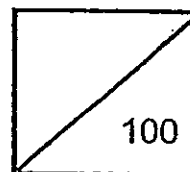




Rosyth School
Preliminary Examination for 2012
STANDARD SCIENCE
Primary 6

Total
Marks:



Name: _____

Class: Pr6 _____

Register No. _____

Duration: 1 h 45 min

Date: 27 August 2012

Parent's Signature: _____

BOOKLET A

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.

	Maximum	Marks Obtained
Part I	60 marks	
Part II	40 marks	
Total	100 marks	

* This booklet consists of 19 pages .

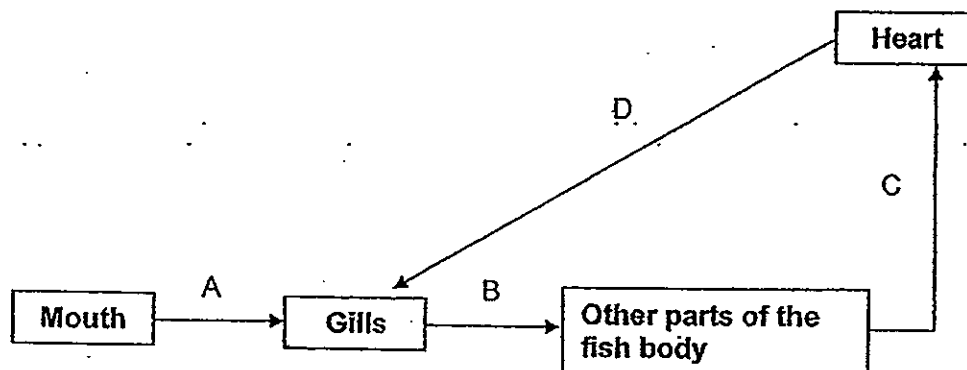
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PART I (60 marks)

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 What are the similarities between a spore and a pollen grain?
- (1) Both are dispersed by wind only
 - (2) Both are male sex cells of a plant.
 - (3) Both are required for reproduction.
 - (4) Both are produced by flowering plants.
- 2 Which of the following statement **correctly** describe the differences between the life cycle of a mosquito and cockroach?
- (1) The young of the cockroach does not looks like the adult whereas the young of a mosquito does.
 - (2) The mosquito has a 4-stage life cycle while the cockroach has a 3-stage life cycle.
 - (3) The life cycle of a cockroach has a pupa stage whereas the life cycle of a mosquito has no pupa stage.
 - (4) The cockroach spends part of its life cycle in the water while the mosquito does not.

The diagram below shows the path of which carbon dioxide travels in a fish.



At which two points, A, B, C or D, contain the highest amount of carbon dioxide?

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

- 4 The diagram below shows an unborn baby at different stages of growth in the mother's uterus.



The table below provides a more detailed information about the growth of the baby on inside the mother's uterus.

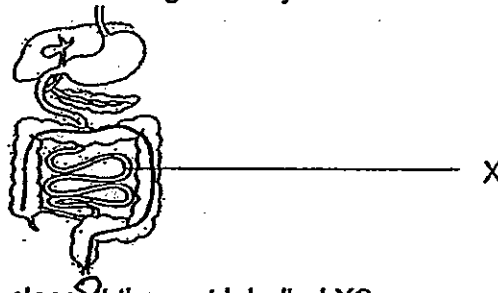
Weeks of growth inside the mother's uterus	Length of baby (cm)	Mass of the baby (g)	Growth of foetus
5	0.5	1	•Embryo stage begins
8	4	10	•Embryo starts to grow
14	19	116	•Foetus stage begins •Organs develops
26	38	908	•Might survive if born •Movement of foetus felt by mother
36	51	3060	•Ready for birth

Which one of the following is true about the foetus at 29 weeks?

- A: The foetus may survive if born.
 B: The foetus can move its body parts.
 C: The foetus has increased in length and body mass.

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

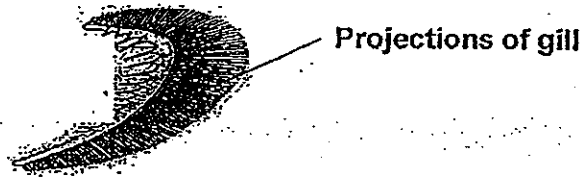
- 5 The diagram below shows the human digestive system.



What of the following takes place at the part labelled X?

- (1) Digestion of food has just started.
 (2) Food is completely digested and absorbed
 (3) Food is completely digested and water is absorbed
 (4) Water is absorbed and waste products are removed

6 Study the diagram of a fish gill below carefully.



How does the numerous projections of the gill help to increase the speed of gaseous exchange?

- (1) By absorbing more water
- (2) By trapping more dust particles in the water
- (3) By increasing the surface area in contact with the water
- (4) By increasing the rate of water flowing through the gills

7 Study the two classification table of some organisms carefully.

Classification table 1

Group W	Group X
Pear plant	Moss
Chilli plant	Mould
	Bracket fungus.

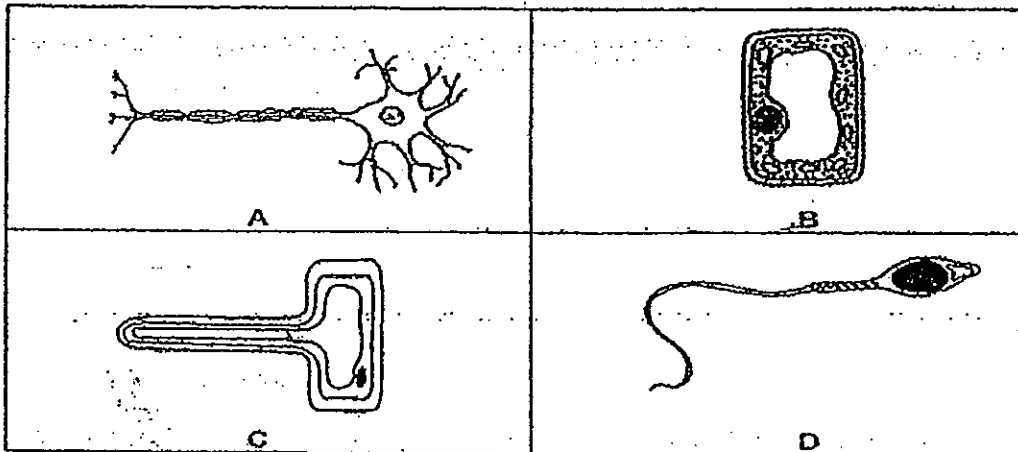
Classification table 2

Group Y	Group Z
Moss	Mould
Pear plant	Bracket fungus
Chilli plant	

How are the two tables being classified?

	Classification table 1	Classification table 2
(1)	Ability to make food	Methods of reproduction
(2)	Methods of reproduction	Ability to make food
(3)	Ways they obtain food	Ability to make food
(4)	Methods of reproduction	Ways they obtain food

- 8 Study the pictures of the four different types of cells that are shown below carefully.



Which one of the following is the correct classification of the cells shown above?

	Animal cells	Plant cell(s)
(1)	A and D	B and C
(2)	B and C	A and D
(3)	C and D	A and B
(4)	A, B and C	D

- 9 The picture below shows a species of fish that lives in the deep sea.

Light under the eye



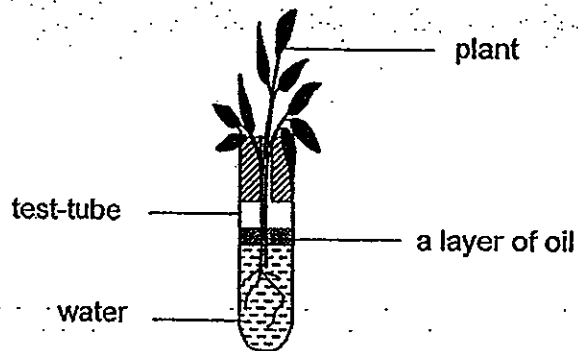
The fish has bacteria living under its skin, producing light under its eye. In return, the bacteria get a safe home and receive nutrients as well as oxygen from the fish's blood.

What benefits does the fish get from this relationship?

- A: Lure and attract the prey
- B: Obtain nutrients to survive
- C: Navigate in the dark waters

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

- 10 An experiment was conducted using 4 similar plants E, F G and H with the same number of leaves. Each of the plants was placed in a test-tube as shown in the diagram below.



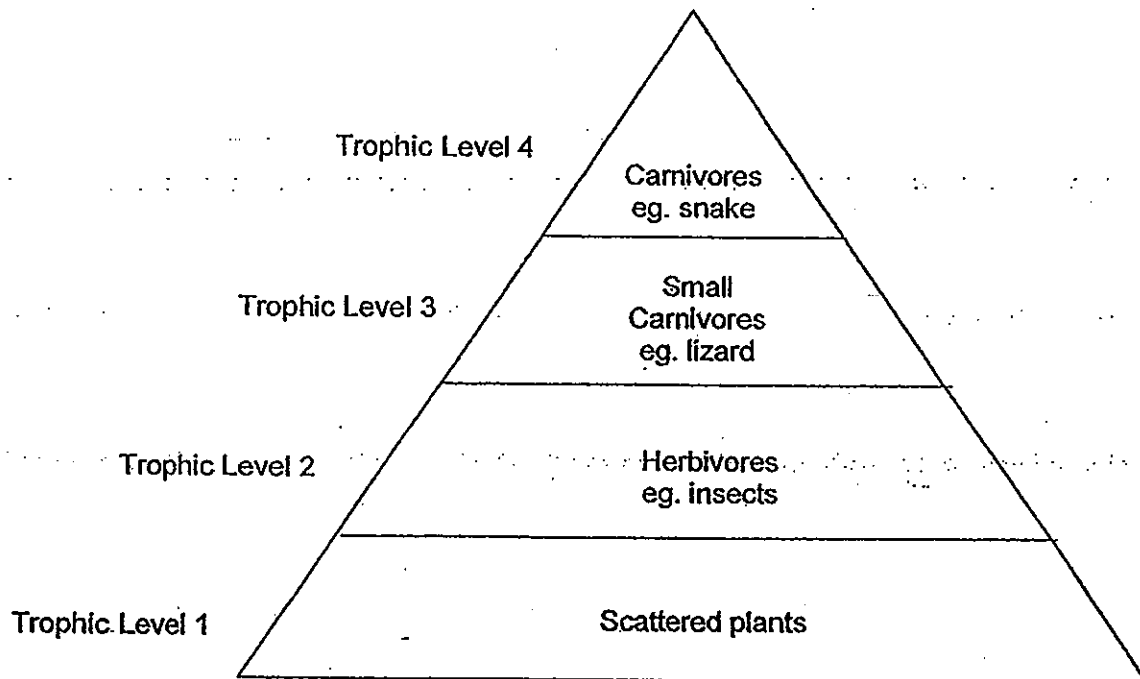
Some of the plants had their leaves coated with oil. At the start of the experiment, each plant was weighed with the test-tube. After 3 days, they were weighed again. The results of the experiment were then recorded in the table below.

Plant	Mass of plant with test-tube / g	
	At the start of experiment	After 3 days
E	123	98
F	117	116
G	98	96
H	120	100

Which of the plants had their leaves coated with oil?

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

- 11 The diagram below shows the ecological pyramid found in a hot desert in which the energy flow from one level to the next and the number of organisms in each trophic level are graphically represented.



In which trophic level will the organism be less likely to survive if the desert gets less rain and the conditions are harsher?

- | | |
|---------------------|---------------------|
| (1) Trophic level 1 | (2) Trophic level 2 |
| (3) Trophic level 3 | (4) Trophic level 4 |

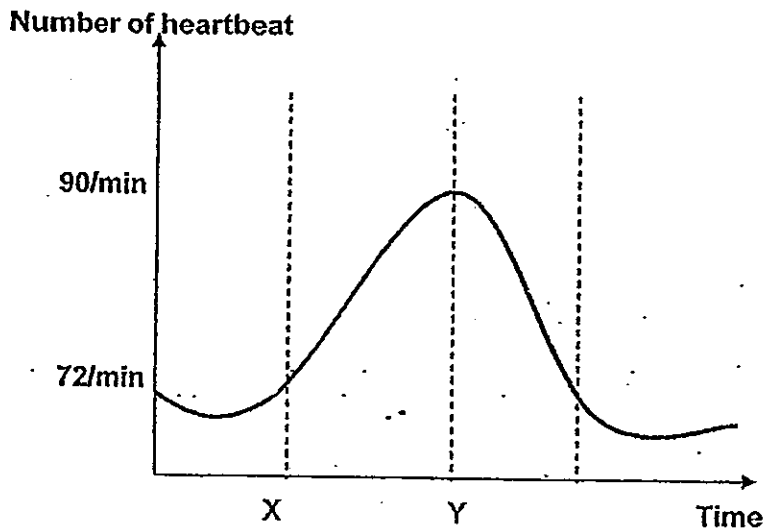
- 12 Alfred placed 20 guppies into a fish tank. The number of guppies was counted and recorded over a period of 9 weeks in the table below.

Week	Number of guppies
1	20
2	19
3	23
4	21
5	18
6	12
7	15
8	12
9	11

Using the data in the table, which one of the following characteristics of living things can you infer?

- (1) Living things can reproduce and die.
- (2) Living things can response to changes.
- (3) Living things can feed on other organisms.
- (4) Living things can move from one place to another.

- 13 The graph below shows the rate of heartbeat of an athlete against time.



Which of the following changes take place in the athlete during the time period X and Y?

- A: pulse rate decreases.
 - B: heart rate increases.
 - C: breathing rate increases
- (1) A only
 - (2) C only
 - (3) A and B only
 - (4) B and C only

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Questions 14 and 15 refer to the information about the Gypsy moth caterpillar. The Gypsy moth caterpillars are known to feed on vast amounts of tree leaves, weakening the trees and making them die over time. To the farmers, they are pests as they destroy their crops.

- 14 Farmers tried getting rid of them by spraying insecticides, destroying their eggs as well as cutting and burning down trees. However, some chemicals from the insecticides find their way into the nearby rivers and lakes.

Which of the following are possible explanations for the damage man has done to the environment?

- A: Cutting and burning of trees would destroy the habitats of other animals.
- B: Deforestation leads to global warming and the depletion of the ozone layer.
- C: Insecticides could harm and contaminate fish and other aquatic animals in the nearby rivers.

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

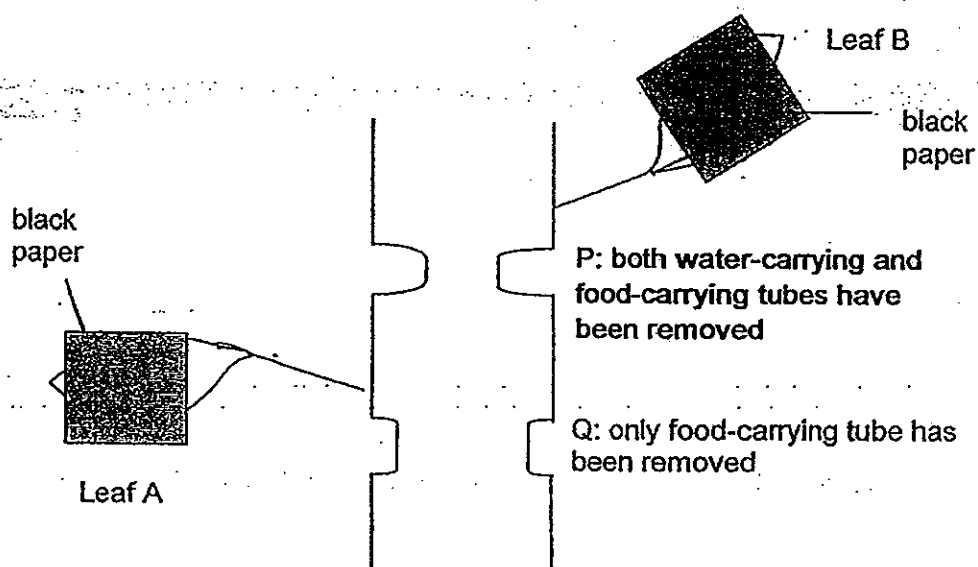
- (2) A and C only
- (4) A, B and C

- 15 It has been known that a naturally occurring fungus will kill the Gypsy moth caterpillars. During wet season the population of the Gypsy moth seems to be kept under control.

What is a possible reason for this to happen?

- (1) There are more predators during wet seasons.
- (2) The wet conditions promote the growth of the fungi.
- (3) The wet conditions slow down the growth of the fungi.
- (4) There is less food for the Gypsy moth during wet seasons.

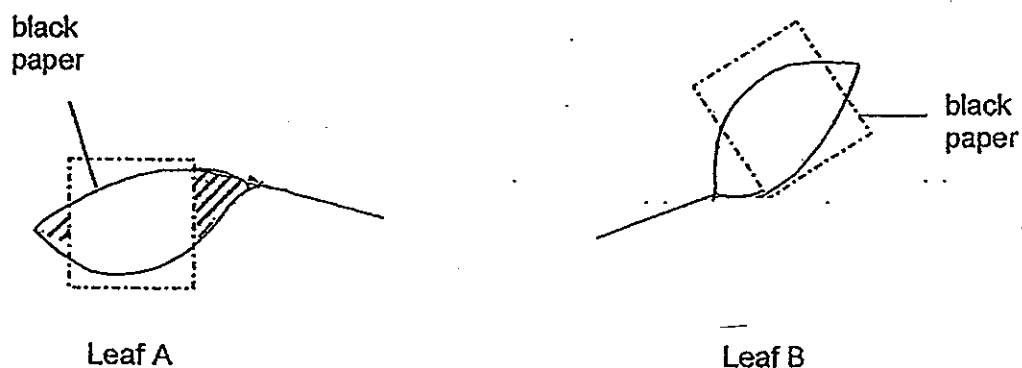
- 16 Some pupils carried out an experiment by cutting out and removing rings of different thickness of a stem from a plant at positions, P and Q, as shown below.



The plant was watered daily and kept in the dark for 96 hours before leaves A and B were partly covered with black paper on both sides of the leaf as shown above.

The plant was then placed under bright sunlight for 14 hours. After that, both leaves A and B were tested for starch using iodine solution.

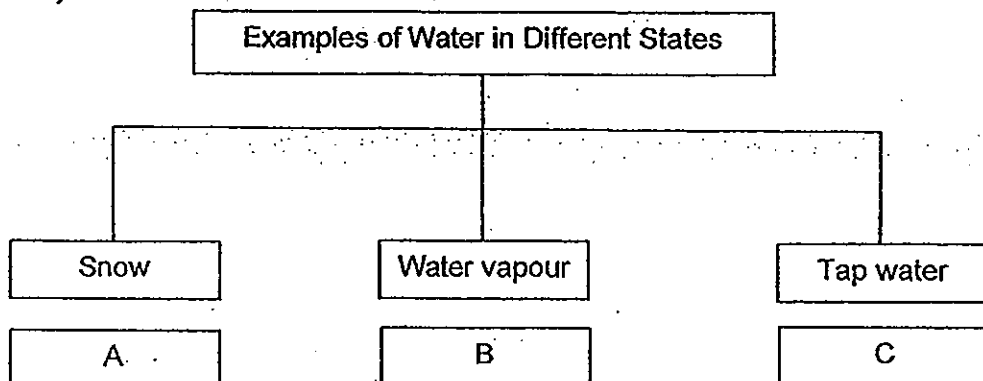
The parts that were shaded had turned the iodine solution dark blue as shown below.



What can be inferred from the above observations?

- (1) Water is needed for the plant to make food.
- (2) Sunlight and water are needed for the plant to make food.
- (3) Plants cannot make food when both the xylem and phloem are removed.
- (4) Only the parts of the leaf not covered by the black paper were able to make food.

- 17 Study the classification chart below.



Which of the following is correctly classified?

	A	B	C
(1)	Hailstones	Dew	Mist
(2)	Steam	Mist	Icebergs
(3)	Icebergs	Dew	Mist
(4)	Hailstones	Steam	Dew

- 18 Sam wanted to compare the time taken for different solutions to reach boiling point. He placed 4 beakers of different solutions over an electric stove and recorded the time taken for each of them to boil

Which of the following factors must he keep constant in order to carry out a fair test?

- A: size of the beaker
 B: amount of solution
 C: starting temperature of the solution
 D: final temperature of the solution

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

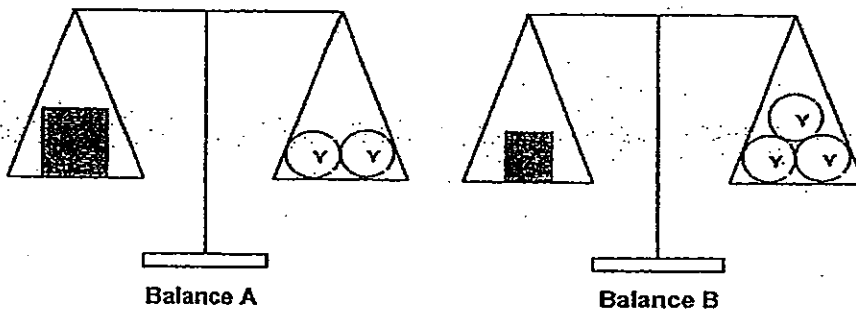
- 19 Kenny was in a very dimly-lit room with his cat. He could hardly see the body of his cat except its eyes.

What is/are the reason(s) for him to be able to see the eyes of his cat but not its body?

- A: The eyes of the cat gave off light.
 B: The light in the room was able to be reflected off the eyes of the cat into Kenny's eyes.
 C: The light in the room could not be reflected off the cat's body into Kenny's eyes.

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

20 Study the diagram below carefully.



Which of these statement(s) about the objects is/are incorrect?

A: Object X has twice the mass of Object Y.

B: Object Z has a smaller mass than Object X.

C: Object Y has a larger mass than Object Z.

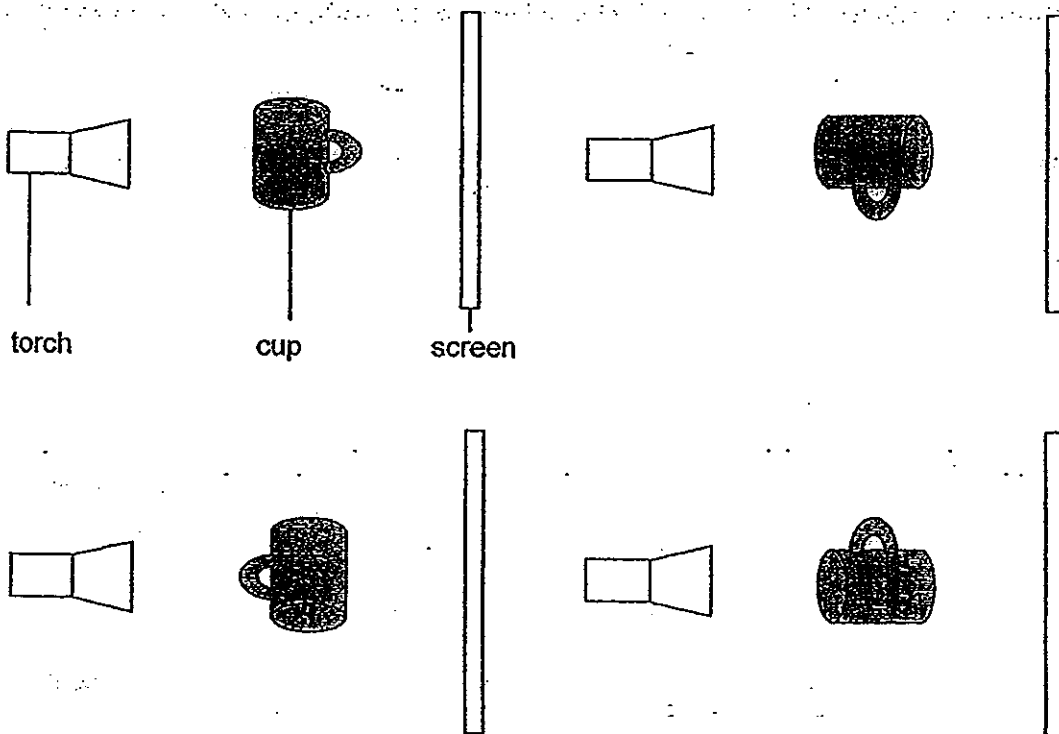
(1) A only

(2) B only

(3) A and B only

(4) B and C only

21 A torch was used to shine at an opaque cup from four different directions as shown below.



How many different types of shadows of the cup can be cast on the screen?

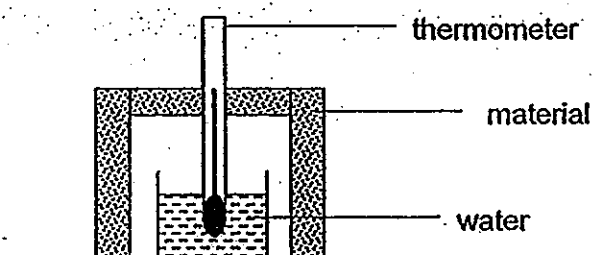
(1) 1

(2) 2

(3) 3

(4) 4

- 22 An experiment was carried out using different materials of equal thickness in 4 set-ups P, Q, R and S.



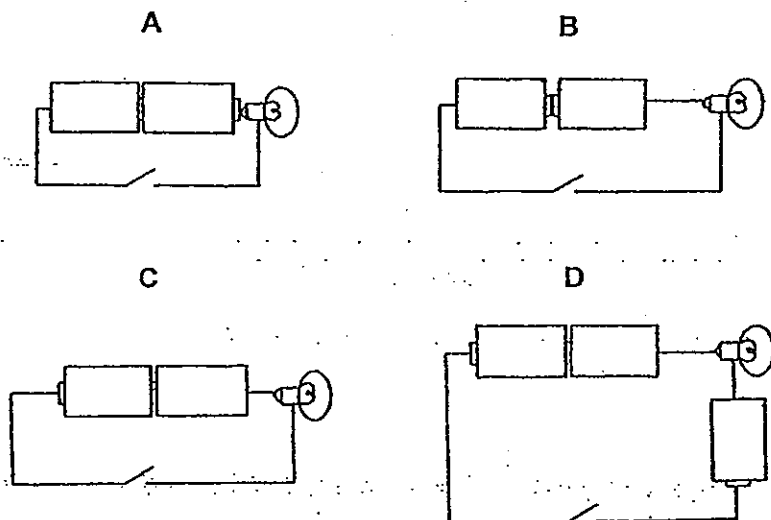
The temperature of water in each beaker was measured and recorded at regular intervals. The results of the experiment are shown below.

Time / min	Temperature of water / °C			
	Set-up P	Set-up Q	Set-up R	Set-up S
0	100	100	100	100
5	63	88	80	52
10	45	77	73	43
15	32	72	69	37
20	25	69	60	33

Which is the best material you would use to transport ice cubes from your home to a barbeque party?

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

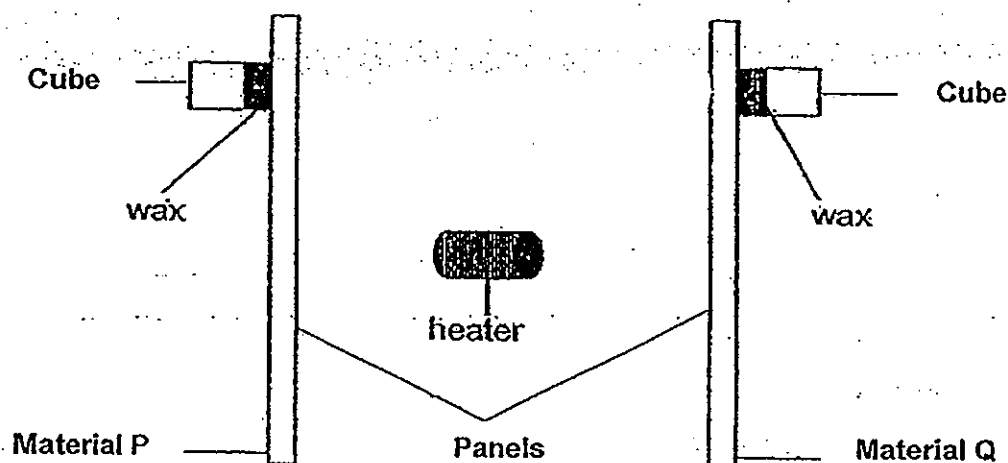
- 23 Study the four electric circuits, A, B, C and D carefully. The four different electric circuits were set up using 1.5V batteries and 3.8V bulbs.



Which of the above circuits will have bulbs lighting up with the same brightness when the switches are closed?

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

24 Study the diagram below carefully.



Esther stuck two cubes using wax onto two panels at the same height. The panels were made of different materials, P and Q. A heater is placed at an equal distance from the two panels.

She repeated the same experiment using another two panels made of different materials, R and S. She recorded the time taken for the cubes to fall off the panels.

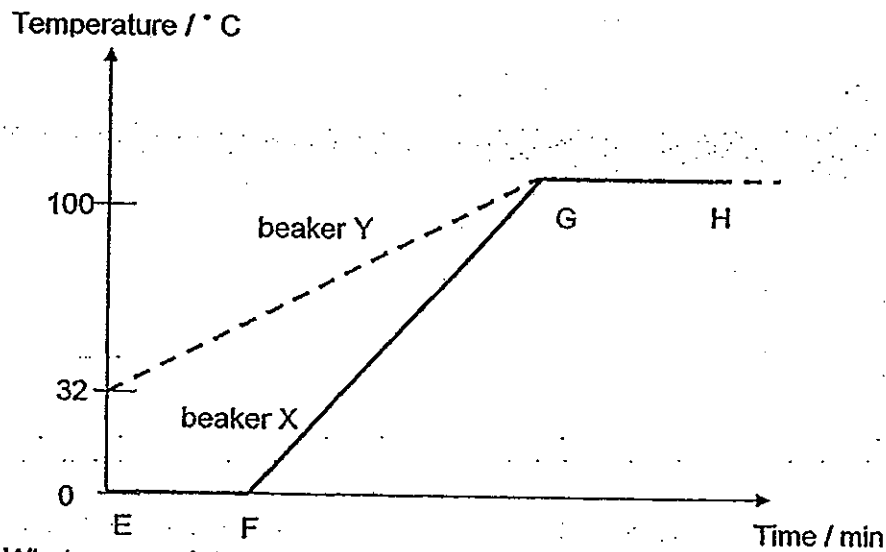
Materials	Time taken for cube to drop from the panel (sec)
P	55
Q	35
R	17
S	46

Based on the results, which of the following are true?

- A: Material P absorbs heat the slowest.
- B: Material R conducts heat the fastest.
- C: Material P is the best conductor of heat
- D: Material Q is a better conductor of heat than Material S

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

- 25 The graph below shows how the temperature of contents in two beakers, X and Y, changes over time.

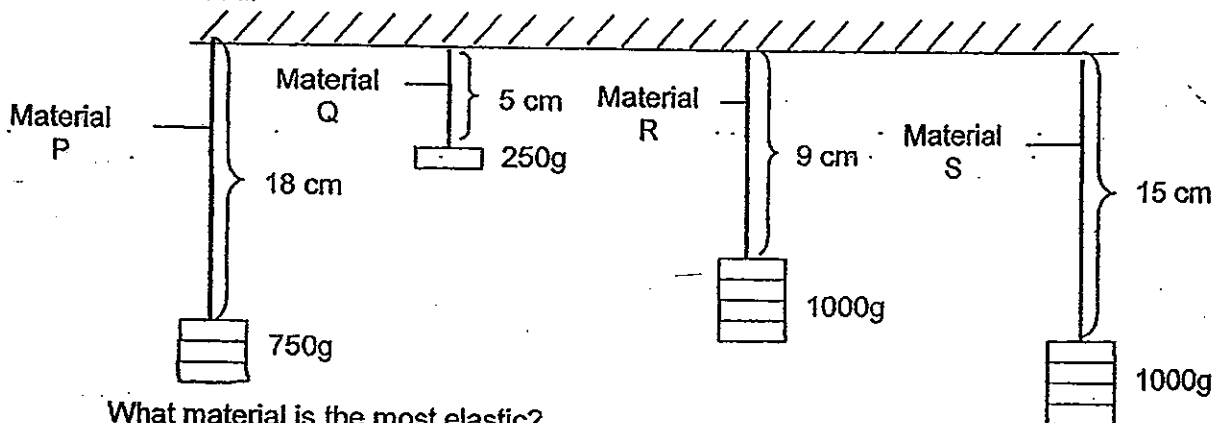


What can you interpret from the graph?

- A: The content in beaker X could be ice.
 B: The content in beaker X gained heat at only FG.
 C: The content in beaker Y was heated over a stronger flame.

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

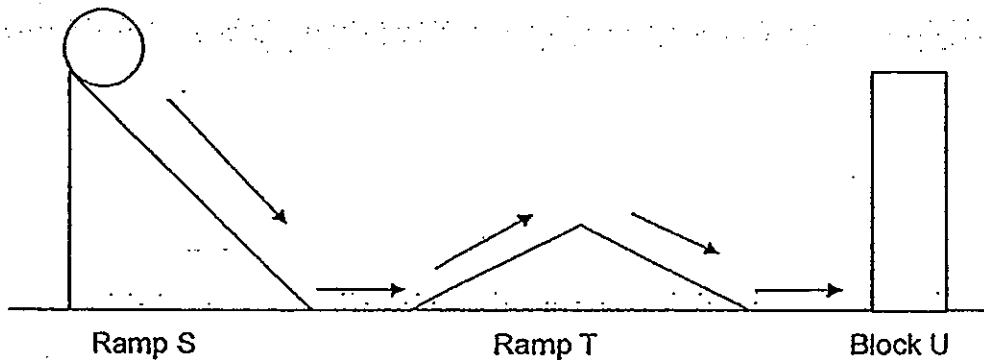
- 26 Kumar tested the elasticity of four different materials P, Q, R and S of the same length and thickness. He attached weights to each end of the material and observed that each was able to return to its original length when the weights were removed. The diagram below shows his observations after the weights were added.



What material is the most elastic?

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

- 27 A tennis ball is released from the top of a ramp S. It rolls down the ramp and along the floor. Then it travels up the ramp T and down before it is stopped by a wooden block U as shown in the diagram below.

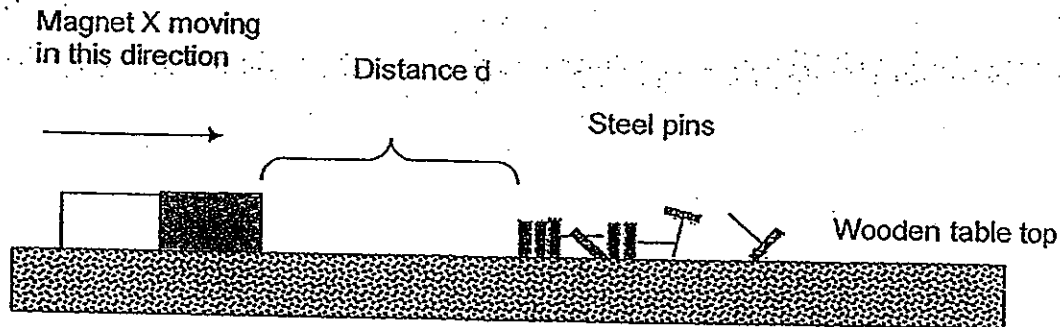


Which of the following statements are true?

- A: As the ball moves up the ramp T, its kinetic energy increases.
- B: The tennis ball possesses only potential energy at the point of release
- C: As the ball travels down the ramp S, some of the potential energy is converted to kinetic energy.
- D: The ball comes to a stop as its kinetic energy is converted to heat energy and sound energy when it hits block U.

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

- 28 Jamie carried out an investigation to find out the strength of three magnets X, Y and Z, given to her. She slowly moved Magnet X towards some steel pins placed on a wooden table until the magnet attracted the pins from a distance d , as shown in the diagram below.



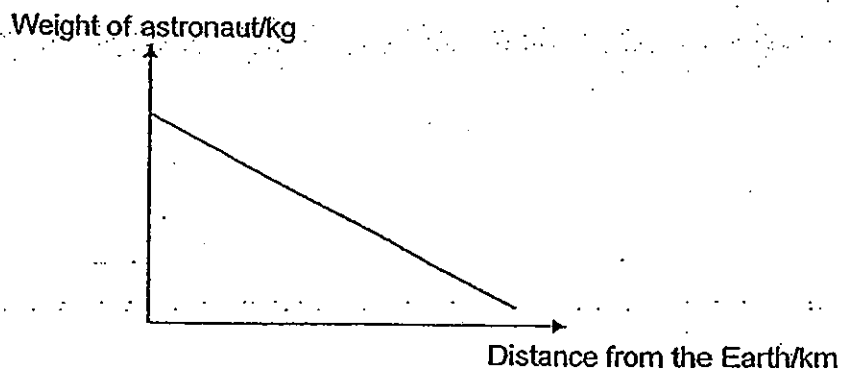
She then repeated the procedure two more times and calculated the average distance. The experiment was then repeated with the other two magnets, Y and Z. The results were tabulated as shown below.

	Distance d / cm			
	First Try	Second Try	Third Try	Average
Magnet X	2.4	2.3 2.6	2.8	2.5
Magnet Y	3.0	2.5 3.0	2.7	2.9
Magnet Z	1.5	1.9	1.8	1.7

Which one of the following shows the correct ranking of the strength of the magnets from the strongest to the weakest?

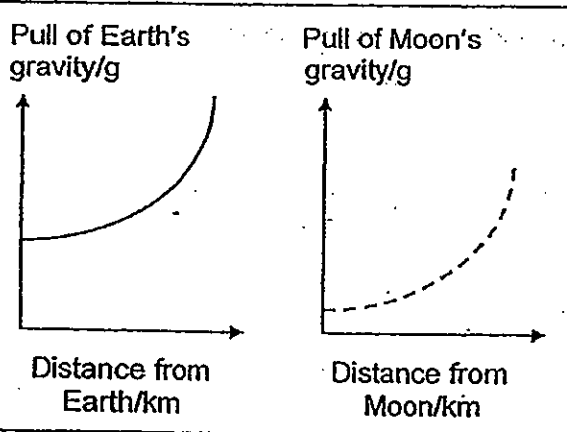
- (1) X, Y and Z
 (2) X, Z and Y
 (3) Y, X and Z
 (4) Z, Y and X

- 29 An astronaut in a spaceship was travelling from the Earth to the Moon. The graph below shows the change in his weight as he travelled from the Earth to the Moon.

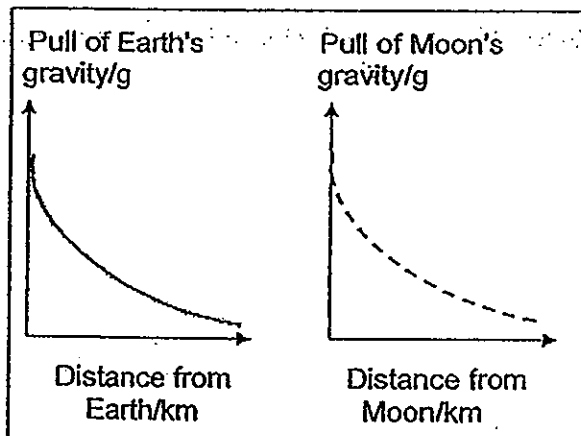


Which one of the following sets of graphs correctly shows the force of the Earth's gravity and that of the Moon on the spaceship?

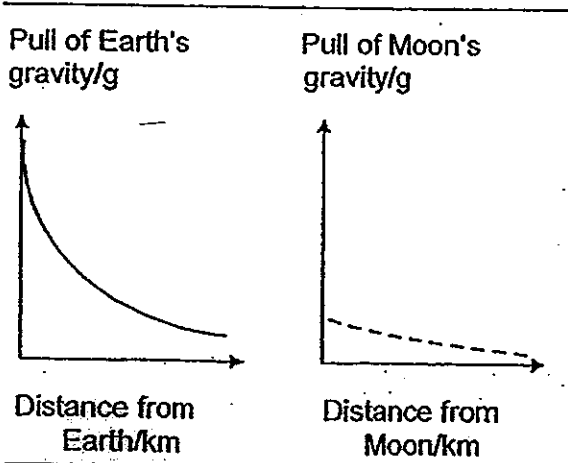
(1)



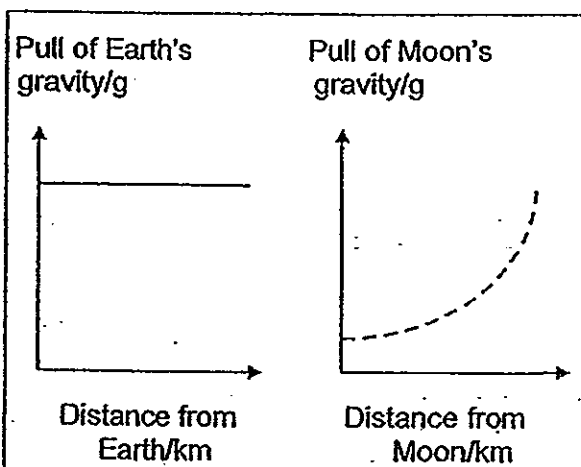
(2)



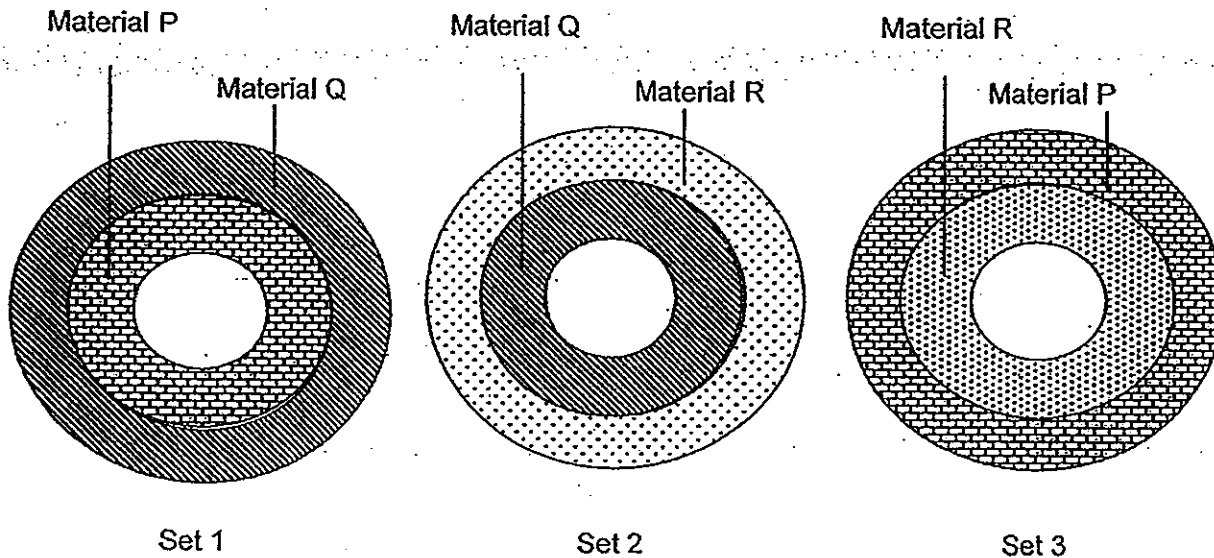
(3)



(4)



- 30 David made 3 sets of rings using three different materials as shown below. All the 3 sets of rings are similar except for the material used.



At room temperature, all the inner rings of each set could fit into the outer rings and still be pulled out with some effort. David then heated the sets of rings evenly to 45°C .

He then obtained the following observations for each set:

- Set 1: the inner ring made of material P fell out of the outer ring easily.
- Set 2: the inner ring made of material Q could not be pulled out at all.
- Set 3: the inner ring could fit into the outer ring and be pulled out with some effort.

Based on the above observations, what could David conclude from his experiment?

- A: Different materials expanded at different rates when heated.
B: Material Q expanded the most when heated.
C: Material P expanded the least when heated.

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

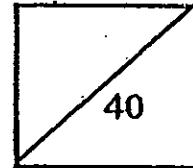
End of Booklet A



Rosyth School
Preliminary Examination for 2012
STANDARD SCIENCE
Primary 6

Name: _____

Total
Marks:



Class: Pr 6 _____ Register No. _____ Duration: 1 h 45 min

Date: 27th August 2012 Parent's Signature: _____

Booklet B

Instructions to Pupils:

1. For questions 31 to 44, give your answers in the spaces given in this Booklet B.

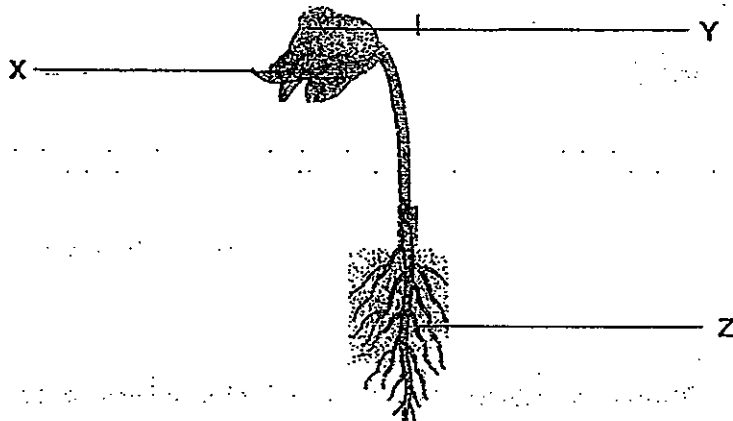
* This booklet consists of 15 pages .

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PART II (40 MARKS)

For questions 31 to 44, write your answers in this booklet.

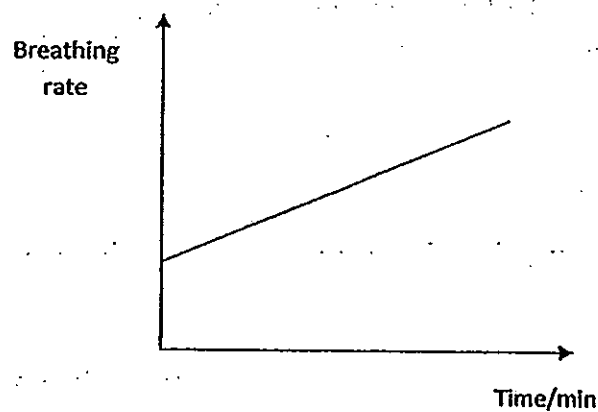
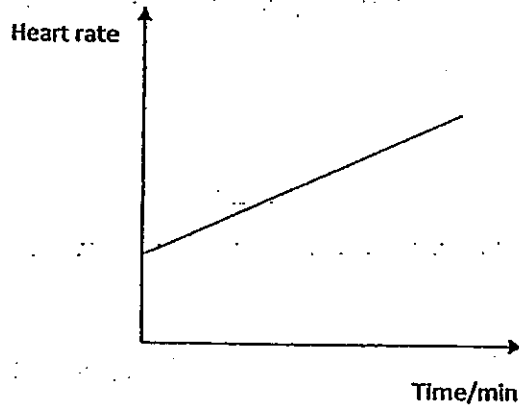
31 The picture below shows a seedling at a specific stage of growth.



(a) In what way is part Y useful to the seedling at this stage of growth? [1]

(b) Which part of the plant would have appeared first? Why? [2]

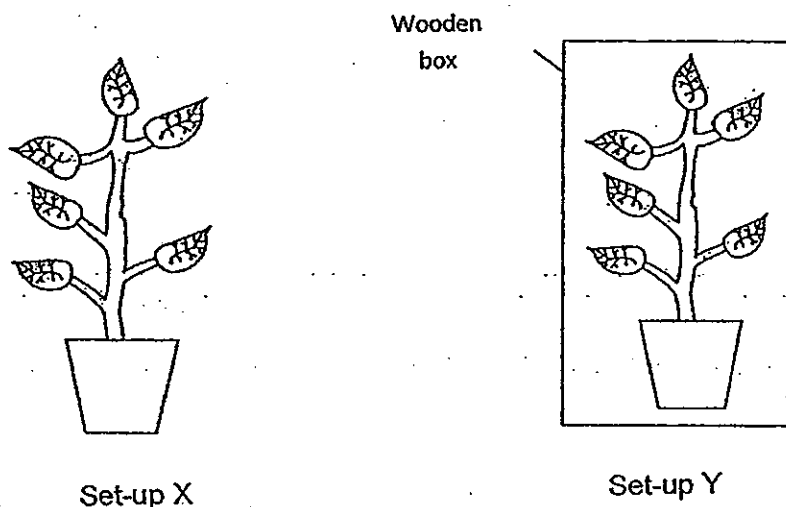
- 32 Sally ran round the field for 30 minutes. Her heart rate and breathing rate during the run were then measured and plotted in the graphs as shown below.



- (a) Based on the graphs shown above, what is the relationship between the heart rate and breathing rate? [1]

- (b) Explain the relationship in (a). [2]

- 33 Peter wanted to find out the effect of light on the growth of plants. He used the following set-ups, X and Y, for his experiment and left them in the open for 6 days. He gave them equal amounts of water every day.

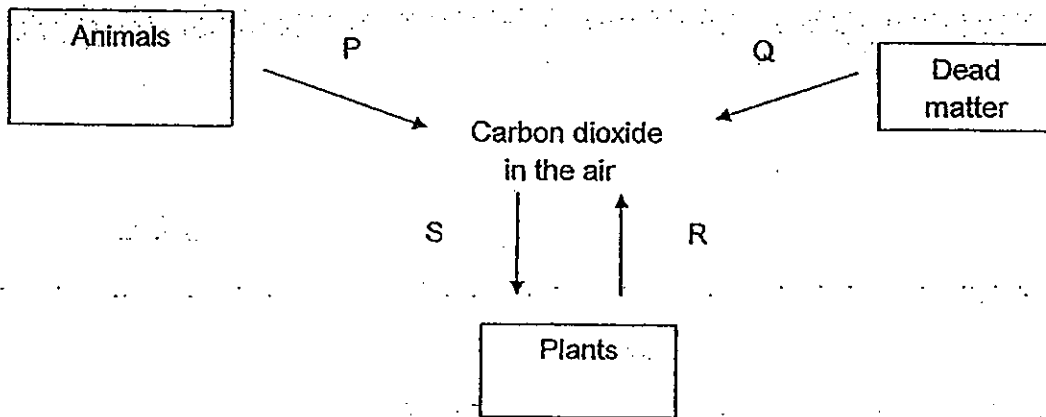


He then observed that the plant in set-up Y withered while the plant in set-up X remained healthy.

- (a) Explain his observations. [2]

- (b) Give another variable in the experiment that must be kept constant. [1]

- 34 The diagram below shows how carbon dioxide is removed from or released to the surrounding air during the processes P, Q, R and S.



- (a) Identify the processes Q and S.

[1]

Q: _____

S: _____

- (b) Give 2 reasons why process Q is important to plants?

[2]

Reason 1: _____

Reason 2: _____

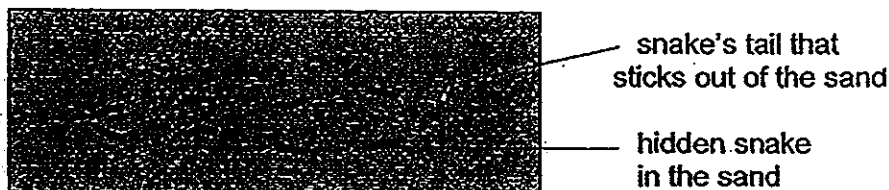
- 35 The diagram below shows a food chain in a desert.

grass → ant → lizard → snake

- (a) Which organism obtains its energy directly from the Sun?

[1]

The snake catches the lizard by burying itself in the sand until it is quite invisible with its tail sticking out that looks like a blade of grass.

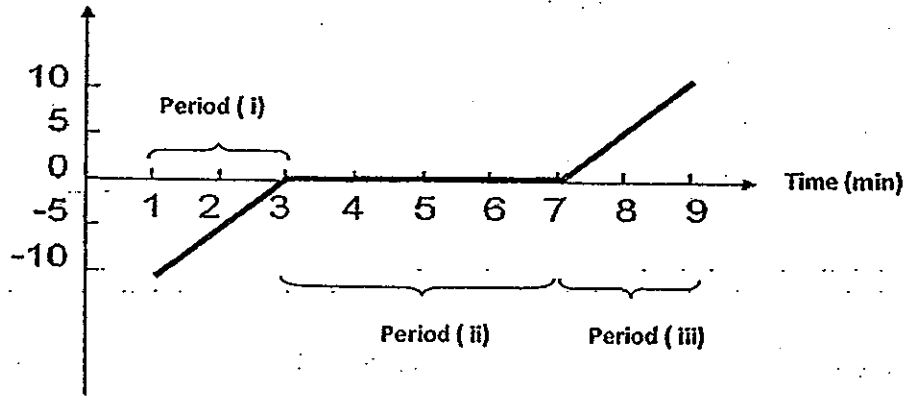


- (b) Explain how this behaviour of the snake can help it eat the lizard.

[1]

- 36 John took a beaker of ice out from the freezer and observed for a period of time. He then plotted the changes in temperature in the graph and recorded the information in a table below respectively.

Temperature ($^{\circ}\text{C}$)



Time (min)	1	2	3	4	5	6	7	8	9
Temperature ($^{\circ}\text{C}$)	-10	-5	0	0	0	0	0	5	10

- (a) Write down the states of matter at the different periods that John would observe over time. [3]

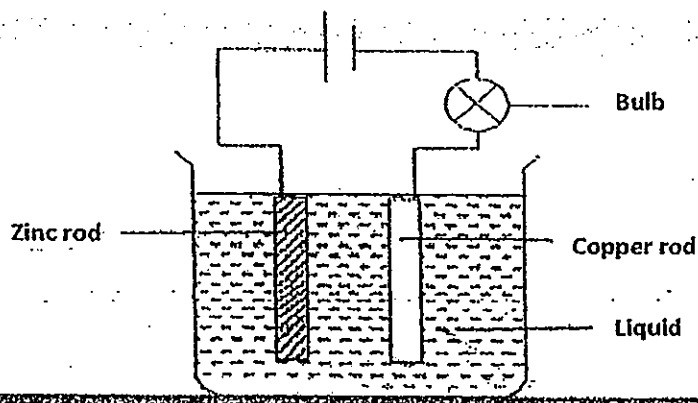
Period (i) _____

Period (ii) _____

Period (iii) _____

- (b) There was a decrease in the mass of the matter at period (iii). Explain why. [1]

- 37 Jeremy wanted to investigate the electrical conductivity of different types of liquids. He prepared 5 beakers containing different liquids and used a new set of copper and zinc rods for each liquid tested.



He then recorded his findings in the table below.

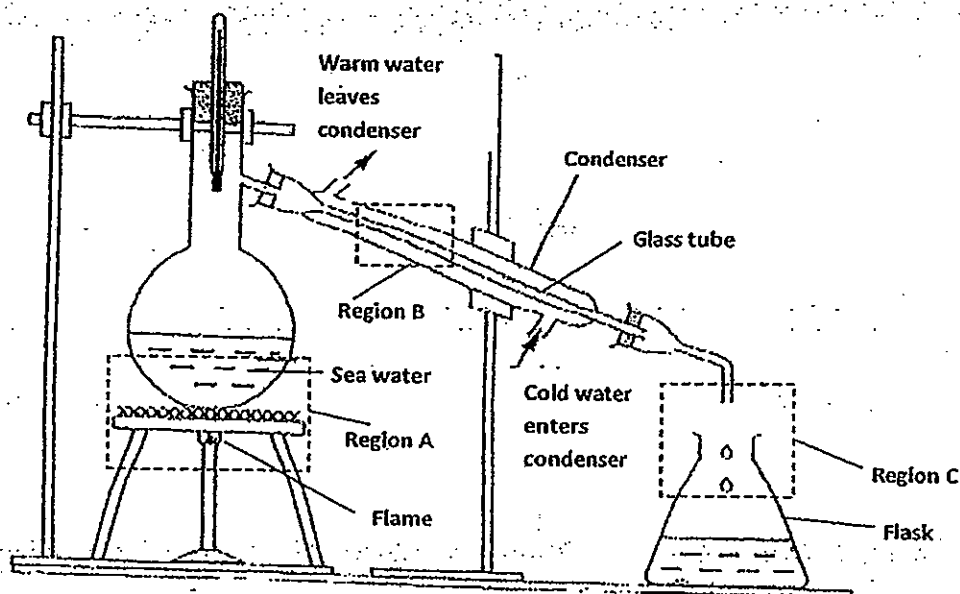
Liquids	Did the light bulb light up?
Detergent	No
Copper sulphate solution	Yes
Salt solution	Yes
Limewater	Yes
Milk	No

- (a) What 2 variables must Jeremy keep the same for this experiment to be fair? [2]

- (b) In this experiment, what observation did Jeremy make to deduce that copper sulphate solution is a better conductor of electricity than limewater? [1]

- (c) What conclusion can Jeremy make about the five liquids? [1]

- 38 The setup below shows the method which can be used to collect pure water from sea water.



- (a) From the setup, state the heat transfer at region A.

[1]

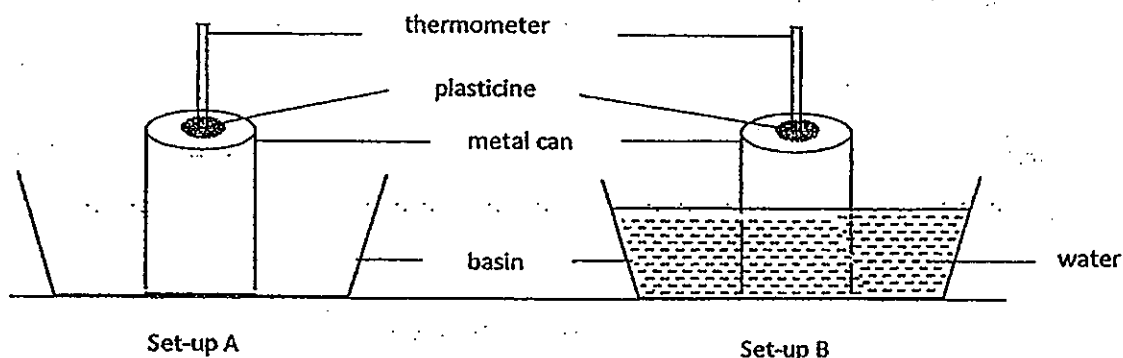
- (b) Explain why the cold water entering the condenser becomes warm water when leaving it.

[1]

- (c) Suggest one way to increase the amount of water collected in the flask within the same duration of time?

[1]

- 39 Ming Han carried out an experiment using the set-ups as shown below. A thermometer was used in each set-up to measure the temperature of air in each of the cans. He then added 400ml of water into the basin in set-up B and left both set-ups in the sun.



He recorded the temperature of air in the 2 cans at equal intervals as shown in the table below.

Time/ min	Temperature of air in cans / °C	
	A	B
0	33	33
5	33	30
10	36	29
15	37	28
20	38	27

- (a) What was the aim of his experiment? [1]

- (b) Explain why the temperature of air in the 2 cans are different after 20 minutes. [1]

- 40 Jasmine made a temporary magnet in the laboratory by stroking an iron nail using a magnet 30 times in one direction. Diagram 1 below shows how she magnetized the nail.

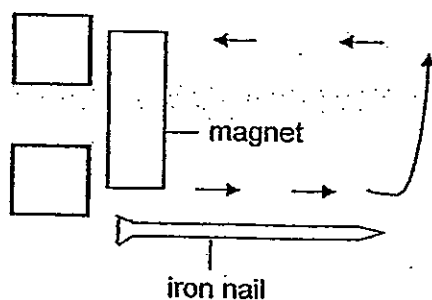


Diagram 1

She placed a compass next to the magnetized nail and observed the position of the compass needle in Diagram 2.

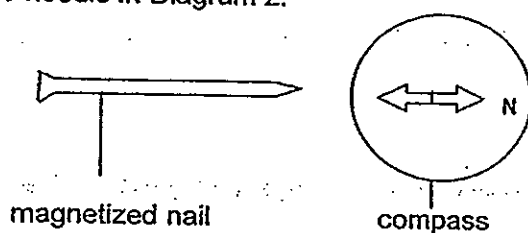


Diagram 2

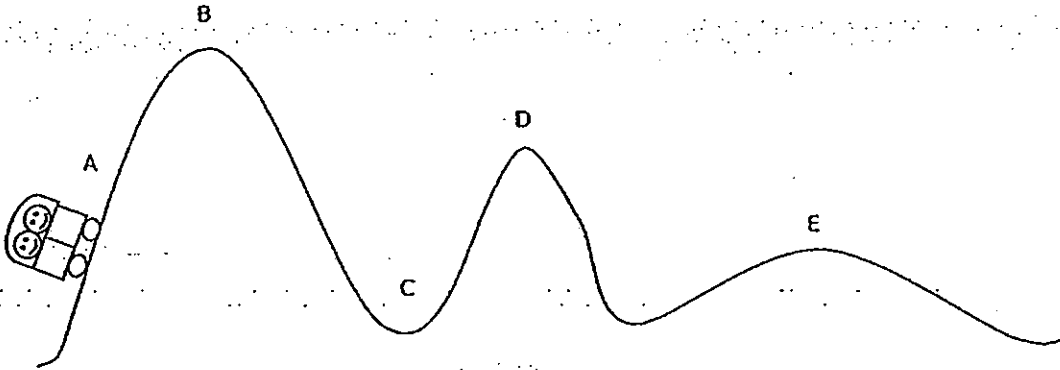
- (a) Label the poles of the magnet by writing 'N' for the north pole and 'S' for south pole in each box provided in Diagram 1 above. [1]

Next, Jasmine magnetized 2 more identical nails using the same stroking method described above but increasing the number of strokes by 30 each time. She then used the temporary magnet to pick up paper clips. She counted the number of paper clips picked up by each temporary magnet and recorded the results in the table as shown below.

Iron Nail	Number of strokes given	Number of paper clips picked up
1	30	4
2	60	7
3	90	11

- (b) What could Jasmine conclude about the strength of the temporary magnet from her investigation? [1]

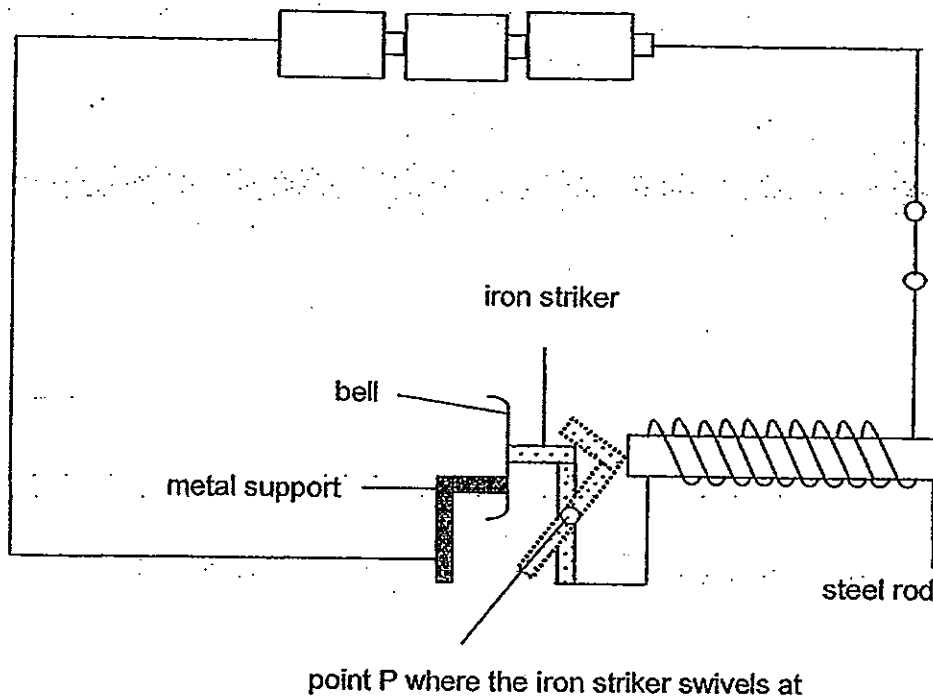
- 41 The diagram below shows two boys riding on a roller coaster.



- (a) It has been observed that the first peak B is the highest compared to the other peaks on the roller coaster. Explain why this is so [2]

- (b) The boys then went on a hiking trip at Bukit Timah Hill. They found that it was more difficult to climb up a hill than to go down from it. Suggest a reason for this. [1]

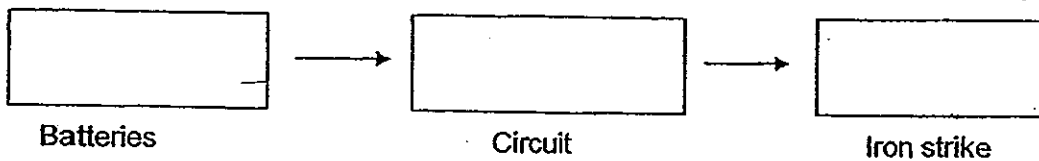
- 42 The diagram below shows a set-up that enables a bell to sound.



When the switch is closed, it forms a closed circuit, allowing electricity to flow through and the steel rod to be magnetized. The iron striker then gets attracted to the magnetized steel rod, causing the circuit to be open.

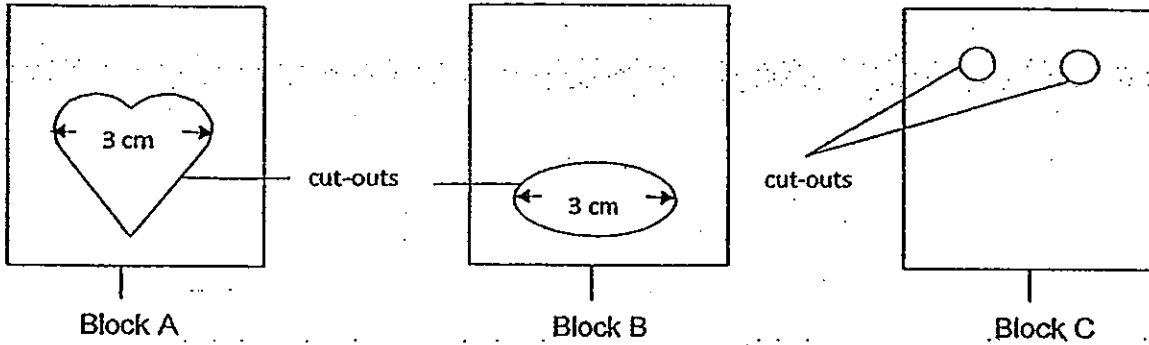
- (a) What will then happen in the set-up subsequently that leads to the sounding of the bell? [2]

- (b) State the energy conversion that takes place when the circuit is closed. [1]

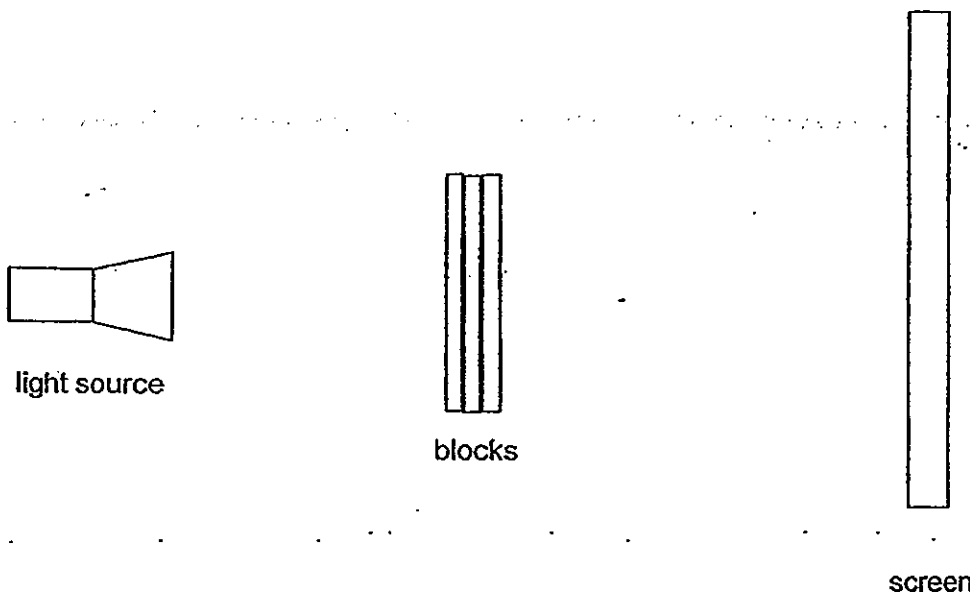


- (c) What would happen if the iron striker was made of copper? [1]

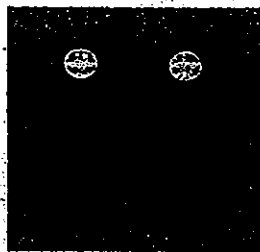
- 43 The diagrams below show three blocks made of different materials but of identical size and thickness. Each block has shape(s) cut out from it.



The three blocks are then placed in line with one another and glued together. A light source is then brought near the aligned blocks as shown below.



The shadow casts on the screen is as shown below.



Question 43 is continued
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Rosyth School/ Preliminary Examination/ Standard Science/P6/2012

- (a) Given that the materials used to make the blocks are wood, clear glass and clear plastic. State the material that each block is made of. [1]

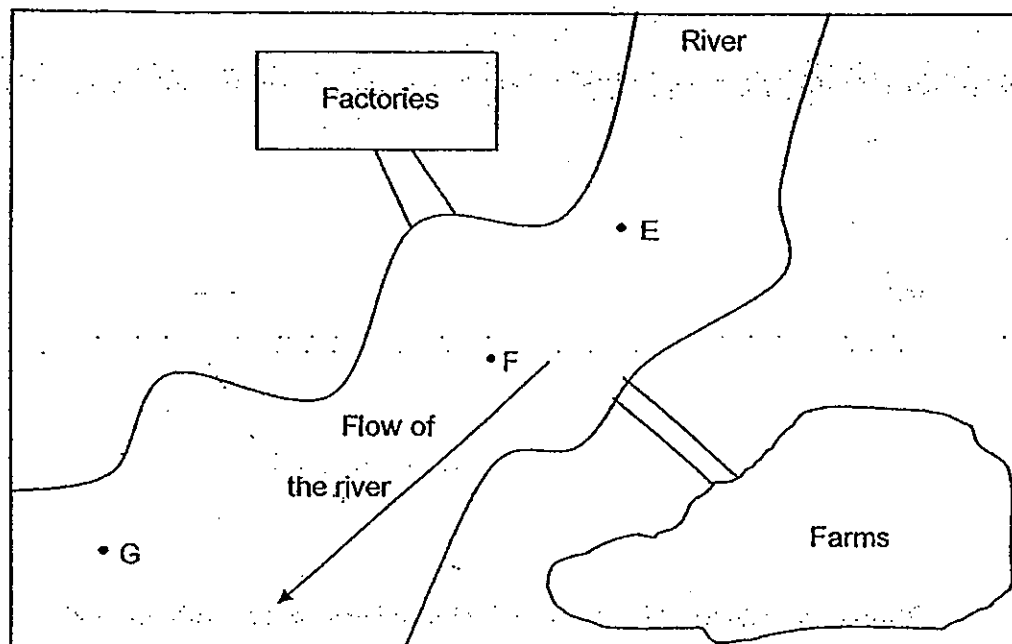
Block A: _____

Block B: _____

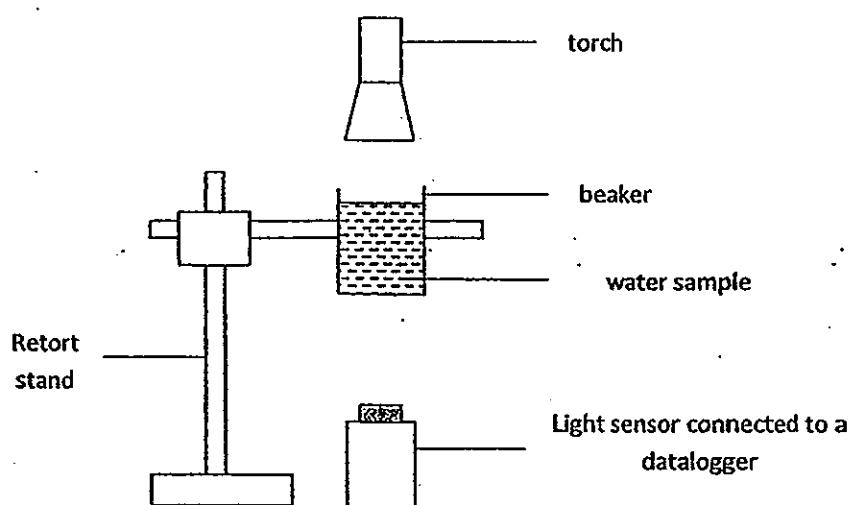
Block C: _____

- (b) What is the property of light that allows the shadow to be cast as shown above? [1]
- _____

The diagram below shows a river with farms and factories nearby that discharge waste materials into it.



In an experiment, 3 water samples from 3 different points E, F and G of the river were collected. The set-up of the experiment is shown below.



A torch light was shone at each of the water samples from E, F and G and a datalogger was used to measure the amount of light that passed through each water sample.

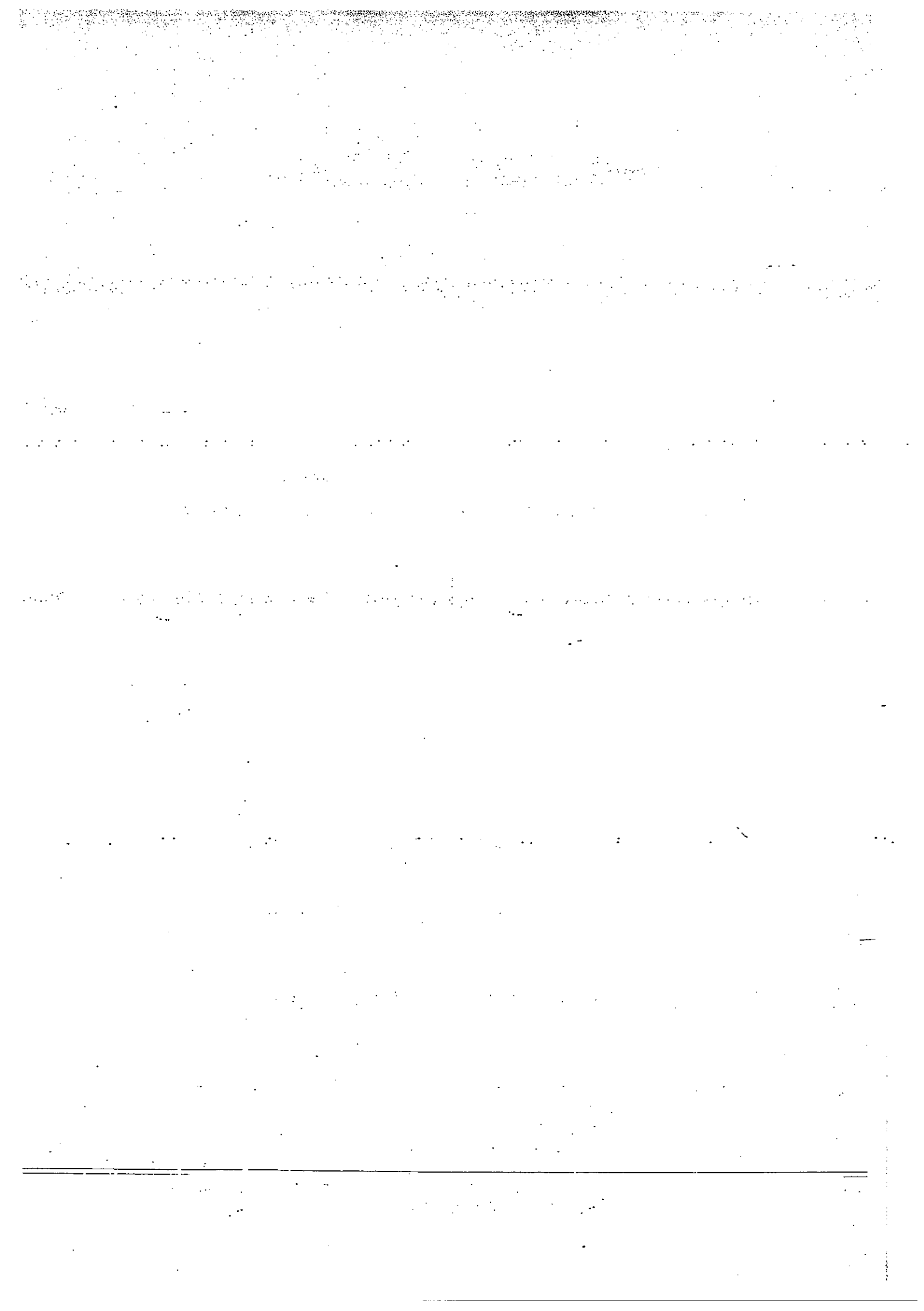
Question 44 is continued
on page 15

The experiment was then repeated two more times to obtain three sets of readings for each of the water samples. A table of results was used to record the readings but with some missing headings as shown below.

Number of readings	Reading on the light sensor for each water sample/Lux		
	(i) _____	(ii) _____	(iii) _____
1st	500	80	950
2nd	510	86	935
3rd	525	77	910

- (a) Label the missing headings (i), (ii) and (iii) with the correct water samples from the 3 points E, F and G in the table above. [1]
- (b) At which point of the river E, F or G would you find the least number of organisms? Explain your choice. [1]

End of Paper



Answer Ke

EXAM PAPER 2012

SCHOOL : ROSYTH
SUBJECT : PRIMARY 6 SCIENCE

TERM : SA2

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

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

31)a)Part Y supplies food for the plant.

b)The roots would have appeared. It needs to get water and minerals as well as to hold the plant firmly to the ground.

32)a)When the heart rate increase, the breathing rate also increase.

b)When Sally runs she need more energy, so when she take in more oxygen, it will be absorbed into the bloodstream and transferred to all her cells, causing it to have more energy supplied for her. Thus, breathing faster, the heart has to allow more oxygen being absorbed into the bloodstream.

The heart will pump faster.

33)a)Without the presence of sunlight, the plant in Set-up Y will not be able to photosynthesise, while the plant in Set-up X has sunlight, allowing it to photosynthesise.

b)The type of plant.

34)a)Q: Decomposition. S: Photosynthesis.

b)1)During Decomposition, carbon dioxide is given off to the surrounding air for plants to photosynthesis.

2)Process Q gives out carbon dioxide, which needed for plants in photosynthesis.

5)a)The grass obtains energy directly from the sun.

b)The ant eats grass, so it goes to the snake's tail, and since the lizard feeds on ants, it will go near the ant, and the snake would quickly pounce on the lizard eating it.

5)a)i)Solid. ii)Solid and liquid. iii)Liquid.

b)Some of the water in period (iii) evaporates.

7)a)The amount of liquid and the same type of battery.

b)The bulb will glow brighter when tested with copper sulphate solution than when it is tested with limewater.

c)While copper sulphate, salt solution and limewater are.

3)a)The heat from the flame is transferred to the sea water.

b)The cold water gained heat from the glass tube which gained heat from the hot vapour traveling along it.

c)Increase temperature of the flame.

9)a)Ming Han, wanted to find out if adding water into the basin with metal in would affect the temperature of air in the can.

b)The temperature of air in the can in set-up A increases over 20min, as the air in the can gains heat from the surrounding air while the temperature of air in the can in Set-up B decreases over 20min because the air in the can cools due to the water in the basin.

1)a)N, S

b)The more the number of strokes given to the nail, the stronger the temporary magnet.

1)a)The gravitational potential energy is most at peak B, which would be converted to the greatest maximum kinetic energy in the form of greatest speed to overcome the height in the next peak.

b)Gravity is acting on them, pulling them down.

2)a)The switch must be open, thus the electro-magnet will be demagnetized, releasing the iron striker to strike the bell.

b)Chemical Potential energy → Electrical energy → Kinetic energy

c)If the iron striker was made of copper, it will not be attracted by the magnetised steel rod.

3)a)A: Clear plastic.

B: Clear glass.

C: Wood.

b)Light travels in a straight line.

4)a)i)G ii)F iii)E

b)It contains the most amount of pollutants which are harmful to the organism as the amount of light can be captured by the light sensor.