Rosyth School
Second Semestral Assessment for 2008
SCIENCE
Primary 5

Total Marks: ____ / 100

Name: _____

Class: Pr _____ Register No. _____ Duration: 1 h 45 min

Date: 29th October 2008 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 19 pages. (Pg. 1 to 19)

Section A (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.**

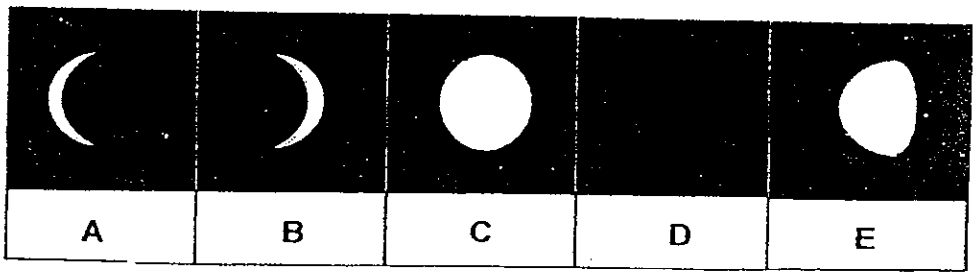
1. The table below shows the conditions of four imaginary planets.

	Planet A	Planet B	Planet C	Planet D
Presence of air	Yes	Yes	Yes	No
Average Temperatures	28°C	58°C	- 8°C	8°C
Presence of water	Yes	No	Yes	No

Which one of the following planets is suitable for living things to survive in?

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

2. The diagram below shows the different phases of the Moon as seen from the Earth for a particular month.

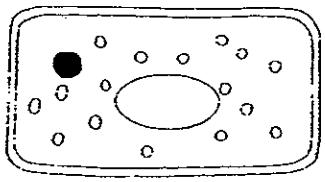


Which one of the following is the correct sequence?

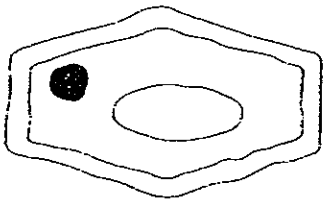
(1) E → B → D → A → C
(2) B → C → E → D → A
(3) C → E → A → D → B
(4) B → D → E → A → C

(Go on to the next page)

3. The diagrams below show two plant cells.



Cell P



Cell Q

Which of the following can P and Q possibly be from?

	Cell P	Cell Q
(1)	Apple skin	Paramecium
(2)	Elodea leaf	Onion
(3)	African violet leaf	Hibiscus plant leaf
(4)	Potato	Human

4. Tricia viewed a letter "e" under the microscope.

e

Which of the following shows the correct image she would see under the microscope after magnification?

(1) e

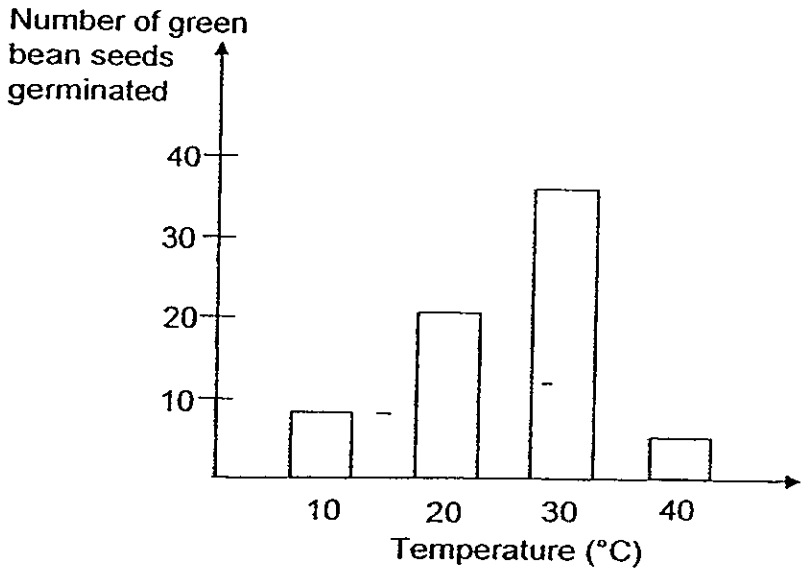
(2) ə

(3) ə

(4) ɘ

(Go on to the next page)

5. Jacob soaked 40 green bean seeds in water at different temperatures for eight hours. He then recorded the number of seeds that germinated in the graph below.



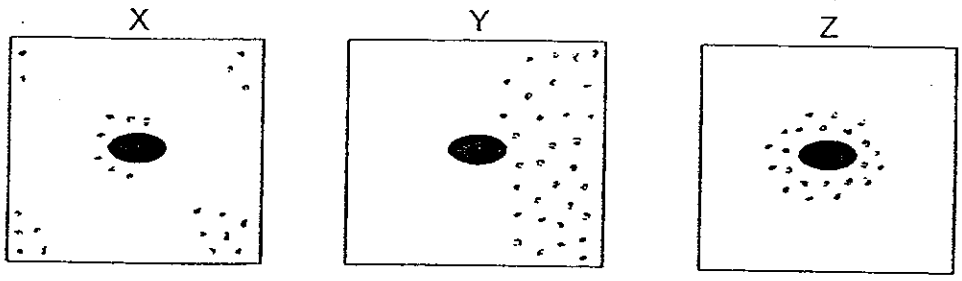
Which of the following are possible conclusions of this experiment?

A. Different temperatures affect the germination of green bean seeds
B. 30°C is the best temperature for the germination of green bean seeds
C. The number of green bean seeds affect the temperature of germination
D. Overcrowding of seeds affects the number of green bean seeds germinated

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

(Go on to the next page)

6. Three different types of plants, X, Y and Z with fruits, were found dispersed as shown below after a few hours.



Legend:

● - Parent Plant

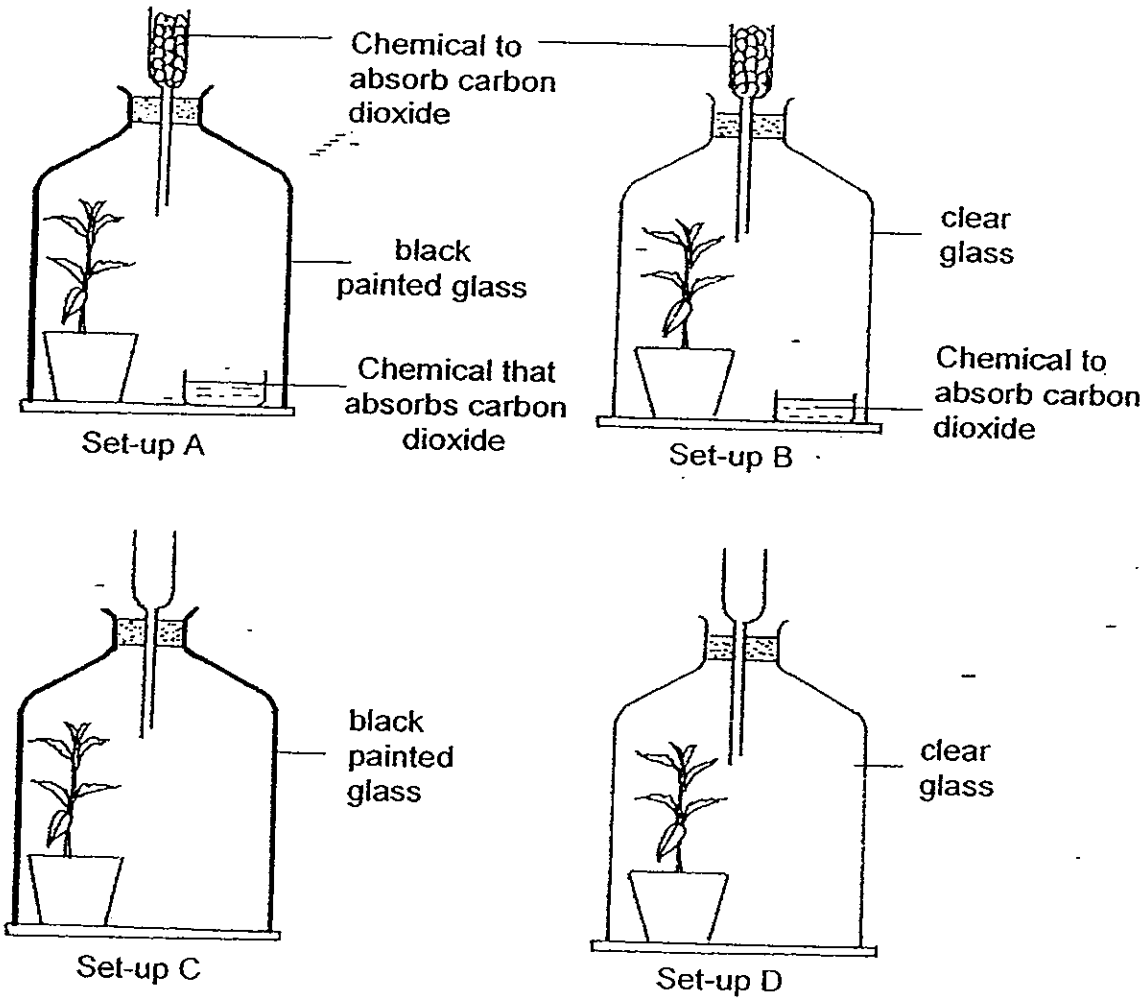
• - Dispersed Seed

What are the likely characteristics of the plants?

	X	Y	Z
(1)	Has wing-like structure	Has a hard outer covering	Dries up when ripe
(2)	Has fleshy and juicy fruits	Has small, light seeds	Able to float
(3)	Hairy and light	Has air spaces	Large seeds
(4)	Has stiff hairs	Has a wing-like structure	Splits open when dry

(Go on to the next page)

7. The diagram below shows 4 experimental set-ups. They are all placed under the sun.

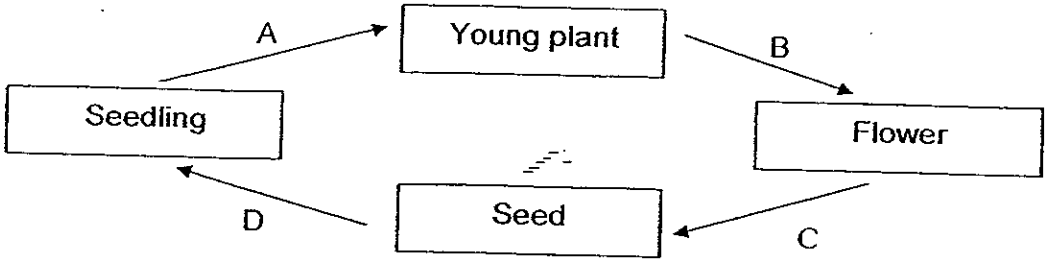


Which pair of experimental set-ups would you use to show that carbon dioxide is essential for photosynthesis?

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

(Go on to the next page)

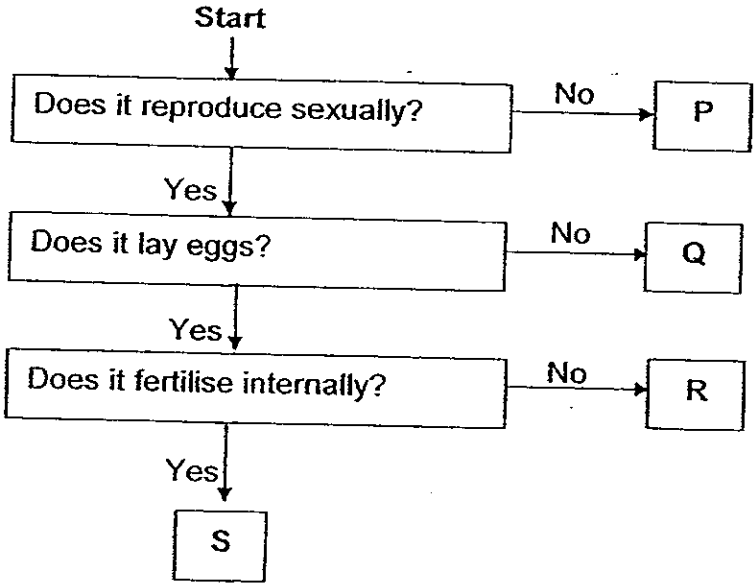
8. The diagram below shows the stages of growth of a plant.



At which stage(s) do(es) fertilisation take place?

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

9. Study the chart below.



Which letters in the chart represent the frog and the paramecium correctly?

	Frog	Paramecium
(1)	Q	S
(2)	P	R
(3)	S	Q
(4)	R	P

(Go on to the next page)

10. Which sequence correctly describes the flow of energy in our natural environment?

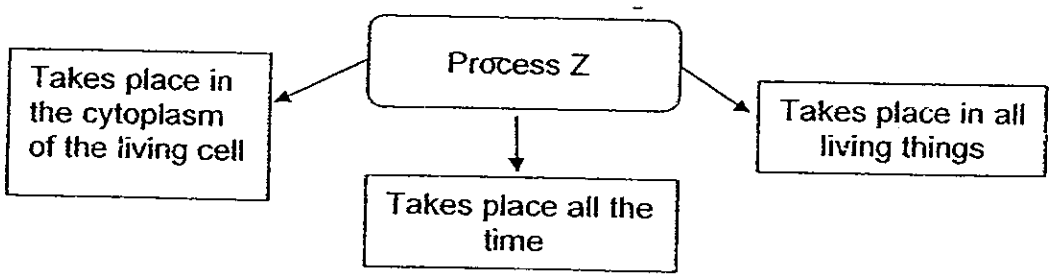
(1) carnivore → herbivore → plant → Sun
(2) carnivore → plant → herbivore → Sun
(3) Sun → carnivore → herbivore → plant
(4) Sun → plant → herbivore → carnivore

11. Which of the following statement(s) about exhaled air is/are correct?

A. It has more carbon dioxide than oxygen.
B. It has less water vapour than inhaled air.
C. It is usually warmer than the surrounding air.

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

12. Study the diagram below.



Which of the following equation(s) best represent(s) Process Z?

A: Water → water vapour → water droplets
B: Water + carbon dioxide → glucose + oxygen
C: Glucose + oxygen → carbon dioxide + energy + water

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

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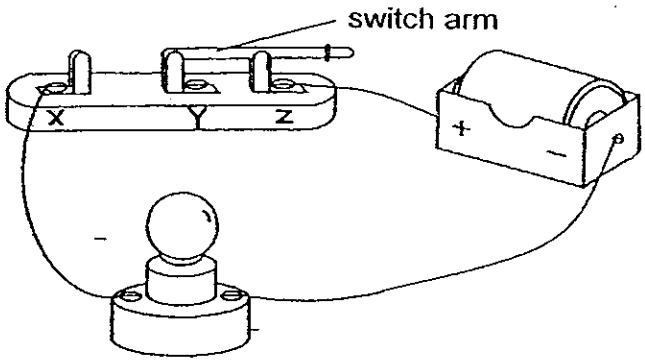
13. Arun has set up the circuit as shown in the diagram. The bulb does not light up.



What should he do to make the bulb light up?

A. Change the bulb.
B. Change the battery
C. Connect the wire to Y instead of X. Z
D. Connect the switch arm to X instead of Y.

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

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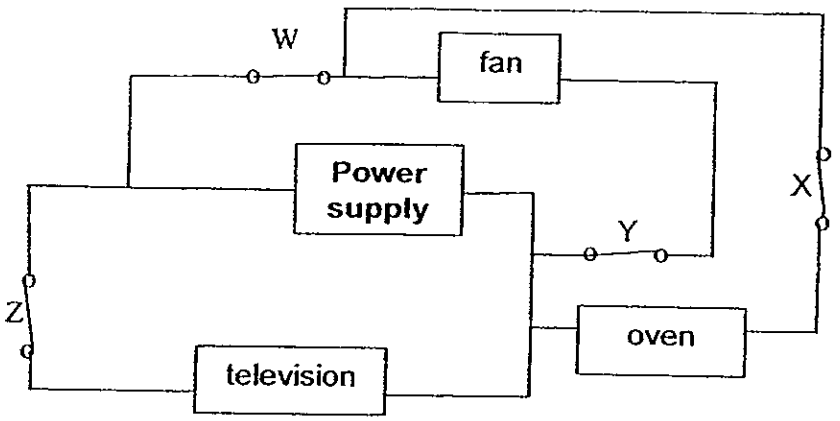
14. The wiring plan of an apartment is represented in the form of a circuit diagram below.

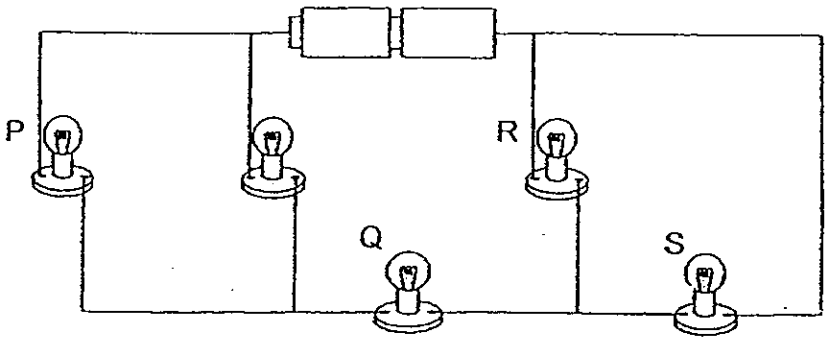


The switches W, X, Y and Z were closed and all three electrical appliances were working.

Which switch must be opened to allow only the oven and television to work?

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

15. The diagram below shows five bulbs connected by two batteries.



One of the following bulbs is not working and as a result, none of the bulbs light up. Which bulb is not working?

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

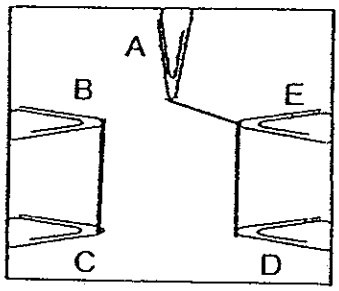
(Go on to the next page)

16. A circuit card is tested with a circuit tester. The results are given in the table below.

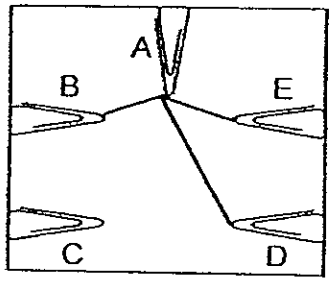
Clips tested	Does the bulb light up?
A and C	No
B and E	Yes
E and D	Yes
C and D	Yes

Based on the results shown in the table above, which one of the following is a possible arrangement of the wires on the circuit card?

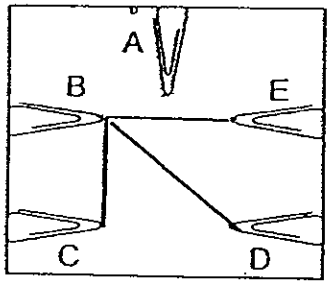
(1)



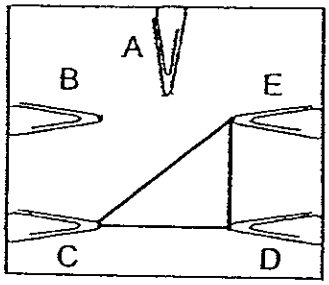
(2)



(3)



(4)



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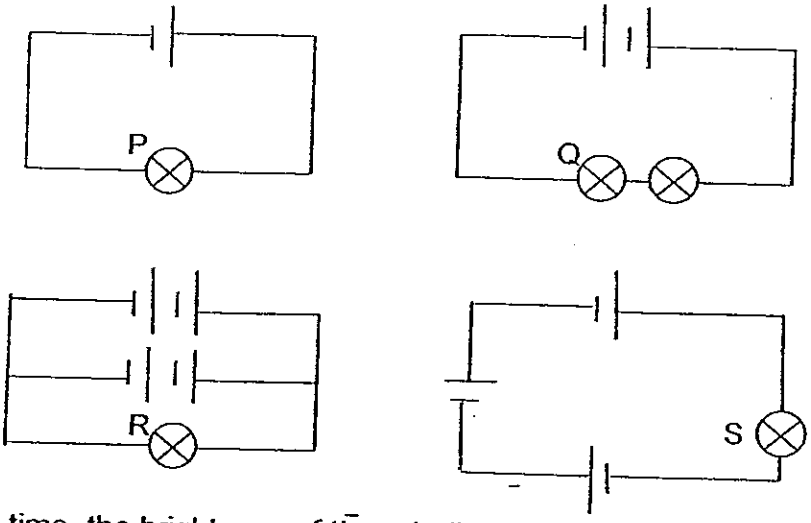
17. The diagram below shows four circuits with different arrangements of identical batteries and identical bulbs. The bulbs in all four circuits light up.

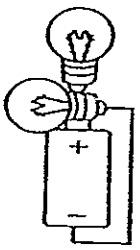


At any time, the brightness of three bulbs was compared.
Which one of the following shows the brightness of the bulbs P, Q, R and S?

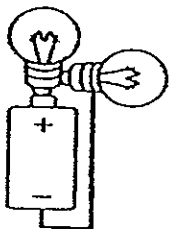
	Brightness of bulb		
	High	Medium	Low
(1)	S ✓	Q	P
(2)	R	S	Q
(3)	S ✓	R	Q
(4)	R	Q	P

18. Which one of the following set-ups will enable both bulbs to light up?

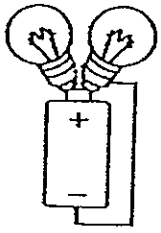
(1)



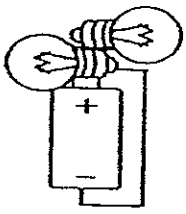
(2)



(3)



(4)



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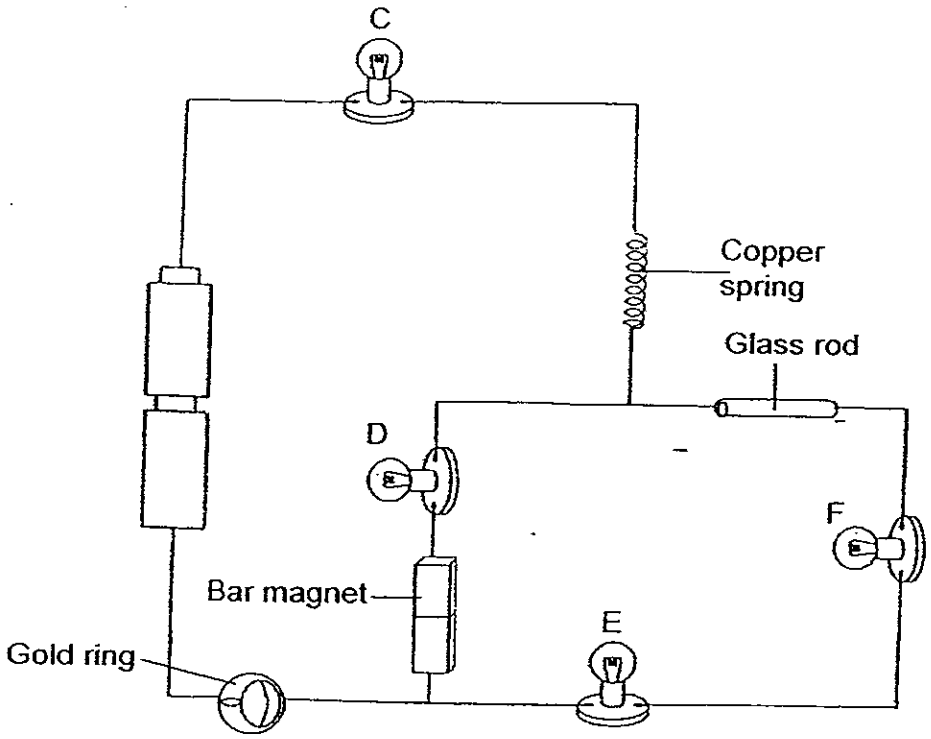
19. The diagram below shows 4 bulbs C, D, E and F in a circuit that is connected correctly.



Which of these bulbs will light up?

(1) C and D only
(2) C, E and F only
(3) All of the bulbs
(4) None of the bulbs

20. Which of the following electrical device(s) break(s) the electrical circuit when the current flowing through them is too large?

A. Circuit breaker
B. Fuse
C. Electricity meter

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

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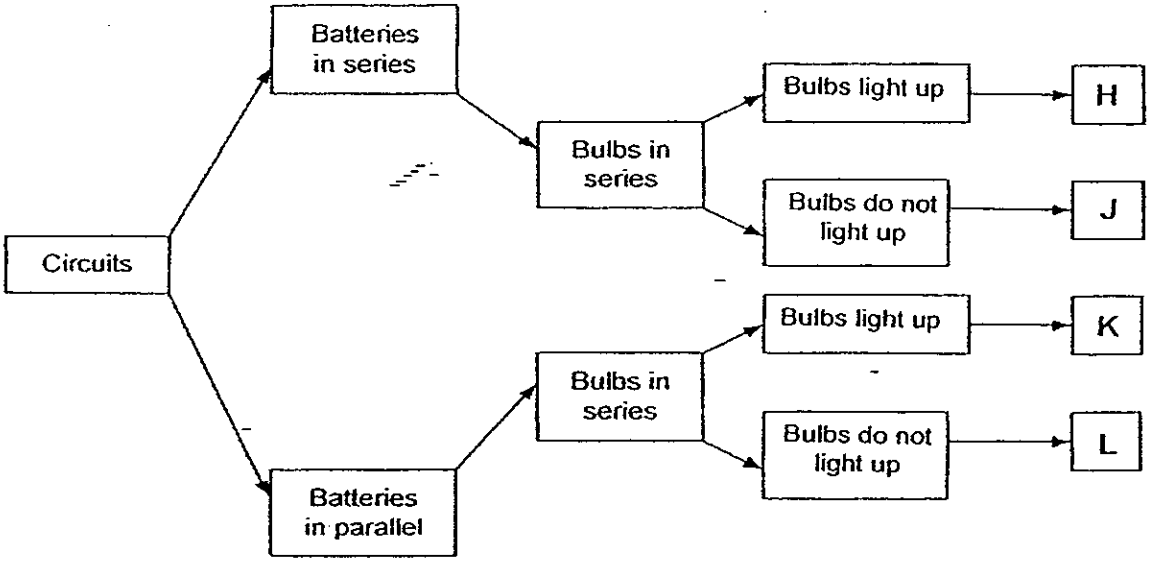
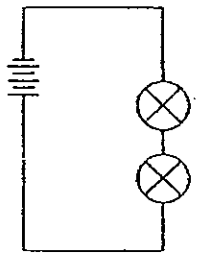
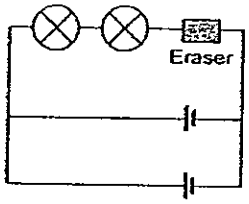
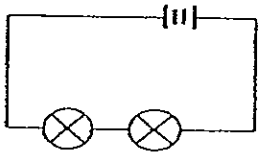
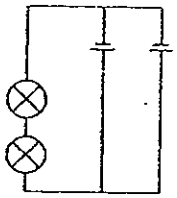
21. Study the flow chart below.



Which of the following matches the circuits shown in the table?

				
(1)	H	J	K	L
(2)	K	L	J	H
(3)	K	J	L	H
(4)	H	L	J	K

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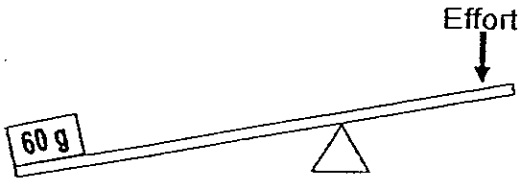
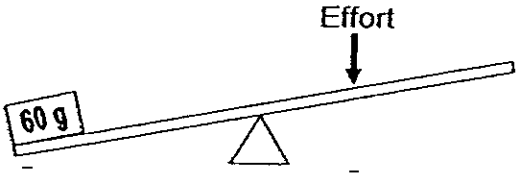
22. Which one of the following loads can be lifted with an effort of 60 g?

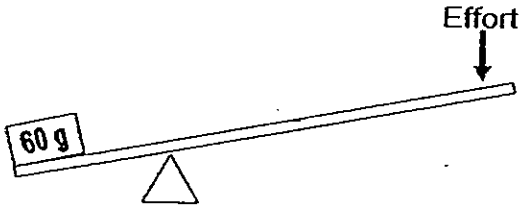
A:



B:



C:



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

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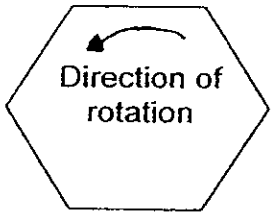
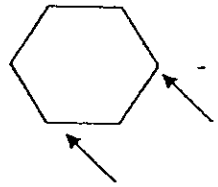
23. When two equal forces are applied to a hexagonal box, it turned in the direction shown below.

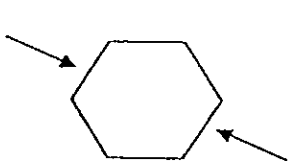


Which of the following shows the forces that have acted on the box?

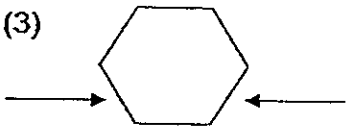
(1)



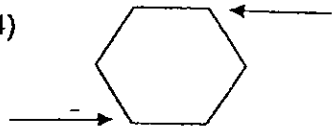
(2)



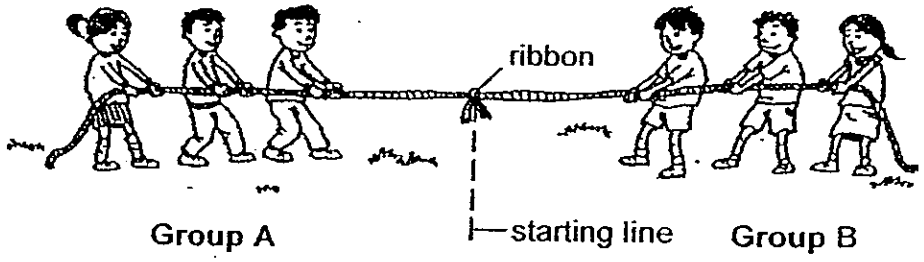
(3)



(4)



24. The diagram below shows two groups of children playing tug-of-war. Each group needs to get the ribbon on the rope over to their side in order to win.



Why is the ribbon still at the starting line even though both groups have been pulling the rope for some time?

(1) There is no force acting on the rope.
(2) The force exerted by each group is equal.
(3) Group A is exerting more force than Group B.
(4) Group B is exerting more force than Group A.

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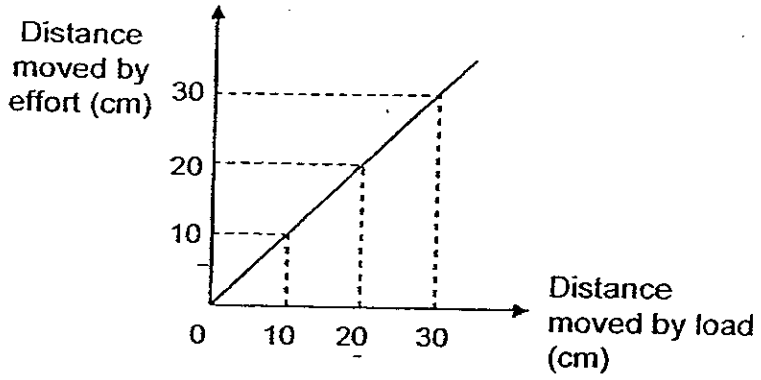
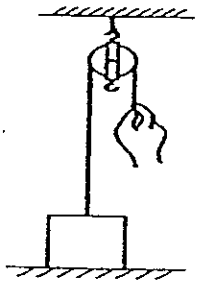
25. The graph below shows the distance moved by the effort and load of a certain simple machine.

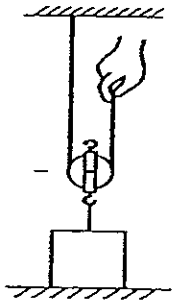


Which one of the following simple machines represents the graph shown above?

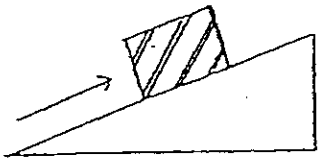
(1)



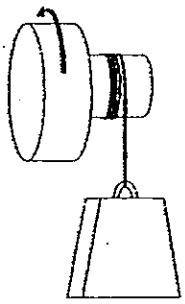
(2)



(3)



(4)



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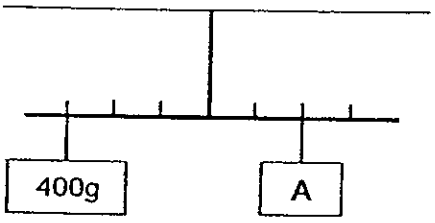
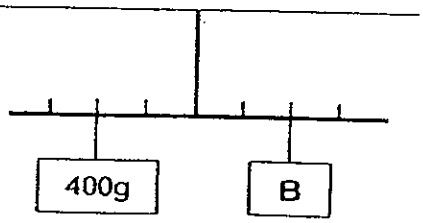
26. Study the diagrams below. Each shows a suspended lever which is balanced by an object and a 400g weight. Which object, A, B, C or D is the lightest?

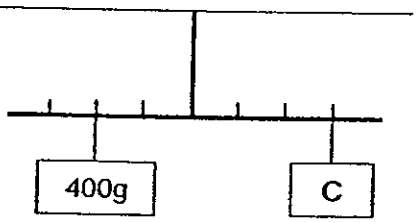
(1)



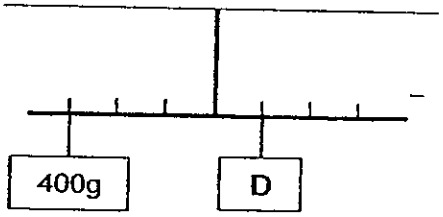
(2)



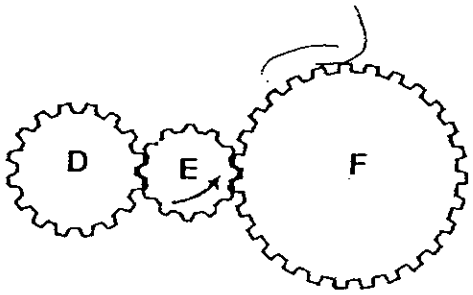
(3)



(4)



27. The diagram below shows a set of gears. Gear E moves in an anti-clockwise direction.



Which of the following describes correctly the direction and speed of rotation of Gear F?

	Direction of Rotation	Speed of Rotation
(1)	Clockwise	Fastest
(2)	Clockwise	Slowest
(3)	Anti-Clockwise	Fastest
(4)	Anti-Clockwise	Slowest

(Go on to the next page)

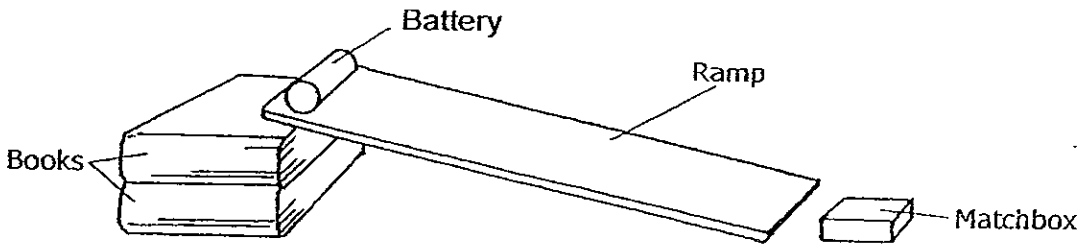
28. Mohan experimented with different wheel sizes when he was designing a wheel and axle system. He recorded his findings in the table below.

Systems	Diameters (m)	
	Wheel	Axle
A	20	5
B	50	5
C	10	10
D	5	50

Based on his record, which set of wheel and axle should he use to apply the least force?

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

29. Karen wanted to find out if the slope of a ramp affects the distance moved by a matchbox by using the force of a rolling battery.

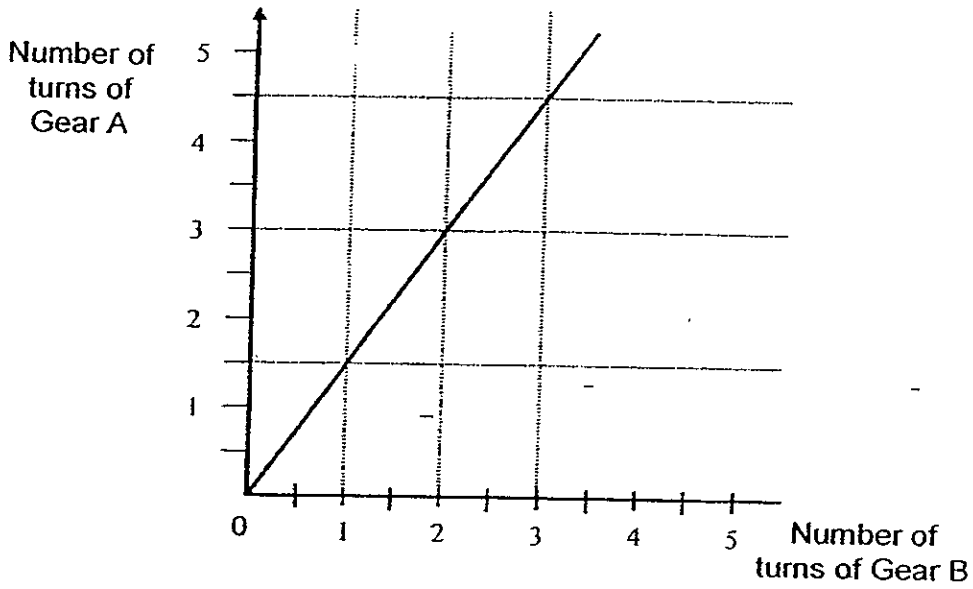


Which one of the following variable must be changed to conduct the above experiment?

(1) Brand of battery
(2) Size of matchbox
(3) Type of surface of ramp
(4) Number of identical books

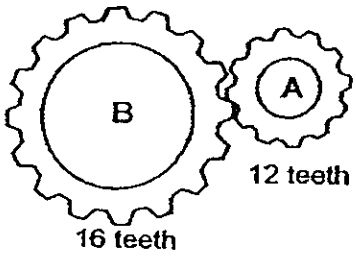
(Go on to the next page)

30. Jamie used a gear system which consisted of two gears of different sizes to determine the relationship between the numbers of turns of the two gears. He drew the following graph based on his results.

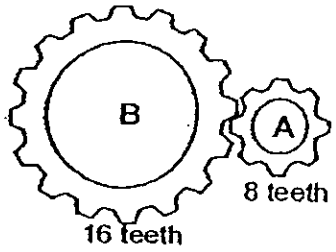


Which one of the following gear system did Jamie use for his investigation?

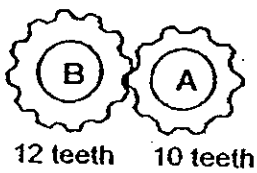
(1)



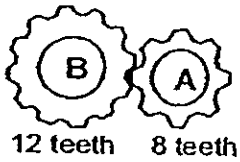
(2)



(3)



(4)



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Rosyth School
Second Semestral Assessment for 2008
SCIENCE
Primary 5

Name: _____

Total Marks: /40

Class: Pr ____ Register No. _____ Duration: 1 h 45 min

Date: 29th October 2008 Parent's Signature: _____

Booklet B

Instructions to Pupils:

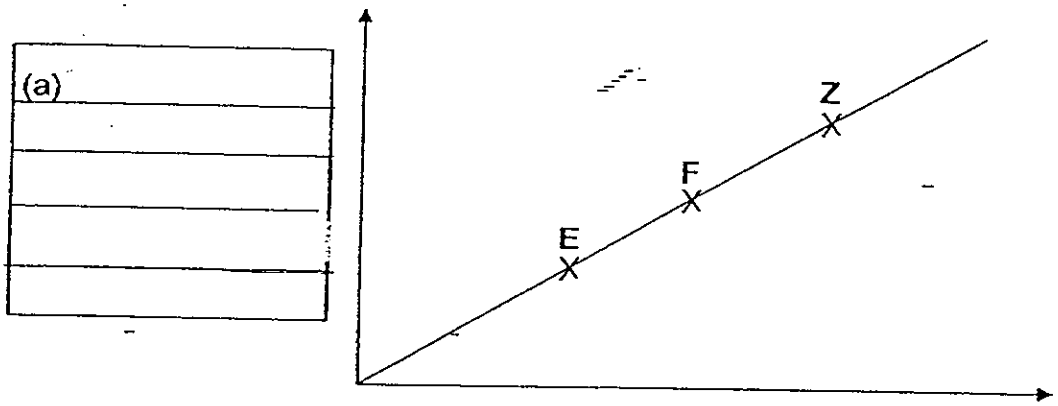
1. For questions 31 to 46, give your answers in the spaces given in this Booklet B.

* This booklet consists of _13_ pages. (Pg. 20 to 32)

SECTION B (40 MARKS)

For questions 31 to 46, write your answers in the spaces provided.

31. The graph below represents the relationship between the distance from the sun and the time taken to revolve around the sun once for the planets, E, F and Z



(a) Fill in the correct heading in the given box above. [1]

(b) In which planet would the temperature be the lowest? Explain your answer. [1]

_____ _____

_____

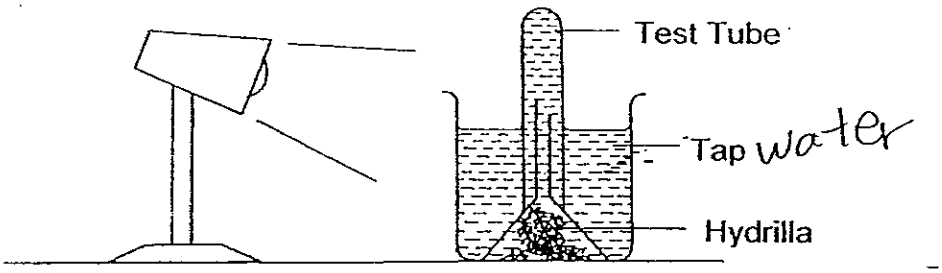
32. Refer to the diagram below.

(a) Mark with an 'X' on the diagram above to indicate where a young plant could grow. [1]

(b) Indicate with an arrow where the young plant is able to obtain food and water before it has leaves. [1]

(Go on to the next page)

33. Mastura set up the experiment shown below in a dark room. She noticed that air bubbles appeared at the top of the test tube after some time. She counted the number of bubbles produced at the end of two hours. She repeated the same experiment twice, each time using a different coloured light bulb, W, X, Y and Z.

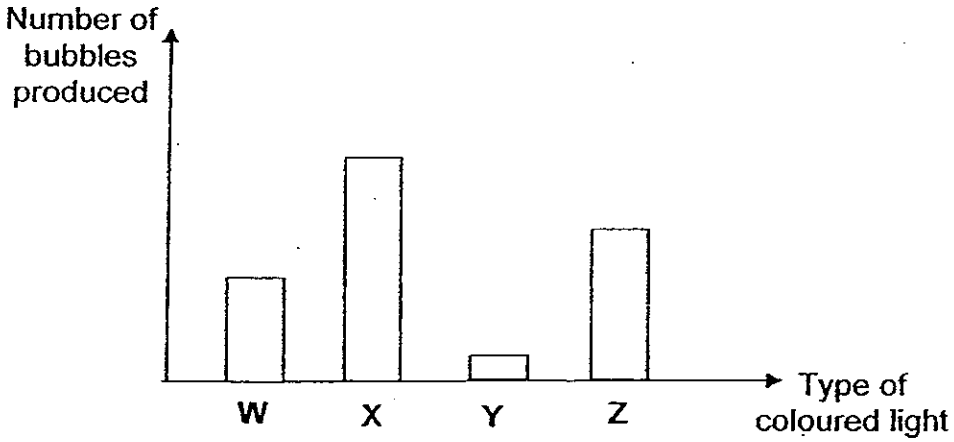


(a) What is Mastura trying to find out from this experiment? [1]

(b) Which variable is changed in this experiment? [1]

(c) What are the air bubbles produced in the test tube? [1]

Mastura recorded her results in a bar graph as shown below.



(d) Which coloured light shows the highest rate of photosynthesis? Give a reason for your choice. [1]

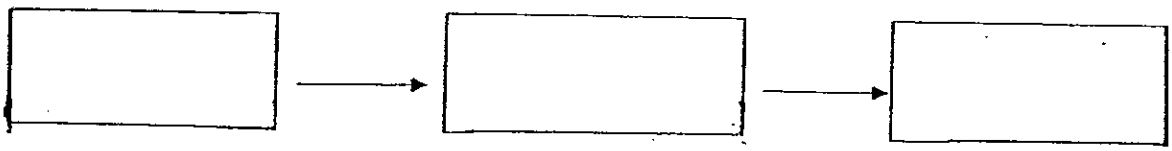
(Go on to the next page)

34. Sheila studied the feeding habits of three different animals A, B and C. The animals were placed in separate enclosed tanks and were given a sufficient supply of water. Grains that are consumed by mealworms as food, were put together with the mealworms in a dish and put in the tanks as food for the animals. The food was weighed at the start and the end of the experiment and the masses were recorded in the table below.

Animal	Mass of grains (g)		Mass of mealworms (g)	
	Start of experiment	End of experiment	Start of experiment	End of experiment
A	50	50	50	20
B	70	30	70	50
C	90	60	80	80

What would happen to A, B and C if only grains were given over two weeks? [1]

Fill in the boxes below to show the energy transfer that had taken place in the tank which contained animal A. [1]



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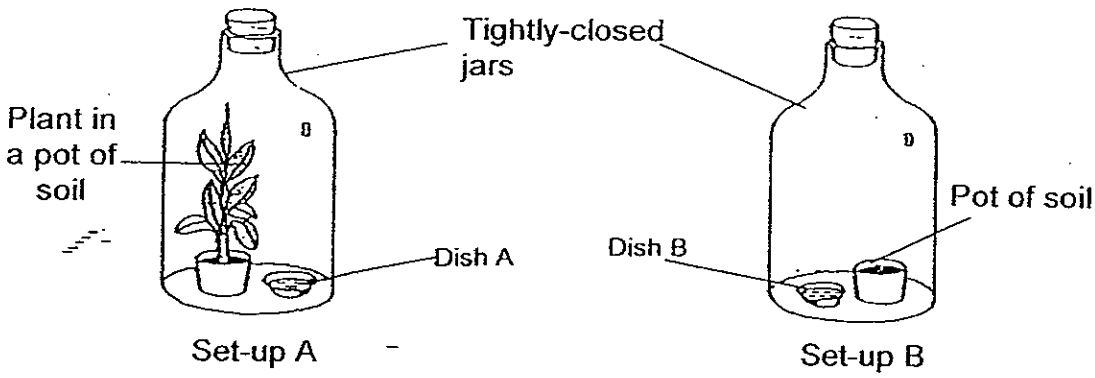
35. The diagram below shows experimental set-ups A and B.



The set-ups were placed in a dark cupboard. After two days, it was observed that the limewater in Dish A had turned chalky but the limewater in Dish B remained clear.

(a) Why did the limewater in Dish A turn chalky? [1]

_____

_____

(b) What is the purpose of having set-up B? [1]

_____

_____

(c) Would the result be different if the set-ups had been left under the sun rather than in the cupboard? Explain your answer. [1]

_____

_____

(Go on to the next page)

36. An experiment was conducted to investigate the effect of varying light intensities on the rate of photosynthesis in two plants. One of these plants was taken from the open garden while the other from the shade.

Light intensity (units)	**Rate of photosynthesis**	
	Plant R	Plant S
10	7	12
20	15	31
30	24	49
40	33	52
50	44	55
60	50	56
70	57	56
80	62	56

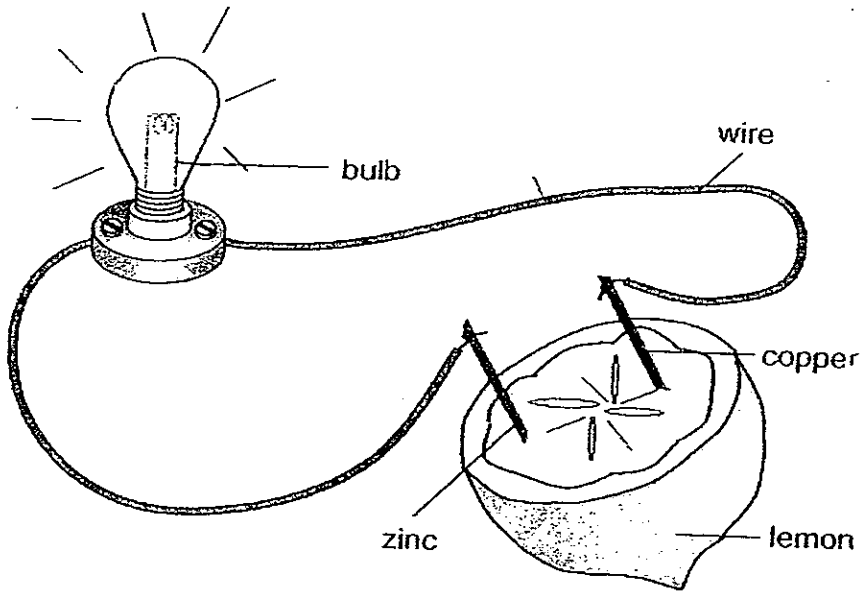
(a) State the relationship between light intensity and the rate of photosynthesis for both plants at light intensities up to 50 units. [1]

(b) Which plant was taken from the shade? Explain your answer. [1]

(c) Besides changing the intensity of light, identify another variable which when changed can affect the rate of photosynthesis in both plants. [1]

(Go on to the next page)

37. A pupil carried out an experiment using the experiment set-up shown in the diagram below.



(a) The lemon with the zinc and copper rods replaced a component in the electrical circuit. What is this component? [1]

_____

(b) The pupil carried out the experiment again using a potato. He observed that the bulb was dimmer than before.
What conclusion can the pupil draw from this observation? [1]

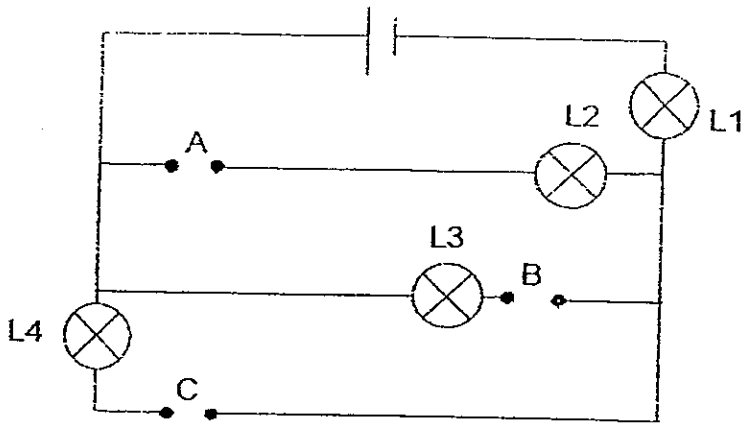
_____

_____

_____

(Go on to the next page)

38. Qing Qing set up the circuit as shown in the diagram below.



She had three rods X, Y and Z of unknown materials. She placed them in positions, A, B and C on the circuit respectively.

The results of the experiment were shown in the table below.

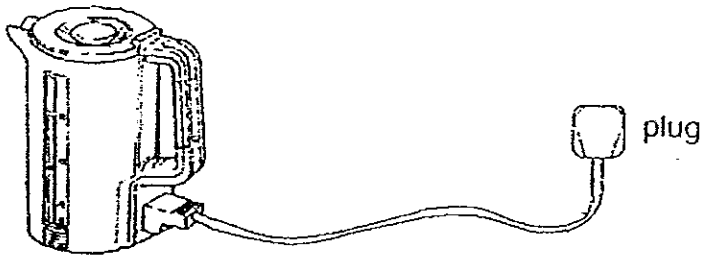
Positions where rods were placed			Did the bulbs light up?			
A	B	C	L1	L2	L3	L4
X	Y	Z	Yes	No	Yes	No

Based on the results, her brother Bing Bing made the following statements. Put a tick (✓) in the appropriate boxes to indicate whether the statements are 'True', 'False' or 'Not Possible to Tell'. [2]

	Bing Bing's statements	True	False	Not Possible to Tell
(a)	Y is made of iron.			
(b)	L1 is brighter than L3.			
(c)	If L4 is removed, L2 will be lit now.			
(d)	X and Z are non-conductors of electricity.			

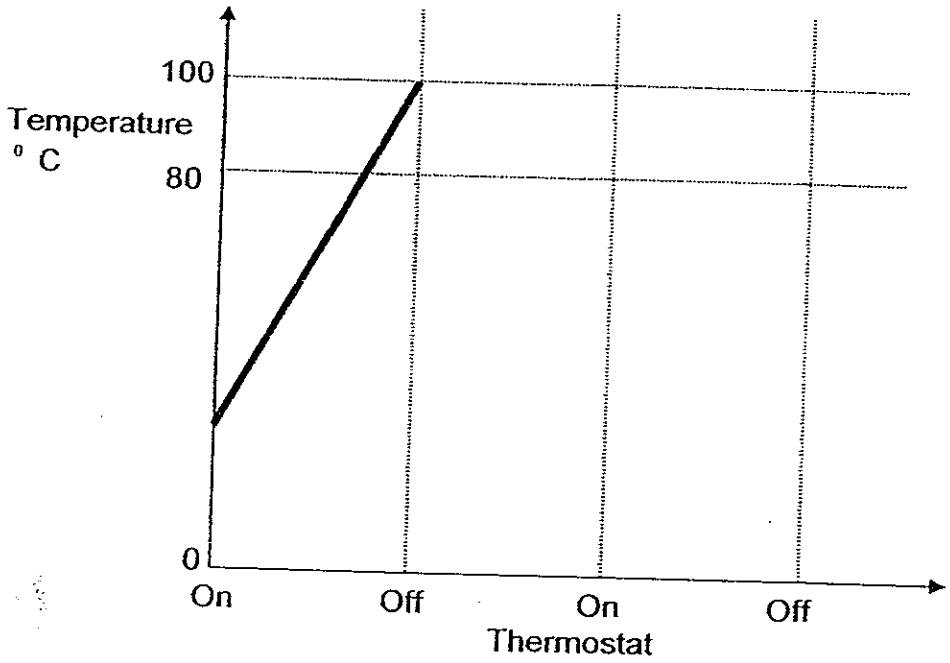
(Go on to the next page)

39. The diagram below shows an electric jug.



A special switch called a thermostat is used in the electric jug to control its temperature. The thermostat switches on the boiling system when the temperature of the water in it lowers to less than 80°C and switches off when the temperature rises to 100°C.

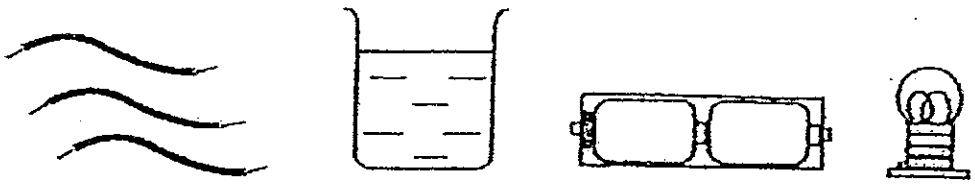
(a) Complete the graph below to show how the temperature inside the electric jug changes over time. [1]



(b) What are two advantages of using this kind of electric jug? [2]

(Go on to the next page)

40. Aishah wanted to find out whether liquid X is a conductor of electricity. The diagram below shows some of the apparatus found in the Science Room.



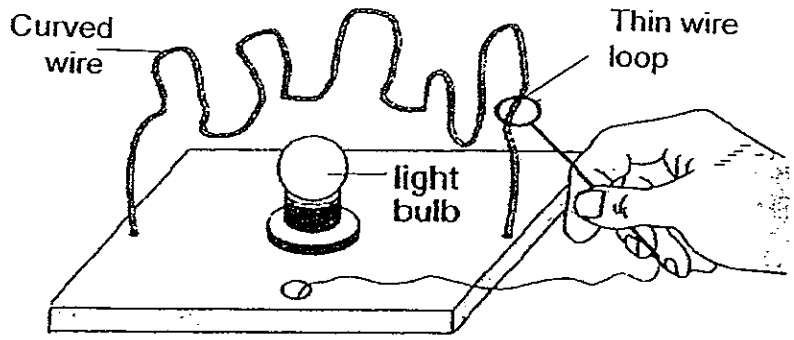
Wires with rubber tubing | liquid X in glass beaker | battery | lamp

(a) Draw a suitable set-up using an electric circuit for Aishah's experiment. [1]

(b) Aishah drew the conclusion that liquid X is a conductor of electricity. What were two observations she made that helped her draw the conclusion? [2]

(Go on to the next page)

41. The diagram below shows a game which requires one to move a metal loop through a length of curved wire. The game tests the steadiness of the player's hand. If the player's hand is not steady and the loop touches the curved wire, the bulb will light up.



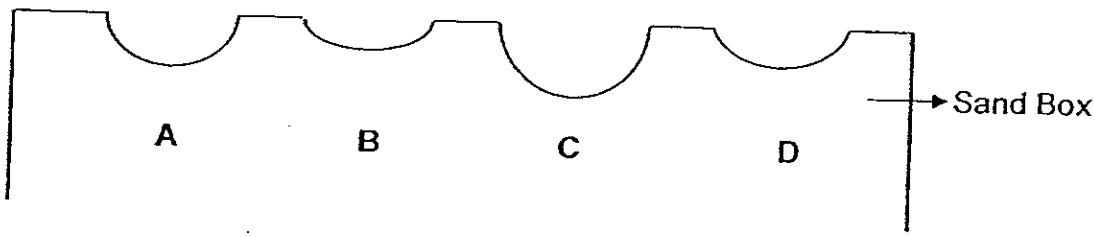
Why does the bulb light up when the loop touches the curved wire? [2]

_____

_____

_____

42. John wanted to find out the effect of gravitational force on different materials. Four identical balls of different materials were dropped onto a sand box. The impressions left by the balls are shown below.



(a) Name one variable that must be kept constant in this experiment. [1]

_____

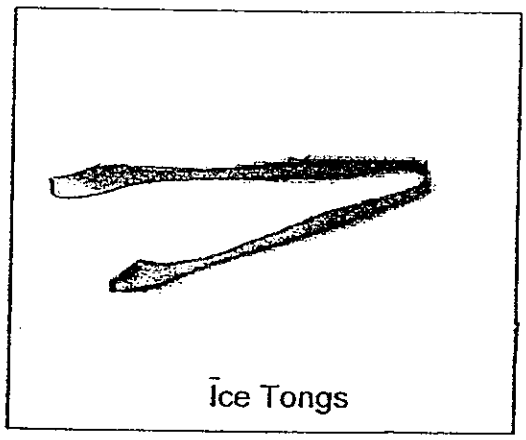
(b) Identify the balls with the greatest mass and with the smallest mass. [1]

(i) Greatest Mass: _____

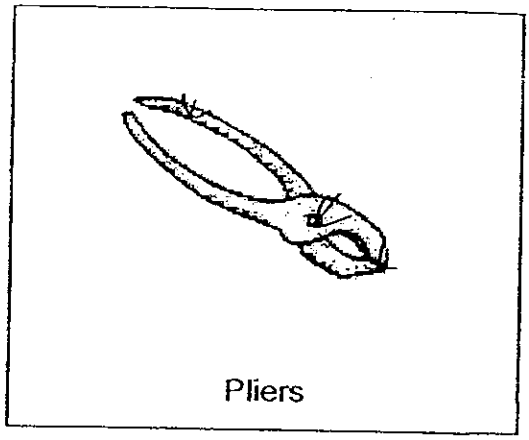
(ii) Smallest Mass: _____

(Go on to the next page)

43. The pictures below show an ice tongs and a pair of pliers.



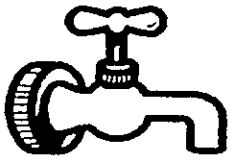
Ice Tongs



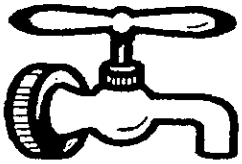
Pliers

Label the effort, load and fulcrum in the pictures of the ice tongs and pliers. [2]

44. Look at the 2 taps shown below



Tap X



Tap Y

(a) What is the simple machine used in the taps? [1]

_____

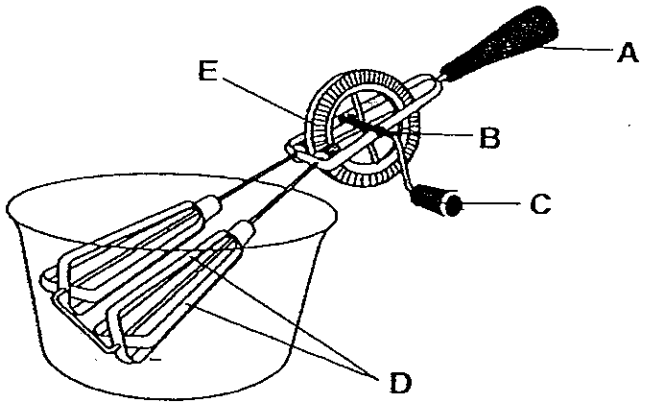
(b) Which tap, X or Y, would require less effort to turn on? Explain your answer. [1]

_____

_____

(Go on to the next page)

45. Gary used an egg beater as shown below. The egg-beater uses the principles of the wheel and axle and gears



(a) Write the correct letter that represents the following. [1]

i) Wheel: _____

ii) Axle : _____

(b) How do the gears make work easier for Gary when he is using the egg-beater? [1]

_____

_____

(Go on to the next page)

46. Raja used 2 different simple machines, Y and Z, to move different loads. He recorded the mass of the load, the amount of effort used and the distances moved by the effort and load each time.

Load (g)	Effort used in Y	Effort used in Z
100	180	50
200	270	100
300	390	?
400	480	200

Distance moved by load (m)	Distance moved by the effort (m)	
	Y	Z
1.0	0.5	2.0
1.5	0.8	3.0
2.0	1.0	4.0
2.5	1.3	5.0

(a) What is the effort used in Z when it is used to move a 300 g load? [1]

_____

(b) Based on the results above, individually compare the amount of effort used when machines, Y and Z, were used to move the different loads. [2]

_____

_____

_____

_____

(c) Raja wanted to mop his room quickly. Which one of the above simple machines would he choose? Explain your answer. [1]

_____

_____

End of Paper

ANSWER SHEET

EXAM PAPER 2008

SCHOOL : ROSYTH 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
1	3	2	2	2	4	4	2	4	4	1	2	2	3	2	3	3

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

31)a)Time taken to revolve around the sun once.
b)As the planet is the furthest from the sun, it will receive the least heat.

32)a,b

33)a)She trying to find out if the different coloured light bulb affect the number of bubbles produced.
b)The different coloured light bulb.
c)The air bubbles are oxygen.
d)X. It has the most number of bubbles produced.

34)A would not survive.
Grains→mealworms→Animal A

35)a)The plant is placed in a dark cupboard so it can photosynthesis but can only respire and when it respire, it taken in oxygen and gives out carbon dioxide and carbon dioxide limewater chalky.

b)It is to prove that carbon dioxide is given out during respiration by the plant.

c)Yes. The limewater may not turn chalky because the plant can photosynthesis and when it photosynthesis, it take in carbon dioxide and given out oxygen leaving it no carbon dioxide to make it chalky.

36)a)The higher the light intensity the faster the rate of photosynthesis.

b)Plants. Its rate of photosynthesis is higher at light intensities from 10 to 60 unit.

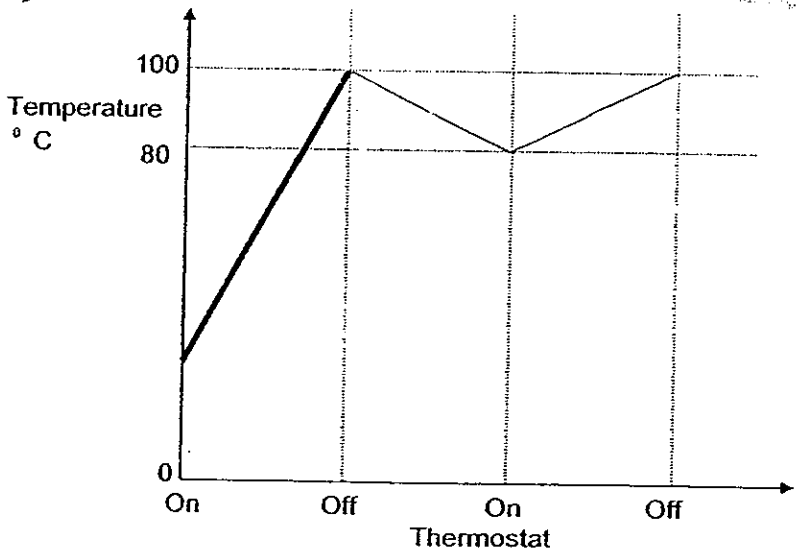
c)Amount of water.

37)a)battery.

b)A copper rod and a zinc rod put in a lemon makes a stronger battery more electricity than a potato.

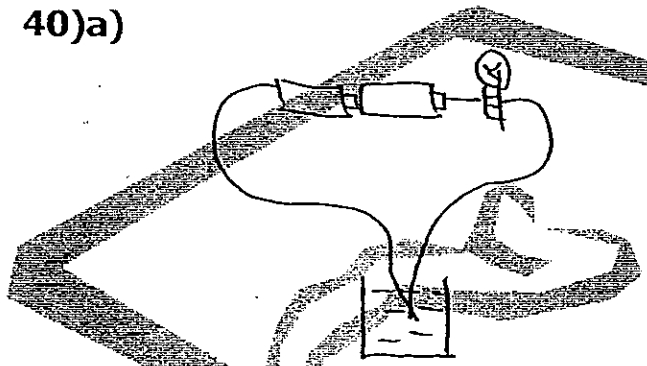
38)a)Not b)F c)F d)T

39)a)



39)b)To save electricity and help us to control its temperature the water will be kept hot all the time.

40)a)

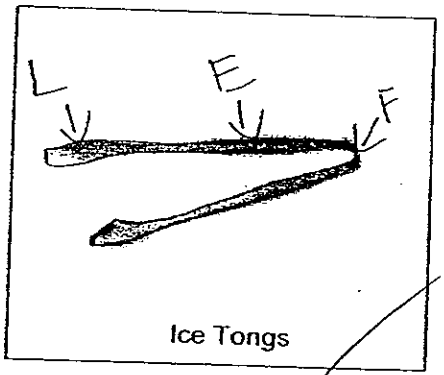


b)The bulb light up and the liquid X in glass beaker is warm.

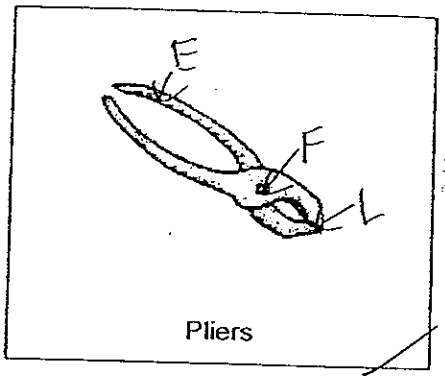
41)When the loop touches the wire, the circuit is complete and electricity flows through the circuit.

42)a)Height which the balls are dropped.
b)i)C ii)B

43)



Ice Tongs



Pliers

44)a)Wheel and axle.
b)Y. It has a bigger wheel and effort moves over a greater distance.

45)a)i)C ii)B

b)Changes the direction of the force.

46)a)150

b)Machine Y uses more effort than its load and machine Z uses less effort than its load.

c)Y. The distance moved by the effort is less than the distance moved by the load therefore it required lesser effort.