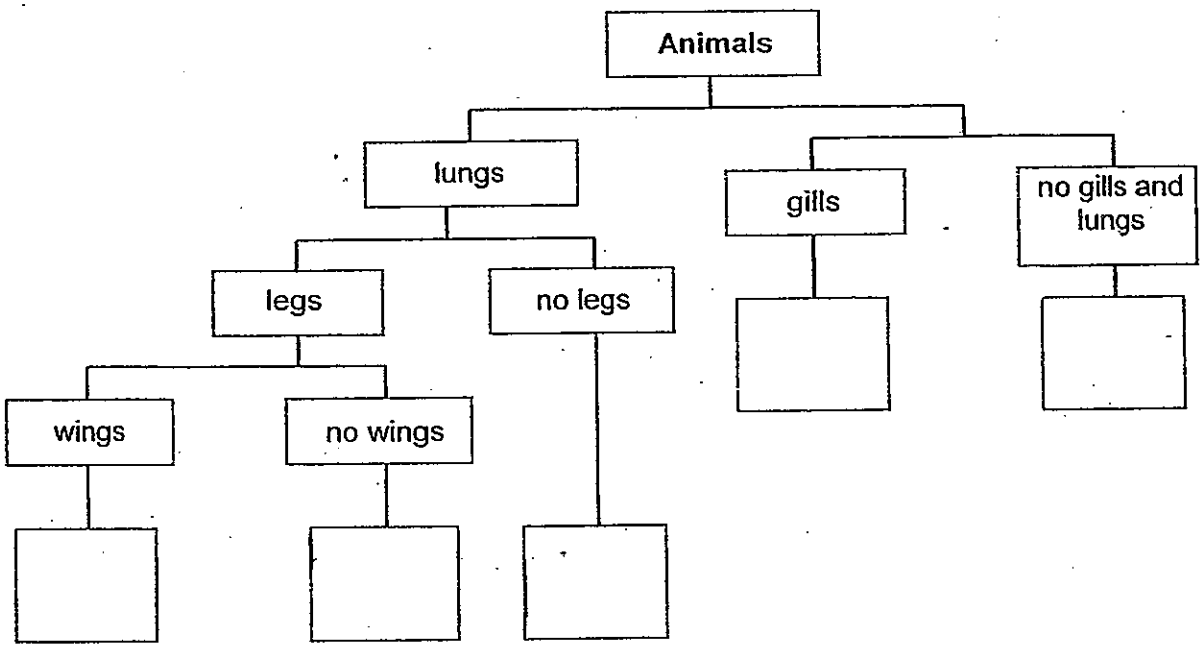
Animal(s) S **is/are NOT (an) insect(s)**	**REASON 1**	
	REASON 2	

32. The table below shows the characteristics of six animals.
A tick (✓) in each box indicates the presence of such characteristic.

animal	*has lungs*	has legs	has wings	has gills
A				✓
B	✓	✓		
C	✓	✓	✓	
D		✓		
E	✓	✓	✓	
F	✓			

Based on the information above, answer the following questions:

(a) Complete the classification diagram using letters A, B, C, D, E and F **ONCE** only in the correct boxes below. You may include more than one letter in a box. [1]

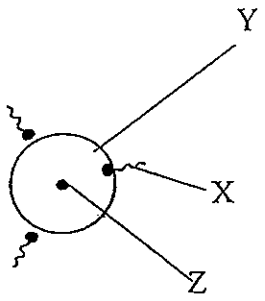


(b) Which of these animals is a bird / are birds?

Write letters A, B, C, D, E and/or F only. [1]

_____

33. The diagram below shows the fusion between 2 sex cells in an organism.



(a) Identify each of the following: [1½]

X:_____

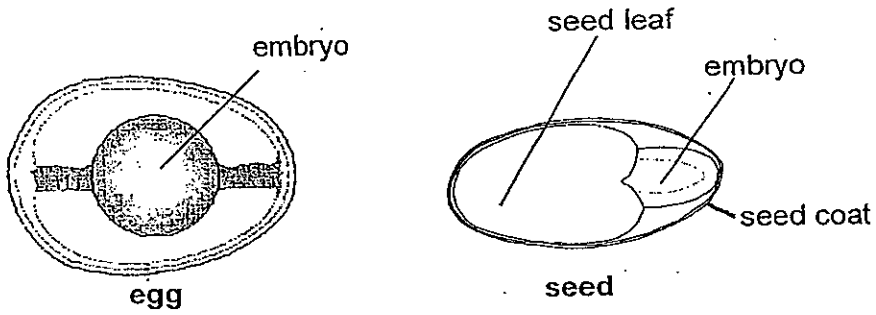
Y:_____

Z:_____

(b) State the process that is taking place. [1]

_____

34. The diagrams below show the embryos (**NOT** drawn to scale) found in an egg and a seed.

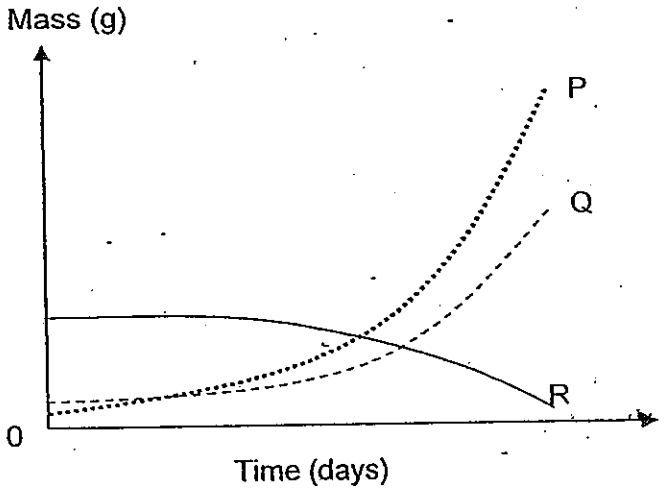


(a) Name the part of the seed that is similar to the function of the egg yolk. Explain your answer. [1½]

_____

_____

The graph below shows the masses of the seed leaf, embryo in an egg and a plant shoot.



(b) Based on your answer in (a), which one of these lines, P, Q or R, represents the mass of seed leaf over a period of time?

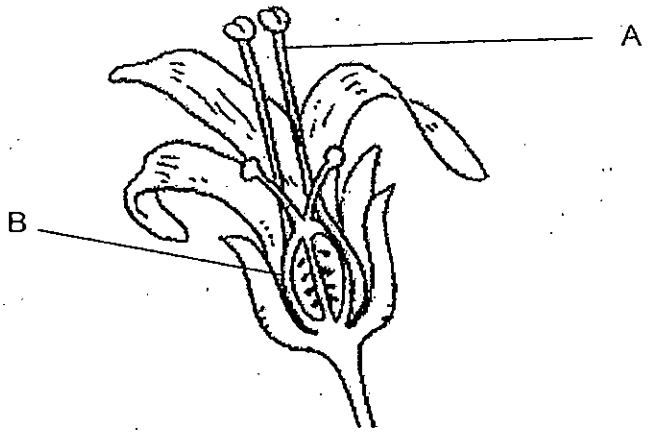
Explain why it cannot possibly be the other two lines on the graph. [1]

_____

_____

_____

35. The diagram below shows a cross-section of a flower with its different parts, A and B.



(a) Name each of the following parts of the flower: [1]

A: _____

B: _____

(b) Sakthi removed the stigma of the flower. However, she observed that the flower had developed into a fruit after 2 weeks.

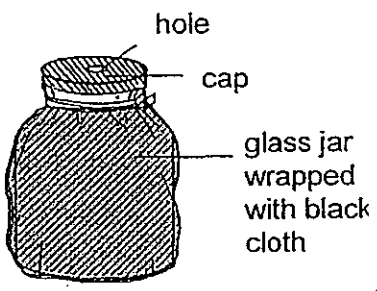
Explain how this could be possible. [1]

_____

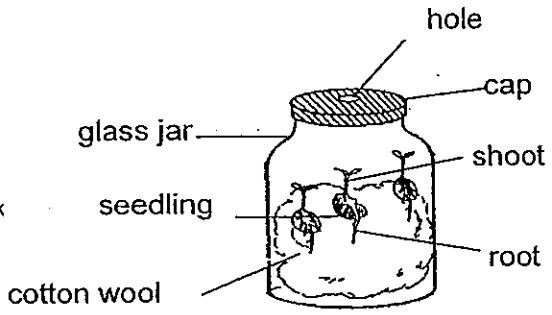
_____

_____

36. Jane conducted an experiment on the germination of seeds using the apparatus shown below.



Jar A



Jar B

Jane placed three seeds of type X in two identical glass jars, A and B, lined with an equal amount of damp cotton wool. Jar A was wrapped with a piece of black cloth while Jar B was **NOT**.

Both set-ups were left in the garden.

(a) What Jane was trying to find out in her experiment? [1]

(b) In which of these jars would the seeds germinate? Explain your answer. [1]

(c) What is the function of the hole in the cap of each of the jars? [1]

37. Diagram 1 below shows parts of a land where four different types of trees were introduced. The width of narrowest part of the river, as shown in the diagram, is 30 m.

Year 2000 (Diagram 1)

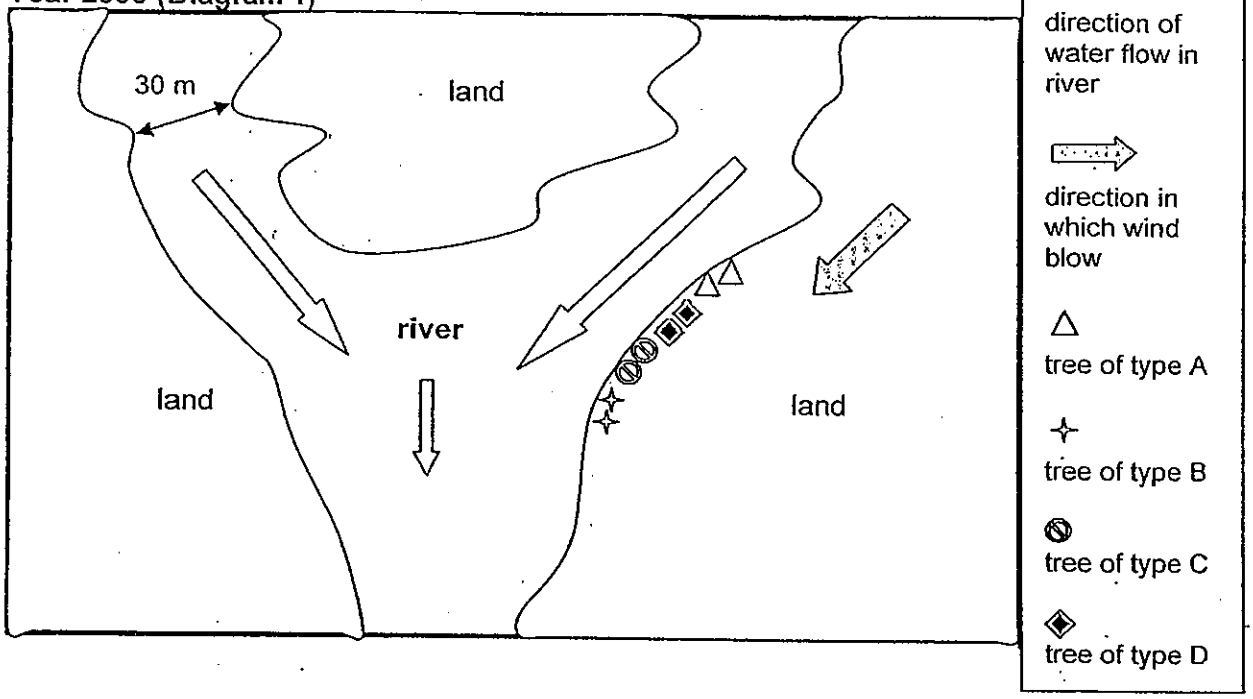
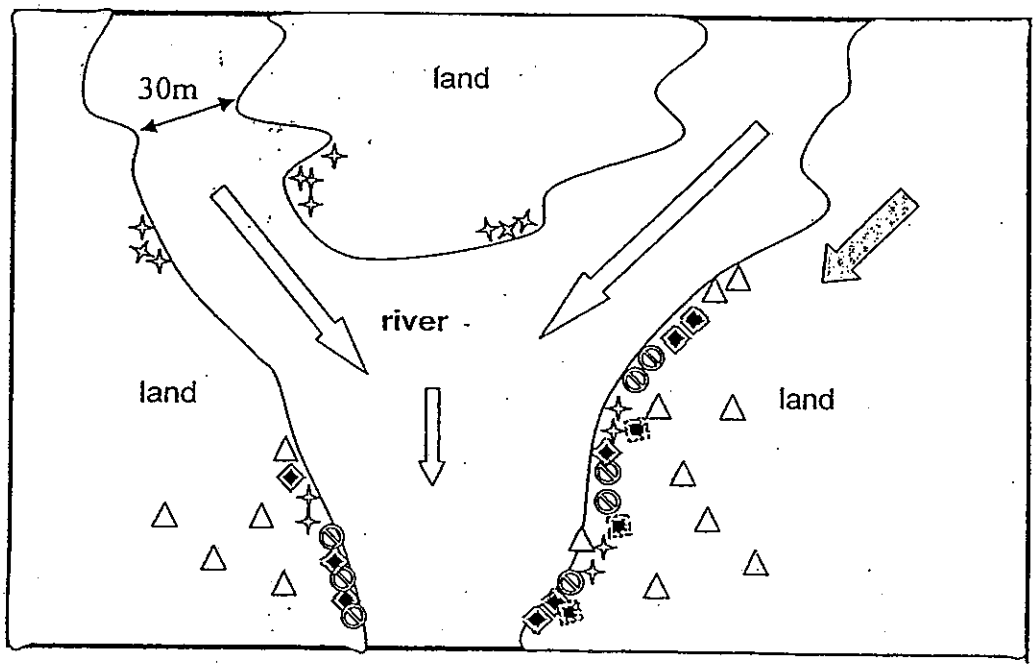


Diagram 2 below shows the same plot of land and the growth of the different types of trees in some other areas of the land.

Year 2005 (Diagram 2)



Based on the information on page 30, answer the following questions:

(a) Fruits of tree type A were dispersed by wind.
State **TWO** physical characteristics of such fruits. (Do **NOT** state their size.) [2]

PHYSICAL CHARACTERISTIC 1	
PHYSICAL CHARACTERISTIC 2	

Two pupils, Anna and Betty ,made the following statements about the fruits of the trees, B and C.

Anna: Fruits of tree types B and C are both dispersed by water since they are along the river bank.

Betty: Fruits of the tree type B is dispersed by animal while fruits of tree type C are dispersed by water.

(b) Which one of these two pupils, Anna or Betty, made the correct statement? Explain your answer. [1½]

_____

_____

Another pupil, Cherly, commented, "All fruits of the different tree types, A, B and C, that are dispersed by water must be light!"

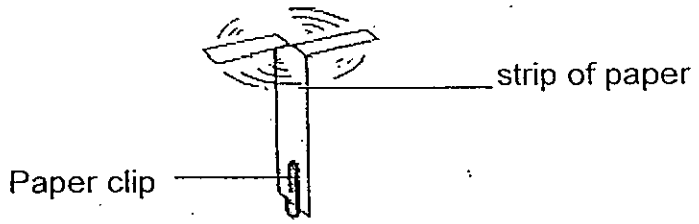
(c) Suggest why Cherly's statement was **NOT** correct.

Give an example of a fruit to support your answer. [1]

_____

_____

38. Megan made a paper flyer using a strip of paper and a paper clip as shown below.



She wanted to find out if the number of paper clips on the paper flyer would affect the time it takes for the paper flyer to fall to the ground. Megan recorded her results in the table below.

number of paper clips on paper flyer	time taken to fall to the ground (sec)	Put a cross (X)
1	10	
2	8	
3	2	
4	4	

Based on the information above, answer the following questions:

(a) Megan made ONE mistake in the table of results shown above.
Put ONE cross (X) in the box to indicate the mistake she had made. [½]

(b) Suggest what Megan could do to ensure that her results were reliable to enable her to arrive at a logical conclusion. [1]

_____

_____

(c) Name **TWO** variables that Megan should keep the same to ensure that she conducted a fair test for her experiment. [2]

VARIABLE 1	
VARIABLE 2	

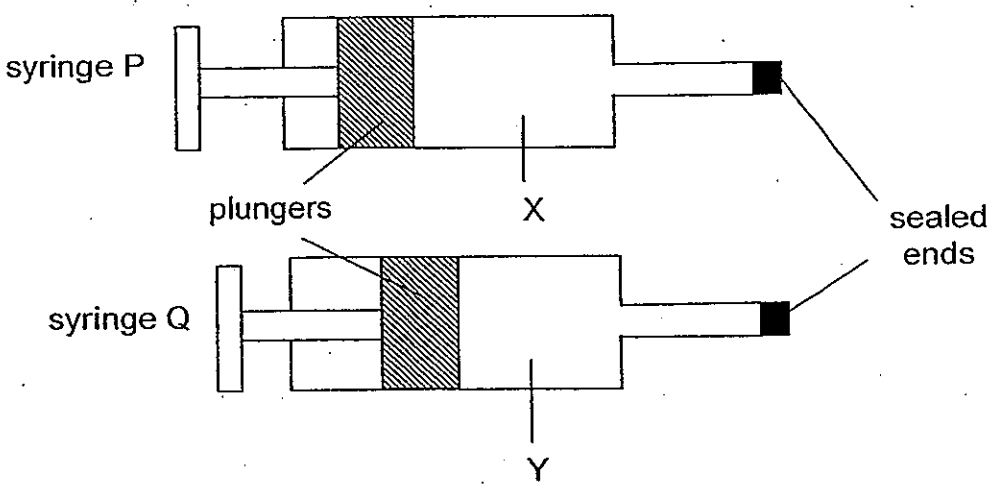
(d) What could Megan conclude from the results of her experiment? [1]

_____

_____

39. Two syringes, P and Q, contained the same amount of matter, X and Y, at room temperature respectively. One end of each syringe was sealed.

The plunger in syringe P could **NOT** be pushed in while the plunger in syringe Q could be pushed in slightly as shown in the diagrams below.



Based on the information above, answer the following questions:

(a) Give a reason why plunger in syringe Q could be pushed in slightly. [1]

_____

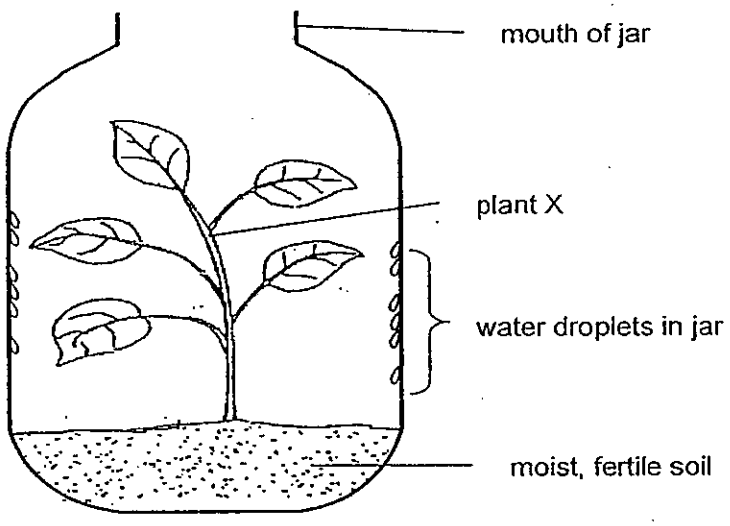
_____

(b) Suggest the state of matter for matter X and give an example of matter X. [1]

_____

40. Jonathan wanted to find out if a water cycle could be created within a glass jar to support the growth of plant X **WITHOUT** having to water it at all.

He created the set-up shown below and placed it near a window for two months.



(a) Two months later, Jonathan found that Plant X had died. Explain why. [½]

_____

(b) How can Jonathan improve his set-up so that the glass jar is able to support the growth of plant X without having to water it at all? Explain your answer. [1½]

_____

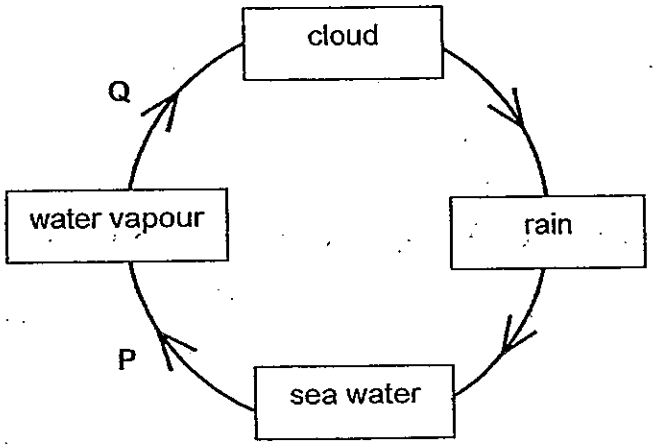
_____

41. A, B, C and D are processes involved in the interchangeable states of a matter as shown below.

(a) Which of these processes, A, B, C and/or D, involve(s) heat loss? [1]

_____

The diagram below represents a water cycle.



Based on the diagram above, answer the following questions:

(b) Name the process(es) which take(s) place at: [1]

(i) P _____

(ii) Q _____

(c) Describe how sea water becomes water vapour. [1]

_____

_____

42. Tina carried out an experiment to find out the rate of evaporation of water in different containers. An equal amount of water was poured into each container. All containers were left under the hot sun until all the water dried up completely.

The table below shows Tina's results:

container	A	B	C	D
exposed surface area of water in the container (cm^2)	10	15	25	30
time taken for all water in the container to dry up completely (hours)	3	2.5	1.5	1

Based on the information above, answer the following questions:

(a) State the relationship between the exposed surface area of water in the container and the time taken for the water in it to dry up completely. [1]

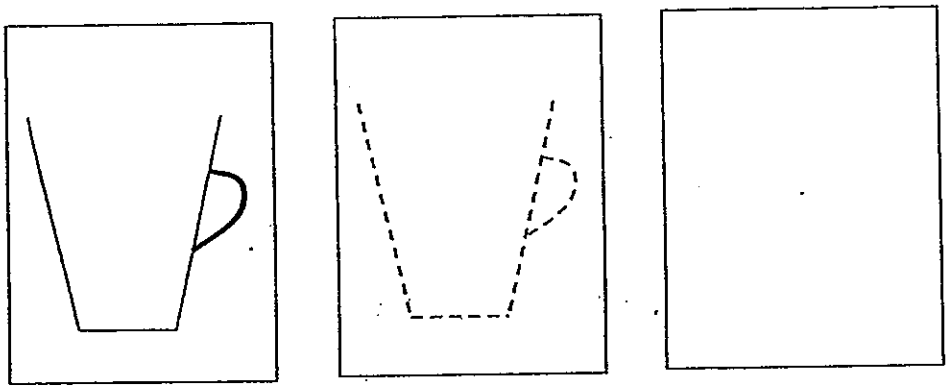
(b) Suggest the time needed for the same amount of water in a container with an exposed water surface area of 20 cm^2 to evaporate completely? [1]

(c) Name **TWO OTHER** factors that will affect the rate of evaporation of water. [2]

FACTOR 1	
FACTOR 2	

43. Harun was given an empty cup as shown in the diagram below.

Harun looked at the cup through 3 different types of screens, P, Q and R, each made from a different material, **ONE** at a time. He drew his observations as shown below.



screen P **screen Q** **screen R**

(a) Which one of these screens allowed most light to pass through it?

State a reason. [1]

_____

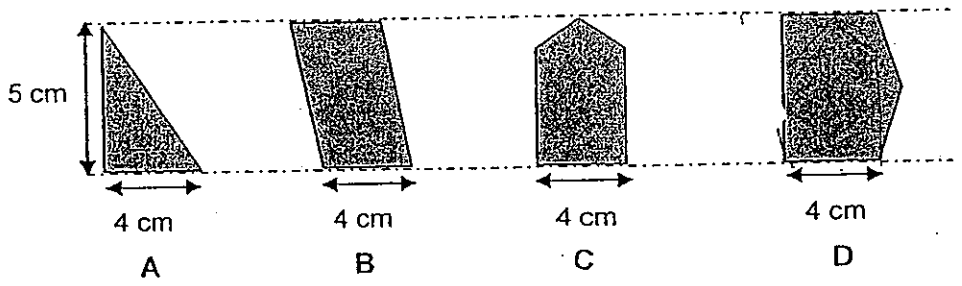
_____

(b) Suggest a type of material used to make the screen for each of the following: [2]

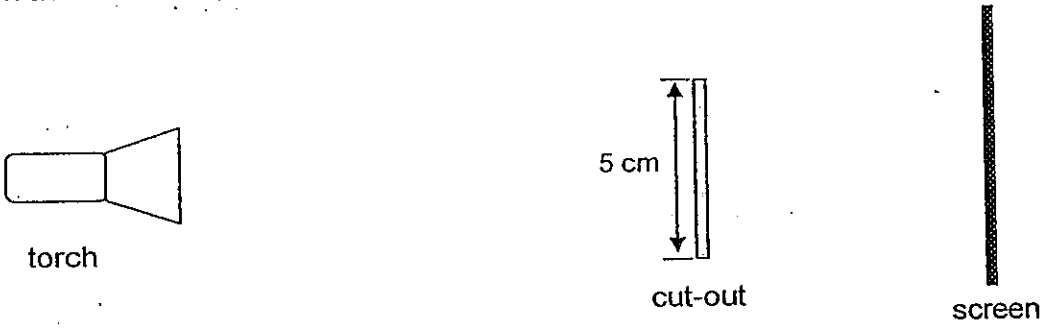
Screen P: _____

Screen R: _____

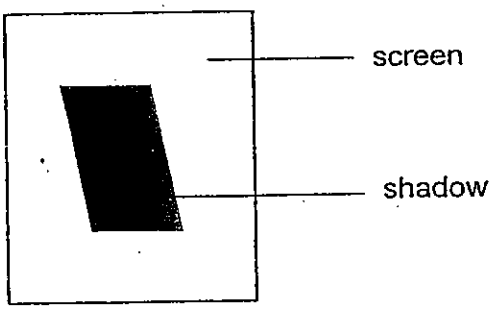
44. Hajar had four cut-outs, A, B, C and D, from the same piece of hard cardboard as shown below.



She selected the cut-outs and aligned them in a straight line between a lighted torch and a screen as shown below.



The following shadow was formed on the screen.



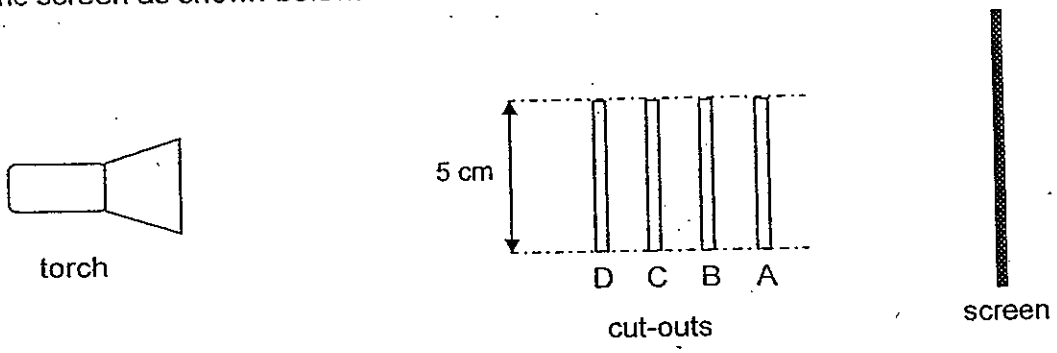
(a) What was the maximum number of cut-outs Hajar had used to form the shadow above? [1]

_____

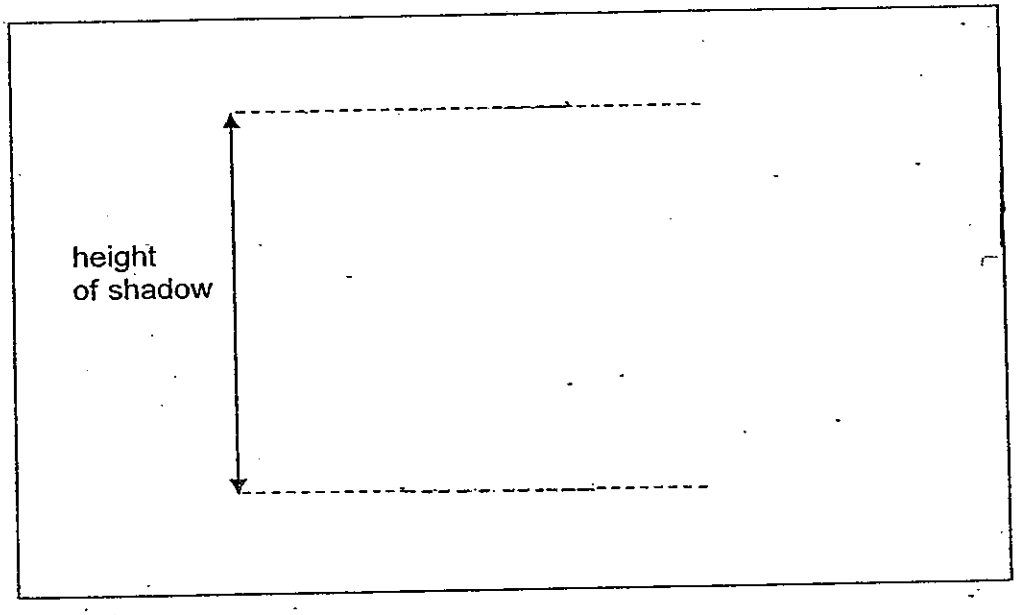
(b) Which of these cut-outs, A, B, C and/or D, were used to form the shadow above? Write letters A, B, C and/or D only. [1]

_____

Next, Hajar aligned all the cut-outs, A, B, C and D, in a straight row between the lighted torch and the screen as shown below.



(c) **DRAW** and **SHADE** accordingly the type of shadow seen on the screen in the box below. [1]



– END OF PAPER –

Setters: Ms Aishah Aris, Mr Ronald Lee, Mr Tan Siew Whatt

ANSWER SHEET

EXAM PAPER 2010

SCHOOL : RAFFLES GIRLS' PRIMARY
SUBJECT : PRIMARY 5 SCIENCE

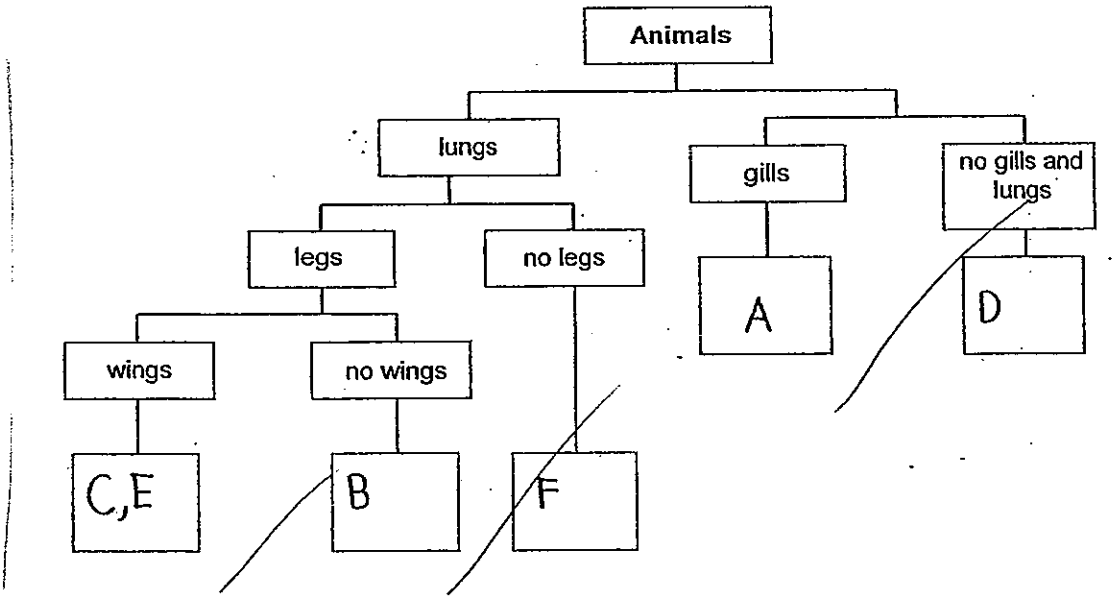
TERM : SA1

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

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

31)1)S has 8 legs while an insect has 5 legs.
2)S has 2 body parts while an insect has 3 body parts.

32)a)



b)Animals C and E.

33)a)X: sperm Y: egg Z: nucleus
b)Fertilisation

34)a)The seed leaf. The egg yolk provides food for the embryo in the egg and the seed leaf provides food for the embryo in the seed. Thus, both of them provides food.

b)As the seedling grows, the mass of the seed leaf decreases. Lines P and Q show an increase in mass over a period of time. Hence, the do not represent the seed leaf.

35)a)A: filament B: ovary

b)Pollen grain was transferred to the stigma before it was removed.

36)a)Jane was trying to find out if sunlight is essential for seeds to germinate.

b)The seeds in both jar would germinate. Germination requires air, water and warmth. The seeds in both jars had all the three of them.

c)It is to allow air to enter the jar as the seeds need it to germinate.

37)a)1)Has a wing-like structure. 2)They are light.

b)Betty offspring of type C are found downstream along the river bank. Type B cannot be dispersed by water as some of its offspring have been dispersed to the upper part of the river. Fruits are unable to move against the flow of the water current.

c)A coconut is heavy but it can float on water as it has fibrous husk which helps it to trap air.

38)a)3,2 =X

b)She should repeat the experiment at leaf twice again.

c)1)length of paper flyer.

2)size of paper clip.

d)The more paper clips, the faster the paper flyer reaches the ground.

39)a)The matter could be compressed.

b)The state of matter for matter X can be liquid. An example would be water.

40)a)It has used up all the water for photosynthesis.

b)Cover the mouth of the jar to prevent water vapour from escaping.

41)a)Process C and D.

b)i)evaporation. ii)condensation

c)Water form the sea water evaporate to from water vapour.

42)a) The bigger the exposed surface area of water in the container, the shorter time taken for all water in the container to dry up completely.

b)2 hours.

c)1)level of humidity.

2)presence of wind.

43)a)Screen P. The cup can be seen very clearly, meaning that it allowed most light to pass through.

b)P: clear glass.

R: cardboard.

44)a)2 cut-outs.

b)A and B.

c)