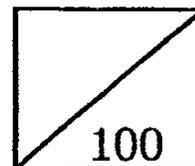




Rosyth School
Second Semestral Assessment for 2007
SCIENCE
Primary 5



Name: _____

Total
Marks:

Class: Pr _____

Register No. _____

Duration: 1 h, 45 min

Date: 1 November 2007

Parent's Signature: _____

Instructions to Pupils:

1. Do not open the booklets until you are told to do so.
2. Follow all instructions carefully.
3. This paper consists of 2 booklets, Booklet A and Booklet B.
4. For questions 1 to 30 in Booklet A, shade the correct ovals on the Optical Answer Sheet (OAS) provided using a 2B pencil.
5. For questions 31 to 46, give your answers in the spaces given in the Booklet B:

	Maximum	Marks Obtained
Booklet A	60 marks	
Booklet B	40 marks	
Total	100 marks	

* This booklet consists of 24 pages . (Pg. 1 to 24)

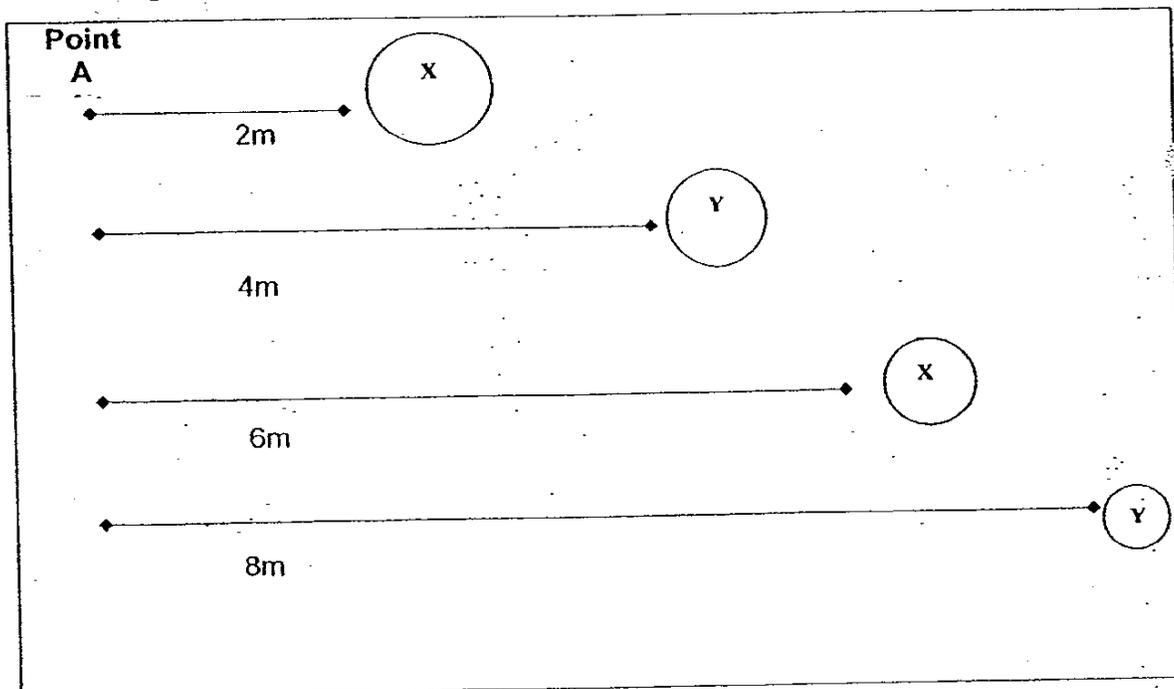
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Part I (60 MARKS)

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. Marshall placed two balls, X and Y, at four different distances from Point A. The diagram below shows the relative sizes of the balls at different distances from Point A.

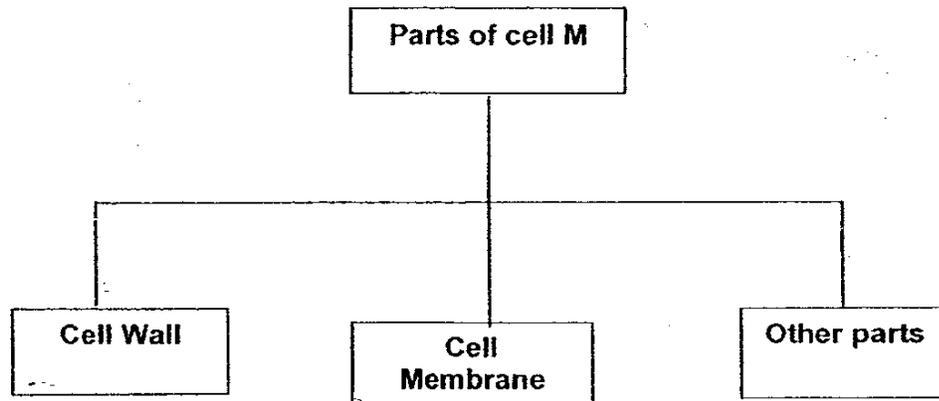


Based on his observations, which one of the deductions is correct?

- (1) Ball Y is bigger than Ball X.
- (2) Balls X and Y are of similar size.
- (3) The further the balls are placed, the smaller they appear.
- (4) The distance the balls are placed do not affect their relative size.

(Go on to the next page)

2. The chart below shows the different parts of a typical cell M. Some parts of the cells are not shown in the chart.



Which are the most likely parts of cell M that are not shown in the chart above?

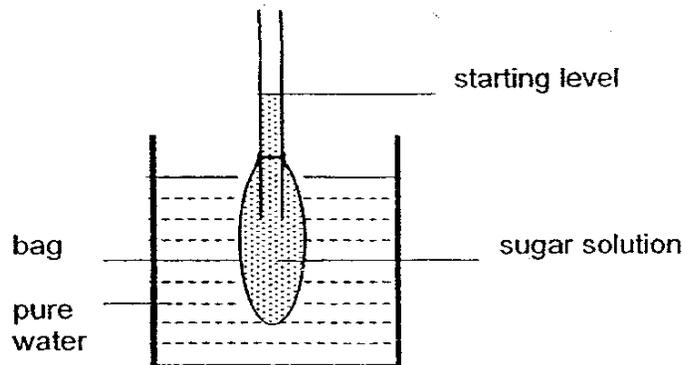
- A : Cytoplasm
- B : Chloroplast
- C : Nucleus

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

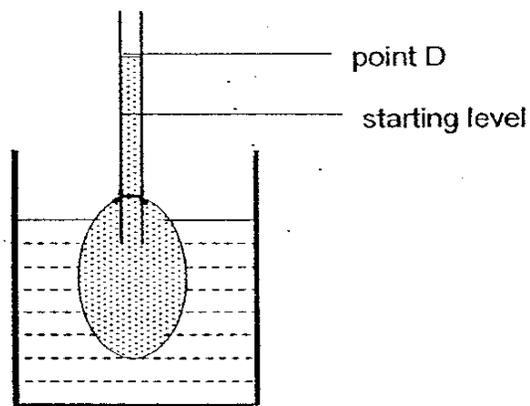
(Go on to the next page)

JK

3. Kim set up the experiment as shown in the diagram below. She took note of the starting level of the liquid in the glass tube.



After 3 hours, she observed that the liquid level in the glass tube had risen to point D.

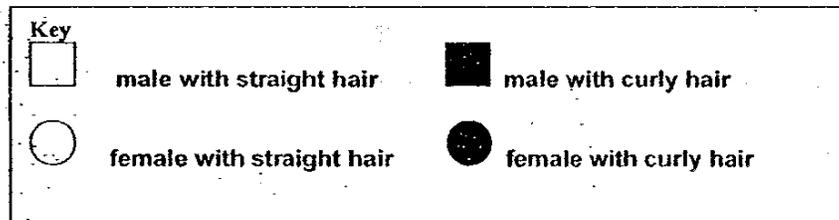
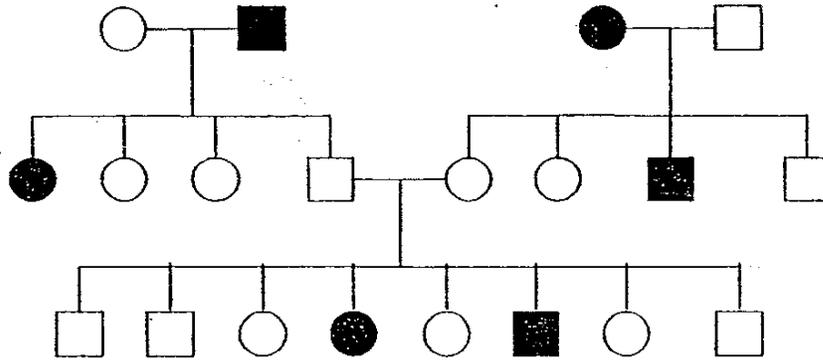


With comparison to a plant cell, which part of the cell has the same property as the material of the bag?

- (1) Cell Wall
- (2) Cytoplasm
- (3) Chloroplast
- (4) Cell Membrane

(Go on to the next page)

4. The family tree below shows the inheritance of curly hair of a family.

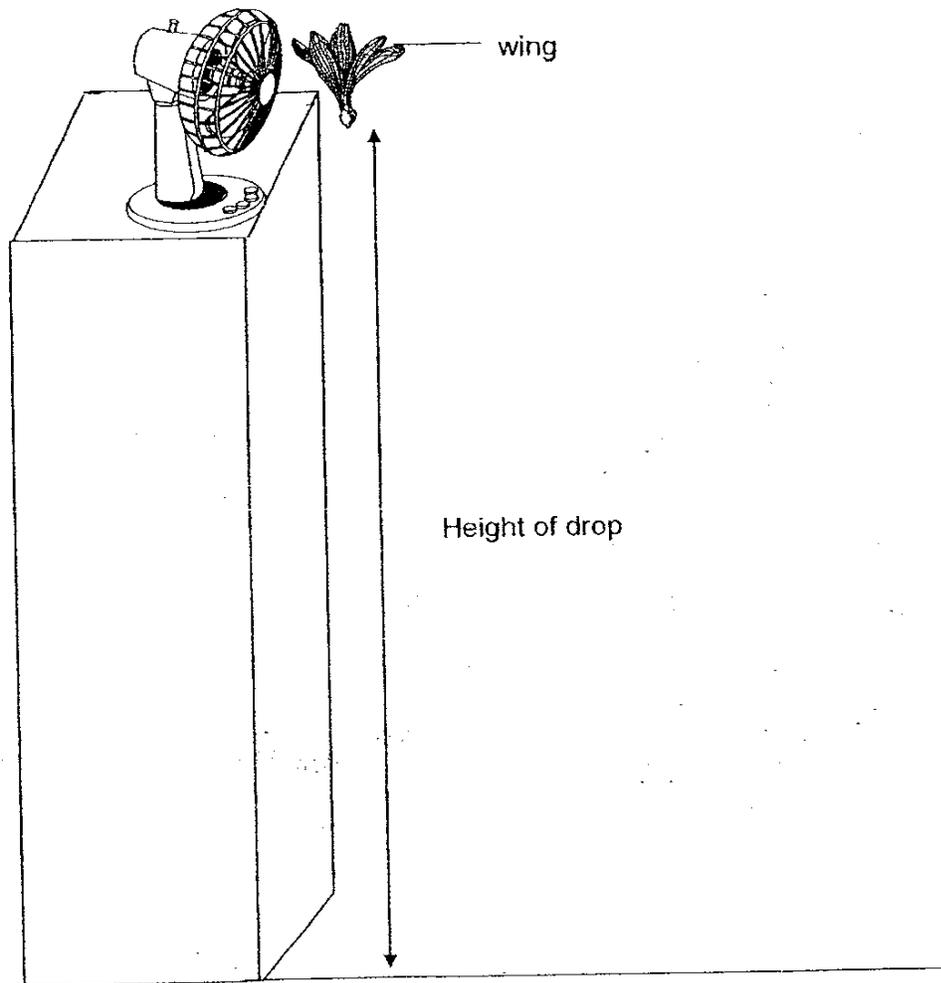


What possible deduction could be made from the family tree above?

- (1) Females are more likely to have curly hair.
- (2) There are two families in each generation.
- (3) Characteristics can be inherited from grandparents.
- (4) At least one parent must have the characteristic, for the child to inherit it.

(Go on to the next page)

5. Aziz wanted to investigate if the length of the wing of a shorea has an effect on its dispersal. He released the fruit from a certain height as shown below.



Which two variables must be measured for his investigation?

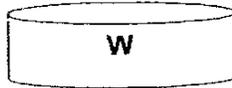
- A : The length of the wing
- B : The mass of the fruit
- C : The time taken for the fruit to land on the ground
- D : The distance it was dispersed from the fan

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

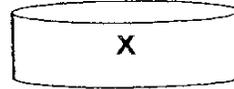
- (2) A and C only
- (4) B and D only

(Go on to the next page)

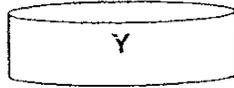
6. Martin placed equal number of yeast cells in four containers, W, X, Y and Z, with different conditions. The condition of each container is stated below.



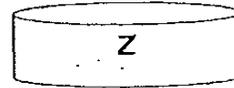
10 ml of
water at
40 ° C



5 ml of
water at
35 ° C



5 ml of
water at
40 ° C



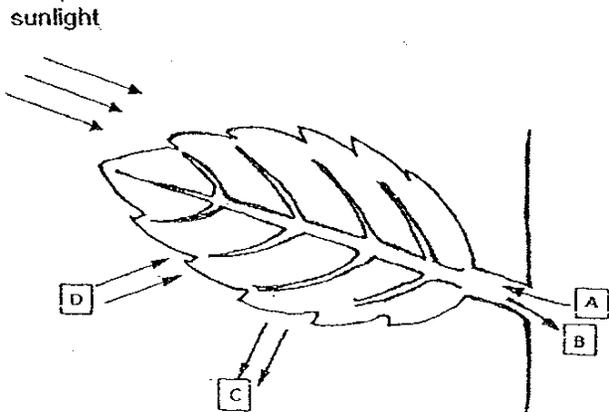
10 ml of
water at
30 ° C

Which containers would you choose to show that the amount of water and the temperature of water affect the rate of reproduction in yeast cells?

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

(Go on to the next page)

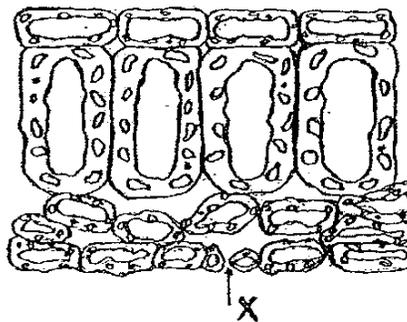
7. The diagram below shows a green leaf on a plant.



Which of the following correctly represents A, B, C and D?

	A	B	C	D
(1)	Oxygen	Sugar	Water	Carbon dioxide
(2)	Water	Sugar	Oxygen	Carbon dioxide
(3)	Water	Oxygen	Sugar	Carbon dioxide
(4)	Sugar	Carbon dioxide	Oxygen	Water

8. The diagram below shows the cross-section of a leaf.



Which of the following is/are the function(s) of the tiny opening, X, found in the leaf?

- A : It allows carbon dioxide to be taken in.
- B : It allows oxygen to be given out.
- C : It helps to trap chlorophyll.

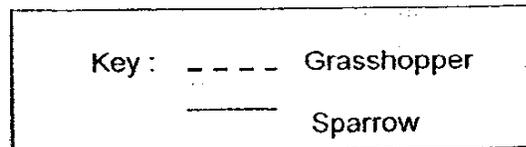
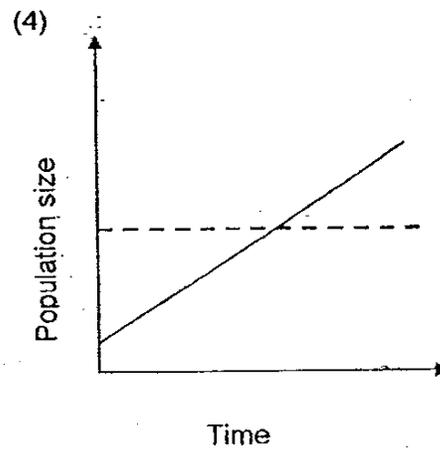
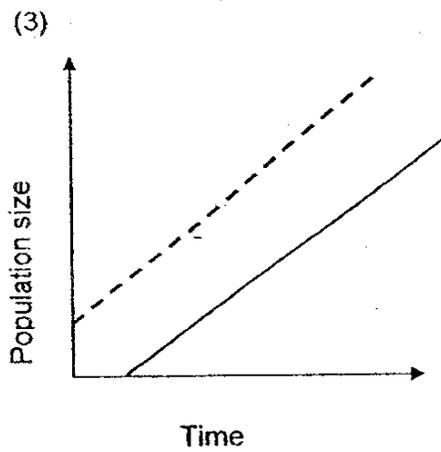
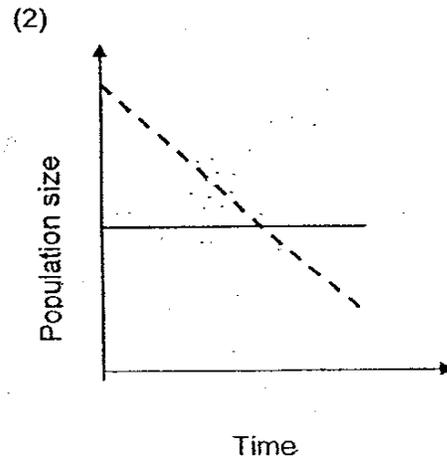
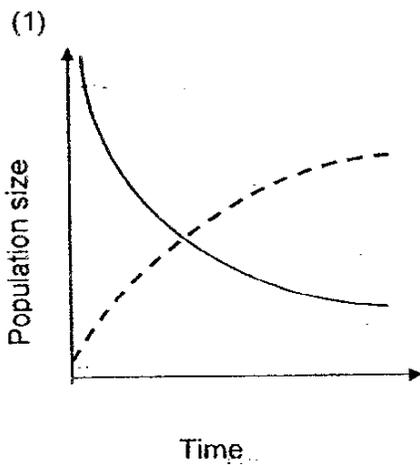
- (1) A only
- (2) A and B only
- (3) B and C only
- (4) A, B and C

(Go on to the next page)

9. The food chain below shows how energy is transferred from a plant to other organisms.

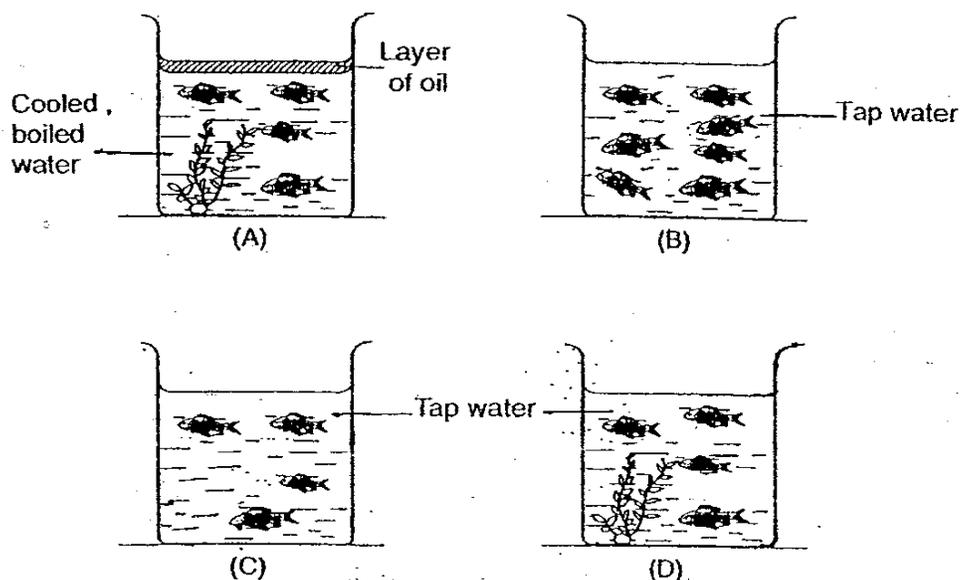


Which one of the graphs below correctly represents the relationship between the grasshopper and sparrow?



(Go on to the next page)

10. Terrence wanted to carry out an experiment to find out how the amount of oxygen in an aquarium affected the organisms living in the aquarium. He placed the four set-ups at the same location.



Study the four set-ups A, B, C and D as shown above. Which two set-ups should he use to ensure a fair test?

- (1) A and B only
 (2) B and D only
 (3) A and D only
 (4) C and D only
11. The following food chain shows energy transferred from plants to animals.

Plants → Rabbit → Fox → Tiger

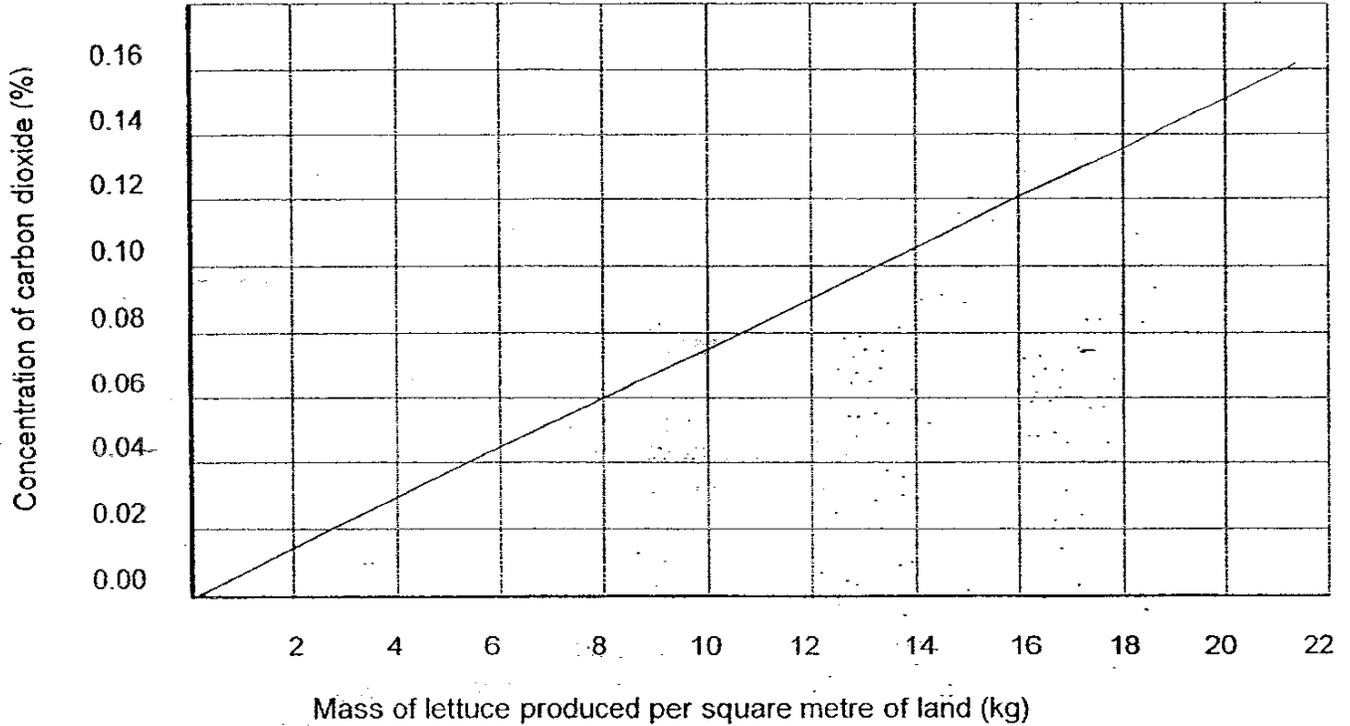
Which one of the following can you deduce from the food chain?

- A: The plants, rabbit and fox are eaten by the tiger.
 B: Energy from the plants is transferred to the tiger through the rabbit and the fox.
 C: The fox gets its energy directly from the rabbit.
 D: Only the rabbit eats the plants.

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

(Go on to the next page)

12. Lettuce is planted in some greenhouses containing different concentrations of carbon dioxide. The relationship between the concentration of carbon dioxide and the mass of lettuce produced per square metre of land is shown in the graph below.



If the mass of lettuce produced per square metre of land is 20kg, what would be the most likely concentration of carbon dioxide?

- (1) Between 0.08% and 0.1%
- (2) Between 0.1% and 0.12%
- (3) Less than 0.08%
- (4) More than 0.14%

(Go on to the next page)

13. Zhihao and his friends carried out an experiment to find out whose toy car consumes more electricity. The table below shows the number of batteries used by each toy car and how long the batteries lasted.

Name	Number of batteries	Number of hours batteries lasted
Zhihao	3	6
Jeya	3	8
Karthik	2	8
Ahmad	2	10

The following conclusions were made based on the results:

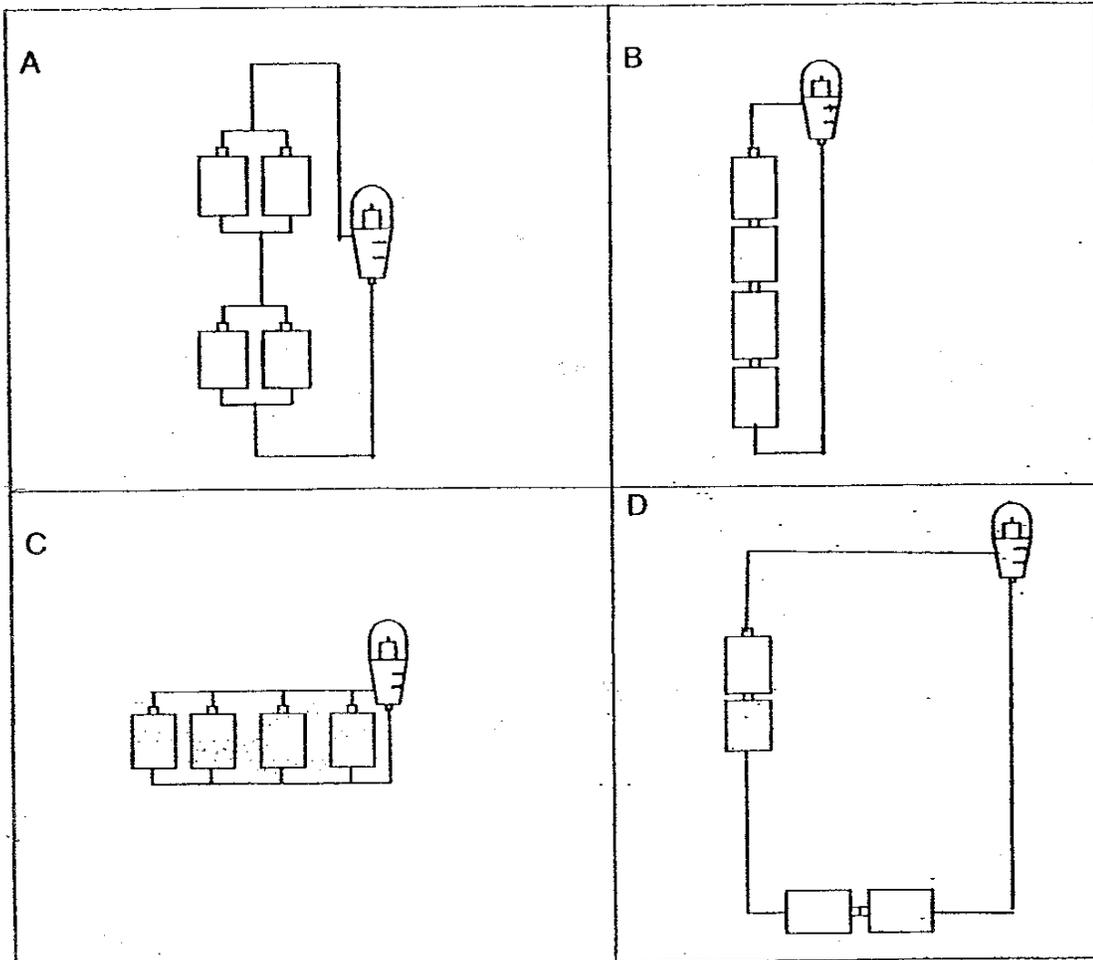
- A : Jeya's toy car consumes more electricity than Zhihao's.
- B : Karthik's toy car consumes less electricity than Jeya's.
- C : Ahmad's toy car consumes less electricity than Karthik's.
- D : Ahmad's toy car consumes more electricity than Zhihao's.

Which of the conclusion(s) made is/are definitely true?

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

(Go on to the next page)

14. Study the electric circuits carefully. All batteries are brand new and of 1.5 volts. The bulbs are also of similar voltage.



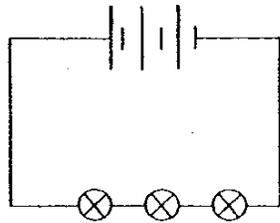
In which two set ups will the bulb be of the same brightness?

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

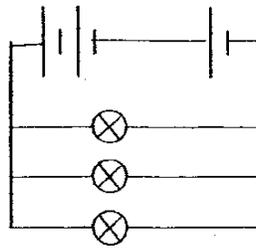
84

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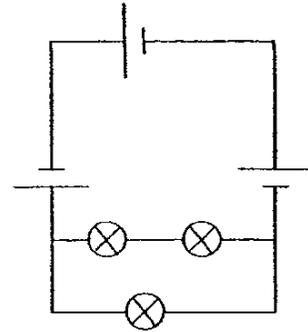
15. Study the three circuit diagrams as shown below.



Circuit P



Circuit Q



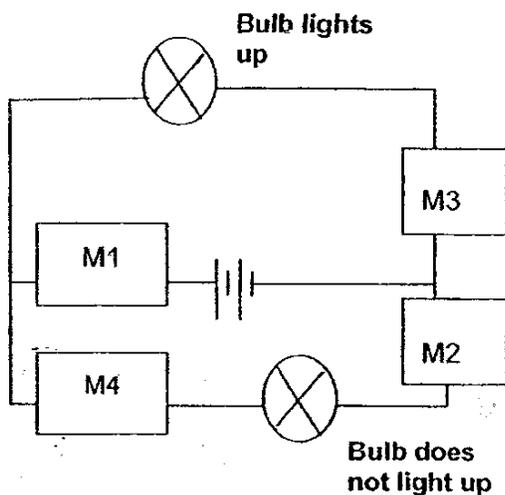
Circuit S

What is the difference among the three circuits?

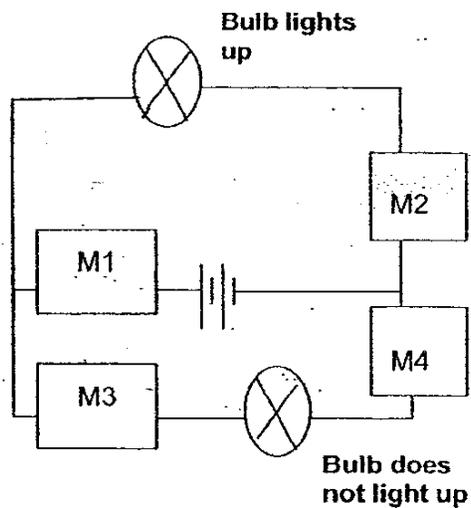
- (1) The number of bulbs
- (2) The number of batteries
- (3) The arrangement of the bulbs
- (4) The arrangement of the batteries

(Go on to the next page)

16. Shanti had four materials, M1, M2, M3 and M4. She wanted to find out which material is a conductor of electricity. Firstly she connected the materials in a circuit and made the observations as shown below.



Next, she rearranged some of the materials in the same circuit and made her observations as shown below.



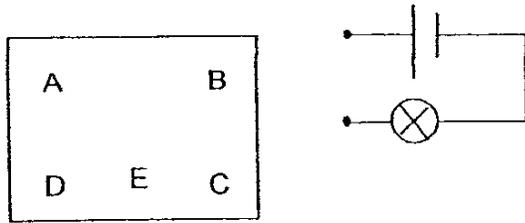
What conclusion could she make from the above results?

- A : M1 is a conductor of electricity.
- B : M2 is a conductor of electricity.
- C : M3 is an insulator of electricity.
- D : M4 is an insulator of electricity.

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

(Go on to the next page)

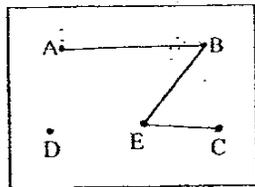
17. Bao Rong was given a circuit card and a circuit tester as shown below.



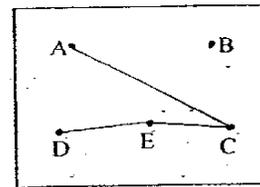
He connected the circuit tester to two points in the circuit card, one at a time. The results are shown in the table below.

Points	Did the bulb light up?	Points	Did the bulb light up?
A and B	No	B and D	No
A and C	Yes	B and E	No
A and D	Yes	C and D	Yes
A and E	Yes	C and E	Yes
B and C	No	D and E	Yes

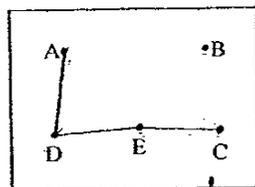
Which the following diagrams match with his observations?



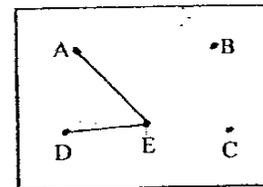
Card W



Card X



Card Y

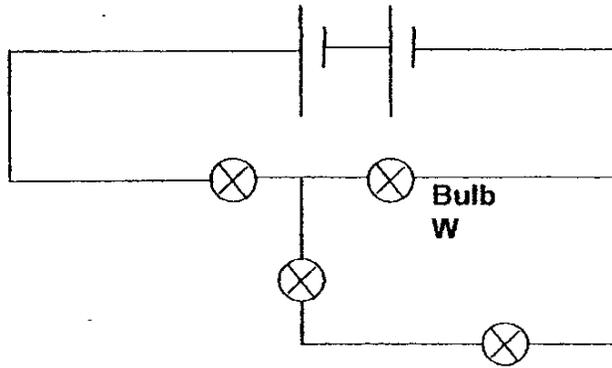


Card Z

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

(Go on to the next page)

18. Study the circuit diagram as shown below.

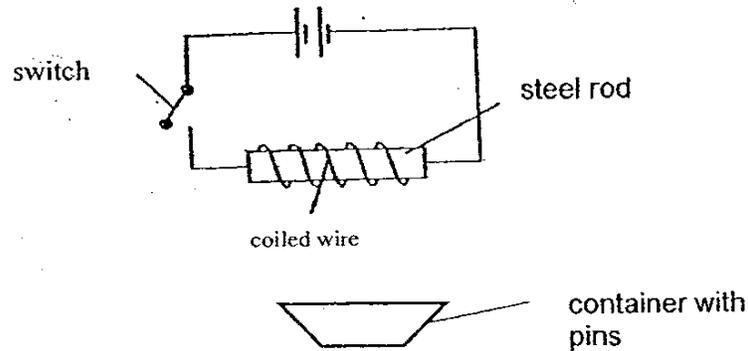


If bulb W fuses, how many bulb(s) will remain lit?

- (1) Zero
- (2) One
- (3) Two
- (4) Three

(Go on to the next page)

19. Alex set up the experiment as shown below.



He closed the switch and observed the number of pins attracted by the steel rod. Then he repeated the steps by increasing the number of dry cell. He recorded his results in a table.

Which one of the table shows the possible results obtained by Alex?

(1)

Number of dry cell	Number of pins attracted
1	5
2	10
3	15
4	0

(2)

Number of dry cell	Number of pins attracted
1	5
2	10
3	15
4	15

(3)

Number of dry cell	Number of pins attracted
1	15
2	10
3	5
4	5

(4)

Number of dry cell	Number of pins attracted
1	10
2	5
3	5
4	10

(Go on to the next page)

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20. Why should we conserve electrical energy?

- A : Fossil fuels can be used up.
 B : Fossil fuels take millions of years to form.
 C : Burning fossil fuels in power station causes air pollution.

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

21. A factory has four types of machines to do a similar task. The amount of electricity and the time taken to complete the task is tabulated below.

Machines	A	B	C	D
Amount of time taken to complete the task (minutes)	20	50	15	60
Amount of electricity used per minute	10	5	7	4

Which one of the following machines would help the factory to conserve energy the most?

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

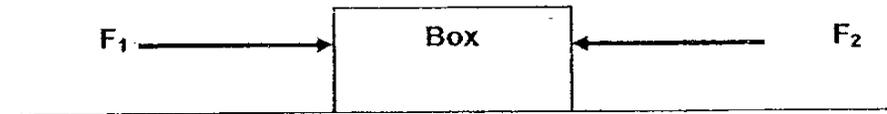
22. Grace and Agnes were playing tennis. When Grace hit the ball over the net, Agnes hit it back harder. Which of the following describe the actions of the force at the point when Agnes' racket hit the ball?

- A: The force applied by Agnes caused the ball to change direction.
 B: The force applied by Agnes caused the ball to increase in speed.
 C: The force applied by Agnes caused the ball to decrease in speed.
 D: The force applied by Agnes caused the ball to stop and drop to the ground.

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

(Go on to the next page)

25. Two forces, F_1 and F_2 acted on the box as shown in the diagram below.



Four children observed that the box moved towards the left. They then made the following conclusions:

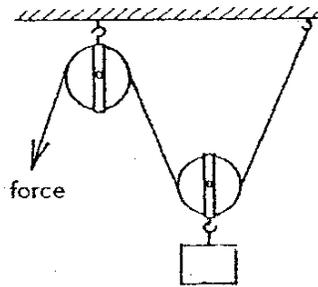
Jacob: F_1 is equal to F_2 .
Kevin: F_2 is greater than F_1 .
Mandy: F_1 is greater than F_2 .

Whose conclusion is correct?

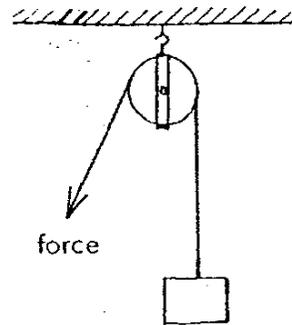
- (1) Kevin only (2) Mandy only
(3) Jacob and Kevin only (4) Kevin and Mandy only

(Go on to the next page)

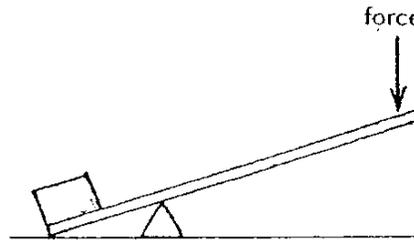
26. Study the three simple machines as shown below carefully.



Simple Machine A



Simple Machine B



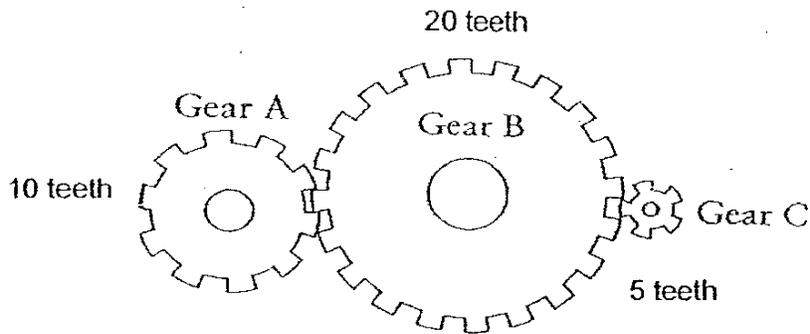
Simple Machine C

Which one of the following statements is false?

- (1) The direction of the force is opposite to that of the load in the three machines.
- (2) The same amount of force is needed to lift the loads in the three simple machines.
- (3) The effort moves a longer distance than the load in simple machines A and C.
- (4) Less force is needed to lift the load in simple machine A than in simple machine B.

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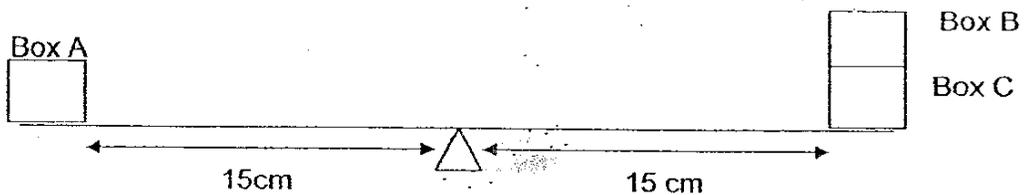
27. The diagram below shows three gears of different sizes fitted together.



If Gear A turned twice in a clockwise direction, how many turns would gears B and C make and in which direction?

	Number of Turns		Direction	
	Gear B	Gear C	Gear B	Gear C
(1)	1	4	Clockwise	Clockwise
(2)	4	1	Anti clockwise	Clockwise
(3)	1	4	Anti clockwise	Clockwise
(4)	4	1	Anti clockwise	Anti clockwise

28. Siew Hoon was given three boxes of unknown masses. They were placed on a lever as shown in the diagram below.



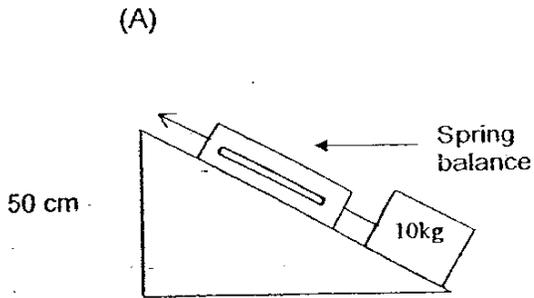
Which of the following can she deduce?

- A: Box A is heavier than Box B.
- B: Box B is lighter than Box C.
- C: Box C is lighter than Box A.

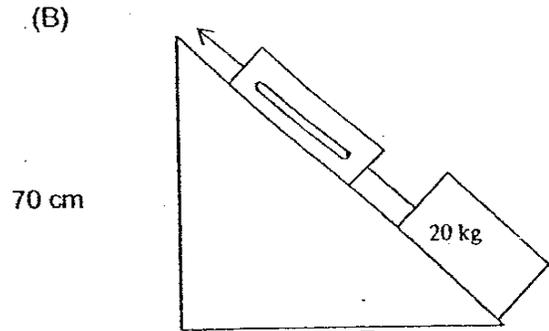
- (1) A only
- (2) A and B only
- (3) A and C only
- (4) B and C only

(Go on to the next page)

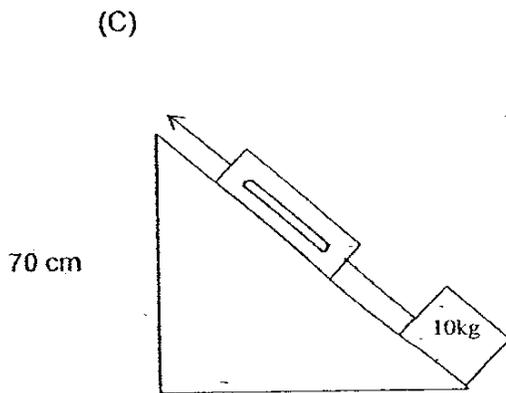
29. Joyce wants to investigate how the length of an inclined plane affects the effort required to pull up a load.
Which two set-ups should she use to carry out a fair test?



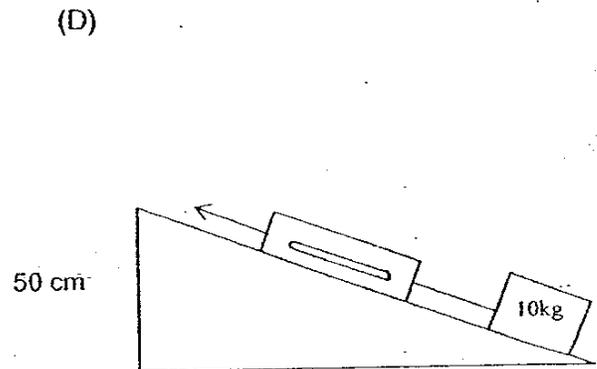
Length of inclined plane is 1m



Length of inclined plane is 2m



Length of inclined plane is 1m



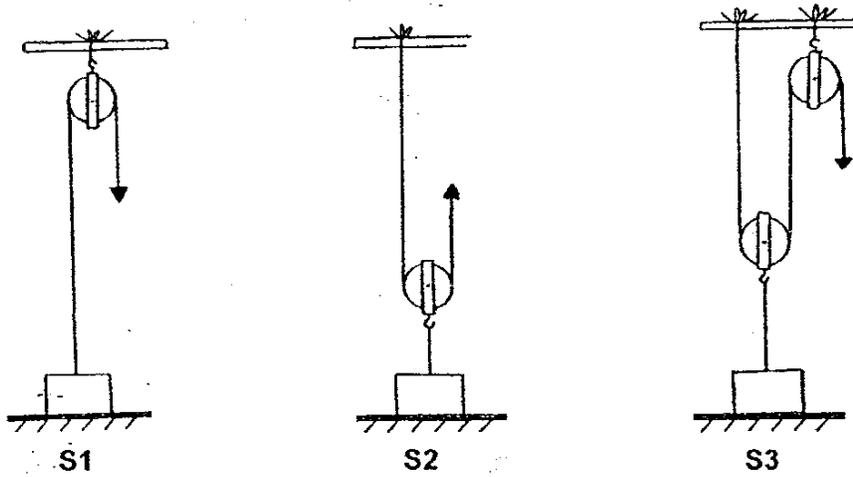
Length of inclined plane is 2m

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

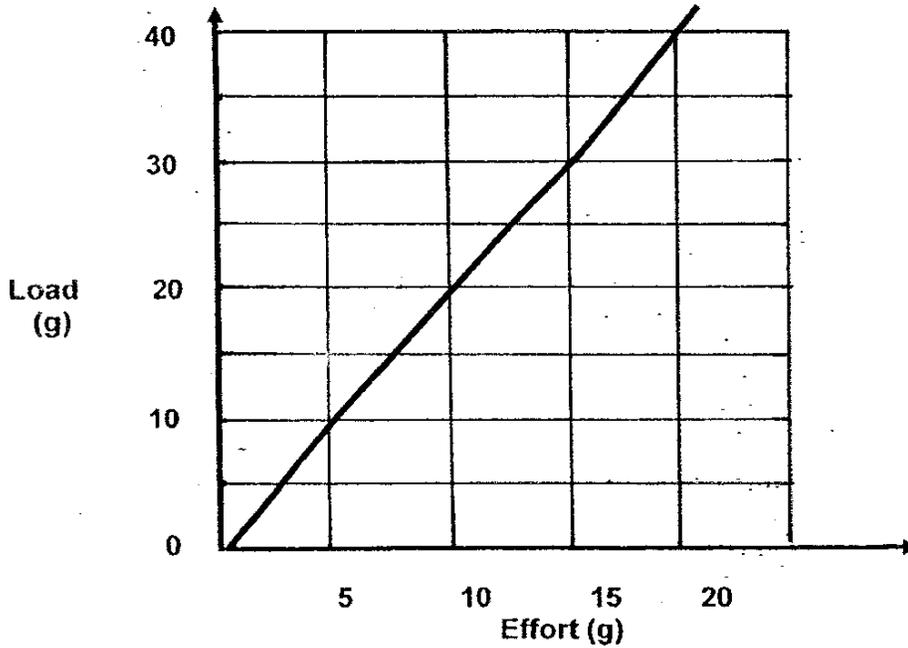
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30. Ali used the pulley systems, S1, S2, S3, as shown below, to lift some loads of different masses.



He measured the effort needed for the various loads. He plotted the results in a graph shown below.



Based on the plotted graph, identify the pulley system(s) that he has used in his experiment.

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

End of Booklet A

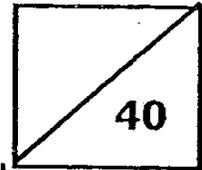
h 96



Rosyth School
Second Semestral Assessment for 2007
SCIENCE
Primary 5

Name: _____

Total
Marks: _____



Class: Pr _____

Register No. _____

Duration: 1 h 45 min

Date: 1 November 2007

Parent's Signature: _____

Booklet B

Instructions to Pupils:

1. For questions 31 to 46, give your answers in the spaces given in this Booklet B.

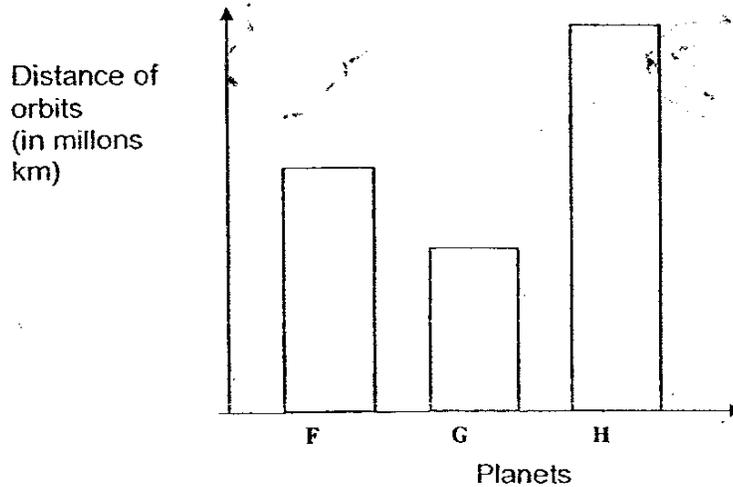
* This booklet consists of 17 pages. (Pg. 1 to 17)

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Part II (40 MARKS)

For questions 31 to 46, write your answers in this booklet.

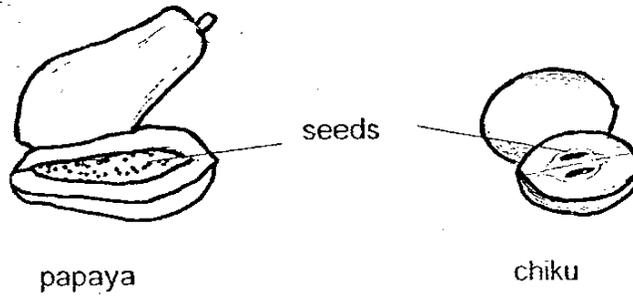
31. The graph below shows the distance of the orbital paths of three planets, F,G and H , around the Sun in our Solar System.



Based on the graph, use a tick (✓) to indicate which of the following statements are 'true', 'false' and 'not possible to tell'. (2marks)

No.	Statements	True	False	Not possible to tell
1	G is the smallest planet.			
2	Planet H takes the longest time to make an orbit around the Sun.			
3	Planet F can support life.			
4	Planet G is colder than the Planet H.			

32. The pictures below show a papaya and a chiku.

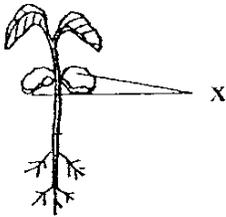


(a) Based on the pictures, which flower (papaya or chiku) would have a greater number of ovules? (1mark)

(b) Support your answer in part (a). (1mark)

33. Sally had some red beans. She measured the mass of one bean at stage A. Then she sowed the seeds in a pot with moist soil and placed the pot near the window.

After a certain interval she took a seedling at stage B and measured the total mass. She repeated the step for stages C to E. The results were recorded as shown below.

Stages	Total Mass
 <p>A</p>	2g
 <p>B</p>	4g
 <p>C</p>	8g
 <p>D</p>	12g
 <p>E</p>	15g

Question 33 continues on pg 4

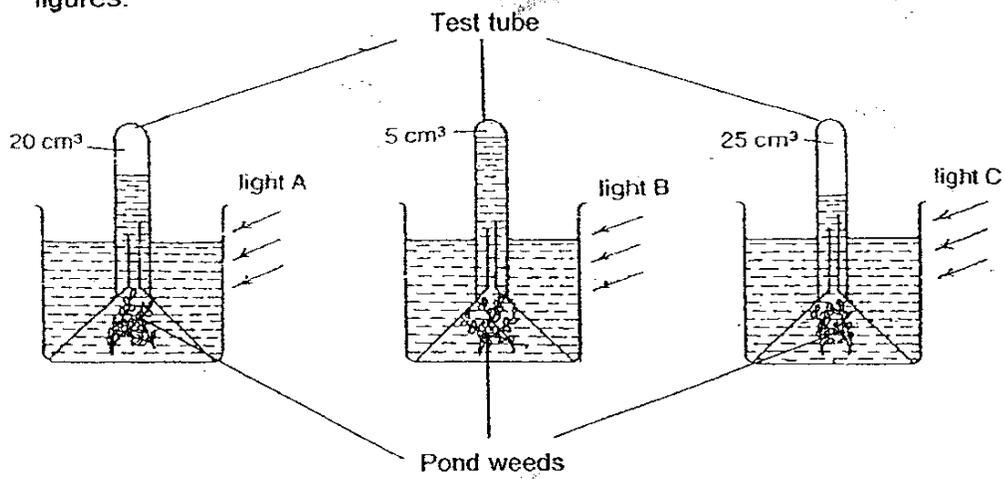
- (a) Why was there an increase in the total mass from stage A to stage B?
(1mark)

- (b) At stage E, the parts X were removed. What would most likely happen to the total mass of the seedling at the next stage? Explain your answer.
(1mark)

- (c) If Sally had carried out the experiment in a dark cupboard from stage B to D, would there be a change in the results obtained? Explain why. (1mark)

- (d) Without repeating the experiment, what could you do to ensure that the results are reliable? (1mark)

34. Mr Lee studied the effects of 3 types of light, A, B and C on the rate of photosynthesis of 10g of pond weeds. The results are shown in the following figures.



If the time taken is the same for all the three experiments, draw two conclusions from the results. (2 marks)

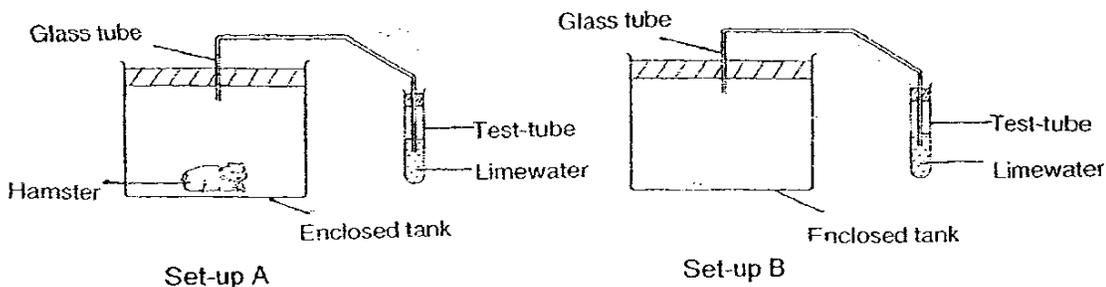
- (i) _____

- (ii) _____

SD

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35. Rosie wanted to find out what gas is produced during respiration. She set up her investigation as shown in the diagram below.



After 30 minutes, she observed that the limewater in Set-up A turned chalky but the limewater in Set-up B remained clear.

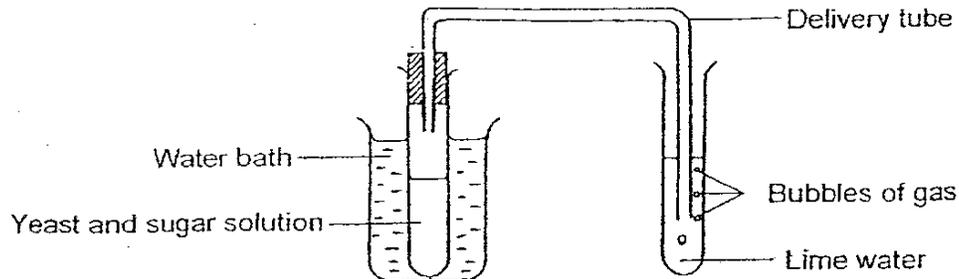
- (a) What conclusion could she draw from her observation? (1 mark)

- (b) What was the purpose of Set-up B? (1 mark)

- (c) What variable was kept the same in this experiment? (1 mark)

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36. A large test tube containing some yeast and sugar solution was set up as shown in the diagram below. The bubbles of gas produced were passed through limewater by using a delivery tube.



The number of bubbles of gas was counted. This was done with the water bath at six different temperatures. The results were recorded in the table shown below.

Temperature (° C)	Number of bubbles per minute
10	5
20	10
30	20
40	25
50	20
60	10

- (a) State the aim of this experiment. (1 mark)

- (b) Name the variable which has been changed in this experiment. (1 mark)

- (c) Based on the results, what is the optimum temperature for the yeasts to respire and reproduce? (1 mark)

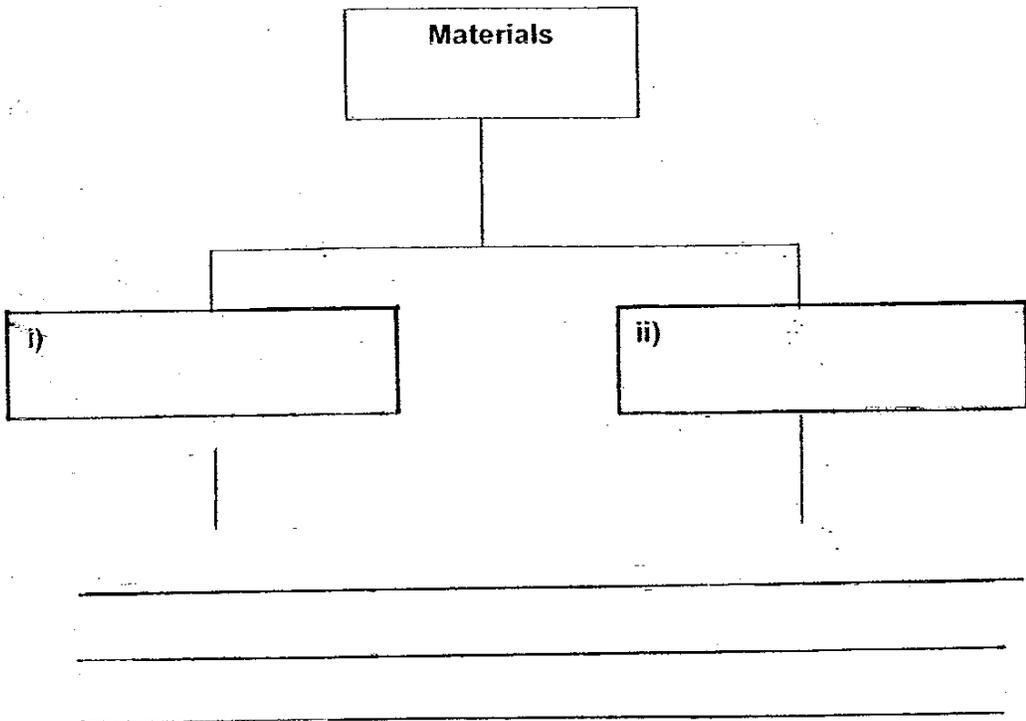
(Go on to the next page)

37. Susan set up an electric circuit to test if the materials, J, K, L, M, N and P, will conduct electricity. She recorded the results in the table below.

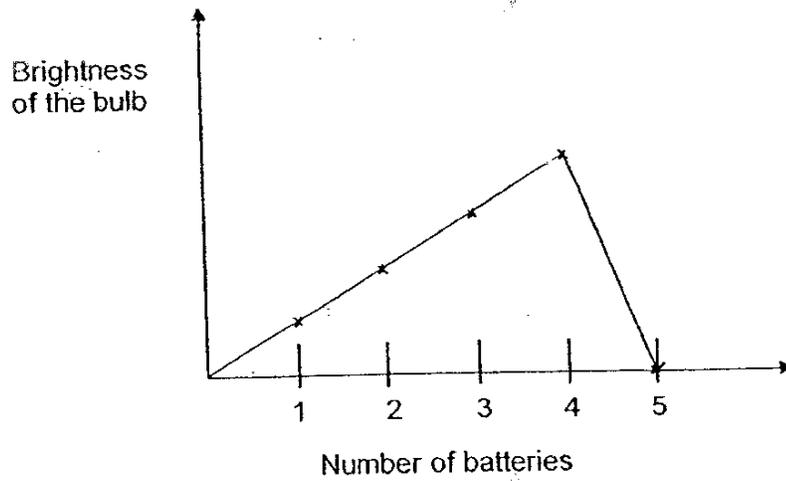
Material	J	K	L	M	N	P
Did the bulb light up in the circuit?	Yes	No	No	No	Yes	Yes

Complete the classification chart below to classify the materials into two groups based on their conductivity of electricity.

Give the headings for boxes (i) and (ii) and state the materials according to their properties in the lines provided. (2marks)



38. Study the graph shown below.

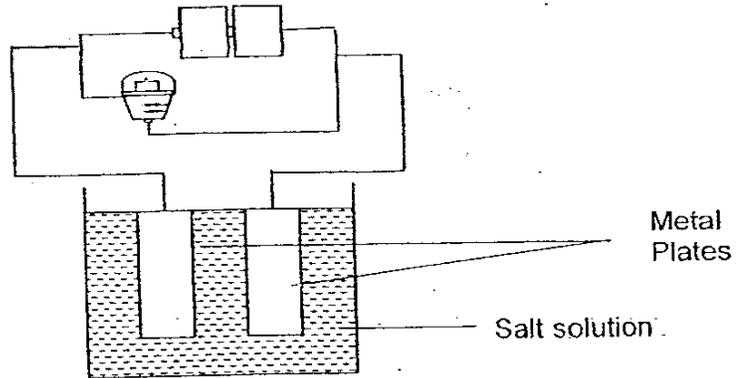


(a) Based on the graph, how do you think the batteries are connected in the circuit? (1mark)

(b) Give a reason for your answer in part (a). (1mark)

(c) Explain why the brightness of the bulb dropped to zero when five batteries were used. (1mark)

39. Study the circuit diagram given below.



Jason used the above set up to find out which metal plates, X or Y, is a better conductor of electricity.

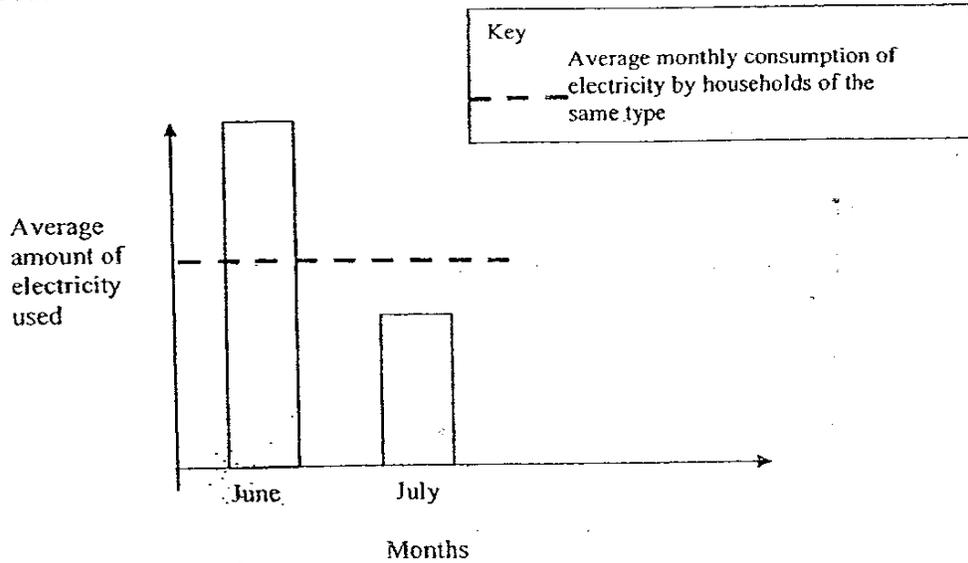
He observed the brightness of the bulb. His friend, Ahmad, told him that his observation could not be used to draw his conclusion.

(a) Give a reason why Ahmad was correct. (1mark)

(b) State a possible observation Jason could make for his investigation. (1mark)

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40. Ben studied his monthly consumption of electricity for his household for two consecutive months in 2007.



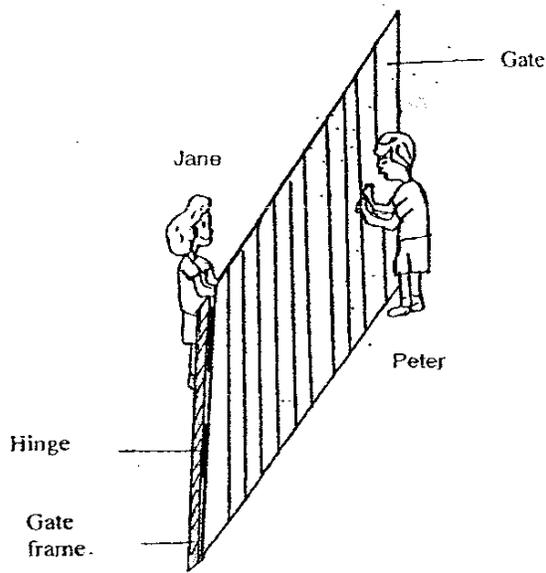
- (a) Based on the graph, state the difference between Ben's household monthly consumption of electricity and the average monthly consumption of electricity by households of the same type over the two months. (1mark)

- (b) State two measures Ben could have taken to reduce his monthly consumption of electricity. (1mark)

Muthu made his hypothesis that the number of batteries in parallel does not affect the amount of current in the circuit.

- (b) If his hypothesis was correct, what observation would he make with regards to the brightness of the bulb? (1 mark)

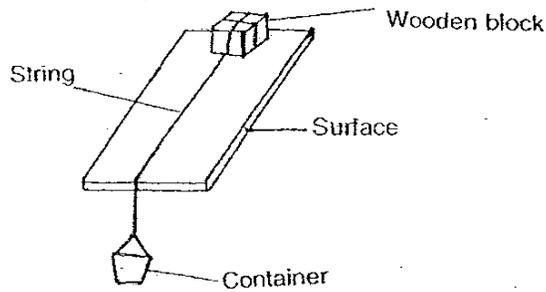
42. Two children, Peter and Jane, exerted an equal force in opposite directions on a gate, as shown in the diagram below.



- (a) What kind of force is exerted on the gate by both children? (1 mark)

- (b) Who is more likely to move the gate? Give an explanation to your answer. (1 mark)

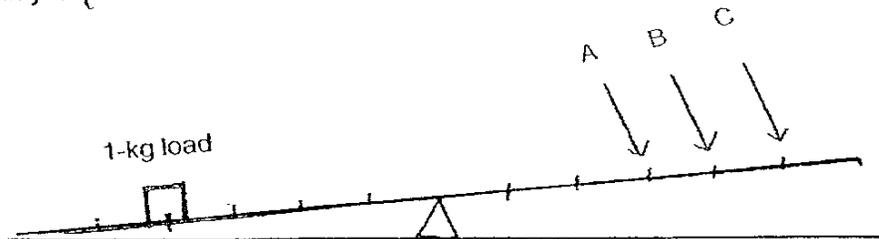
43. Mr Lim set up an experiment as shown below. A small container was attached to the end of the string. Mr Lee dropped some 10-cent coins into the container until the wooden block began to slide along the surface.



- (a) State the force that is exerted on the wooden block by the container of coins. (1mark)

- (b) What does the number of 10-cent coins measure? (1mark)

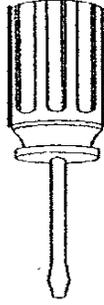
44. Study the lever below.



- (a) Roshan wanted to apply his effort at A to lift the load. What could he do to reduce his force applied at A? (1 mark)

- (b) Roshan wanted to lift the load of 1 kg using a 700g object. At which position, A, B or C, should he most likely place the object? (1mark)

45. Alicia had two screwdrivers. She wanted to remove the screw from a plank of wood.



Screwdriver A

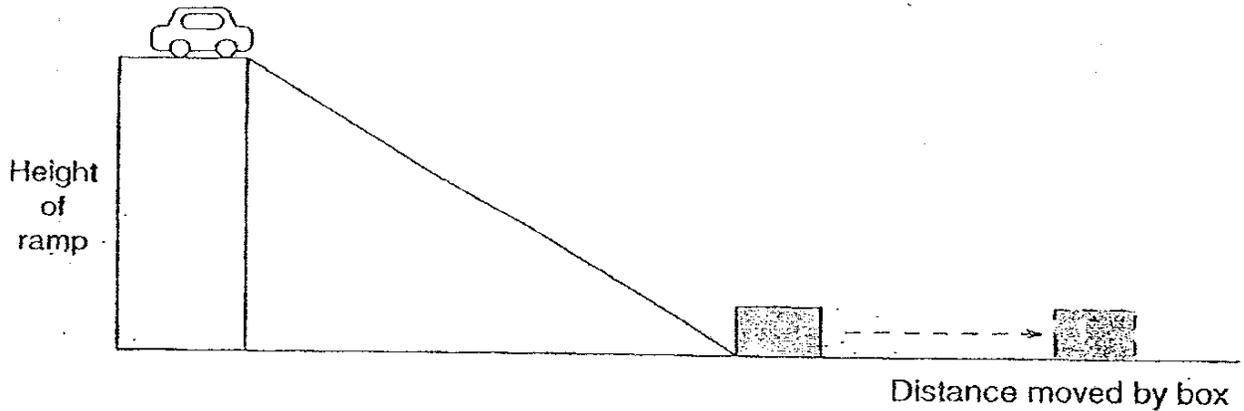


Screwdriver B

- (a) Which screwdriver (A or B) should she use to make her work easier? Explain your choice. (1 mark)

- (b) Alicia decided to use one of the screwdrivers (A or B) to pry open a tin lid. Which screwdriver should she use to make her work easier? Explain your choice. (1 mark)

46. An experiment was set up by Joseph as shown in the diagram below. When the toy car was released, it hit the styrofoam box at the foot of the ramp. The styrofoam box then moved in the direction shown. The distance moved by the styrofoam box was measured and the experiment was repeated with ramps of different heights.

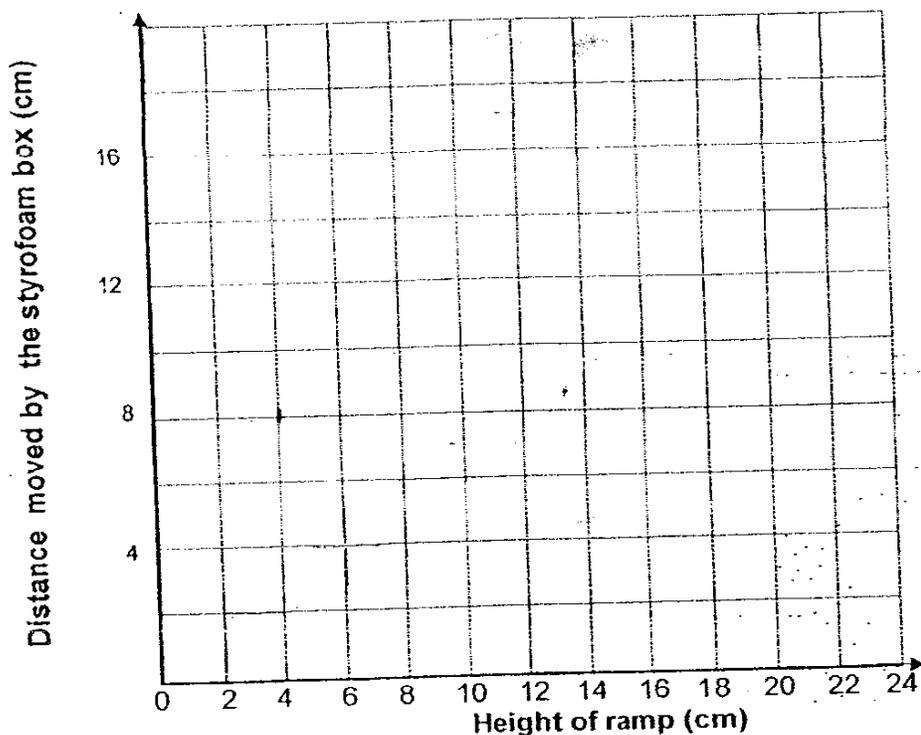


The results are shown in the table below.

Height of ramp (cm)	6	12	18	24
Distance moved by the styrofoam box (cm)	4	8	12	16

Question 46 continues on pg 17

(a) Plot the given results in the grid below. (2 marks)



(b) What do you think was the aim of Joseph's experiment? (1 mark)

(c) What is the relationship between the height of the ramp and the distance moved by the styrofoam box? (1 mark)

End of Paper

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Rosyth Primary School

Primary 5 Science SA2 Exams (2007)

Answer Keys

SECTION A : (60 MARKS)

Qn no.	Ans
1	3
2	3
3	4
4	3
5	2
6	3
7	2
8	2
9	3
10	3

Qn no.	Ans
11	3
12	4
13	4
14	2
15	3
16	3
17	3
18	4
19	2
20	4

Qn no.	Ans
21	3
22	1
23	3
24	2
25	1
26	2
27	3
28	3
29	3
30	4

SECTION B (40 MARKS)

- 31(i) Not
(ii) True
(iii) Not
(iv) False

- 32a. The papaya flower would have a greater number of ovules.
32b. It would increase. It has leaves to make its own food to grow.
32c. Papaya has more seed than chiku and seed are developed from ovules.
- 33a. The seed has taken in water.
33b. It would increase. It has leaves to make its own food to grow.
33c. No, the plant does not need sunlight , but it only needs warmth ,water and air to survive from stage B to D.
33d. Measure the mass of at least two.
- 34(i). The rate of photosynthesis is least under light B.
34 (ii). C produce faster rate of photosynthesis than Light A which in turn produces faster rate of photosynthesis than Light B.
- 35a. Carbon dioxide is produced during respiration.
35b. It proves that the carbon dioxide is produced by the hamster.
35c. The amount of water
The size of the tank
- 36a. To find out the effect of temperature on the reproduction and respiration of yeast.
36b. Temperature of water bath
36c. 40° C

37 (i). Conductors of Electricity

Material J
Material N
Material P

37 (ii) Insulators of Electricity

Material K
Material L
Material M

38a. They are connected in the series.

38b. As the number of battery increases, the brightness of the bulb increases.

38c. The total voltage of the batteries is too high for the bulb and it fuses.

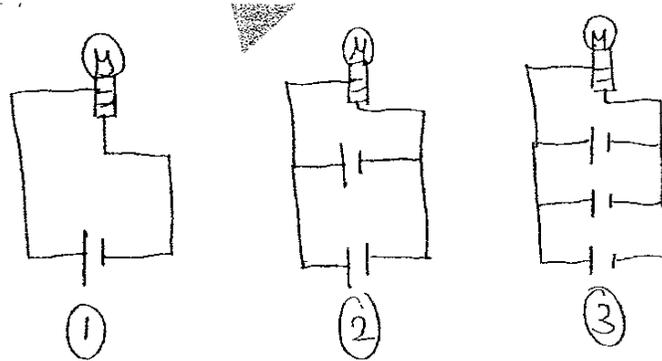
39a. He should not use both metal plates at the same time but use each one in separate experiment.

39b. He would observe the metal plates getting warm.

40a. In June, Ben's household consumption of electricity was higher than the average monthly consumption of electricity but in July it was lower.

40b. Switch off all the light when they are not required, use a fan instead of air-conditioner

41a



Step 1 : Connect a battery to the bulb with wire; note the brightness of the bulb.

Step 2 : Connect another battery in parallel to the circuit and note the brightness.

Step 3 : Repeat the experiment with the third battery.

Step 4 : compare the brightness of the bulb.

41b. In a parallel circuit, the number of batteries did not affect brightness of the bulb.

42a. Pushing

42b. Peter is more likely to move the gate. He is further away from the fulcrum than Jane.

43a. A pulling force.

43b. They measure the wooden block.

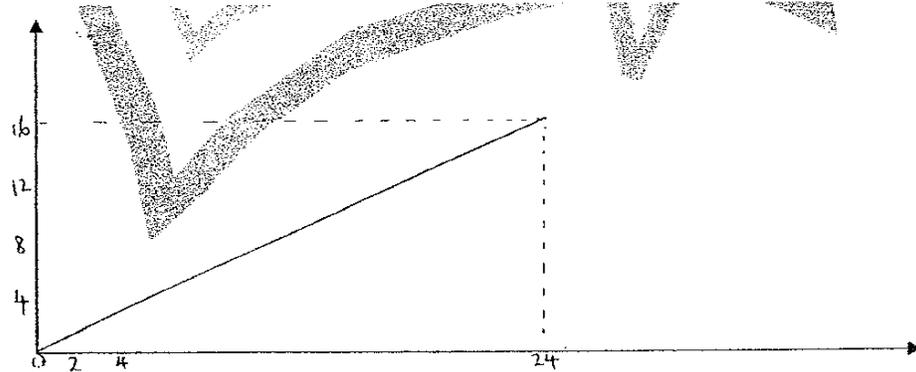
44a. He could move the 1kg load nearer to the fulcrum.

44b. He should place the 700g object at position C.

45a. The diameter of the wheel is bigger than that of the axle.

45b. The diameter of the wheel of A is bigger than the wheel of B.

46a.



46b. It was to find out if the height of ramp affects the distance moved by the styrofoam box.

46c. The higher the height of the ramp, the further the distance moved by the styrofoam box.