AI TONG SCHOOL

2010 SEMESTRAL ASSESSMENT (2)

PRIMARY FIVE SCIENCE

DURATION : 1hr 45 min

DATE: 1 November 2010

INSTRUCTIONS

Do not open the booklet until you are told to do so.
Follow all instructions.
Answer all questions.

Name : _____(

Class : Primary _____

Parent's Signature : _____

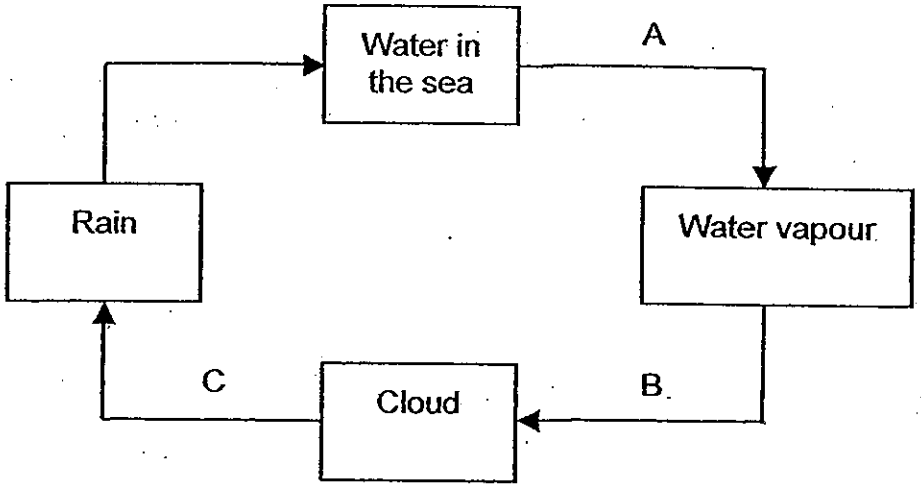
Date : _____

MARKS	/ 100

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.**

1. The diagram below represents a water cycle.



Which of the following is correct?

	Condensation takes place at	Evaporation takes place at
(1)	A	B
(2)	C	A
(3)	B	C
(4)	B	A

2. Chelsea recorded the volumes of water in four containers A, B, C and D, at the start and the end of an experiment. The volumes of water are shown in the table below.

Container	Amount of water at the start of the experiment (ml)	Amount of water at the end of the experiment (ml)
A	70	50
B	80	40
C	90	50
D	100	30

What can Chelsea infer from the experiment?

(1) The water in container C evaporates the fastest.
(2) Container A has the smallest exposed surface area.
(3) Container B has a bigger exposed surface area than container D.
(4) The water in containers A and C have the same rate of evaporation.

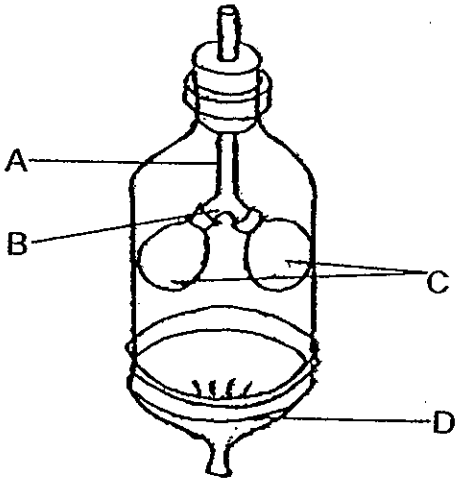
3. The table below shows the state of four substances W, X, Y and Z, at different temperatures.

Substance	State of substance at		
	10°c	30°c	50°c
W	liquid	liquid	liquid
X	solid	solid	solid
Y	solid	liquid	liquid
Z	solid	solid	liquid

Which of the following statements is correct?

(1) Substance W has the lowest boiling point.
(2) Substance X has the highest melting point.
(3) The melting point of substance Z is above 50°c.
(4) The freezing point of substance Y is below 10°c.

4. The diagram below shows a model of the human respiratory system.



What do A, B, C and D represent?

	A	B	C	D
(1)	Windpipe	Air tube	Lungs	Diaphragm
(2)	Throat	Air Sac	Lungs	Windpipe
(3)	Air tube	Windpipe	Rib cage	Diaphragm
(4)	Windpipe	Air tube	Diaphragm	Lungs

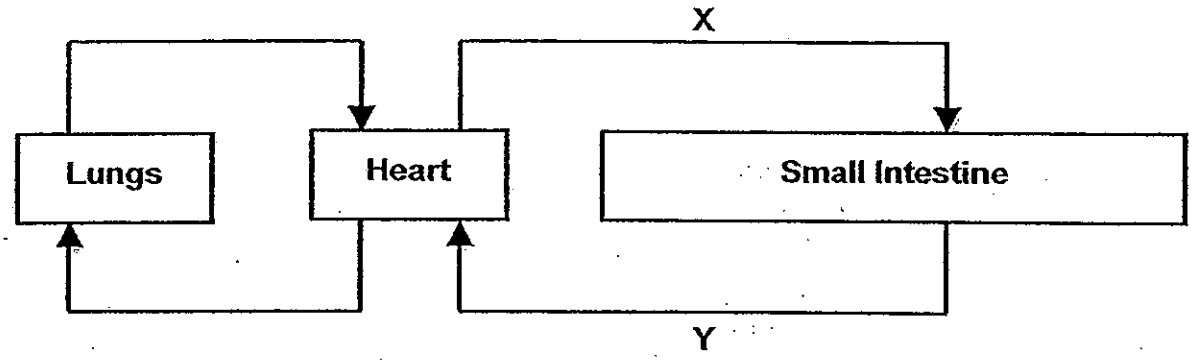
5. Allison poured some water containing blue dye into the soil of a potted plant. After a few hours, she observed that some parts of the flowers and leaves turned blue.

What can Allison infer from her observations about what had happened to the potted plant?

A Water is absorbed by the roots.
B Water is carried through the stem.
C Water is ~~only~~ not only transported to the flowers and leaves.
D Water is transported by the roots to the other parts of the plant.
stem

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

6. The diagram below shows how blood flows in certain parts of the body a few hours after a meal.



When compared with the blood in Y, the blood in X has _____.

(1) less carbon dioxide and less digested food
(2) less carbon dioxide and more digested food
(3) more carbon dioxide and less digested food
(4) more carbon dioxide and more digested food

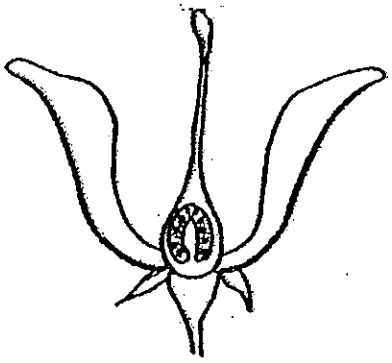
7. Adam classified some fruits and seeds into three groups as shown in the table.

Method of Dispersal		
Group 1	Group 2	Group 3
African Tulip Fruit	Nipah	Love Grass
A	B	C

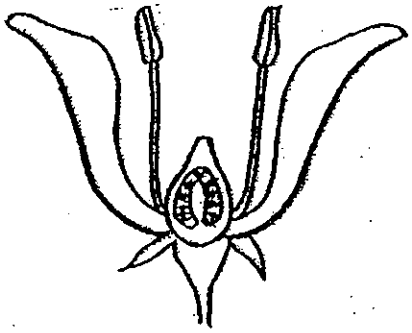
Which of the following fruits or seeds are represented by A, B and C?

	A	B	C
(1)	Angsana	Coconut	Rambutan
(2)	Rubber	Mangrove	Lalang
(3)	Balsam	Pong Pong	Mimosa
(4)	Dandelion	Lotus	Bur

8. Study the diagrams as shown below.



Flower A



Flower B

Which of the following correctly explains how pollination can take place between flowers A and B?

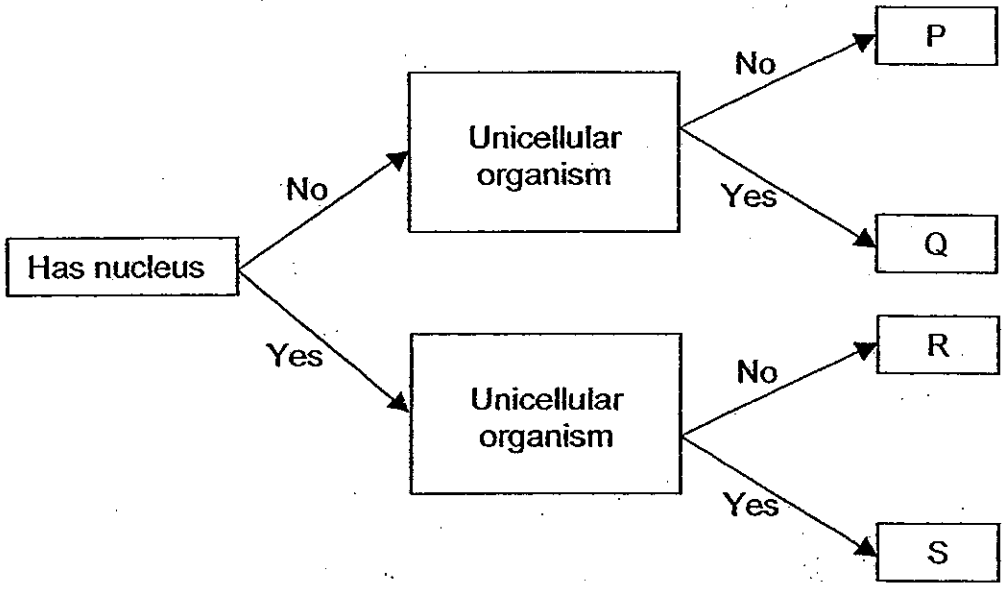
(1) The pollen grains from the stigma of flower A is carried by animals and transferred to the anther of flower B.

(2) The pollen grains from the anther of flower A is carried by animals and transferred to the stigma of flower B.

(3) The pollen grains from the stigma of flower B is carried by wind and transferred to the anther of flower A.

(4) The pollen grains from the anther of flower B is carried by wind and transferred to the stigma of flower A.

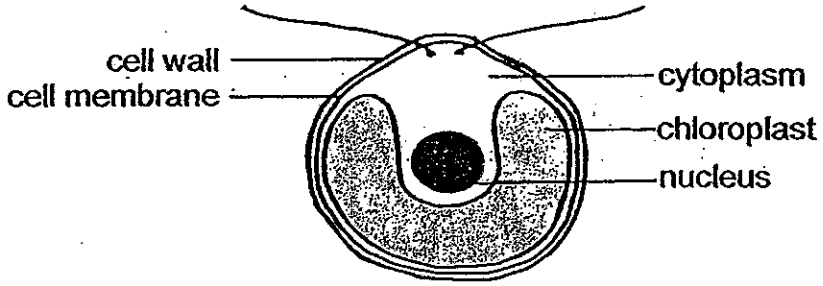
9. Ryan read about some organisms and constructed a flowchart as shown below.



What do P, Q, R and S represent?

	P	Q	R	S
(1)	Bacteria	Red blood cell	Paramecium	Cheek cell
(2)	Red blood cell	Bacteria	Cheek cell	Paramecium
(3)	Yeast	Egg cell	Amoeba	Sperm cell
(4)	Egg cell	Yeast	Sperm cell	Amoeba

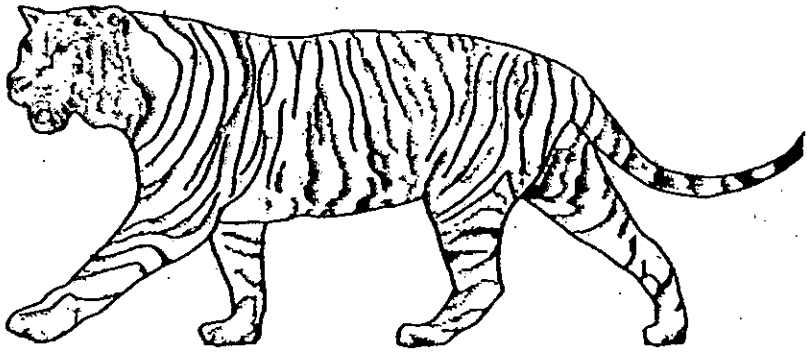
10. The diagram below shows a single-celled organism.



Which one of the following statements about the organism is correct?

(1) The organism is irregular in shape.
(2) The organism has several chloroplasts.
(3) The organism is able to make its own food.
(4) The organism's cell membrane is thicker than its cell wall.

11. Justin studied the animal as shown below.

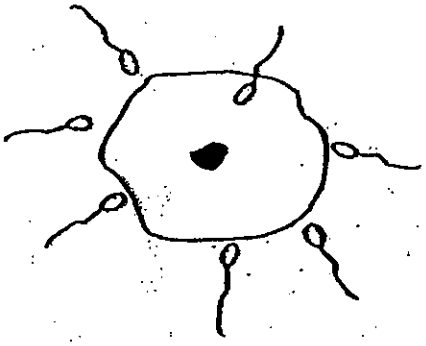


He made four statements about the animal. Which of his statements is/are true?

A Every cell in the animal has a regular shape.
B The animal's tissues are not made up of cells.
C The animal has cells that perform different functions.
D The animal is bigger than a bird because its cells are greater in size.

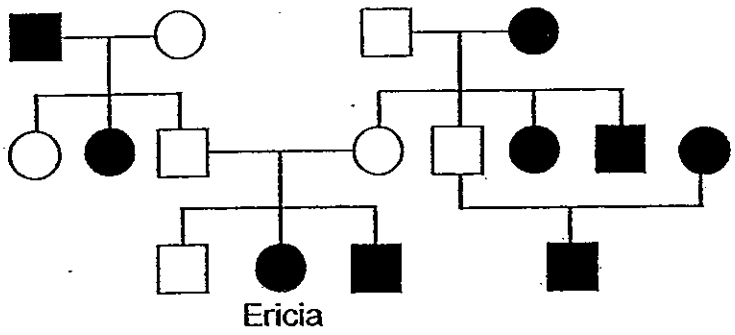
(1) A only
(2) C only
(3) B and C only
(4) A and D only

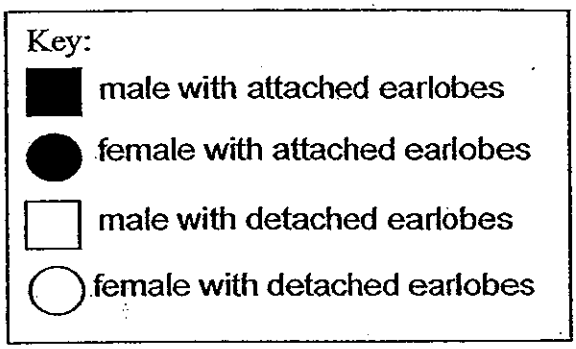
12. Which process is going to take place in the diagram below?



(1) Gestation
(2) Pollination
(3) Fertilisation
(4) Cell division

13. The diagram below shows Ericia's family tree.





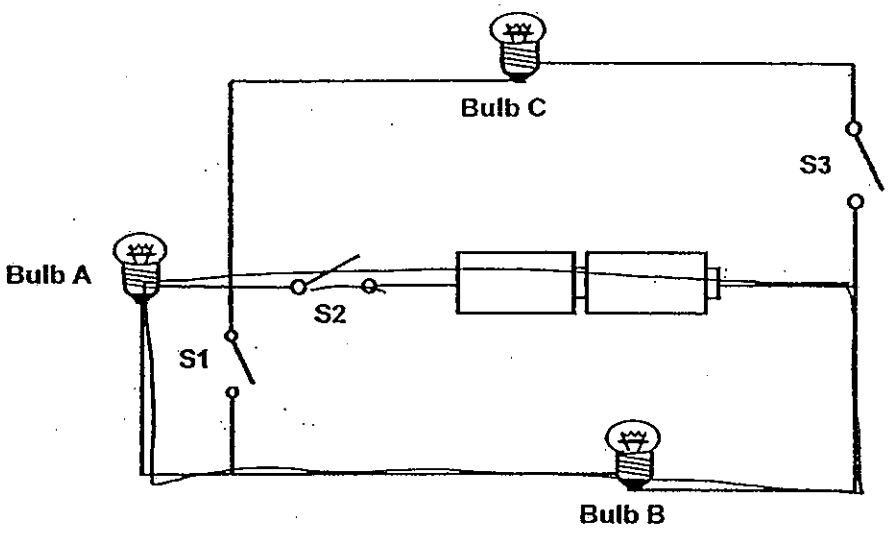
Which one of the following is a correct description of the family tree?

(1) Ericia's parents have attached earlobes.
(2) One of Ericia's aunt has detached earlobes.
(3) Both of Ericia's grandmothers have detached earlobes.
(4) Ericia has two brothers who have attached earlobes.

14. Janice has black eyes, dimples, short hair and a widow's peak. Which of the following characteristics did she **not** inherit from her parents?

(1) Hair length
(2) Colour of eyes
(3) Presence of dimples
(4) Presence of a widow's peak

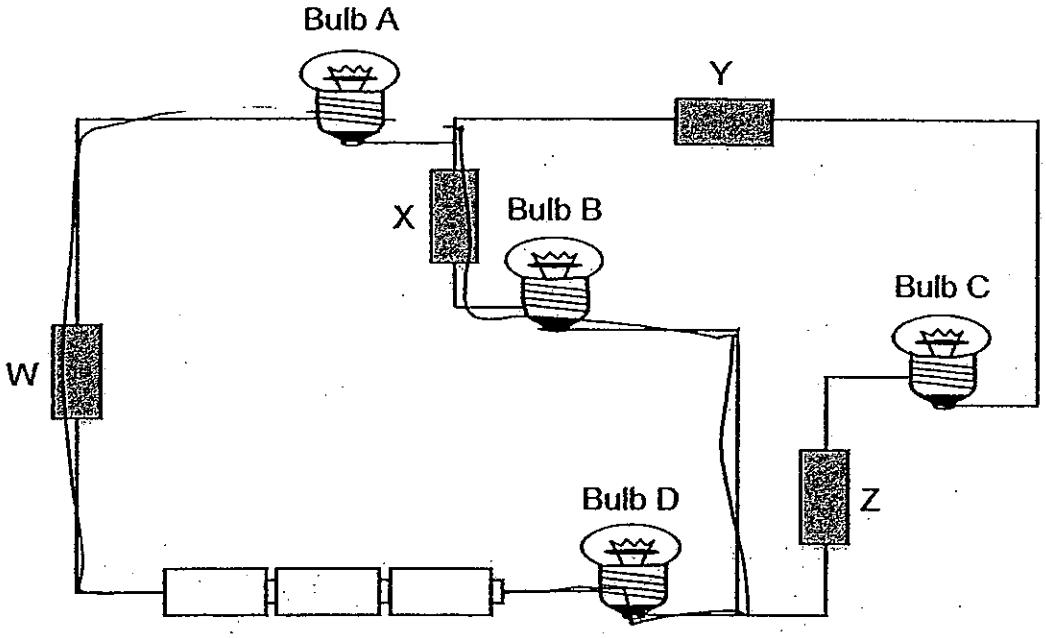
15. Study the electric circuit shown below.



Which of the bulb(s) will light up when the following switch(es) is/are closed?

	Switches			Does the bulb light up?		
	S1	S2	S3	Bulb A	Bulb B	Bulb C
(1)	Close	Open	Close	No	No	Yes
(2)	Open	Close	Open	Yes	No	No
(3)	Close	Close	Open	No	Yes	Yes
(4)	Open	Close	Open	Yes	Yes	No

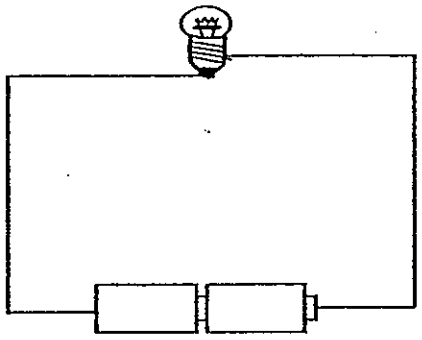
16. Wai Kay set up an electrical circuit as shown in the diagram below.



She observed that only bulbs A, B and D lit up. What materials could rods W, X, Y and Z be made of?

	W	X	Y	Z
(1)	iron	aluminium	steel	carbon
(2)	carbon	iron	aluminium	plastic
(3)	steel	wood	silver	copper
(4)	silver	plastic	copper	wood

17. Ms Pang set up an electrical circuit as shown in the diagram below. However, the bulb remained unlit.



4 of her students tried to explain why the bulb remained unlit.

Andric It is a closed circuit.
Chris The bulb has fused.
Elaine The batteries are faulty
Lucy The components in the circuit are connected wrongly.

Which of Ms Pang's students gave the correct explanation?

(1) Chris only
(2) Chris and Elaine only
(3) Andric and Elaine only
(4) Chris, Elaine and Lucy only

18. A group of students made the following observations about the growth of a plant.

A The root appears
B The first leaves appear
C The seedling grows into a plant
D The seed absorbs water

Rearrange the students' observations to show how the seed grows into a plant in the correct order.

	1st	2nd	3rd	4th
(1)	D	A	B	C
(2)	A	D	C	B
(3)	C	B	A	D
(4)	B	A	D	C

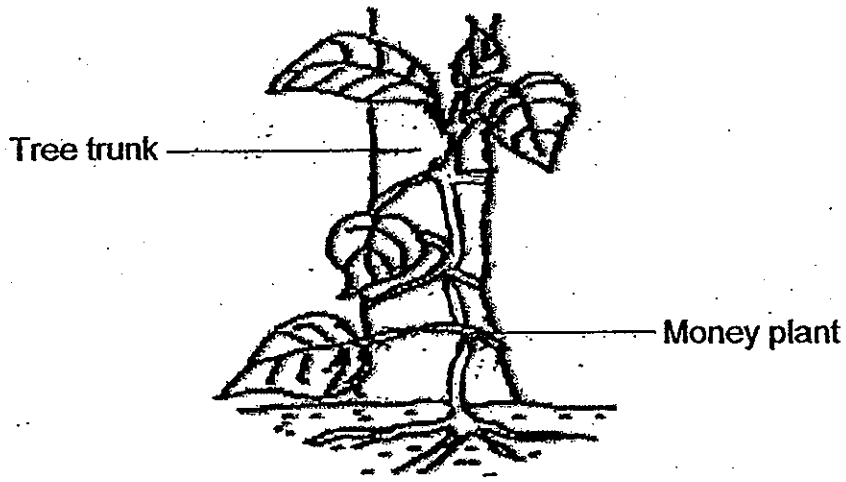
19. Lennon kept 4 mealworms E, F, G and H, each at various stages of growth, in 4 separate containers. He placed 20g of food next to each of them and recorded the amount of food left in each container after 3 days. He tabulated his results as shown below.

Mealworm	Amount of food left after 3 days (g)
E	7
F	11
G	16
H	20

Which mealworm is most likely to be in the pupa stage?

(1) E
(2) F
(3) G
(4) H

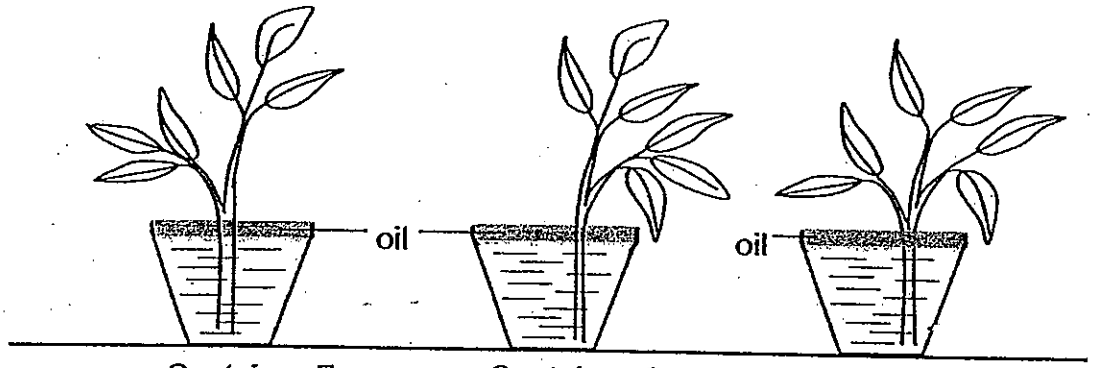
20. The picture below shows a money plant and a tree trunk.



Which one of the following statements about the money plant is true?

(1) It has prop roots.
(2) It has a weak stem.
(3) It feeds on the tree trunk.
(4) It supports the tree trunk.

21. Charmaine placed three types of plants into three identical containers F, G and H, which were filled with 300ml of water each. A layer of oil was also added to the water in each of the three containers.



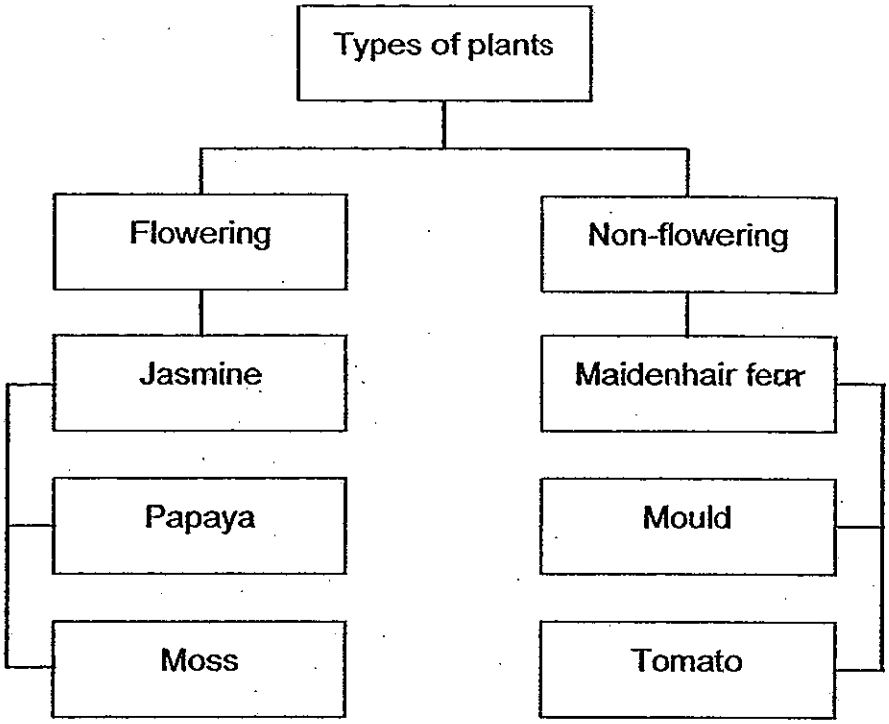
The volume of water in each container was recorded on the 4th day as shown in the table below.

Container	Volume of water / ml	
	Day 1	Day 4
F	300	271
G	300	283
H	300	300

Which container(s) F, G and H contained a plastic plant?

(1) F only
(2) G only
(3) H only
(4) F and G only

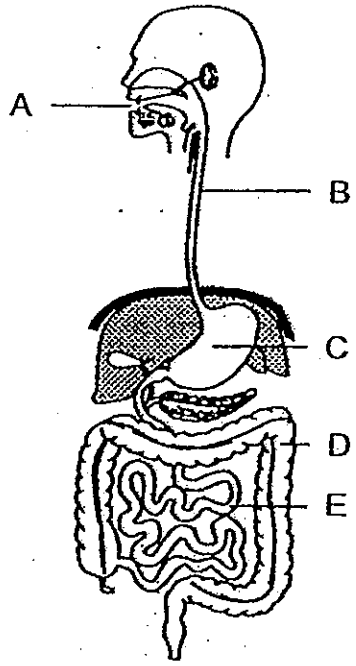
22. Vanessa classified some plants as shown below.



Which of the plants have been classified **wrongly**?

(1) Moss and Tomato
(2) Moss, Mould and Tomato
(3) Papaya, Moss and Mould
(4) Papaya, Mould and Tomato

23. The diagram below shows the human digestive system.



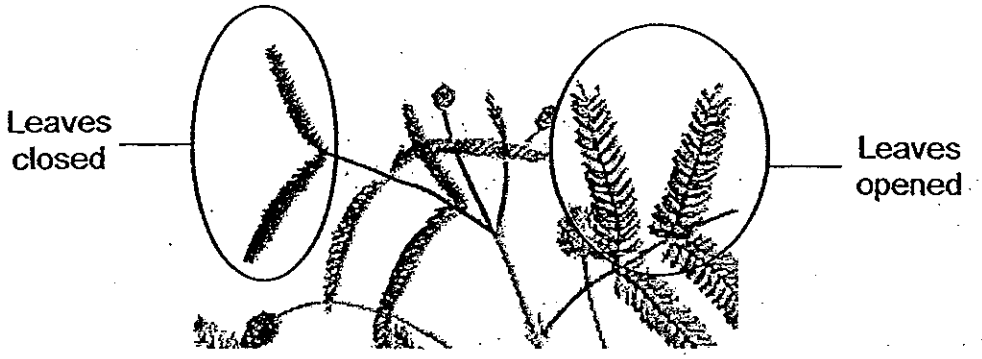
Which parts of the system produce digestive juices?

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

24. Undigested food is moved into the _____ where most of the water and mineral salts are removed.

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

25. Clement observed a picture of the mimosa plant as shown below. He realized that the mimosa plant would close its leaves when someone touched it.



Mimosa plant

From his observation, Clement inferred that the mimosa plant closed its leaves because it _____.

(1) responded to changes
(2) needed air to stay alive
(3) died and stopped growing
(4) was pollinating to reproduce

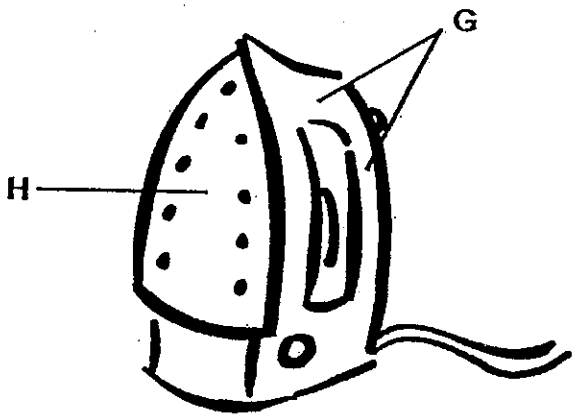
26. Roy conducted a scratch test on 4 materials P, Q, R and S, and he recorded the results as shown below.

P is scratched by Q.
S can scratch R.
Q is scratched by R.

Based on the results recorded, which of the following statements is **incorrect**?

(1) Q is softer than S.
(2) R is harder than Q only.
(3) P is the softest material.
(4) R is softer than S but harder than P.

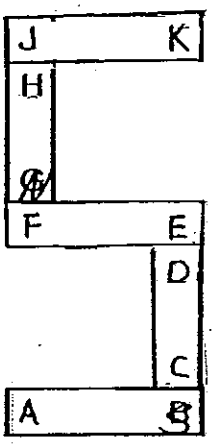
27. The diagram below shows an electric iron.



What materials are most likely used to make parts G and H of the iron respectively?

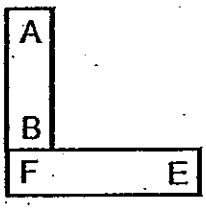
	G	H
(1)	steel	wood
(2)	glass	iron
(3)	iron	plastic
(4)	plastic	iron

28. Five bar magnets with their ends marked A to K can be arranged as shown below.

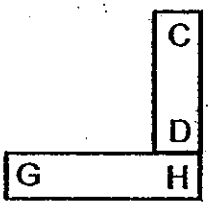


Which one of the following diagrams shows a possible arrangement of two of the magnets?

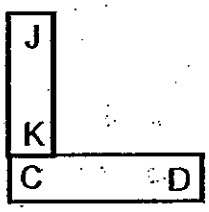
(1)



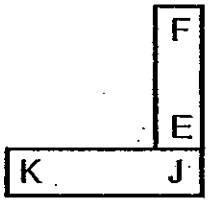
(2)



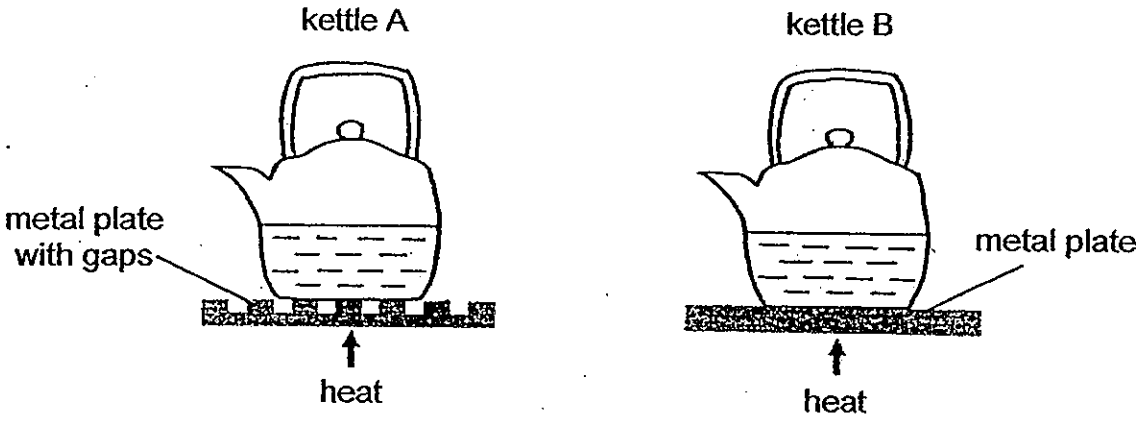
(3)



(4)



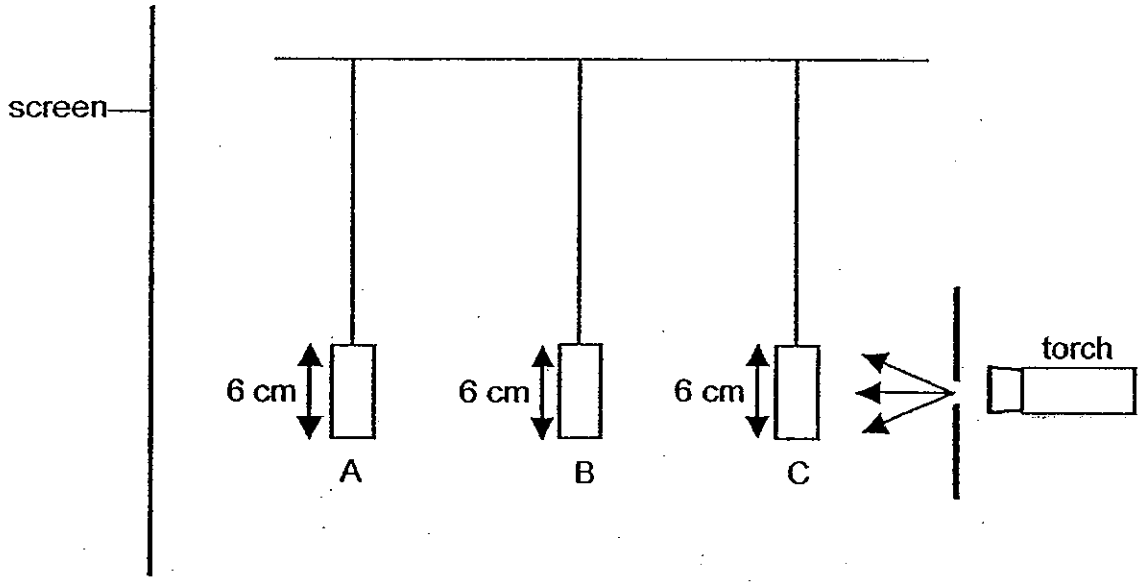
29. Ayano conducted an experiment where she placed two identical kettles on two metal plates of the same material with different surfaces. The kettles contained the same amount of water at room temperature. The plates were heated from below.



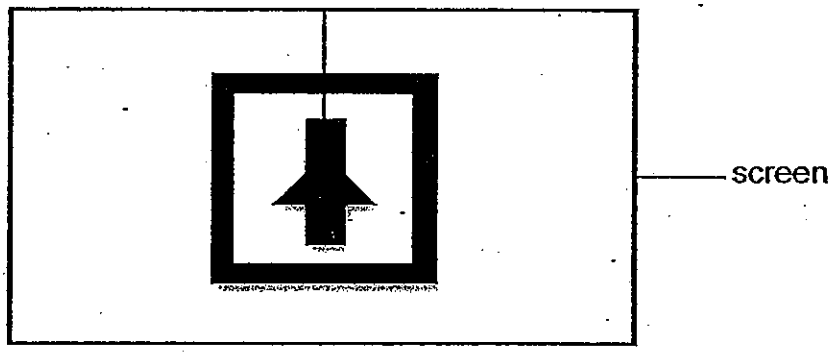
Ayano conjured four possiblilities to explain if the water in kettle A or B would boil first. Which of her following explanations is correct?

	Kettle of water that boils first	Explanation
(1)	A	The gaps in the metal plate trap more heat that is transferred to the kettle.
(2)	B	There is no gap in the metal plate so more heat is lost to the surroundings of the kettle.
(3)	A	There is a smaller surface area of contact between the metal plate and the kettle, thus more heat is transferred to the kettle in a shorter period of time.
(4)	B	There is a greater surface area of contact between the metal plate and the kettle, thus more heat is transferred to the kettle in a shorter period of time.

30. The set-up below shows light shining on three opaque objects A, B and C. One of the objects is hollow in the middle. The objects are placed at different distances from the torch.



The diagram below shows what was seen on the screen.



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

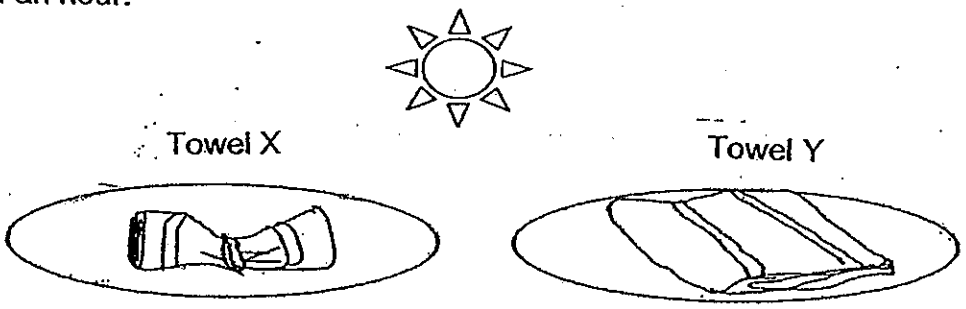
	A	B	C
(1)	rectangular block	square frame	triangular block
(2)	square frame	rectangular block	triangular block
(3)	triangular block	rectangular block	square frame
(4)	rectangular block	triangular block	square frame

Name: _____ ( )

Class P5 ( )

Section B: 40 marks
Read the questions carefully and write down your answers in the spaces provided.

31. The diagram below shows two identical towels X and Y. They have been soaked in 50 ml of water and the initial mass of each towel is recorded. Towel X is rolled up and tied with a string before it is placed on a tray. Towel Y is folded and put on an identical tray. Both towels are placed at the balcony. The mass of Towel X and Towel Y is measured again after half an hour.



(a) Compare the mass of Towel X and Towel Y after half an hour. [1]

_____

_____

(b) Give a reason for your answer in (a). [1]

_____

_____

(c) By putting the two towels at the same location, what are the 3 factors that are kept the same? [1]

_____

3

32.(a) What is the difference in the composition of oxygen in the blood leaving the lungs as compared to the blood that is entering the lungs? [1]

(i) Blood leaving the lungs:

_____

(ii) Blood entering the lungs:

_____

(b) Which two systems work together to ensure oxygen is circulated around the body continuously? [1]

_____

_____

(c) Why is blood pumped faster to the other parts of the body when we exercise? [2]

_____

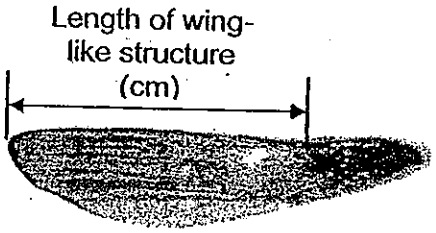
_____

_____

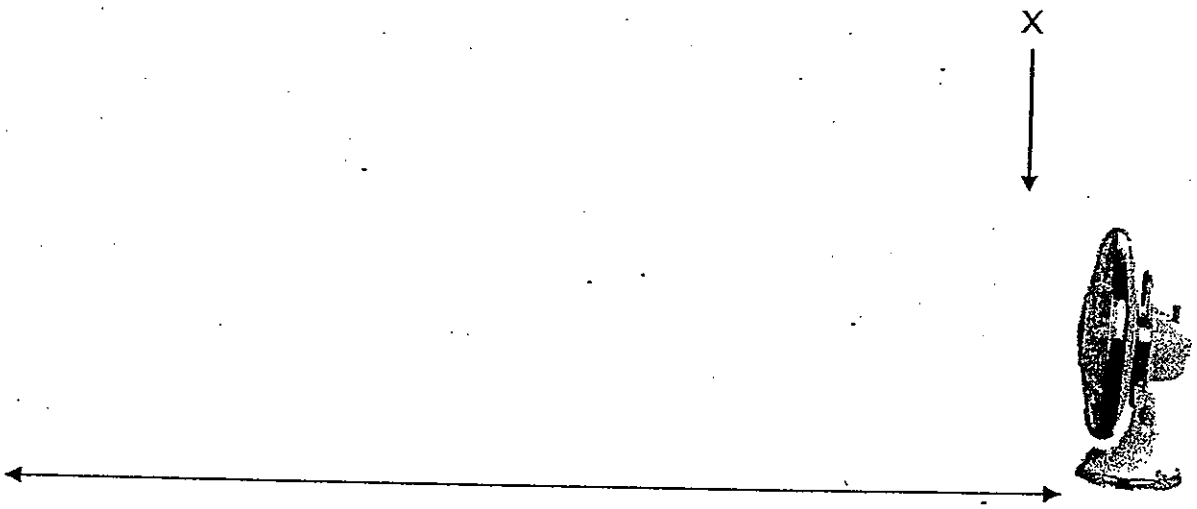
4

33. Don wanted to find out how the wing-like structure of a seed affects the distance it would travel in wind. He cut the length of the wing-like structure of Seed P. Then he dropped it from a height at point X, directly in front of a fan which had been turned on. He then measured the horizontal distance Seed P travelled as shown in the diagram below.

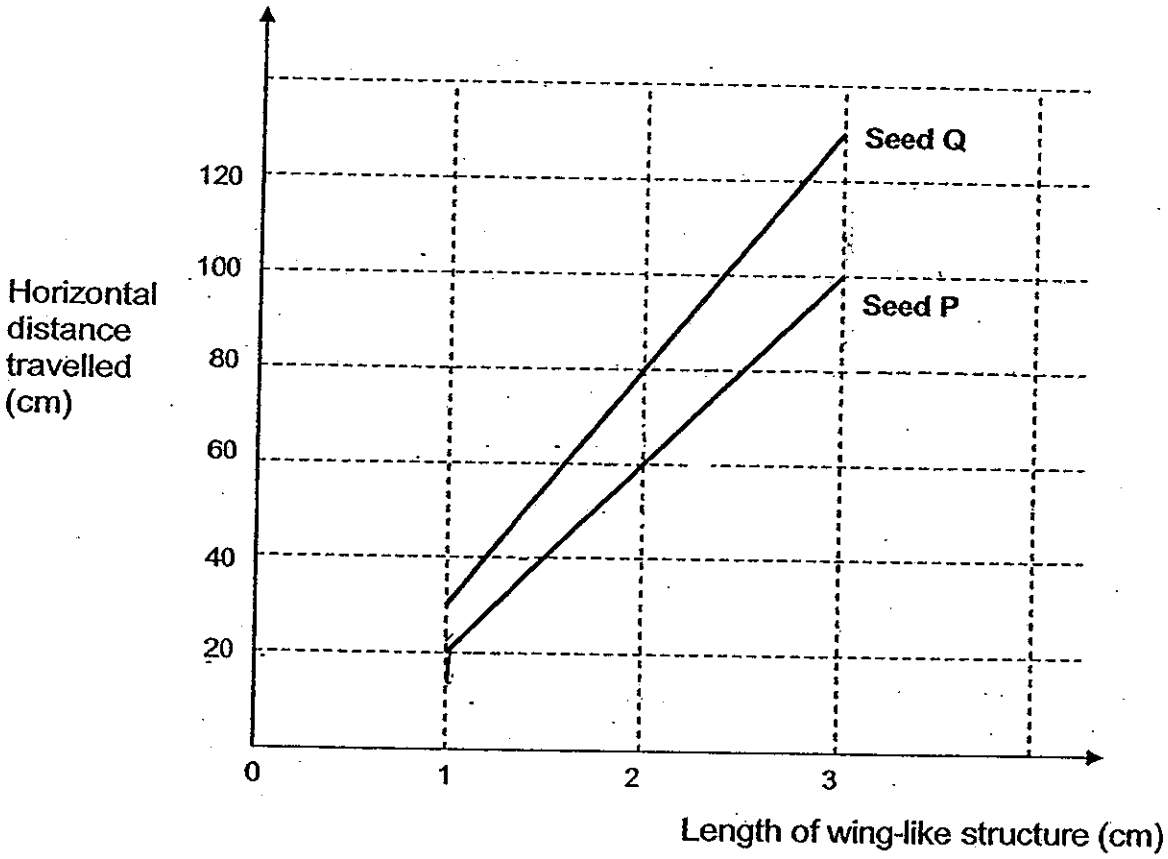
Don repeated the experiment a few more times by cutting the wing-like structure to various lengths and recorded his results.



Seed P



(a) Based on the results obtained, Don plotted the following graph.
What can he infer from the graph about the relationship between the length of wing-like structure of seed P and the horizontal distance travelled? [1]

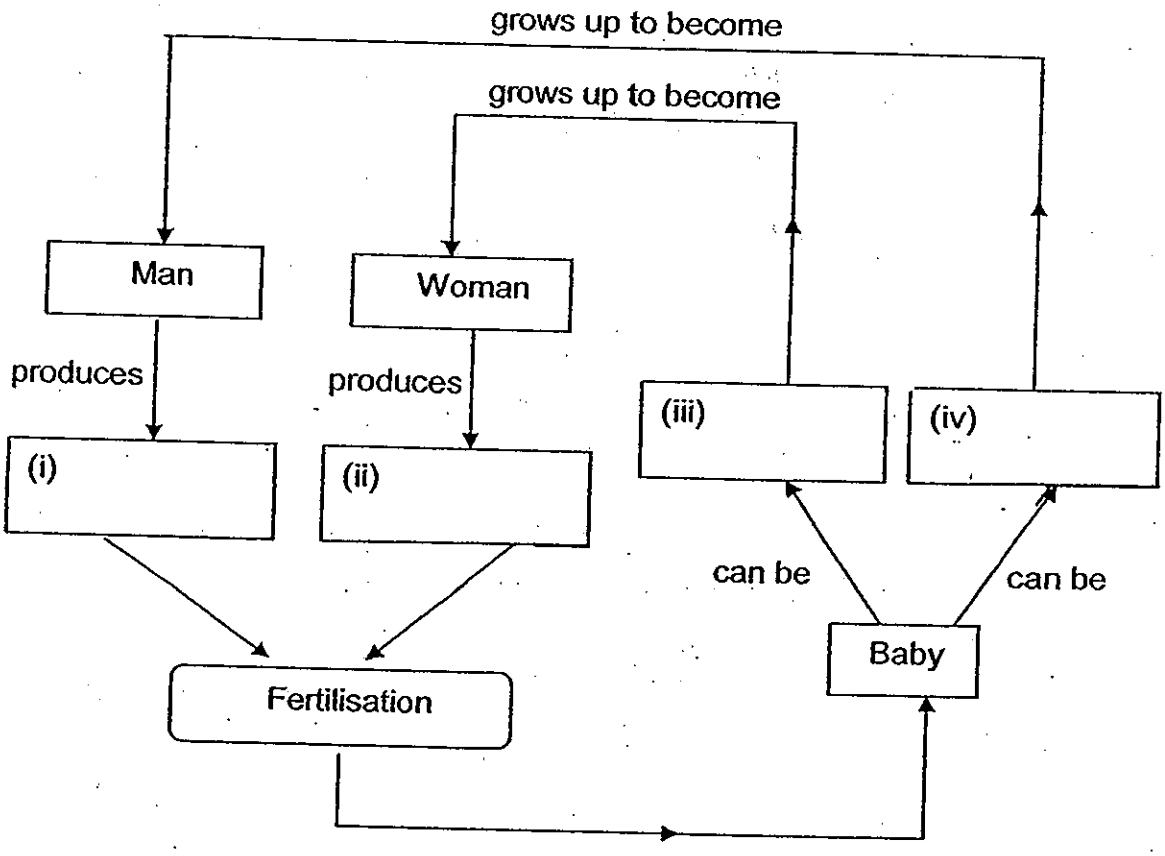


(b) Don repeated the experiment with Seed Q and Seed R which are obtained from the same plant as Seed P. Seed Q was lighter than Seed P and Seed R was the heaviest among the seeds. Don plotted the graph for Seed Q in the graph above.
Plot the result for Seed R on the same graph above. [1]

2

34. The chart below represents reproduction in human beings.

(a) Complete the chart by writing the correct answer in each box. [2]



(b) In which parts of the human body are the cells identified in 34a (i) and 34a (ii) produced? [1]

(i) _____

(ii) _____

3

35. Study the table below.

Part of a cell	Cell A	Cell B	Cell C	Cell D
Nucleus	✓	✓	✓	×
Cell Wall	✓	×	✓	×
Cell Membrane	✓	✓	✓	✓
Cytoplasm	✓	✓	✓	✓
Chloroplast	✓	×	×	×

Based on the information above, answer the following questions.

(a) Which one of these cells A, B, C or D, cannot reproduce? Give a reason for your answer. [1]

_____

_____

(b) Identify Cells A, B, C and D, by drawing lines to match them with the appropriate answers. [2]

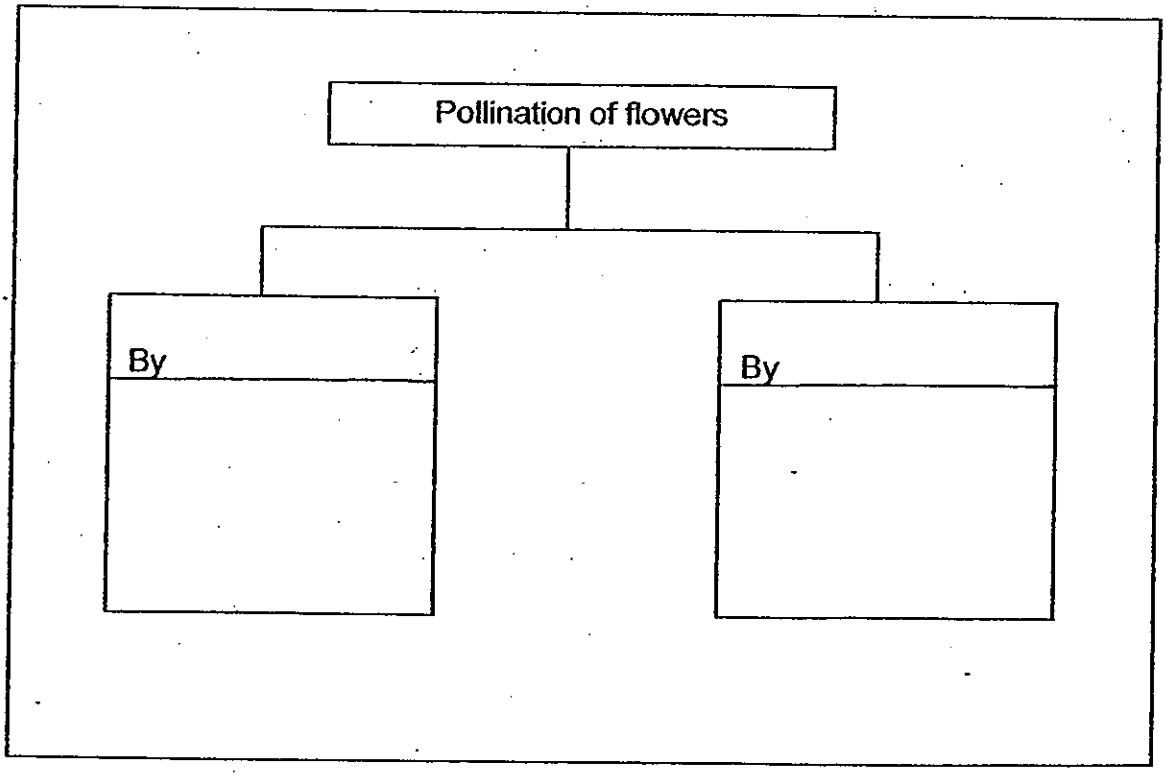
Cell A •	• Human cheek cell
Cell B •	• Red blood cell
Cell C •	• Root cell
Cell D •	• Leaf cell

3

36. The table below shows the characteristics of four different flowers A, B, C and D.

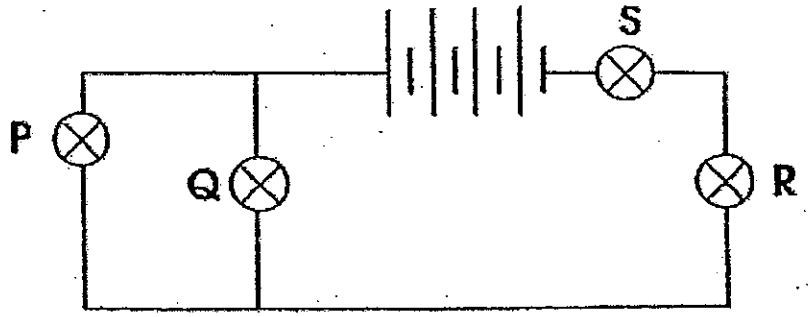
Characteristics	A	B	C	D
Does it have colourful and large petals?	No	No	Yes	No
Does it have a strong scent?	Yes	No	No	No
Does it have anthers dangling outside the flower?	No	Yes	No	No
Does it have stigma dangling outside the flower?	No	Yes	No	Yes
Does it produce nectar?	Yes	No	Yes	No
Does it have sticky or spiky pollen grains?	Yes	No	Yes	No

Based on the information given in the table above, classify flowers A, B, C and D in the table below according to their method of pollination. Give a suitable heading for each group. [3]



3

37. Study the circuit below. All bulbs in the closed circuit are shining brightly.



(a) Which of the bulb(s) in the above circuit will not light up if Bulb S fuses? [1]

_____

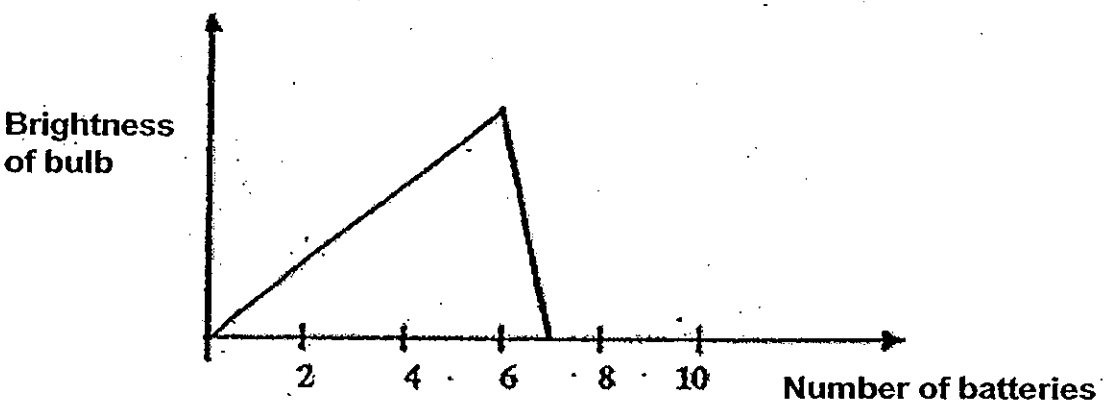
(b) Explain your answer in (a). [1]

_____

_____

2

38. Joe wanted to find out if the number of batteries affects the brightness of a bulb. The graph below shows the results of Joe's experiment.



(a) What happened to the brightness of the bulb when the first 5 batteries were added one at a time? [1]

(b) Explain why there is a sharp fall in the graph when the 7th battery was added. [2]

3

39. Ben saw some animals in the garden and recorded his observations in the table below.

Animal	Number of legs	What they eat	Where they live
P	4	Plants	Garden
Q	6	Plants	Field
R	6	Animals	Garden
S	6	Animals	Field

He grouped the animals as shown in the table below.

Group A	Group B
Animal P	Animal Q
Animal R	Animal S

(a) Based on the classification, what are the suitable headings for Group A and Group B? [1]

Group A: _____

Group B: _____

(b) Eugene then grouped the animals using another characteristic so that there were also two animals in each group. What was the characteristic that he used? [1]

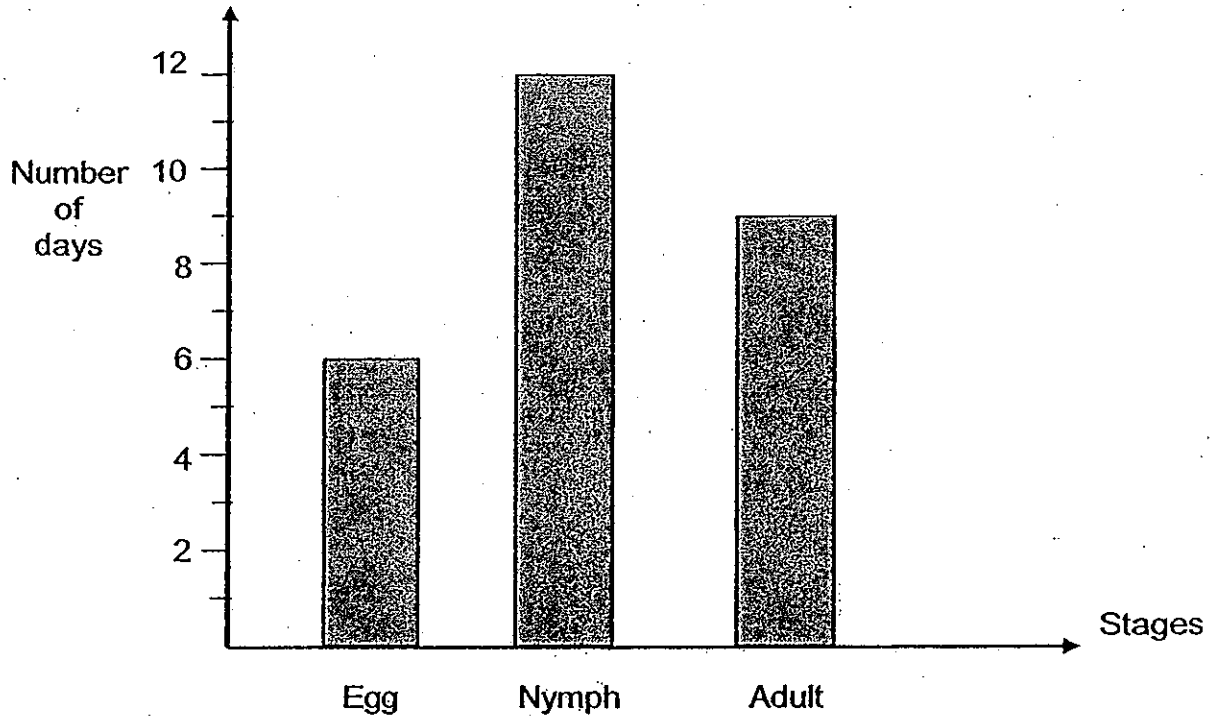
_____

(c) Some of the animals above belonged to the same animal group. Identify the animals and the group that they belong to. [1]

_____

3

40. The graph below shows the duration of various stages of the life cycle of an insect .



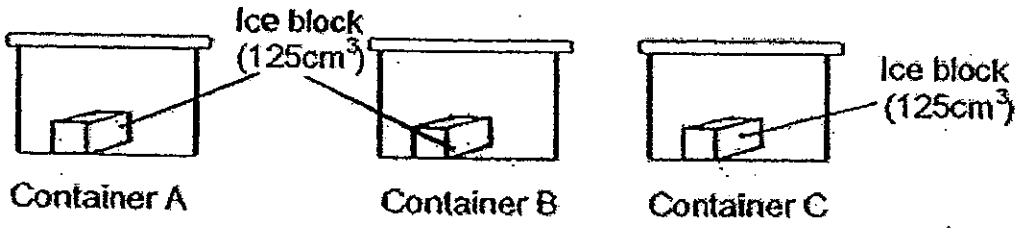
(a) How many stages are there in the life cycle of this insect? [1]

(b) How many days would the insect take to become an adult after the egg is laid? [1]

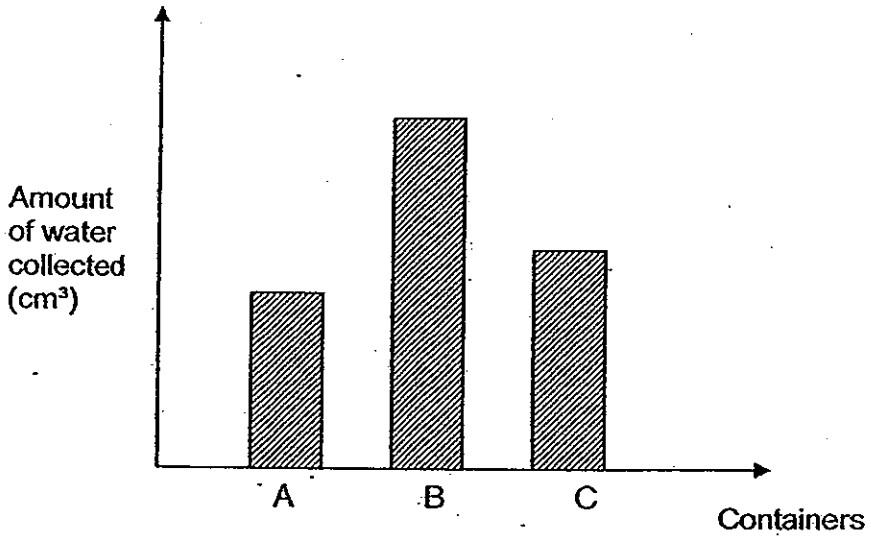
(c) Give an example of an insect with the same number of stages in its life cycle. [1]

3

41. Mandy put a block of ice of equal volume in each container for 30 minutes.



After 30 minutes, she removed the blocks of ice from each container. She collected the water in each container and recorded her findings in a graph as shown below.



(a) Mandy is going on a picnic. Based on her experiment and findings, which container should she use to keep her drinks cold? [1]

_____

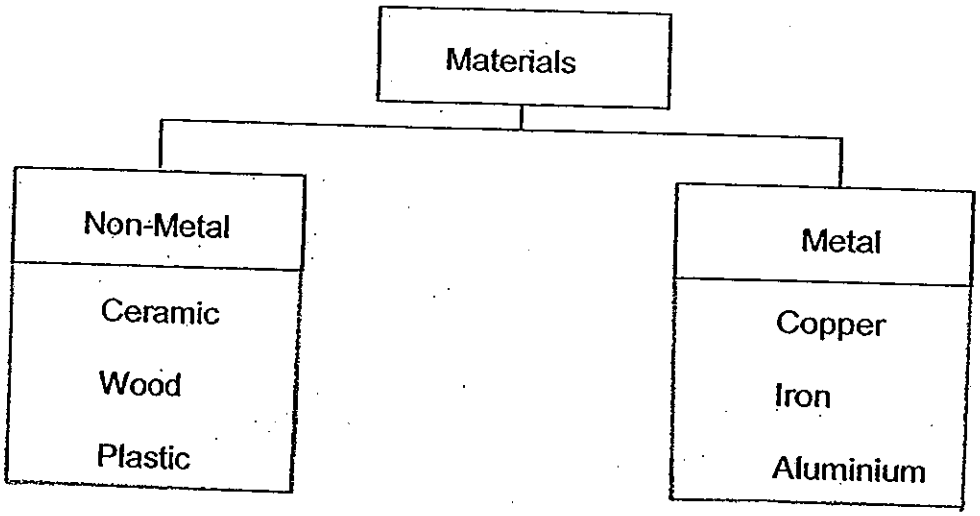
(b) Give a reason why she should choose the type of container identified in (a). [2]

_____

_____

3

42. Glen classified some materials into two groups as shown below.



(a) From which group would you choose a material to make the handle of a pot? Give a reason for your choice. [1]

_____

_____

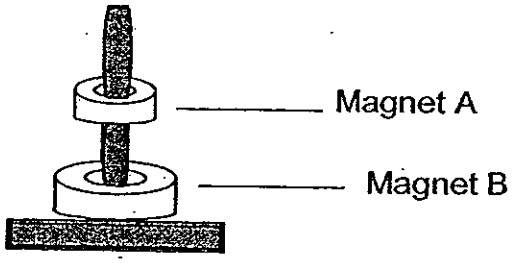
(b) Suggest another way to further classify the above metals into Group X and Group Y. [1]

(i) X: _____

(ii) Y: _____

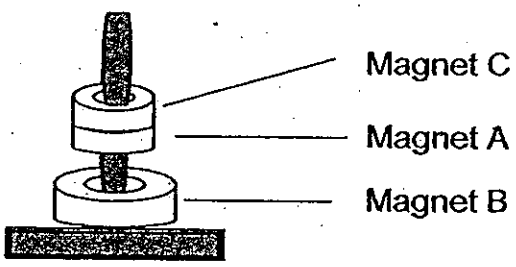
2

43. Kelvin set up an experiment with magnets as shown in the diagram below. A ring magnet A was seen floating above another ring magnet B. Using your interpretation from the set-up below, answer the questions that follow.



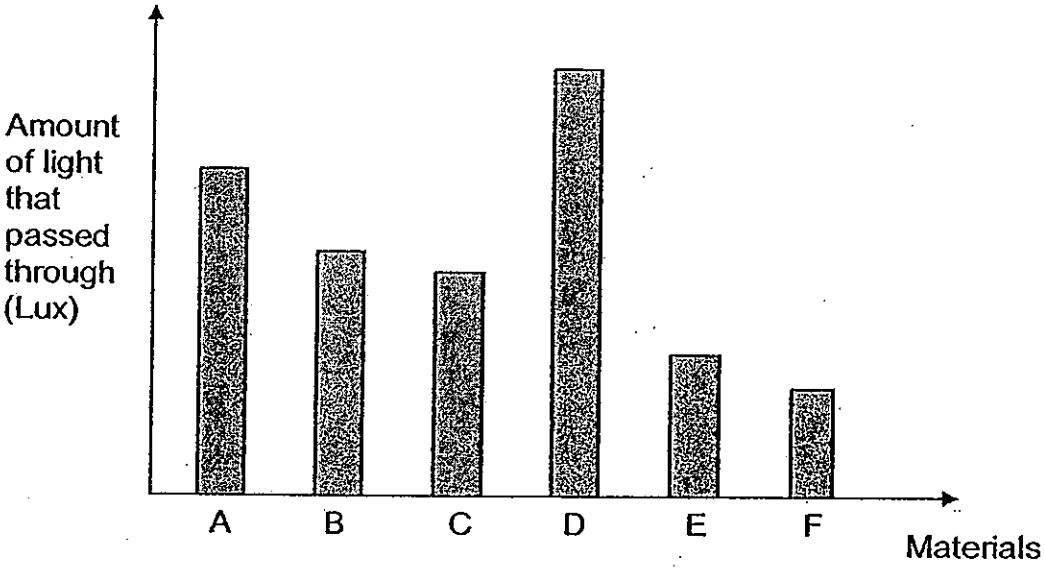
(a) What can you conclude about the poles of magnet A and magnet B that are facing each other? [1]

(b) Kelvin then added another ring magnet C above magnet A and noticed that magnet C was attracted to magnet A. Compare the space between Magnet A and B after magnet C was added. Give a reason why this happened. [2]



3

44. Sarah used a datalogger to measure the amount of light that can pass through different materials. The table below shows the results of the experiment.



Based on the bar chart above, indicate if each of the following statements are **True**, **False** or **Not possible to tell**, by marking with a tick (✓) in the appropriate boxes below. [3]

	Statements	True	False	Not possible to tell
(a)	Material A allows less light to pass through than Material D			
(b)	Material A casts a darker shadow than Material B.			
(c)	Material F is flexible but Material E is not.			
(d)	Material D is opaque.			
(e)	Material C allows some light to pass through.			
(f)	Material F could be a mirror.			

Please check through your work carefully.

3

Ans

EXAM PAPER 2010

SCHOOL : AITONG PRIMARY
SUBJECT : PRIMARY 5 SCIENCE

TERM : SA2

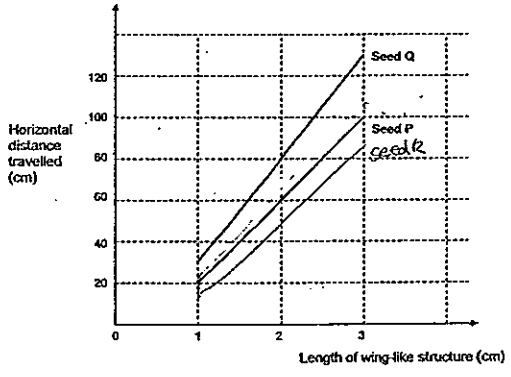
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
4	**2**	**2**	**1**	**1**	**2**	**2**	**1**	**4**	**2**	**2**	**3**	**2**	**1**	**4**	**2**	**2**

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

31)a)Towel X is heavy than Towel Y.
b)Towel Y has a bigger surface area than Towel X so the water in towel Y evaporate faster than the water in towel X.
c)Temperature

32)a)i)Rich in oxygen ii)Poor in oxygen
b)They are respiratory system and circulatory system.
c)When we exercise we need more oxygen and energy so the heart pumped blood faster to other parts of the body.

33)a)The longer wing-like structure of the seed the longer distance the seed travel.
b)



34)a)i)sperms ii)egg iii)girl iv)boy
b)i)testis ii)ovary

35)a)Cell D, it does not have a nucleus to reproduce.
b)A-----Leaf cell
B-----Human cheek cell
C-----Root cell
D-----Red blood cell

36)By wind | By animals
B,D | A,D

37)a)Bulbs R,Q,P
b)The circuit becomes an open circuit when bulb S fuses.

38)a)The brightness of the bulb increase.
b)The electric current in the circuit became too strong causing the bulb to fuse when the 7^{th} battery was added.

39)a)A: Live in garden B: Live in field
b)What kind of food they eat.
c)Animals Q, R, and S, they belong to insect.

40)a)This insect have three stage of life cycle.
b)18 days.
c)Grasshopper.

41)a)Container A.
b)It is a worst conductor of heat so it can gain heat from the surrounding slow.

42)a)Non-Metal as it is a bad conductor of heat and gain heat very slowly.
b)i)Non-magnetic ii)Magnetic

43)a)They are like poles faceing each other.
b)The space between Magnet A and B decreases as Magnet C acts as a weight and pushed Magnets A down words.

44)a)T b)F c)Not d)F e)T f)F