

RAFFLES GIRLS' PRIMARY SCHOOL



SEMESTRAL ASSESSMENT 2

2008

Name: \_\_\_\_\_ Index No: \_\_\_\_\_ Class: P5

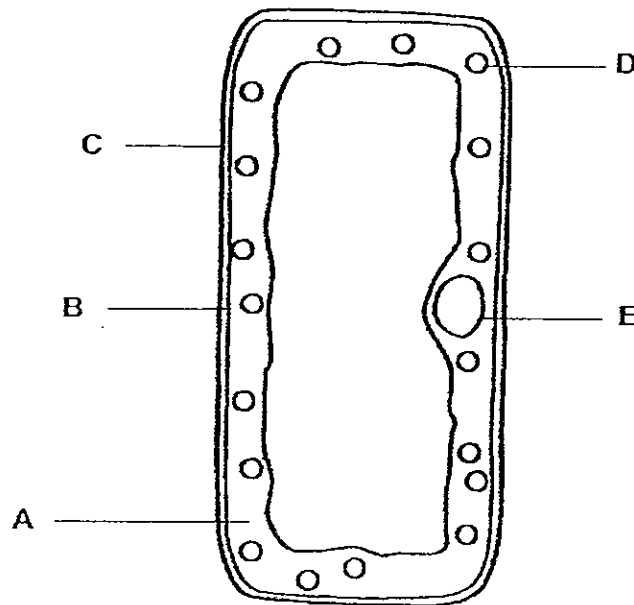
29<sup>th</sup> Oct 2008 **SCIENCE** Att: 1 h 45 min

Section A	50	
Section B	40	
Out of 90 marks		
Highest score	Class	Level
Average score		
Parent's signature		

SECTION A (25 X 2 marks)

For each of the question from 1 to 25, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet (OAS) provided.

1. The diagram below shows a plant cell taken from a leaf.



Which structures, A, B, C, D and E, are also found in both the root and the cheek cells?

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

2. The table below shows some information about the planets in the Solar System.

Planets	Mercury	Venus	Earth	Mars	Jupiter	Saturn	Uranus	Neptune
Diameter (km)	4879	12,104	12,756	6792	142,984	120,536	51,118	49,528
Time taken to make 1 rotation (hours)	1407.6	-5832.5	23.9	24.6	9.9	10.7	-17.2	16.1
Length of day (hours)	4222.6	2802.0	24.0	24.7	9.9	10.7	17.2	16.1
Distance from Sun ( $\times 1000\ 000$ km)	57.9	108.2	149.6	227.9	778.6	1433.5	2872.5	4495.1
Time taken to make 1 revolution around the Sun (days)	88.0	224.7	365.2	687.0	4331	10,747	30,589	59,800

*Note: Negative sign indicates that the planet is moving in an opposite direction to other planets.*

*Source: <http://nssdc.gsfc.nasa.gov/planetary/factsheet/index.html>*

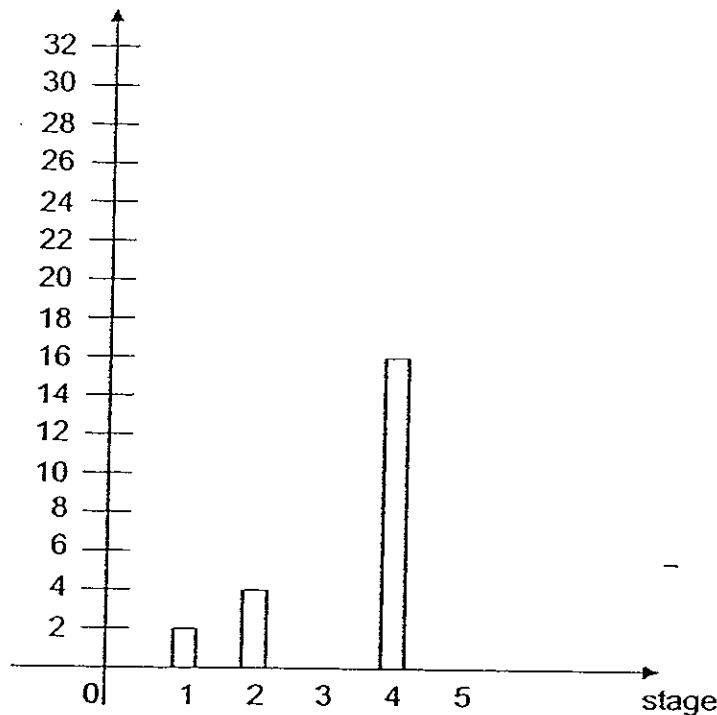


What can be inferred from the information above?

- (1) The further a planet is from the Sun, the shorter is the time taken to make one rotation.
- (2) The further a planet is from the Sun, the greater the diameter of the planet.
- (3) The further a planet is from the Sun, the longer is the time taken for it to make one revolution around the Sun.
- (4) The further a planet is from the Sun, the shorter the length of the day on the planet.

3. The graph below shows the number of cells produced during each stage of cell division. Stages 3 and 5 are missing from the graph.

Number of cells



Which one of the following shows the number of cells for stages 3 and 5 in the graph?

Number of cells	
Stage 3	Stage 5
(1) 6	24
(2) 8	32
(3) 9	25
(4) 12	30

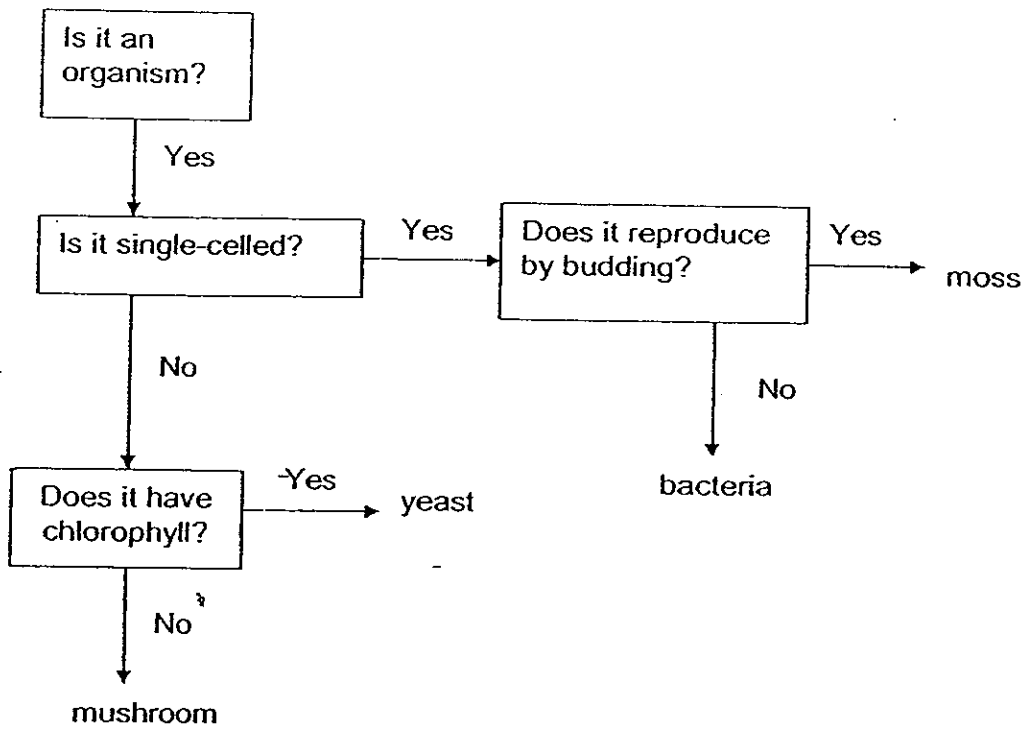
4. The table below shows the comparison of sexual reproduction in flowering plants and animals.

Types of sex cells	In flowering plants	In animals
Male	A	C
Female	B	D

Which of the following shows the correct representation of A, B, C and D?

	A	B	C	D
(1)	anther	ovule	sperm	egg
(2)	sperm	egg	pollen grain	ovule
(3)	sperm	pollen grain	egg	ovule
(4)	pollen grain	ovule	sperm	egg

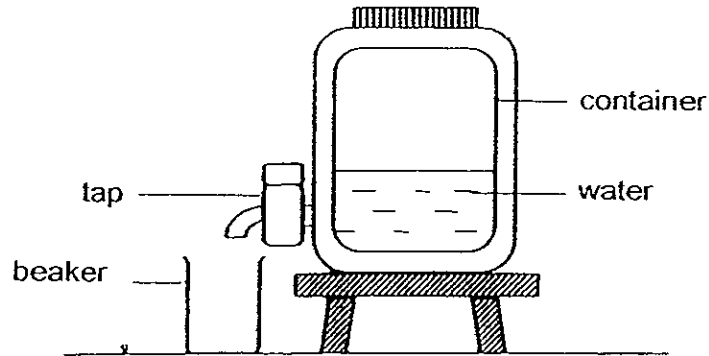
5. The chart below shows how some organisms are classified.



Which of the following is / are wrongly classified?

- A moss
  - B yeast
  - C bacteria
  - D mushroom
- (1) A only  
(2) A and B only  
(3) B and C only  
(4) C and D only

6. The capacity of the container below is  $7000 \text{ cm}^3$ . It is filled with  $2000 \text{ cm}^3$  of water.



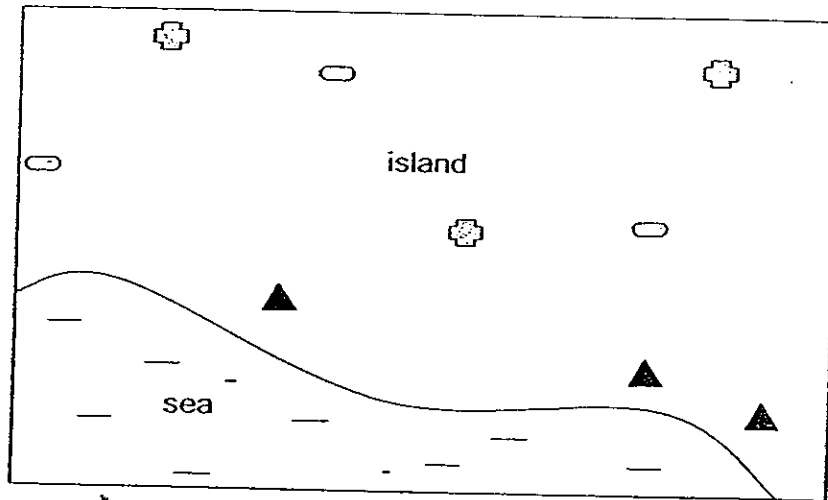
John turned on the tap to release only  $350 \text{ cm}^3$  of water into the beaker.

Which one of the following shows the correct volume of air and water in the container at the end of the experiment?

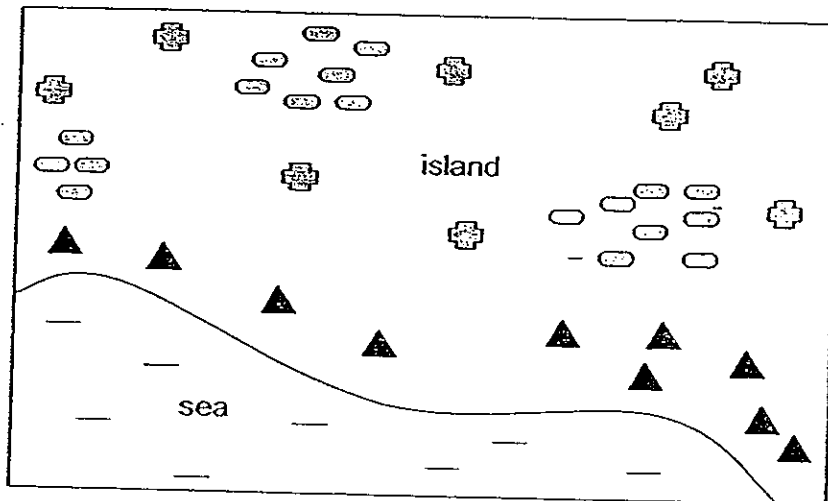
	Volume of air ( $\text{cm}^3$ )	Volume of water ( $\text{cm}^3$ )
(1)	2000	350
(2)	5000	1650
(3)	5350	1650
(4)	7000	350

7. The diagrams below show part of an island where three types of plants (▲, ○ and ⊕) are growing before and after their fruits/seeds have been dispersed.

Before fruits / seeds dispersal



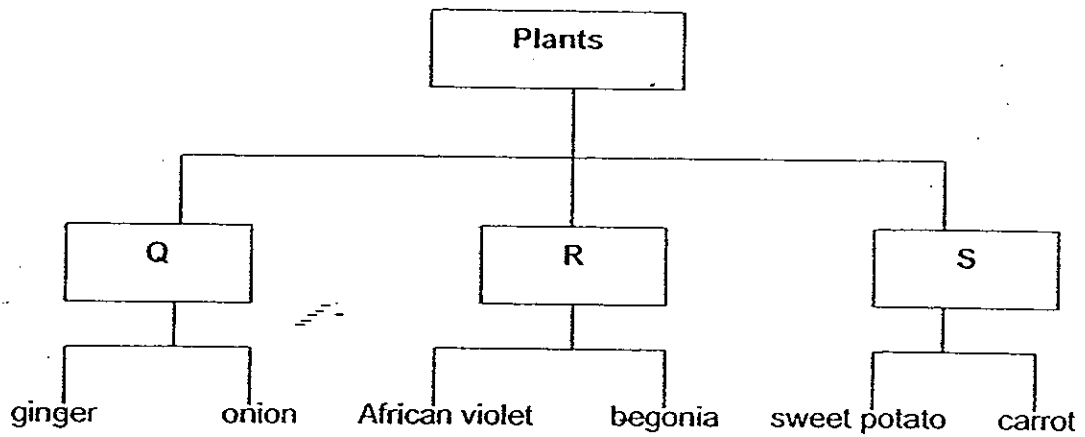
After fruits / seeds dispersal



How are the fruits/seeds of each type of plant most likely dispersed?

	▲	○	⊕
(1)	explosive action	animals	wind
(2)	water	explosive action	animals
(3)	explosive action	water	wind
(4)	water	animals	explosive action

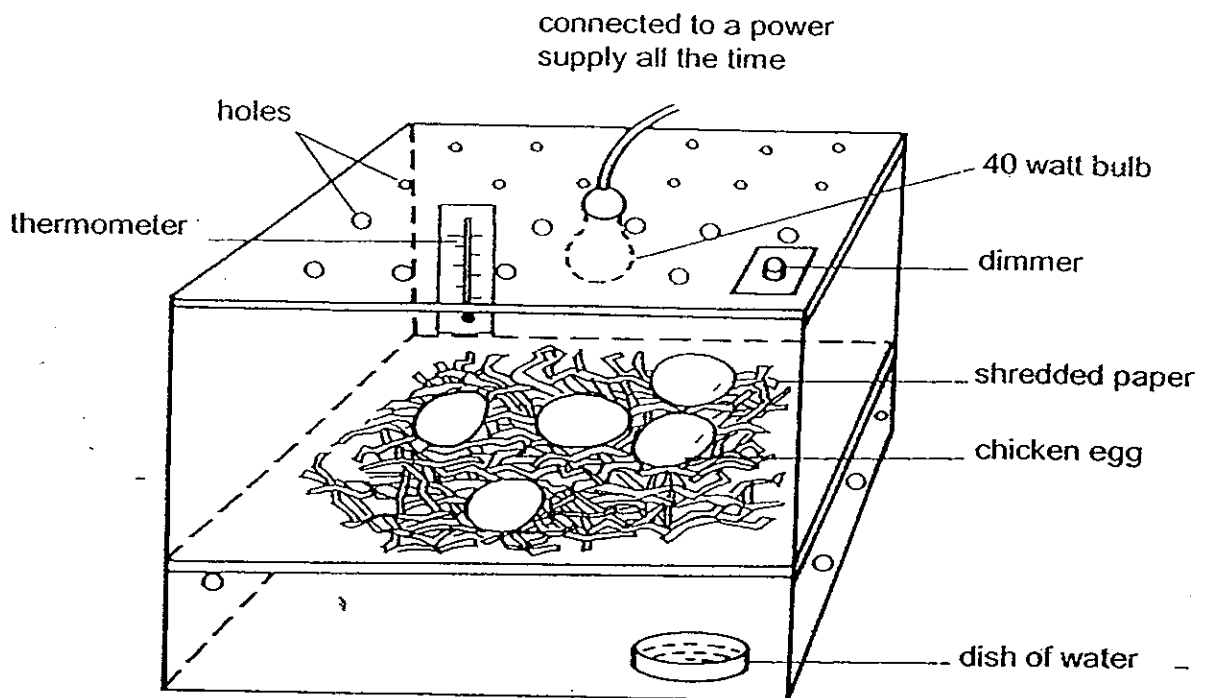
8. Below is a classification table for plants.



Based on the information above, which one of the following represents correctly the sub-headings, Q, R and S?

	Q	R	S
(1)	store food	poisonous plants	underground stems
(2)	by suckers	flowering plants	storage roots
(3)	by underground stems	by leaves	by roots
(4)	have buds	non-flowering plants	by suckers

9. Wendy constructed a simple incubator as shown below.



She bought some chicken eggs from the market and placed them inside the incubator.

She observed the eggs for 21 days but at the end of this period, the eggs did not hatch into chicks.

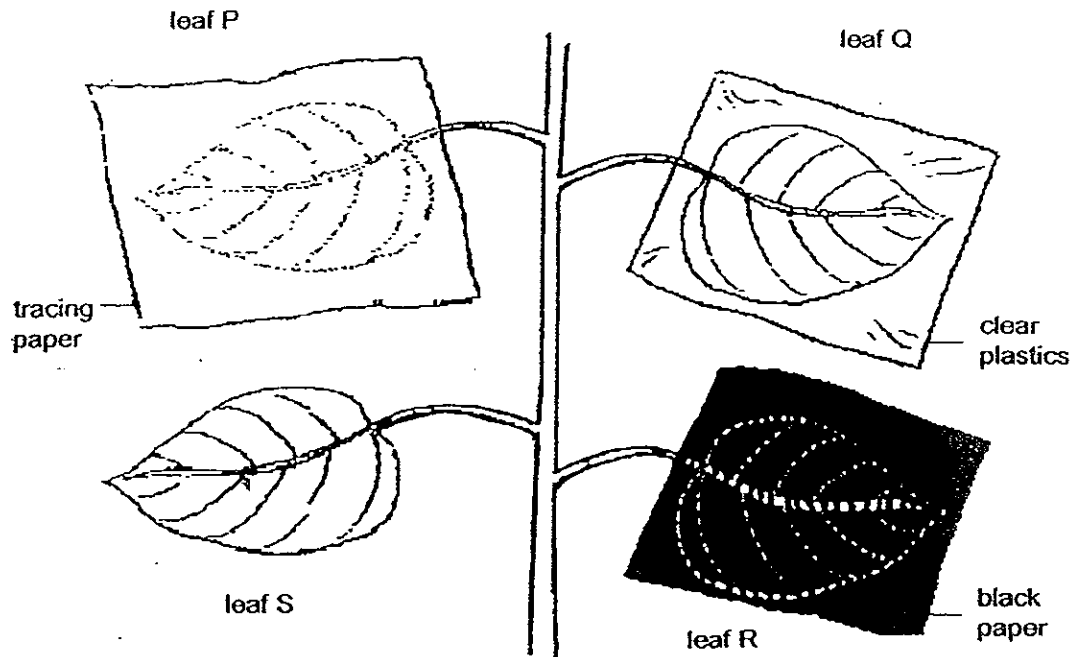
What is / are the possible reason(s)?

- A There was no heat.
- B Air could not enter the egg.
- C The eggs were not fertilised.

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

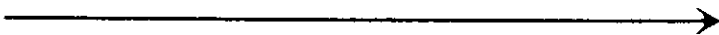


10. Visha conducted an experiment to show how light affects photosynthesis. She used four similar leaves, P, Q, R and S, on a plant. Leaf P was covered with tracing paper, Leaf Q with clear plastics and Leaf R with black paper. Leaf S was left uncovered.

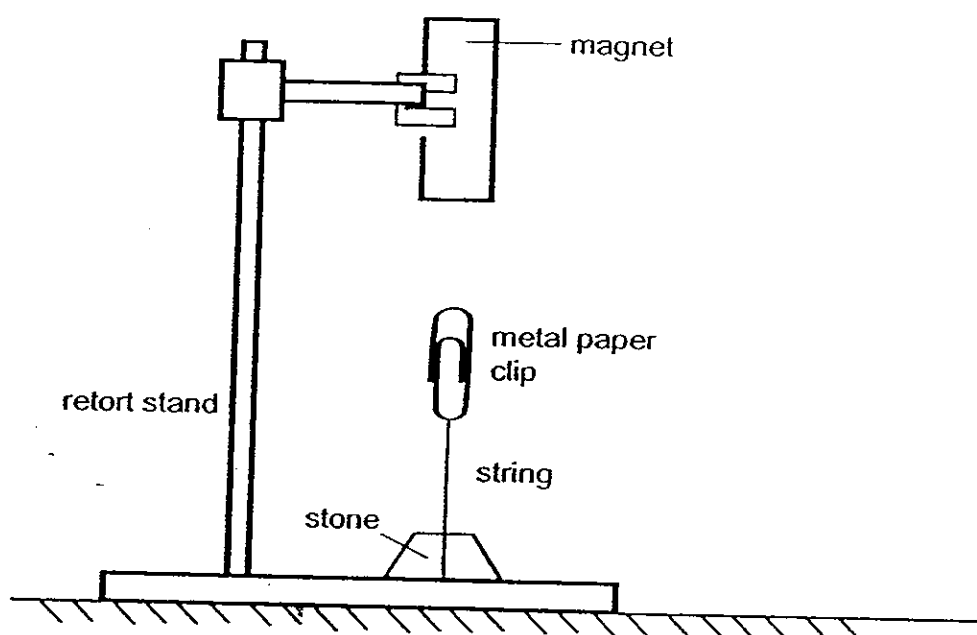


The plant was left in the sun and watered daily. After two days, the leaves were plucked off and the covering materials were removed. The leaves were tested for starch.

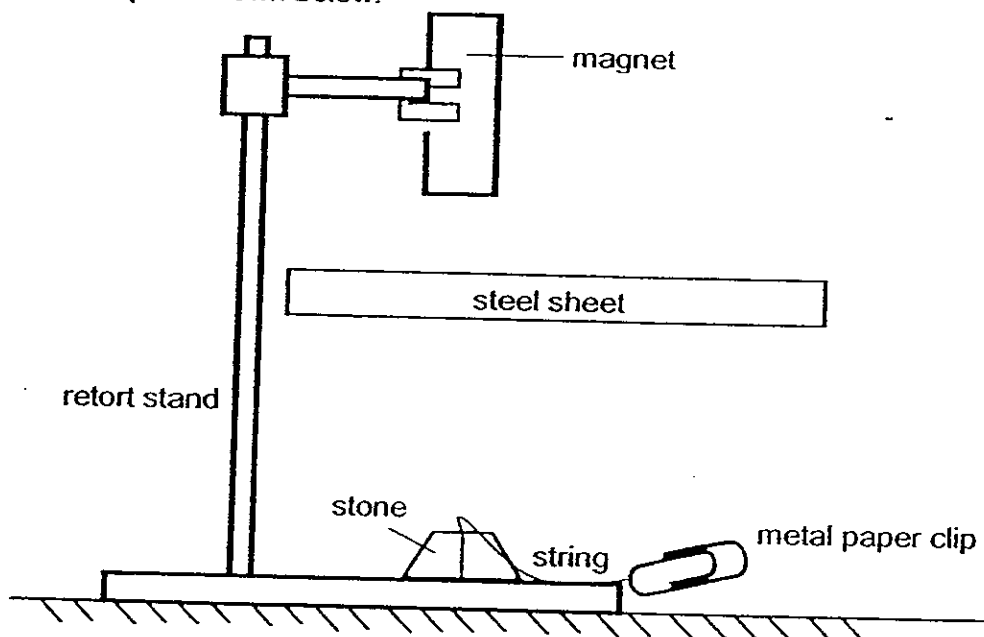
Which one of the following shows the correct order of starch content in the leaves?

				Most amount of starch
(1)	R	Q	P	S
(2)	S	Q	P	R
(3)	S	R	P	Q
(4)	R	P	Q	S

11. James set up an experiment as shown below. The apparatus below are NOT drawn to scale.



James placed a steel sheet between the magnet and the metal paper clip as shown below.

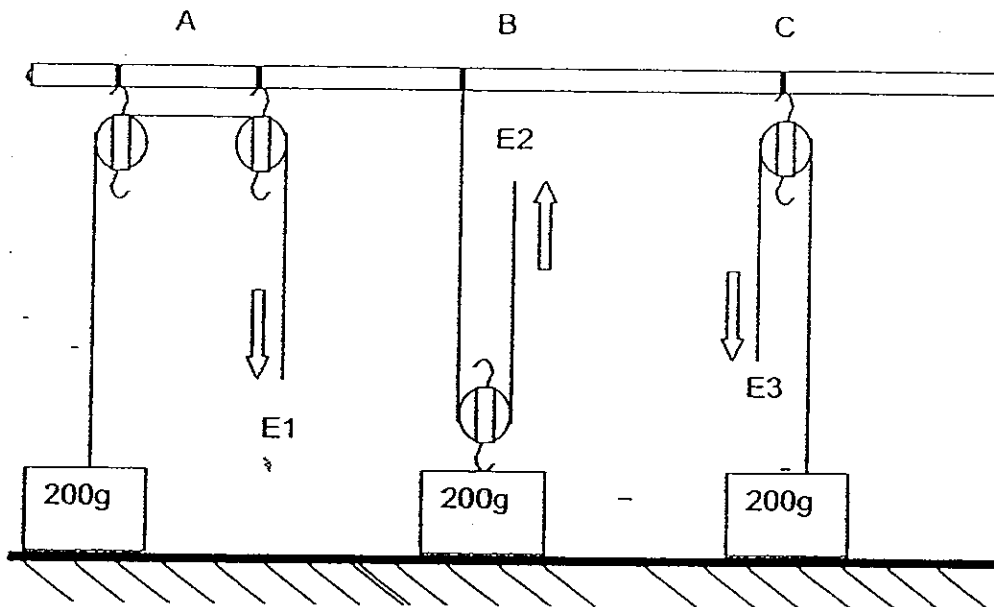


The metal paper clip fell onto the table.

What could James conclude from his experiment?

- (1) The magnet lost its magnetism.
- (2) The magnet cannot go through the steel sheet.
- (3) The steel sheet caused the repulsion between the magnet and the metal paper clip.
- (4) The steel sheet prevented the attraction between the magnet and the metal paper clip.

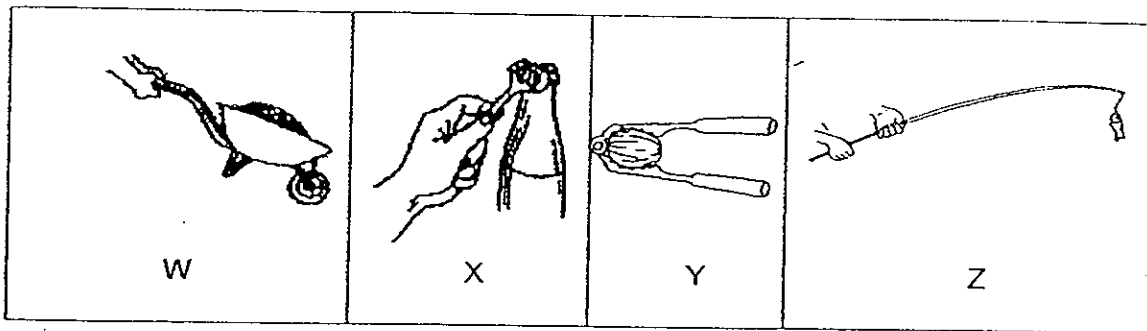
12. Amanda made use of 3 different pulley systems, A, B and C, to find the amount of effort required to lift a 200g load. The minimum applied effort required to lift the load in each pulley system is labelled as E1, E2 and E3 respectively.



Which one of the following sets of results is likely to be the values of E1, E2 and E3, without taking the mass of the pulley and friction into consideration?

	E1(g)	E2(g)	E3(g)
(1)	200	100	200
(2)	100	100	200
(3)	50	100	200
(4)	100	200	100x

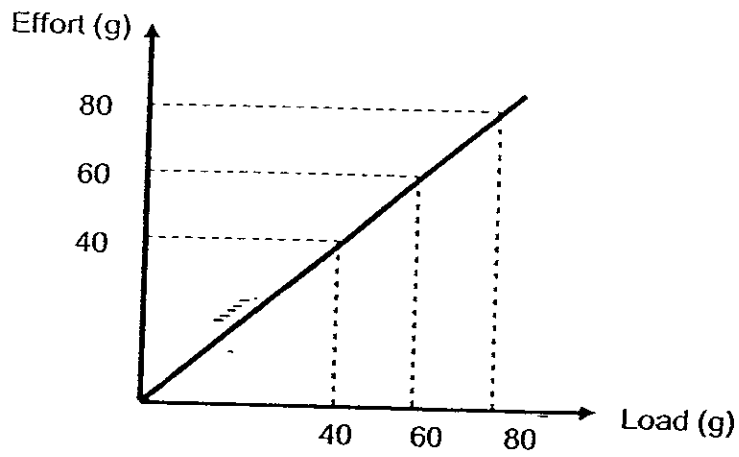
13. Sarah examined the following simple machines and made some statements regarding them.



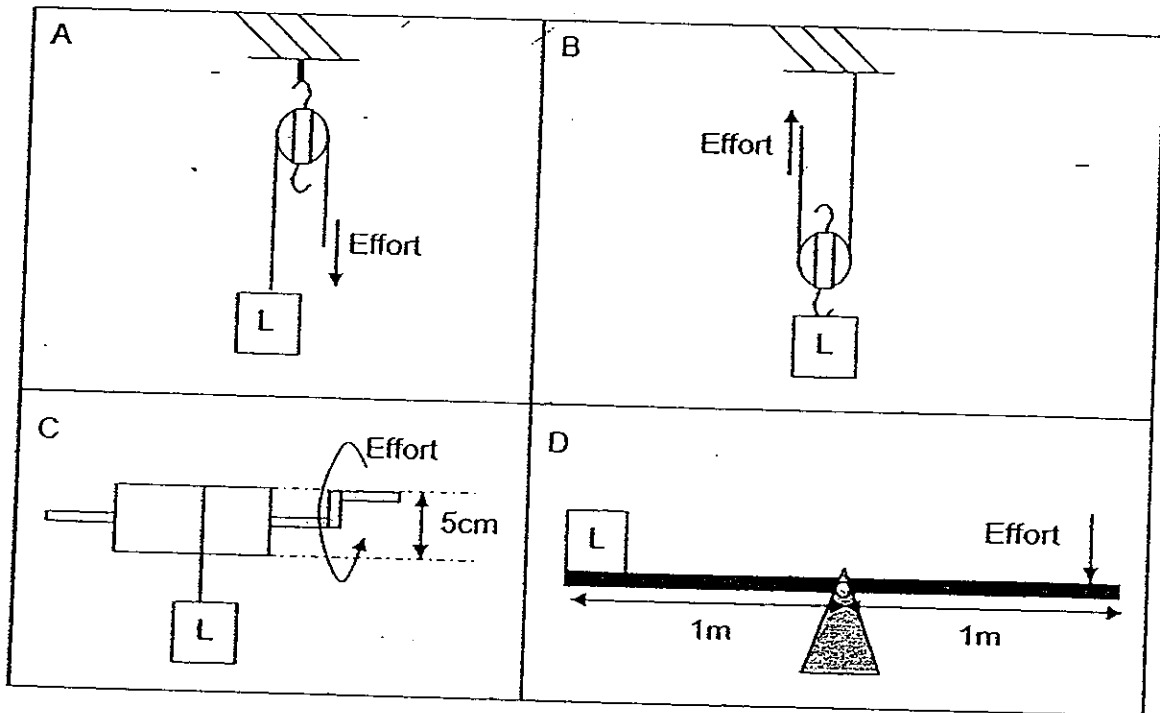
Which one of the following statements made by Sarah is **NOT** true?

- (1) The load is placed between the effort and the fulcrum for W.
- (2) The applied effort for X is less than the load
- (3) Y is using the principle of a lever to make work easier.
- (4) The applied effort for Z is less than the load.

14. The different types of simple machines are illustrated below



Without considering the factor of friction and the mass of the pulley, which of the machines is/are unable to have the effort to load relationship as shown in the graph above?



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

15. The diagrams below show the muscle movements of a man as he raised his forearm (Diagram 1) and eventually lowered it (Diagram 2).

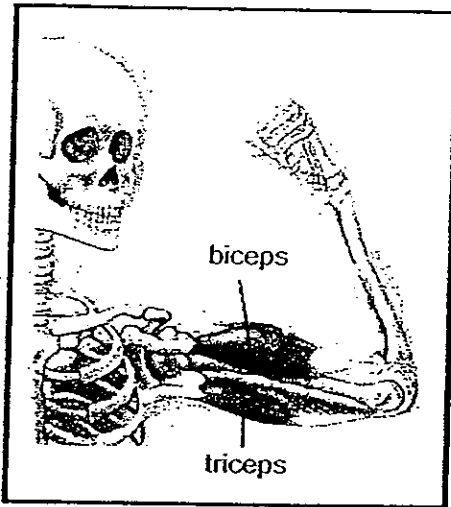


Diagram 1

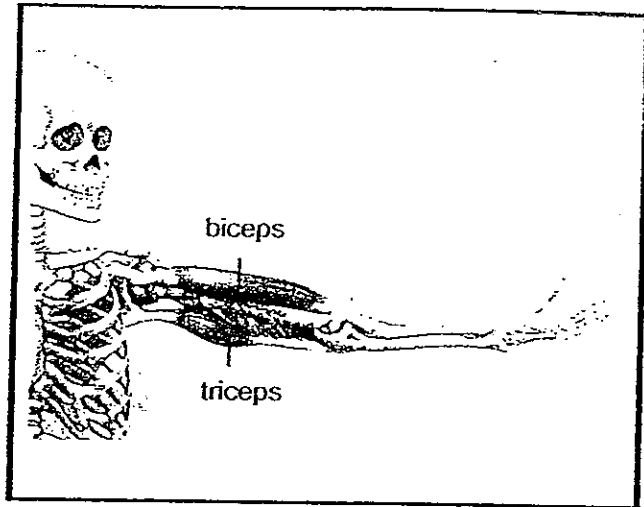
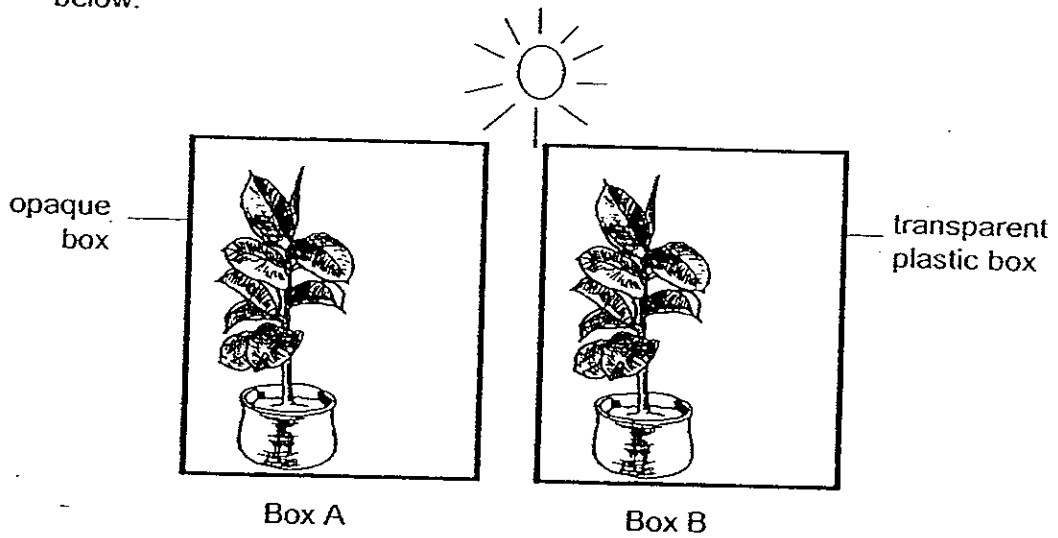


Diagram 2

Which one of the following describes the action of the man's muscles?

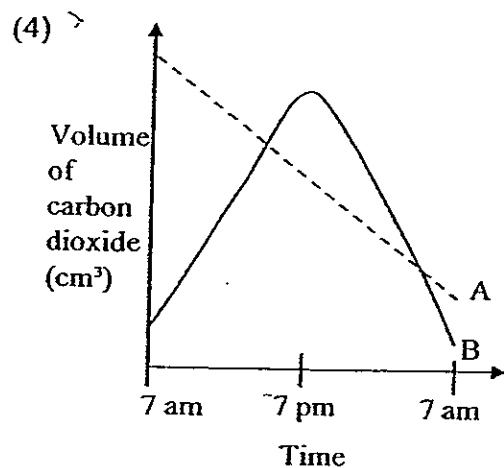
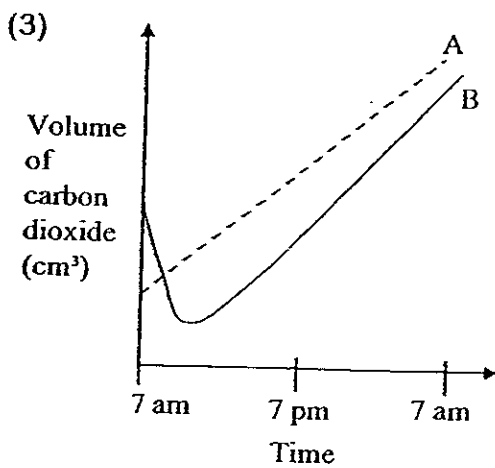
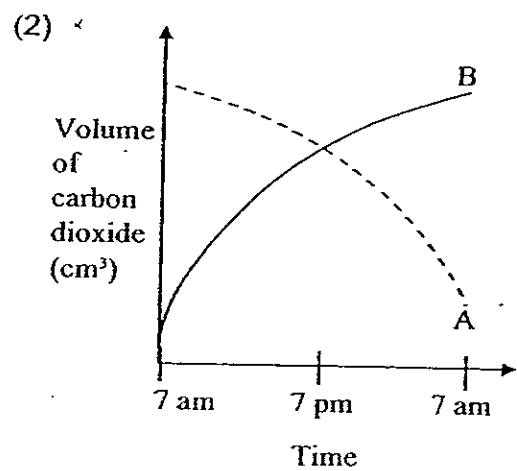
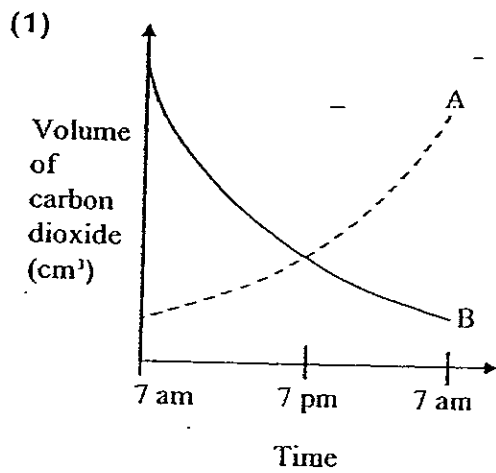
	Diagram 1		Diagram 2	
	Biceps	Triceps	Biceps	Triceps
(1)	contract	relax	contract	relax
(2)	relax	contract	contract	relax
(3)	contract	relax	relax	contract
(4)	relax	contract	relax	contract

16. Tommy uses two similar pots of plants to set up an experiment as shown below.

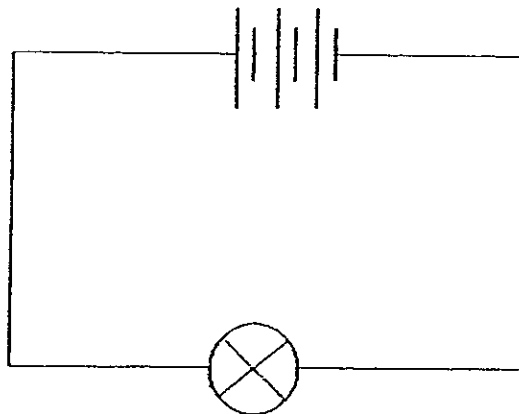


He placed the boxes, A and B, in the garden. There are **NO** openings in both boxes. He recorded the amount of carbon dioxide in both boxes, hourly starting at 7 in the morning.

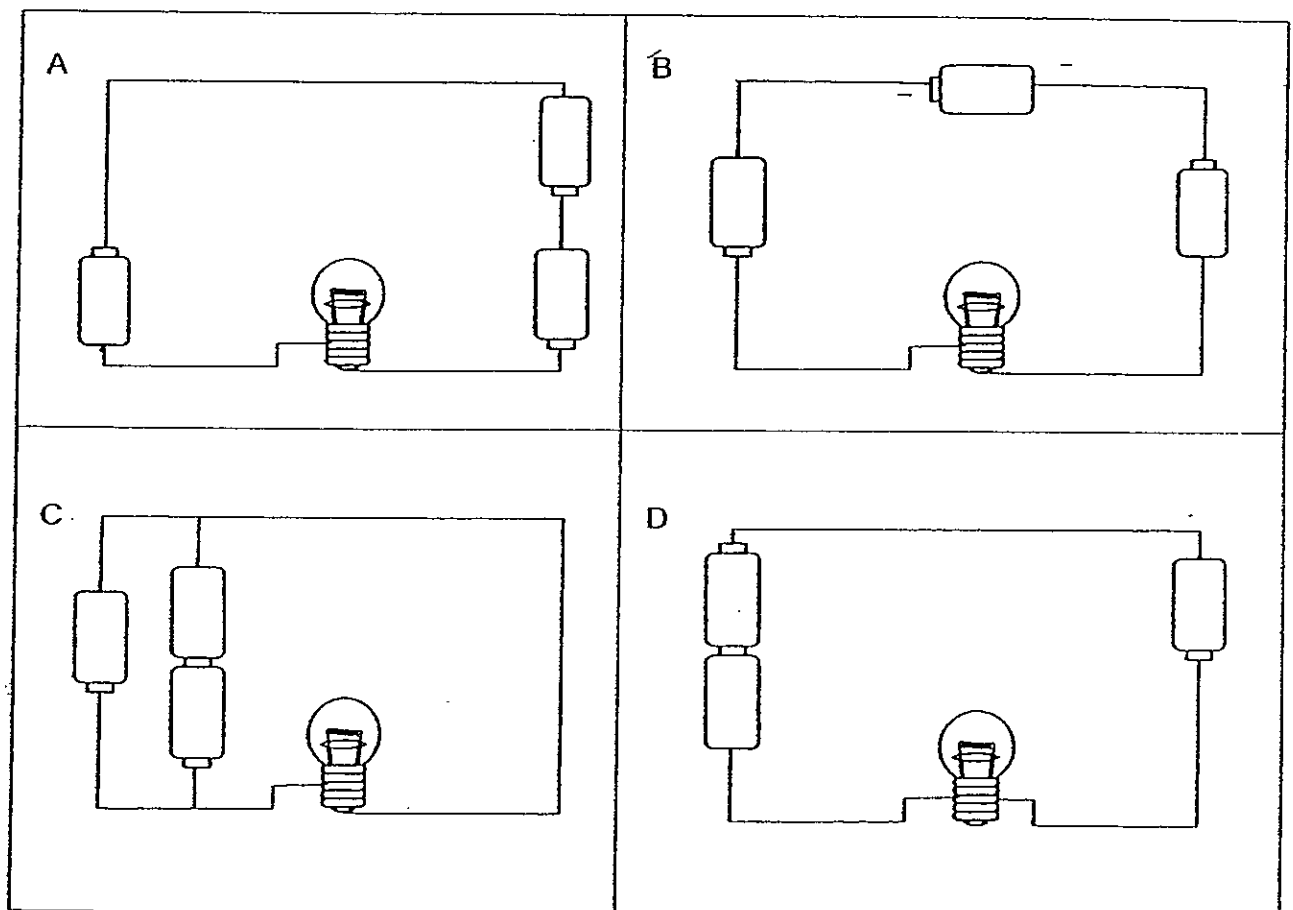
What could possibly be the composition of carbon dioxide in the boxes for that day?



17. Tom connected three identical batteries and a bulb in a circuit as shown in the diagram below.



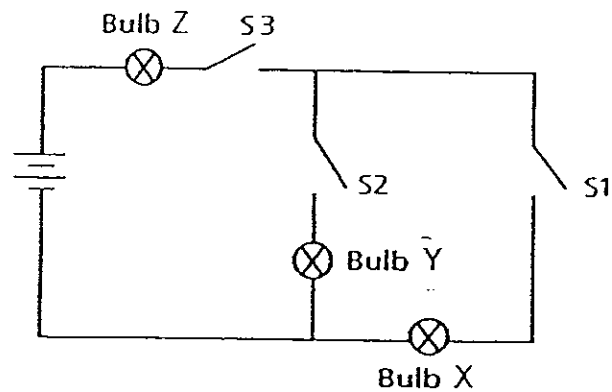
Which of the following circuits will have a bulb that has the same brightness as Tom's?



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



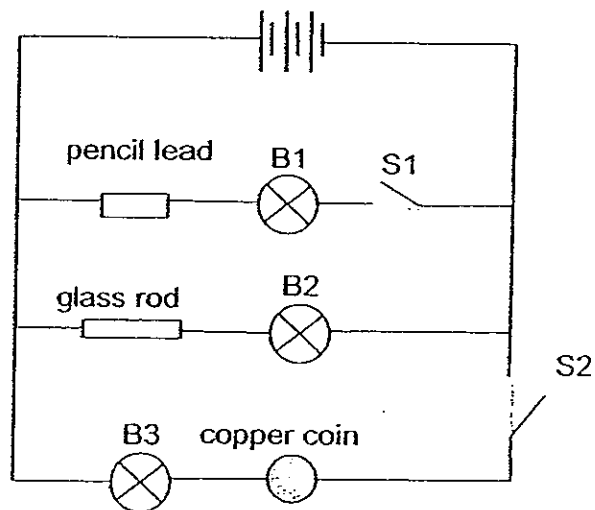
18. Several components made up the following circuit.



Which switches must be closed in order to light up only Bulbs Y and Z?

- |                    |                    |
|--------------------|--------------------|
| (1) S1 and S2 only | (2) S1 and S3 only |
| (3) S2 and S3 only | (4) S1, S2 and S3  |

19. Faiz set up the electric circuit as shown below.

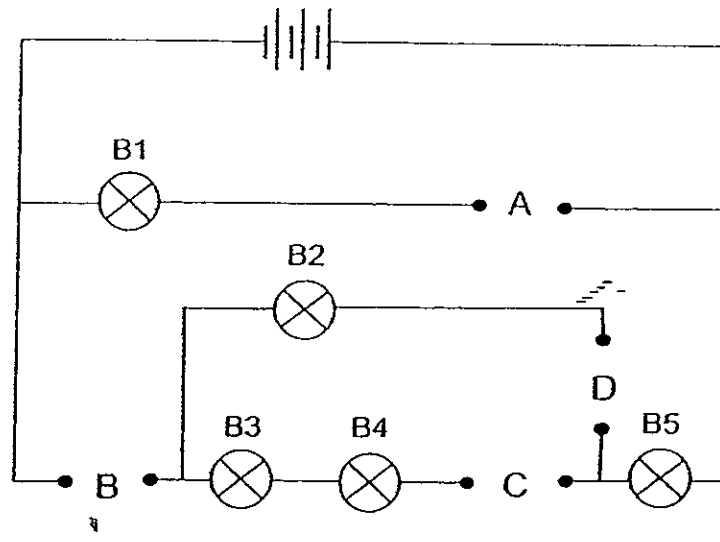


Faiz turned the switches S1 and S2 on and then off. He made some observations.

Which one of Faiz's observations is correct?

- (1) When S2 was closed, only B2 and B3 lit up.
- (2) When S1 was closed, none of the bulbs lit up.
- (3) When both switches were opened, only B2 lit up.
- (4) When both switches were closed, only B1 and B3 lit up.

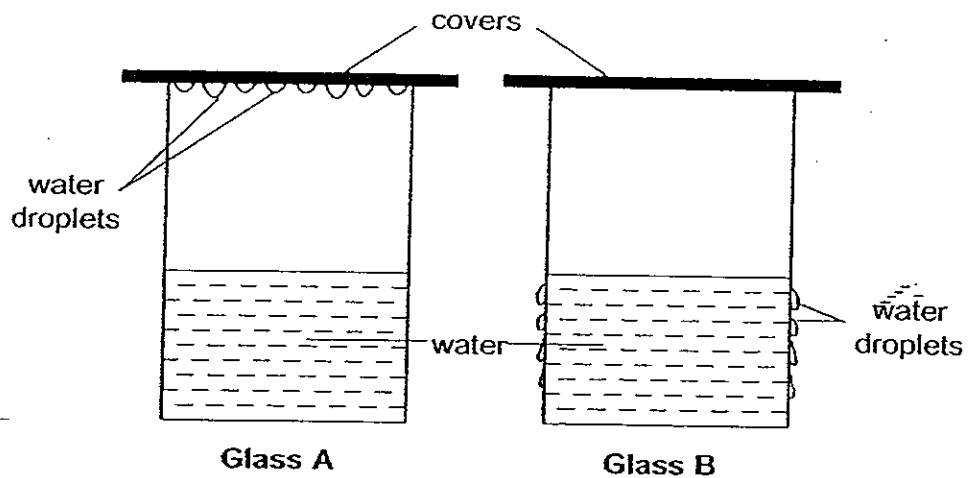
20. Mary is given 4 bars, each of different material. Two bars are conductors of electricity and the remaining two bars are non-conductors of electricity. She needs to place the **four bars** at A, B, C and D of the electric circuit shown below.



Where should Mary place the **two bars of non-conductors** of electricity so that only **two bulbs** will light up in the circuit?

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

21. A group of children saw water droplets on different parts of glass A and glass B as shown below.



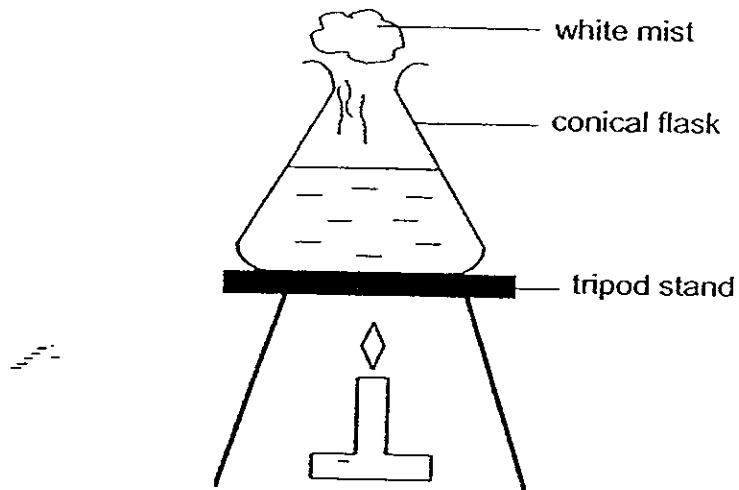
These children made the following statements based on what they had observed.

- Bob : The water droplets in both glasses were caused by the condensation of water vapour.
- Jane : The water droplets in glass A were formed from the water vapour in the air outside the glass.
- Mary : The temperature of the water in both glasses was the same at the beginning of the experiment.

Who made the correct statement(s)?

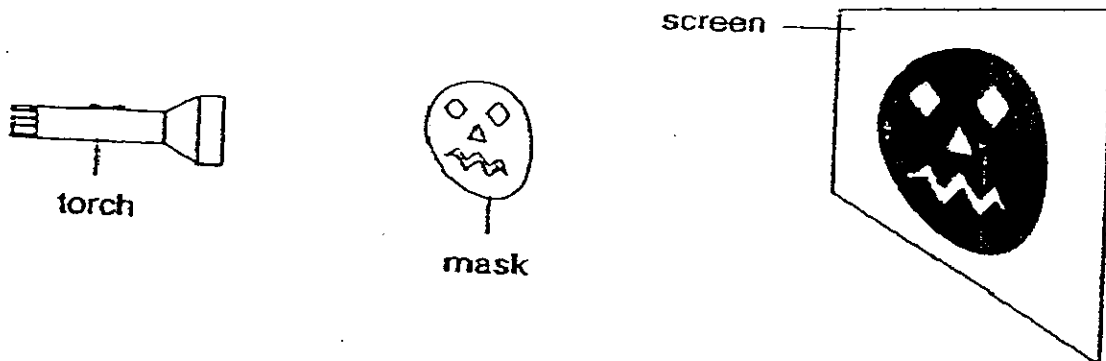
- (1) Bob only
- (2) Mary and Jane only
- (3) Bob and Jane only
- (4) Bob and Mary only

22. The diagram below shows water boiling in a conical flask.



Which one of the following states correctly what the "white mist" is?

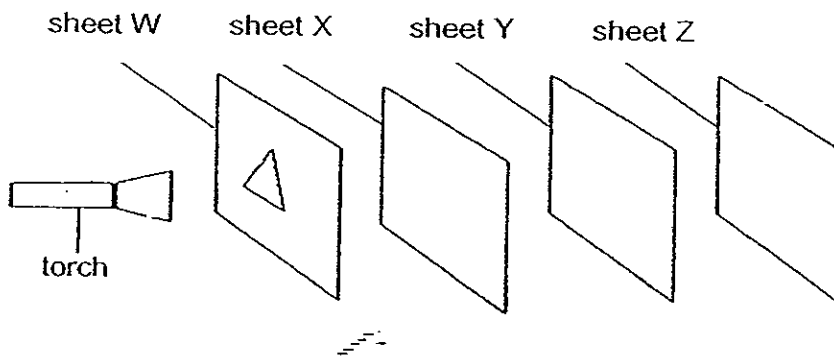
- (1) It is steam from the boiling water.
  - (2) Water vapour condensed to form water droplets.
  - (3) It is water vapour that had evaporated from the water.
  - (4) Water droplets are formed due to the condensation of steam.
23. Bob shines a torch at a mask and a shadow of the mask is seen on a screen as shown below.



Which one of the following methods will **NOT** increase the size of the shadow of the mask on the screen?

- (1) Move the torch towards the mask.
- (2) Move the mask closer to the torch.
- (3) Move the torch towards the screen.
- (4) Move the screen closer to the mask.

24. Four sheets, W, X, Y and Z, lay in a straight line.



When the torch was switched on, a triangular patch of light was seen clearly on sheet Y only.

Which of the following statements are correct?

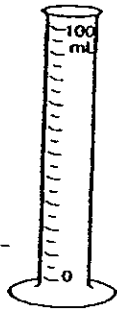
- A W is made of an opaque material.
- B X allows most light to pass through it.
- C Y is made of a translucent material.
- D Z is placed too far from the torch to have any light ray falling on it.

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

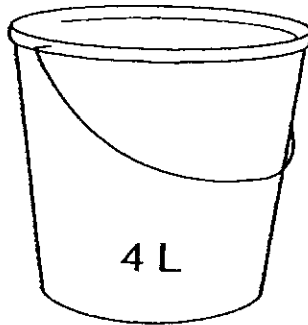
- (2) C and D only
- (4) A, B, C and D

25. A water tap drips slowly, at 5 drops per minute. Jill wants to find out how much water is lost in 3 minutes.

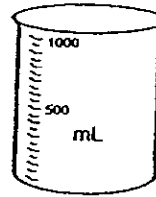
Which one of the following containers would measure the most accurate volume of the water lost?



A



B



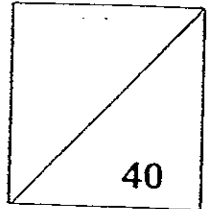
C



D

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

Name : \_\_\_\_\_ Index No : \_\_\_\_\_ Class : P5 \_\_\_\_\_

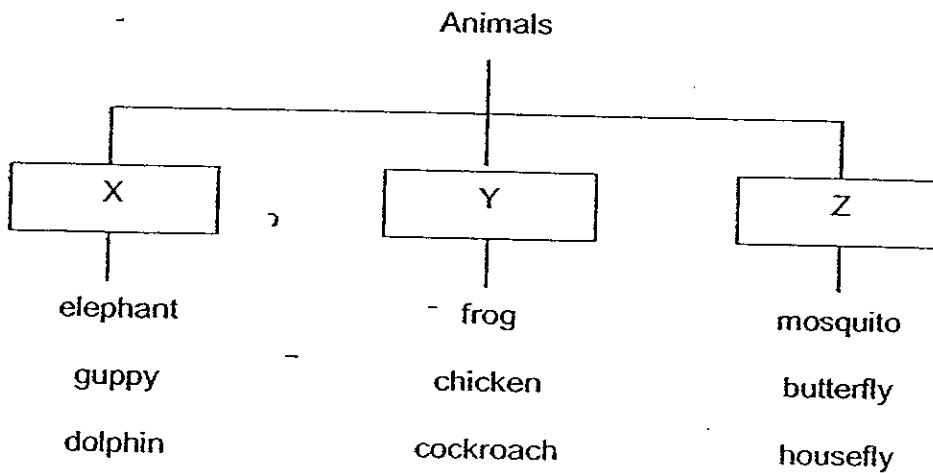


**SECTION B ( 40 marks)**

For questions 26 to 40, 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.

26. Ali classified some animals according to the characteristics of their life cycles as shown below. X, Y and Z are the sub-headings.

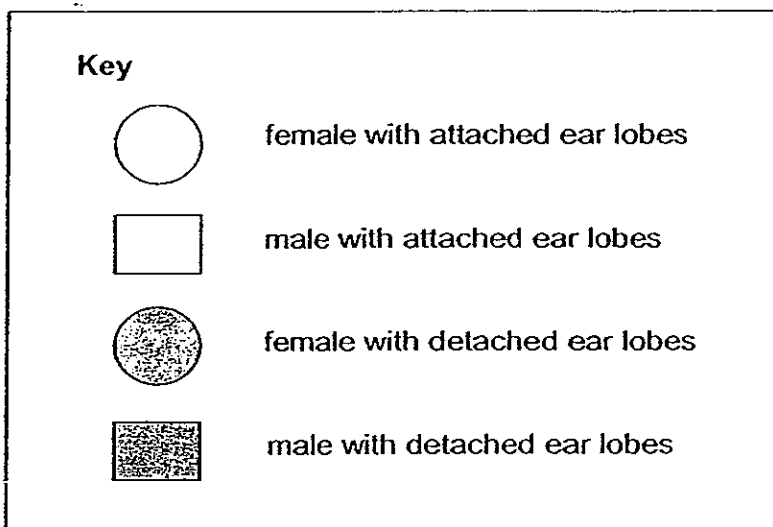
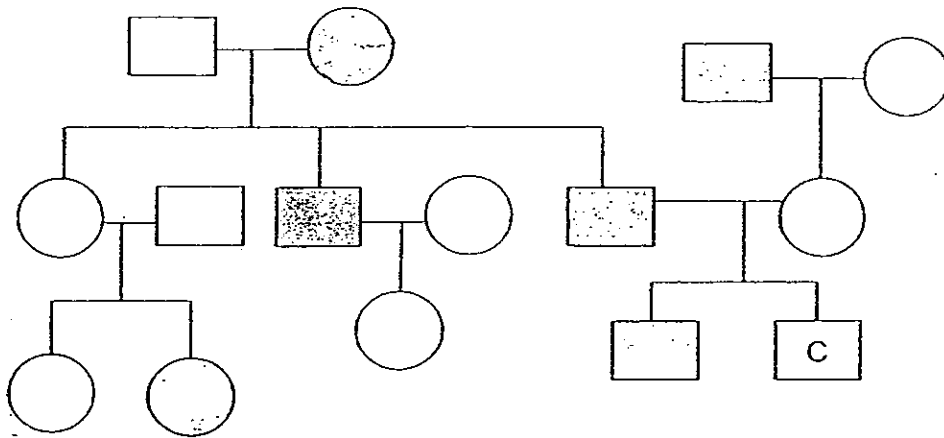


Based on the information above, answer the following questions:

- (a) What is a suitable sub-heading for Z? [1]

- (b) Ali commented that not all the young of animals under sub-heading X and Y resembles its adult. Which animal(s) do/does **NOT** have its young resembling the adult? [1]

27. Madam Wong's family tree is shown below.



Based on the information above, answer the following questions:

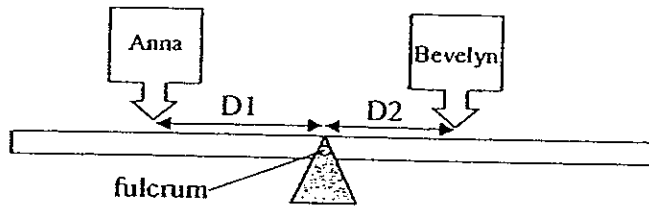
- (a) Madam Wong has three children.  
Put a cross (X) on the correct symbol in the family tree to indicate Madam Wong. [1]
- (b) How many of Madam Wong's children have detached ear lobes? [1]
- 
- (c) C is married to D and both have a daughter with attached ear lobes.  
**DRAW** and **LABEL** on the diagram to indicate D and her daughter. [1]



28. Anna and Bevelyn were playing on the seesaw.

Child	Mass (kg)
Anna	10
Bevelyn	20

The seesaw balanced when they were seated at different positions as shown below.



(Anna) D1	(Bevelyn) D2
1 m	0.5 m
2 m	1 m
4 m	2 m

- (a) State the relationship between the mass of the girls and the distance from the fulcrum, in order for the seesaw to balance.

[1]

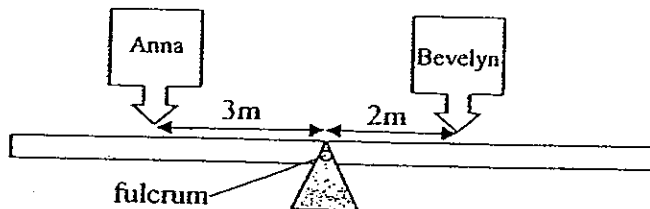
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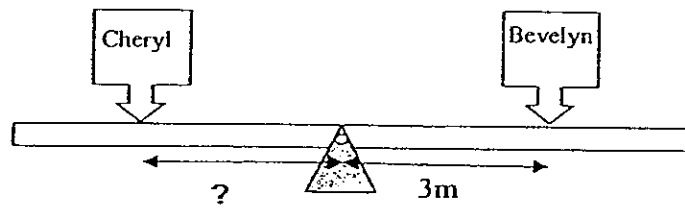
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- (b) **DRAW** an arrow on the diagram below to show how the seesaw would tilt if Anna was 3 m away and Bevelyn was 2 m away from the fulcrum.

[1]



- (c) Cheryl with a mass of 30 kg, replaced Anna on the seesaw.

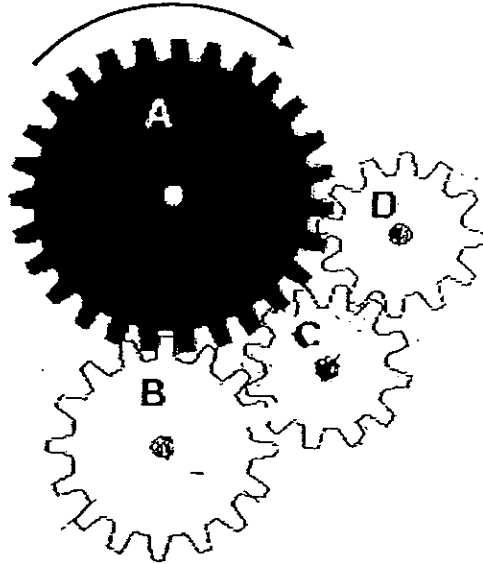


How far from the fulcrum should Cheryl be seated if Bevelyn was 3 m away from the fulcrum? [1]

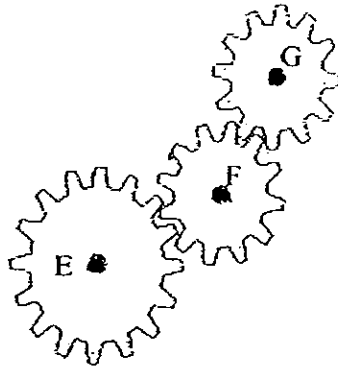
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29. The gears are interconnected as shown below.

- (a) One gear in the system must be removed to allow all the other gears to turn (when gear A turns as shown). Cross out this gear clearly in the diagram below. [1]



- (b) After the removal of the gear in (a), which one of the following gears should be connected to gear D for gear G to rotate anti-clockwise? [1]



Gear \_\_\_\_\_

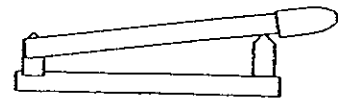
30. Using **ONLY** the following apparatus:



iron bar



wooden board



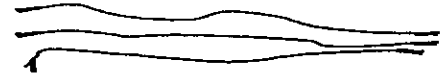
switch



magnet



coiled wire



wires

- (a) Reena wants to make a temporary magnet, A.  
List the suitable apparatus she should choose.

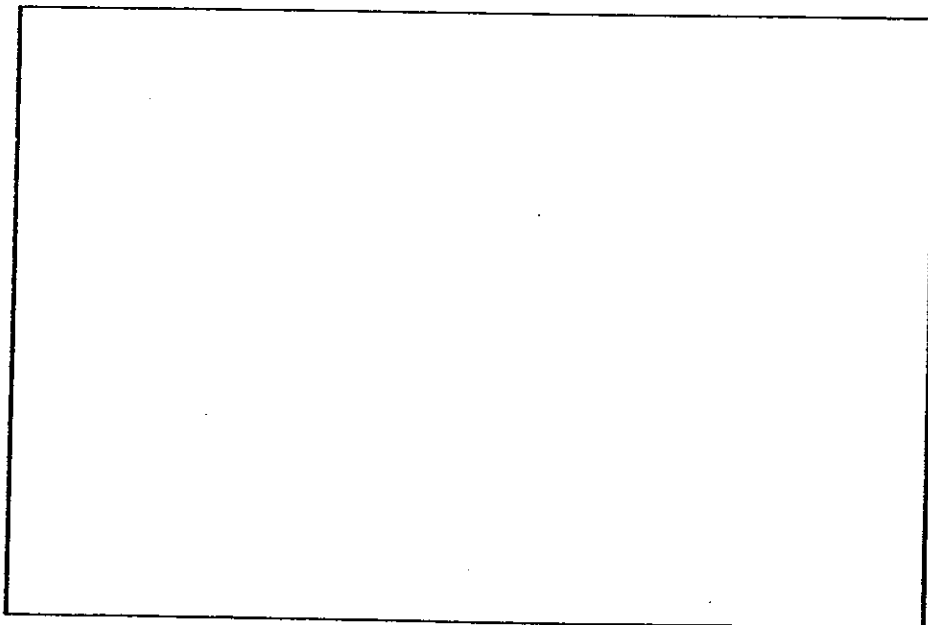
[1]

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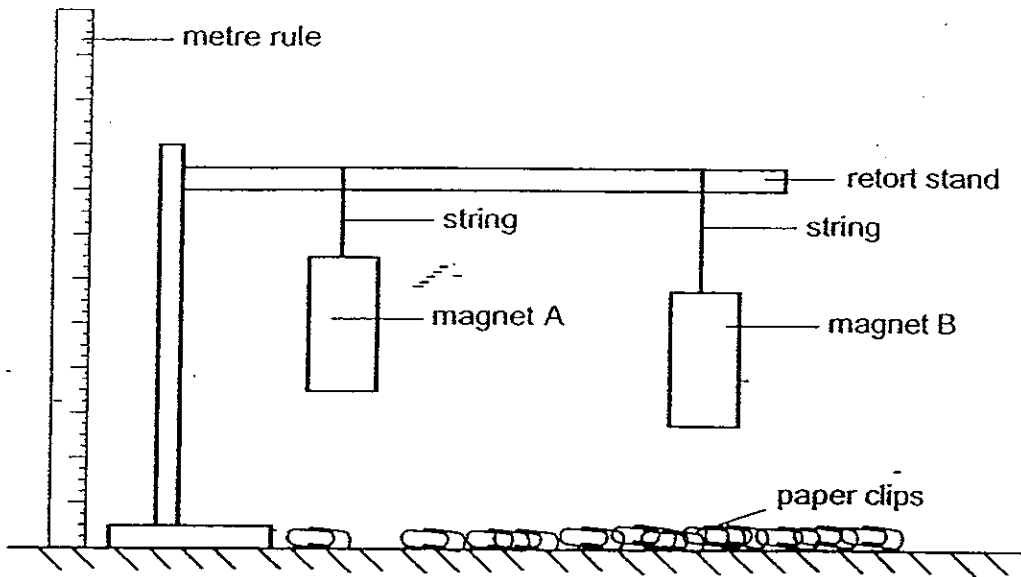
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- (b) **DRAW** a diagram in the box below to show clearly how Reena should arrange the chosen apparatus to make the temporary magnet.

[1]



- (c) Reena wants to compare the strength of the new magnet, A, and the strength of another magnet, B, using the set-up below. Magnet A and B are of the same size.

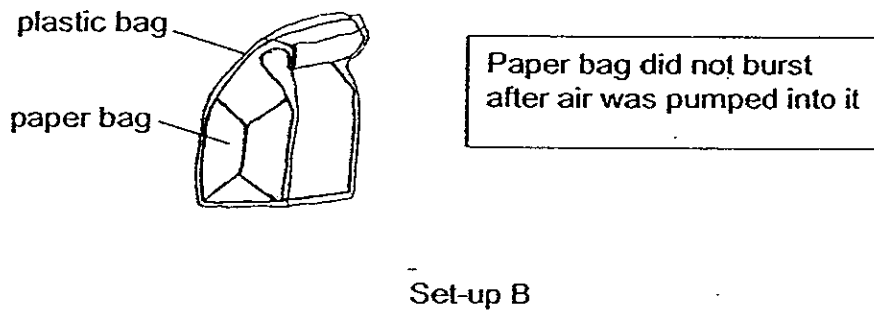
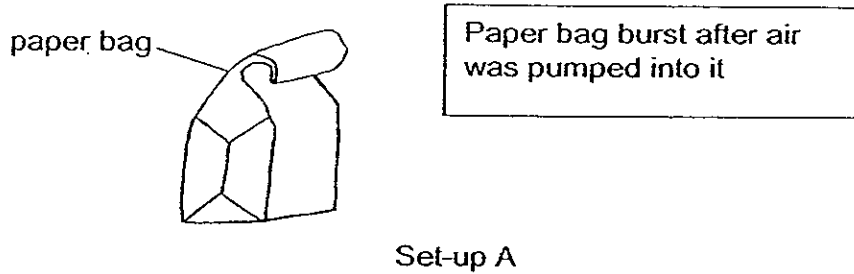


State the **TWO** changes Reena has to make in the above set-up to ensure a fair test. [2]

1: \_\_\_\_\_  
\_\_\_\_\_

2: \_\_\_\_\_  
\_\_\_\_\_

31. Christina had two identical paper bags. She had a thick plastic bag that was of the same size and shape as that of the paper bags. She pumped in an equal amount of air into both the paper bags and recorded her observations as shown below.



- (a) The paper bag in Set-up B did **NOT** burst. State a possible reason. [1]

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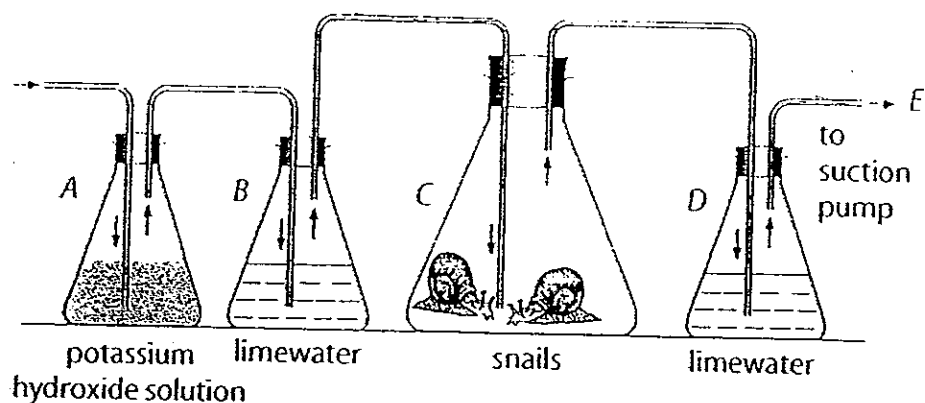
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- (b) Christina placed an animal cell and a plant cell into pure water. She observed that the animal cell burst while the plant cell did **NOT**.

What prevented the plant cell from bursting? [1]

---

32. Maisie carried out an experiment with the apparatus below.



She used a suction pump to suck out the air through the delivery tube E. This caused the air to be drawn into flask A. The air flowed through the apparatus as shown by the arrows.

After some time, Maisie observed that the limewater in flask B was clear but the limewater in flask D turned chalky.

- (a) Give an explanation to her observation of limewater in flask D. [1]

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- (b) What do you think is the function of the potassium hydroxide solution? [1]

---

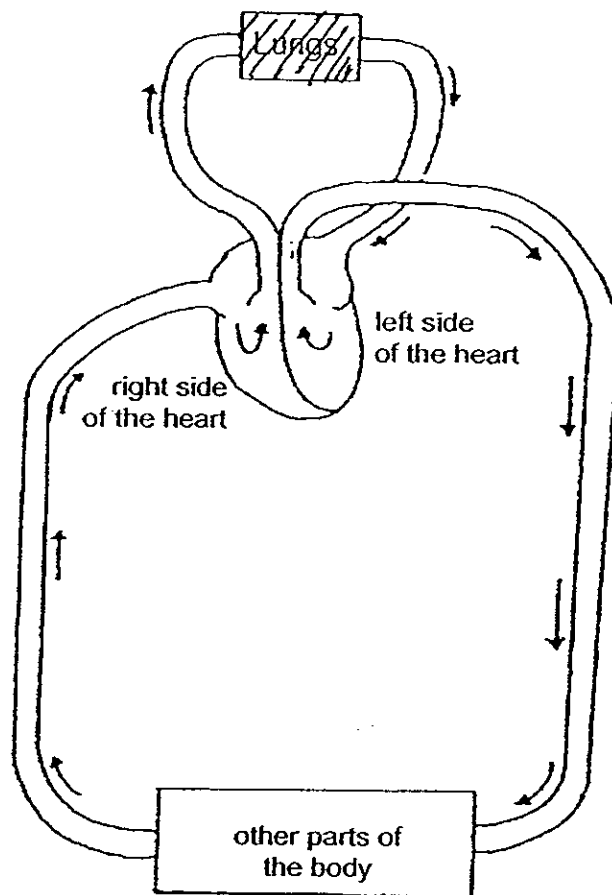
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- (c) What is the aim of Maisie's experiment? [1]

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33. The diagram below shows how blood flows in the body of a man.



- (a) State the gaseous exchange that takes place as the blood flows in the circulatory system, starting from the lungs. [2]

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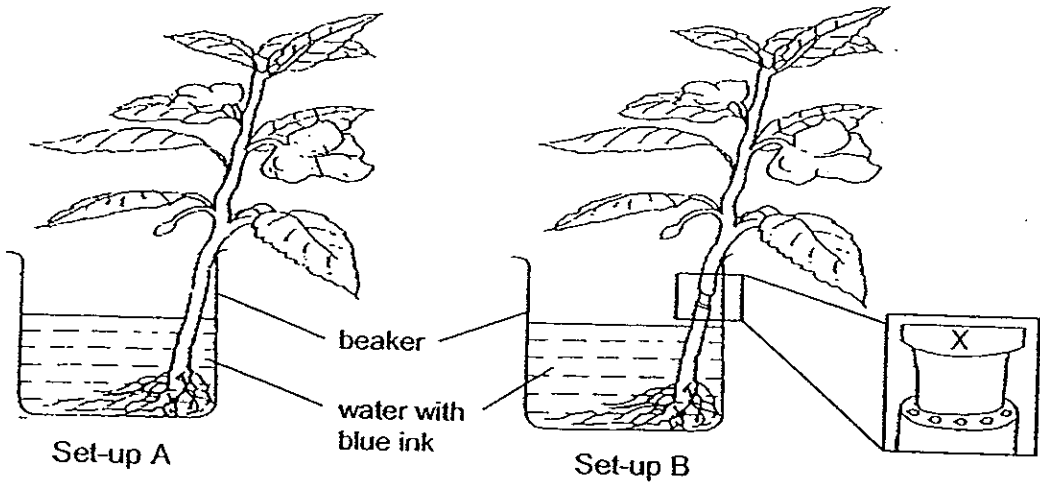
- (b) Why is gaseous exchange in the circulatory system important to man's survival? [1]

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34. James used two similar plants to carry out an experiment as shown below.



In set-up A, James put the plant into a beaker of water with blue ink. For set-up B, James removed the phloem tubes from part of the plant before he put the plant into a beaker of water with some blue ink.

- (a) What do you think James would observe from the flowers after two days? Why? [1]

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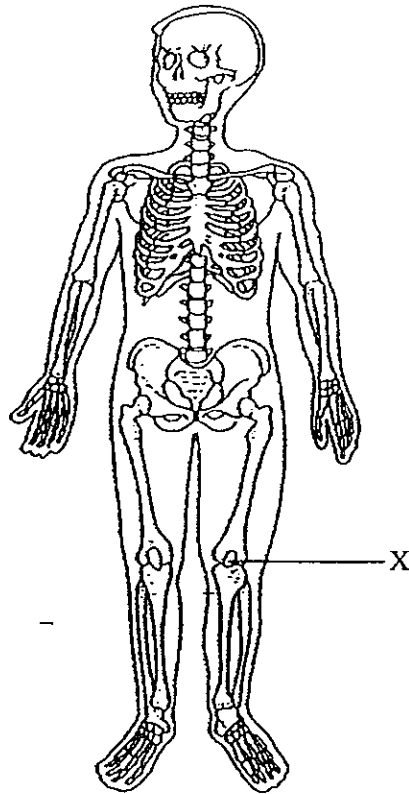
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- (b) James noticed that part X of the plant in set-up B swelled after a few weeks. Explain his observation. [1]

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35. The diagram below shows the human skeletal system.



- (a) Name the joint at X. [1]

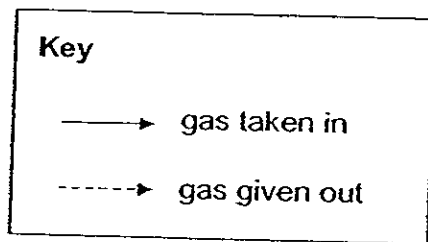
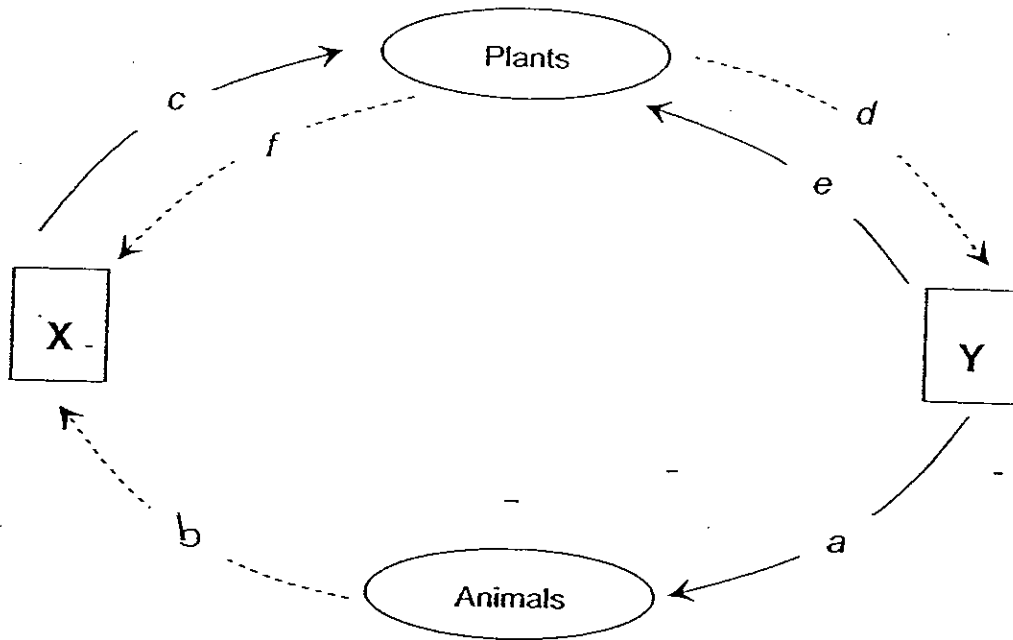
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- (b) Which part of a plant cell has a similar function as the skeleton?  
How is their function similar? [1]

---

---

36. Aaron prepared a diagram to show exchanges of gases between living things and their surroundings during the processes of respiration and photosynthesis. He labelled X and Y to represent the two types of gases involved in the gaseous exchange.



Based on the information above, answer the following questions:

- (a) What does each of the following gases represent? [1]

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

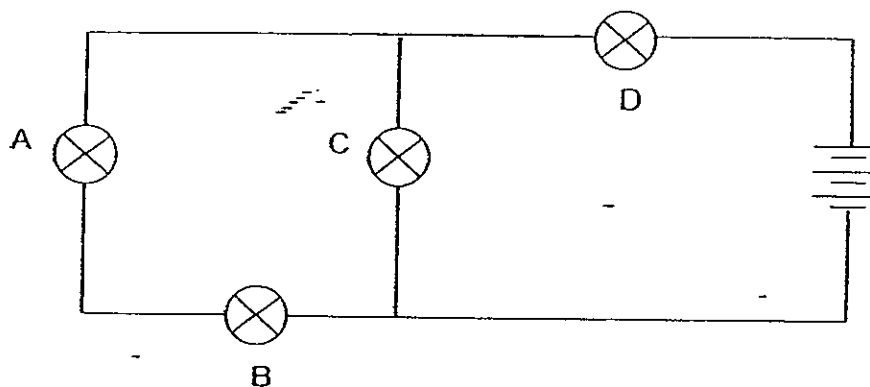
Y: \_\_\_\_\_

- (b) Name the arrows that represent the process of photosynthesis. Write **ONLY** the letters *a, b, c, d, e* and/or *f*. [1]

37. The diagram below shows four lit bulbs, A, B, C and D in a circuit.

A switch is to be placed such that only a particular bulb can be switched on and off while the other three remain lit.

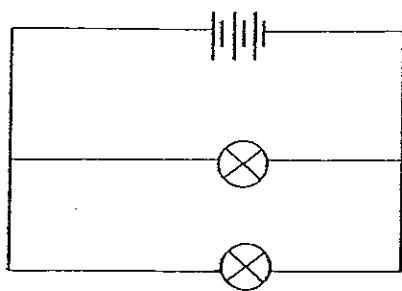
- (a) Mark an X clearly on the circuit diagram below to show where the switch should be placed. [1]



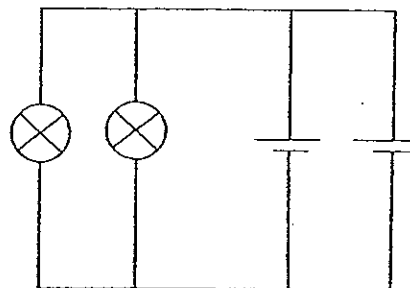
- (b) State which bulb, A, B, C or D, the switch controls. [1]

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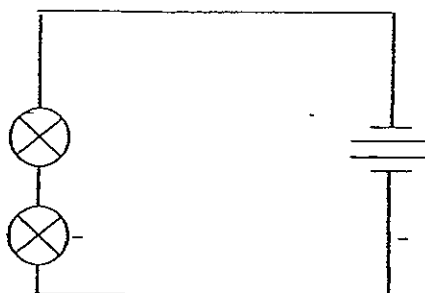
38. David set up the eight circuit diagrams, A to H, below.



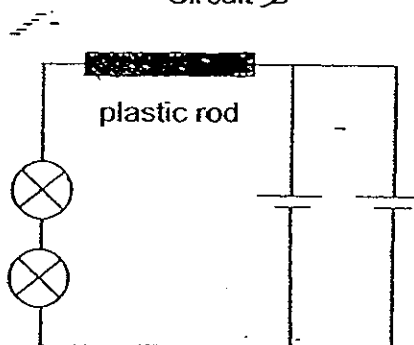
Circuit A



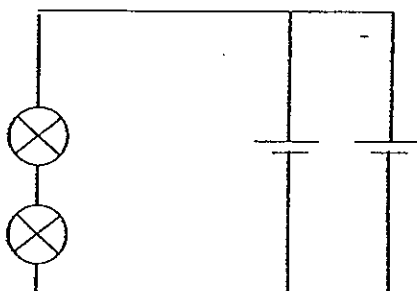
Circuit B



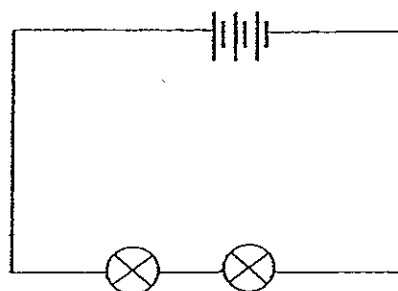
Circuit C



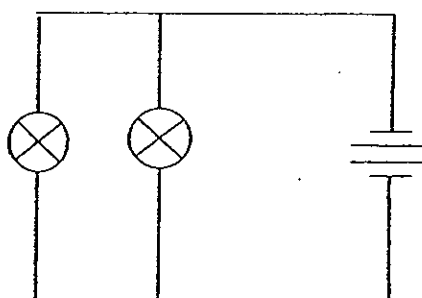
Circuit D



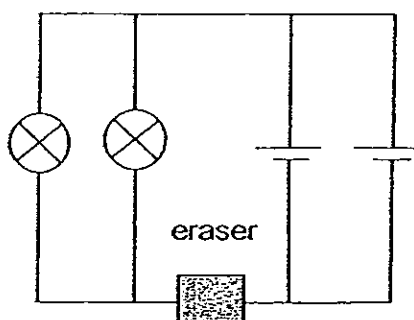
Circuit E



Circuit F



Circuit G

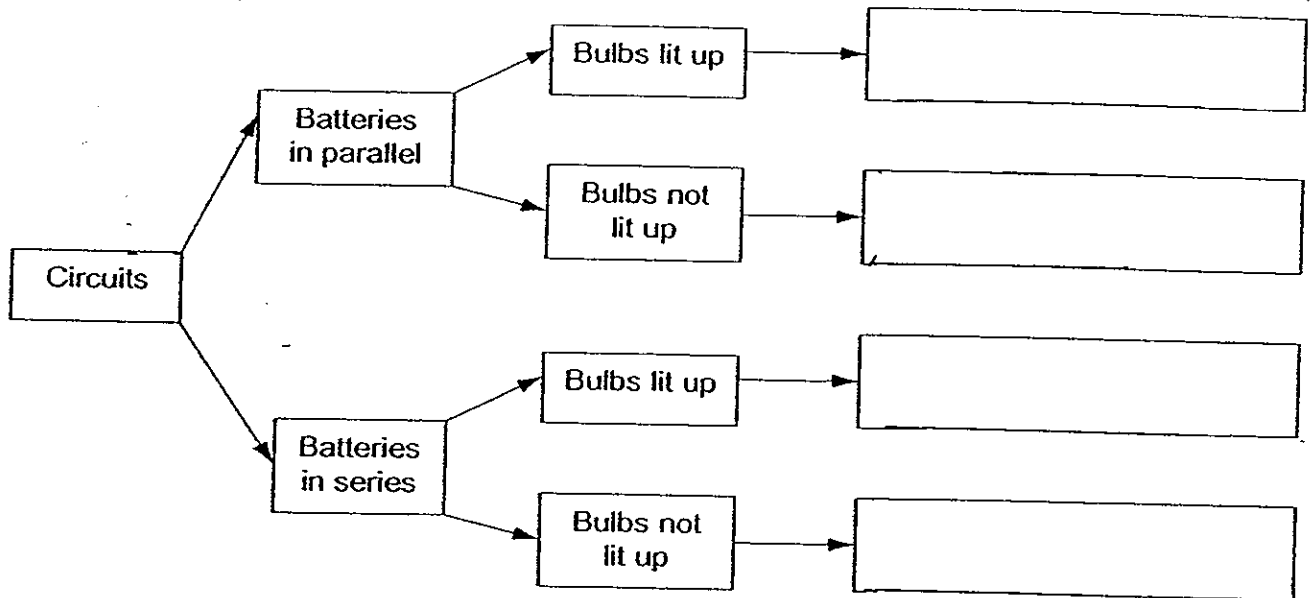


Circuit H

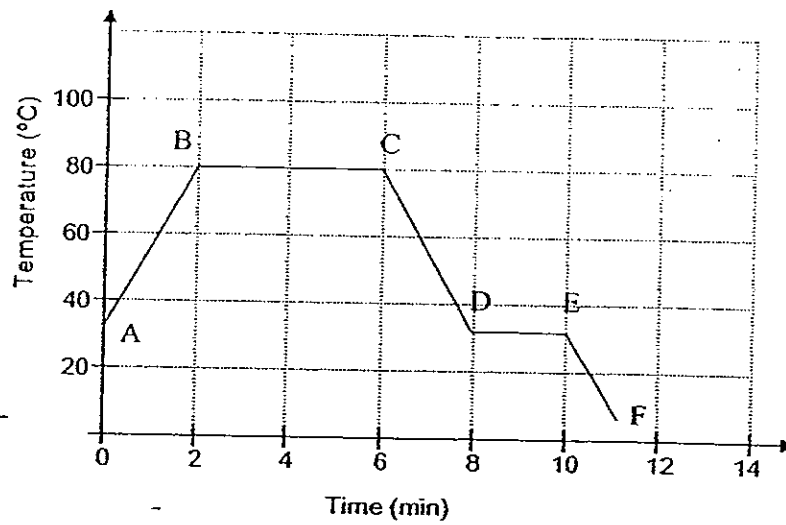
Using the information given, complete the diagram below by matching correctly ALL eight circuit diagrams, A to H.

Write in the correct letters A to H in the boxes provided. You may use commas to separate the letters in each box.

[4]



39. The graph below shows the changes in the temperature of liquid X in a beaker over a period of time. Melting point of X is  $1^{\circ}\text{C}$ .



Based on the graph above, answer the following questions:

- (a) Give **ONE** reason why the temperature of liquid X remained constant from points B to C despite the fact that the liquid was continually heated. [1]

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- (b) Name the states of liquid X from points B to C. [1]

---

- (c) At which point was liquid X placed in a freezer? [1]

---

40. Hillary conducted the experiment in a brightly lit room using the apparatus as shown below.

She wanted to find out the actual amount of light that could pass through 3 different materials, X, Y and Z. She had learnt that the unit for measuring the amount of light is "Lux".

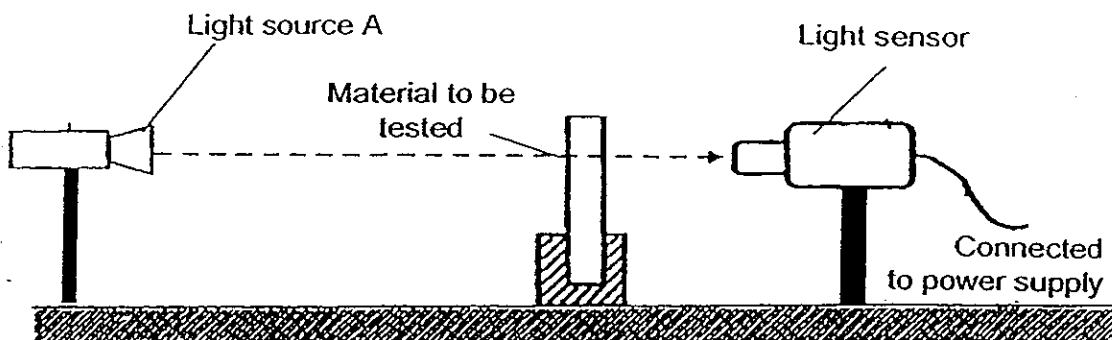


Table 1 below shows the amount of light registered by the light sensor before Hillary turned on light source A.

Table 1 - Experiment conducted **WITHOUT** turning on light source A

Material	Readings		
	1 <sup>st</sup> set (Lux)	2 <sup>nd</sup> set of (Lux)	3 <sup>rd</sup> set of (Lux)
X	75	72	79
Y	76	74	77
Z	78	75	76

Next, using the same apparatus, Hillary turned on light source A and recorded the following readings:

Table 2 - Experiment conducted with light source A being turned on

Material	Readings		
	1 <sup>st</sup> set (Lux)	2 <sup>nd</sup> set (Lux)	3 <sup>rd</sup> set (Lux)
X	250	257	247
Y	1100	750	1020
Z	80	79	83



- (a) Explain Hillary's purpose in conducting the experiment **WITHOUT** turning on light source A. [1]

---

---

- (b) What was Hillary's purpose in repeating each experiment 3 times? [1]

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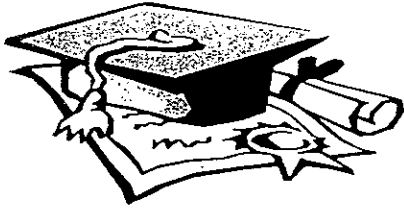
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- (c) One of the readings in table 2 is **NOT** valid. **CIRCLE** the reading that is considered **NOT** valid. [1]

- END OF PAPER -

Setters : Miss Aishah Aris, Mrs Christina Lim, Mr Tan Siew Whatt, Miss Lim Li Shan





# ANSWER SHEET

EXAM PAPER 2008

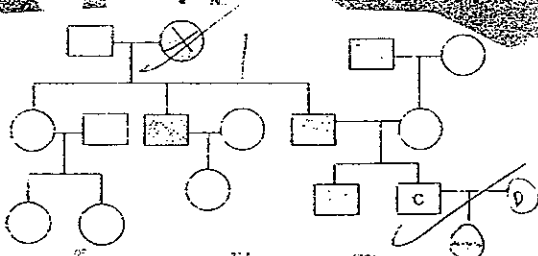
SCHOOL : RAFFLES GIRLS' PRIMARY SCHOOL  
 SUBJECT : PRIMARY 5 SCIENCE

TERM : SA 2

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

26) a) 4 stage life cycle.      b) Frog.

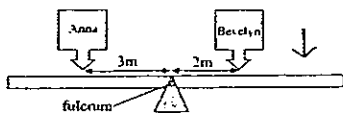
27) a) c)



b) 2 children.

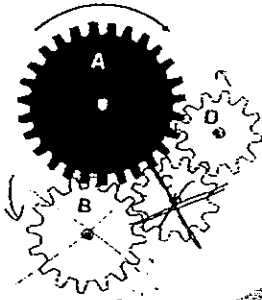
28) a) In order for the see saw to balance, Anna, who is lighter must sit further away from the fulcrum and Bevelyn, who is heavier must sit closer to the fulcrum.

b)



28)c)2m.

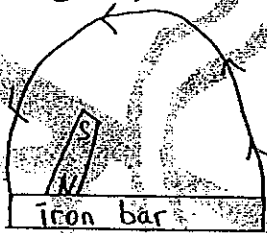
29)a)



b)F

30)a)Magnet, iron bar.

b)



- c)1)The two strings must be of the same length.  
2)The number of paper clips below magnet A and B must be the same.

31)a)The paper bag prevents set-up B from bursting as it gives the paper bag a shape but set-up A does not have anything to give it a shape so it will burst.

b)The cell wall prevented the plant from bursting.

32)a)The snails give out carbon dioxide during respiration.

b)The potassium hydroxide solution is to absorb carbon dioxide that goes into flask A.

c)To find out if snail gives out carbon dioxide during respiration.

33)a) Blood from the lungs that is rich in oxygen flows to the left side of the heart which pumps it to all parts of the body. As the blood flows through all parts of the body, it picks up carbon dioxide. It flows back to the heart and is pumped to the lungs to breathe out carbon dioxide and take in oxygen.

b) Human needs oxygen to respire to release energy for the processes to take place.

34)a) The white flower on plants in both set-up A and B would turn blue. Xylem tubes are present in both plants to transport water with blue ink from the roots to the flower.

b) The phloem tube that transport food made in the leaves has been removed. Some of the food made in the leaves was unable to travel down wards beyond X/ through X.

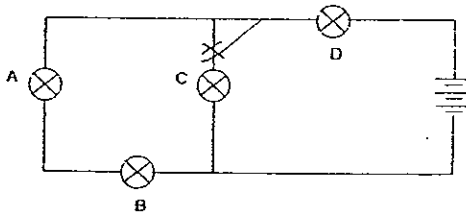
35)a) Hinge joint.

b) Cell wall. It gives the plant a shape and the skeleton also gives the human a shape.

36)a) X: Carbon dioxide. Y: Oxygen.

b) Arrows c and d.

37)a)



b) Bulb C.

38) B, E

D, H

A, F

C, G

**39)a)From point B to C, liquid is at its boiling point.**

**b)Gaseous and liquid state.**

**c)Point E.**

**40)a)She needed to subtract the amount of light contributed by the surrounding light source in order to get the actual reading of light passing through the material.**

**b)1)To ensure that the data are valid/reliable.**

**2)To reduce human error.**

**3)to remove the data which are not of range.**

**c)750**