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CHIJ ST. NICHOLAS GIRLS' SCHOOL



PRELIMINARY EXAMINATION

2013

P6 SCIENCE

(BOOKLET A)

22 August 2013

NAME : _____ ()

CLASS : Primary 6 _____

Total time for Booklets A & B: 1 hour 45 minutes

30 questions
60 marks

INSTRUCTIONS TO CANDIDATES

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

This booklet consists of 21 printed pages.

Section A (30 x 2 = 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. Figure 1 below shows the water-carrying tube (xylem) and food-carrying tube (phloem) of a plant.

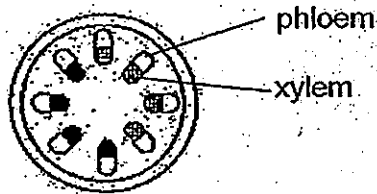


Figure 1

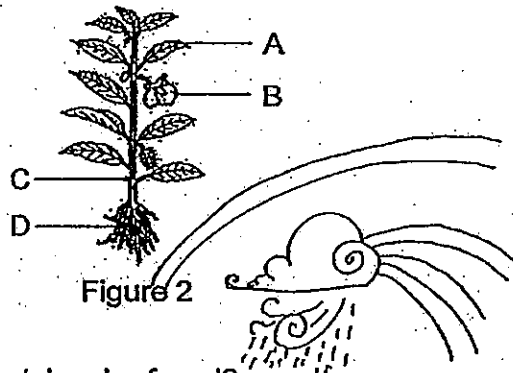
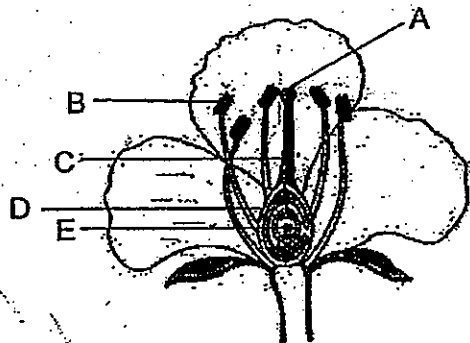


Figure 2

In which part(s) of the plant in figure 2 can the tubes be found?

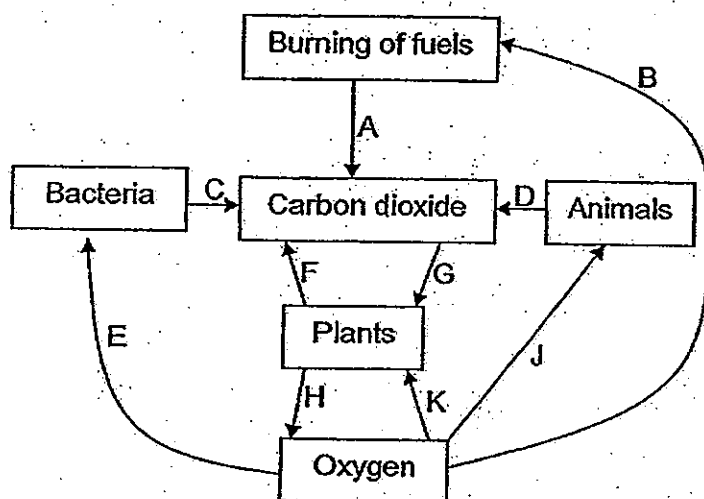
- (1) A only
 - (2) C only
 - (3) A and C only
 - (4) A, B, C and D
2. The diagram below shows the cross-section of a flower with male and female parts.



Which parts of the flower are directly involved in the pollination process?

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

3. The diagram below shows the exchange of gases in an environment.



Which one of the following sets of arrows represents respiration?

- (1) JD and KF only
 - (2) AB, CE and KG only
 - (3) CE, KF and JD only
 - (4) HG, KF and CE only
4. Which one of the following adaptive features of the various organisms is correctly matched with its function?

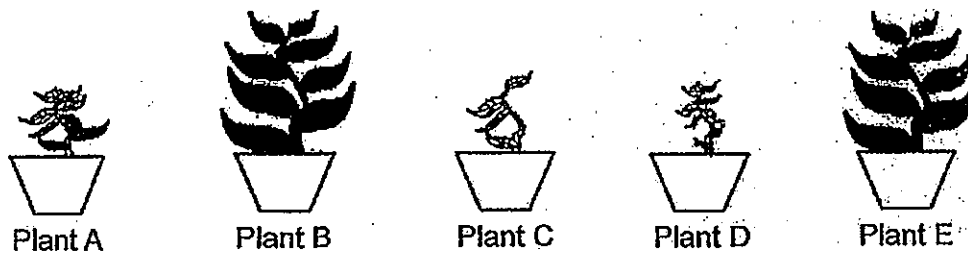
	Name of organism	Adaptive feature	Function of adaptive feature
(1)	Polar Bear	Stiff hairs on underside of paws	To increase friction for movement on ice
(2)	Eagle	Has talons	To catch and tear the flesh of its prey
(3)	Camel	Has hump on its back	To store water and fat
(4)	Pitcher Plant	Leaf modified as pitcher	To trap insects as nutrients

5. Hassan carried out an investigation to find out how different conditions affect plant growth.

He placed five similar small plants into separate pots and grew the plants under the conditions shown in the table. A tick (✓) indicates the presence of the condition.

Condition	Plant A	Plant B	Plant C	Plant D	Plant E
light	✓	✓	X	✓	✓
sand	✓	X	✓	✓	✓
water	✓	✓	✓	X	✓
fertilizer	X	✓	✓	✓	✓

The diagram below shows the plants after two weeks.







Based on the results above, which condition has the least effect on plant growth?

- (1) light
- (2) sand
- (3) water
- (4) fertilizer





6. John wanted to test if substances, X, Y or Z, could be used to keep fruit flies away from tomatoes. To do this he coated some tomatoes with the substances and left some tomatoes with no coating. He used similar tomatoes for all tests. He counted the number of fruit flies on the tomatoes after two hours.

In order to obtain the most reliable results, which one of the following set-ups should he use to test the effect of the substances?

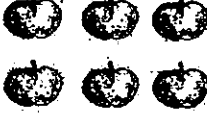



(1)

No coating  tomato	Coated with substance X only 
Coated with substance Y only 	Coated with substance Z only 

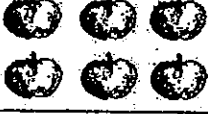
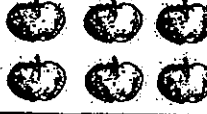

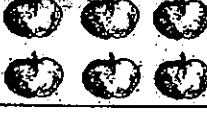
(2)

No coating 	Coated with substance X only 
Coated with substances X & Y 	Coated with substances X, Y & Z 

(3)

No coating 	Coated with substance X only 
Coated with substance Y only 	Coated with substance Z only 

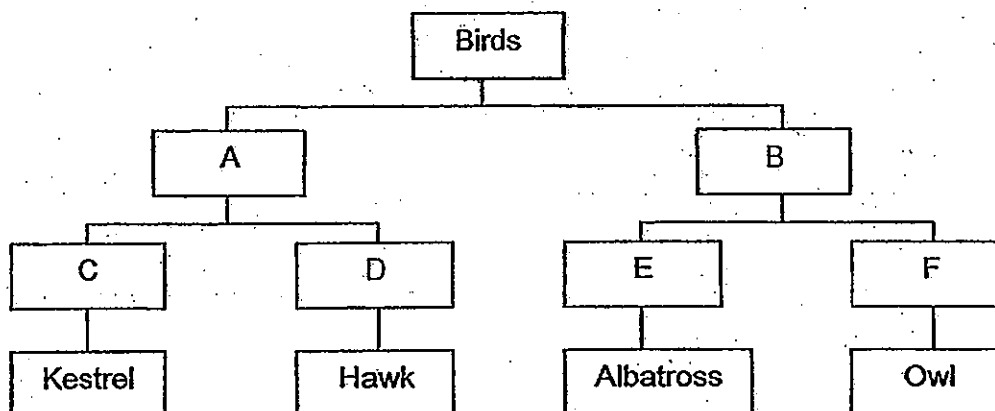
(4)

No coating 	Coated with substance X only 
Coated with substances X & Y 	Coated with substances X, Y & Z 

7. The table below gives some information on four birds.

Characteristics	Birds			
	Albatross	Hawk	Kestrel	Owl
Glides	√			√
Hovers		√	√	
Keen eyesight		√		√
Wide wingspan	√		√	

Based on the table above, the birds can also be classified in the following classification chart. The letters A to F represent characteristics of the birds.



Which one of the following correctly shows the characteristics B and D?

	B	D
(1)	Glides	Does not have wide wingspan
(2)	Hovers	Does not have keen eyesight
(3)	Glides	Does not have keen eyesight
(4)	Does not have wide wingspan	Hovers

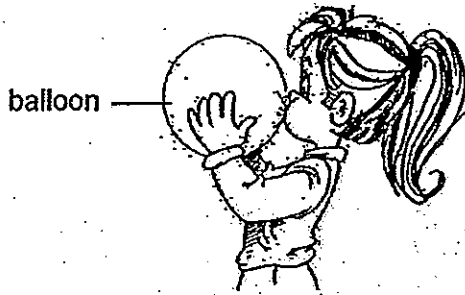
8. A group of scientists found two parts of an animal as shown in the diagram below.



Based on the parts discovered, which one of the following statements about the animal is most likely to be correct?

- (1) It was a mammal.
- (2) It was an aquatic animal.
- (3) It breathed through lungs.
- (4) It reproduced by laying eggs.

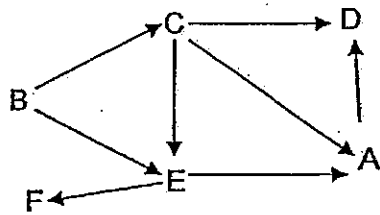
9. The drawing below shows a boy blowing a balloon.



Which one of the following correctly describes what happens to his ribcage, diaphragm and chest when he blows into the balloon?

	Ribcage	Diaphragm	Chest
(1)	Move out and upwards	Move downwards	Bigger
(2)	Move out and upwards	Move upwards	Smaller
(3)	Move in and downwards	Move downwards	Bigger
(4)	Move in and downwards	Move upwards	Smaller

10. Study the food web below carefully.



Based on the food web above, two experiments are carried out. Some of the organisms are kept together in one container over a period of time as recorded in the table below.

Experiment	Organisms that are kept together
1	A, C and D
2	A, B and C

Which one of the following is most likely to be the outcome of the experiments?

	Outcome of experiment 1	Outcome of experiment 2
(1)	C and D are left	A is left
(2)	D is left	C is left
(3)	A and D are left	C is left
(4)	D is left	A and B are left

11. The diagram below shows a bird's nest fern growing on the trunk of a rain tree.

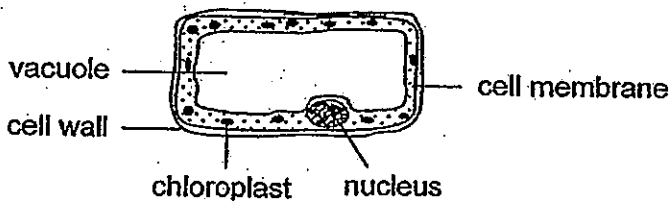


The bird's nest fern grows at the base of large branches and can grow in the absence of soil as it has a unique ability to trap water. The rain tree is not damaged by this process and does not benefit from it.

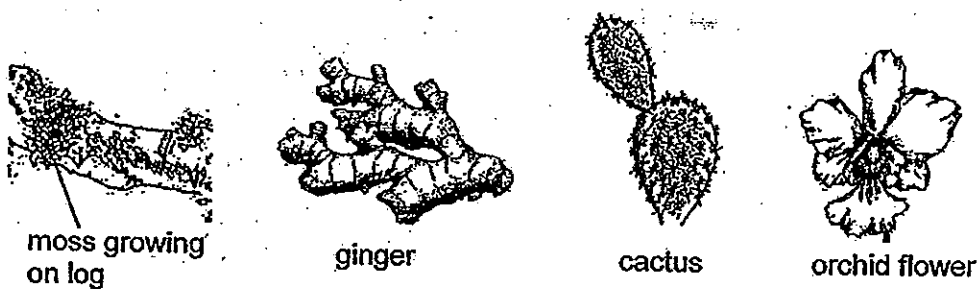
Which one of the following best illustrates a similar type of relationship as the bird's nest fern and the rain tree?

- (1) Ladybirds feeding on aphids.
- (2) Vultures feeding on the remains of the lions' catch.
- (3) Fleas living underneath a dog's fur and feeding on its blood.
- (4) Butterflies feeding on the nectar of flowers and pollinating them.

12. Study the cell below carefully.

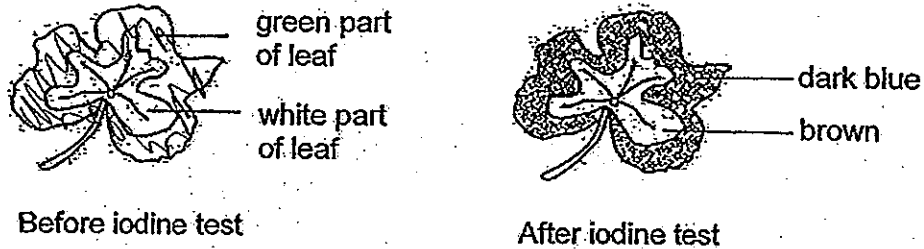


In which of the organisms shown below could the cell above be found?



- (1) cactus only
- (2) moss and cactus only
- (3) moss, ginger and orchid flower only
- (4) moss, cactus, ginger and orchid flower

13. A group of students carried out an iodine test with a variegated leaf plucked from a plant that had been exposed to sunlight for several hours. The diagram below shows the result of their test.



What conclusion can they draw from the result of their test?

- (1) Sugar is produced during photosynthesis.
- (2) Sunlight is needed for photosynthesis to take place.
- (3) Chlorophyll is needed for photosynthesis to take place.
- (4) The rate of photosynthesis is higher at the outer part of the leaf.

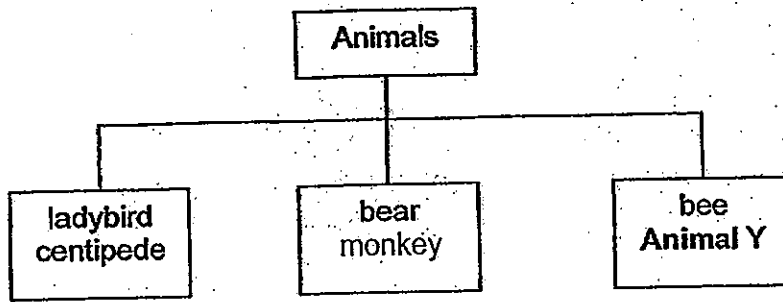
14. The table below shows the characteristics of two animals, X and Y.

Characteristics	Animal X	Animal Y
The life cycle has three stages	No	Yes
The young resembles the adult	No	Yes
It is a pest in one or more of its stages	Yes	Yes

Which one of the following pairs of animals best represents animal X and animal Y respectively?

	Animal X	Animal Y
(1)	Mosquito	Grasshopper
(2)	Butterfly	Mealworm beetle
(3)	Cockroach	Frog
(4)	Moth	Chicken

6. The animals below are classified according to the food they eat.



From the information given in the above chart, which one of the following statements about animal Y is most likely to be true?

- (1) It is an insect.
- (2) It is able to fly.
- (3) It is not a predator.
- (4) It reproduces by laying eggs.

16. There are two versions of the gene controlling hair type, curly (C) and straight (c).

Different combinations of the gene versions result in different hair types: A person with curly hair has the combination CC, a person with wavy hair has the combination Cc, and a person with straight hair has the combination cc.

The diagrams below show how gene combinations in parents can result in different combinations in their children. Not all combinations are shown.

	Father	
	C	C
Mother	C	CC
	c	CC

	Father	
	C	C
Mother	C	CC
	c	Cc

	Father	
	C	c
Mother	C	CC
	c	Cc

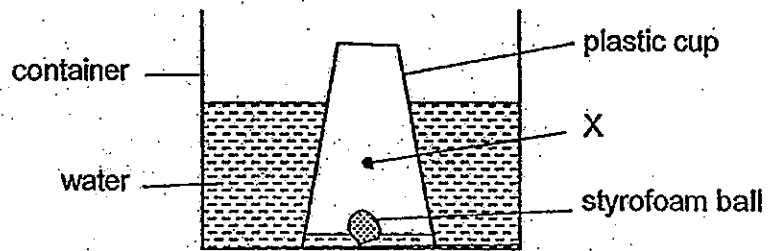
	Father	
	C	c
Mother	C	Cc
	c	cc

	Father	
	c	c
Mother	C	cc
	c	cc

Based on the information given above, which one of the following conclusion is correct?

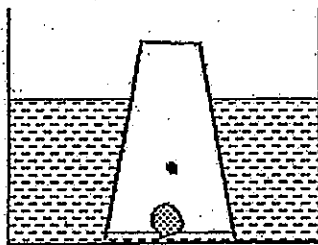
- (1) A mother with wavy hair can only give birth to children with wavy hair.
- (2) A mother with curly hair cannot give birth to children with straight hair.
- (3) Parents cannot give birth to three children each with a different hair type.
- (4) Parents who have the same hair as each other can only give birth to children with that hair type.

17. The diagram below shows the position of a styrofoam ball inside an inverted plastic cup.

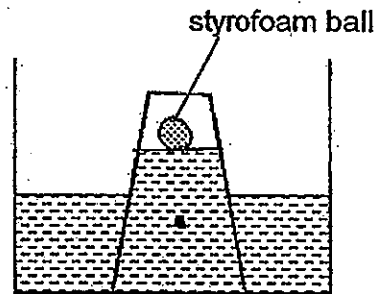


If a hole is pricked at position X of the plastic cup, which one of the following diagrams shows the correct position of the styrofoam ball?

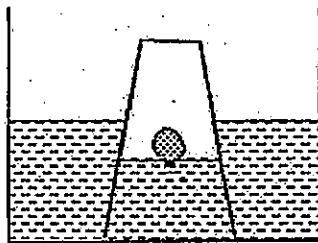
(1)



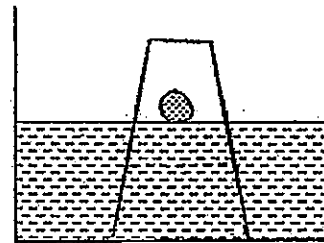
(2)



(3)



(4)



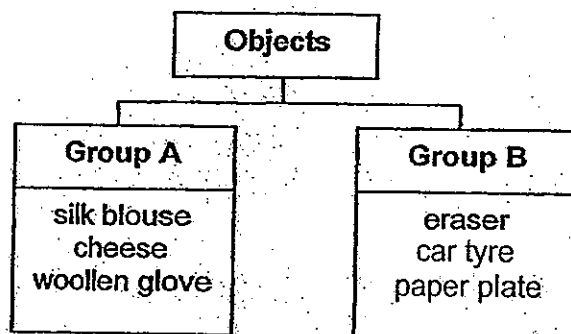
18. The table below shows the melting and boiling points of four different substances W, X, Y and Z.

Substance	W	X	Y	Z
Melting point (°C)	-20	25	32	0
Boiling point (°C)	5	110	80	100

Which substance(s) in the table above would have a definite shape and a definite volume at a room temperature of 30°C?

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

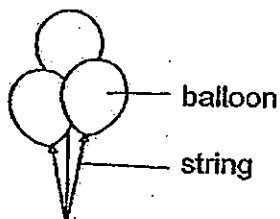
19. Smith classified some objects into two groups as shown in the chart below.



Which one of the following shows the correct headings for the two groups?

	Group A	Group B
(1)	Man-made materials	Natural materials
(2)	Biodegradable	Non-biodegradable
(3)	Not waterproof	Waterproof
(4)	Materials from animals	Materials from plants

20. The diagram below shows some helium-filled balloons being released into the air.

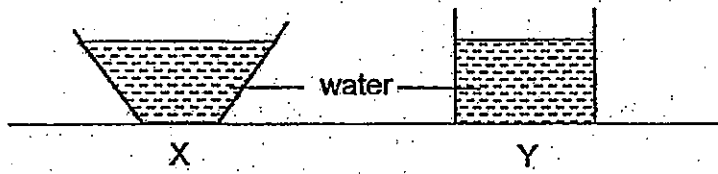


As the balloons are rising, which of the following forces are acting on the balloons?

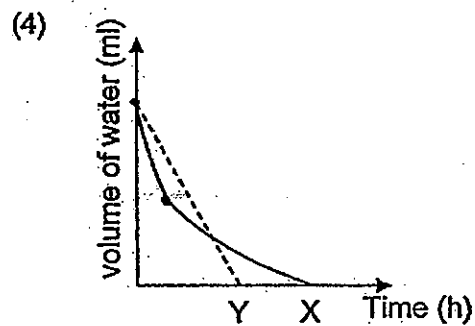
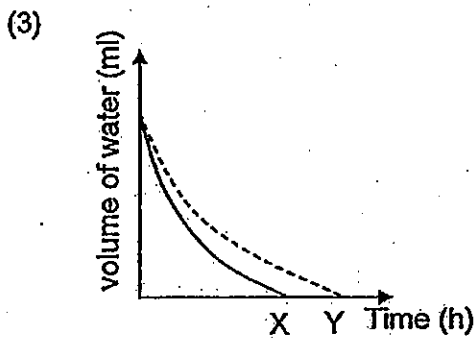
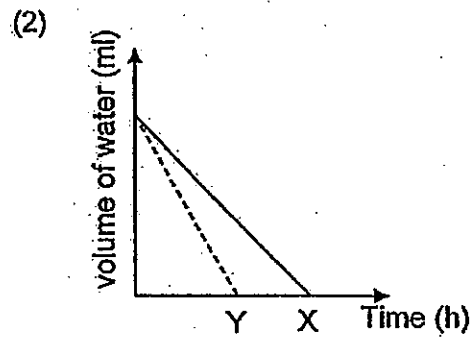
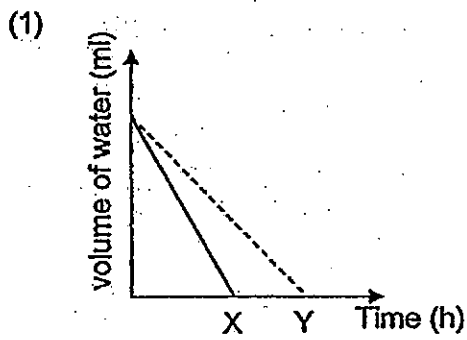
- A air resistance
- B magnetic force
- C gravitational force
- D elastic spring force

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

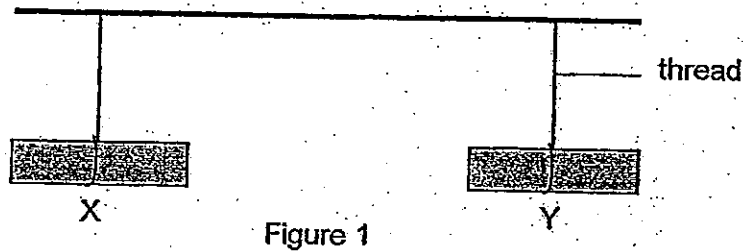
21. Susie carried out an experiment to investigate the rate of evaporation of water. She filled two containers X and Y with 100 ml of water each. She placed both containers on the same table in her room.



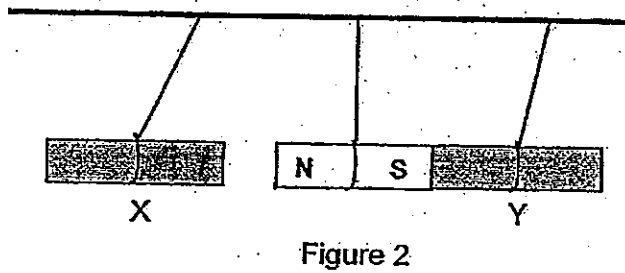
Which one of the following graphs most likely represents the rate of evaporation of the water in both containers X and Y?



22. Two objects, X and Y, are hung a distance apart as shown in Figure 1 below.



When a magnet is placed between them, object X moves away while object Y moves towards the magnet as shown in Figure 2 below.

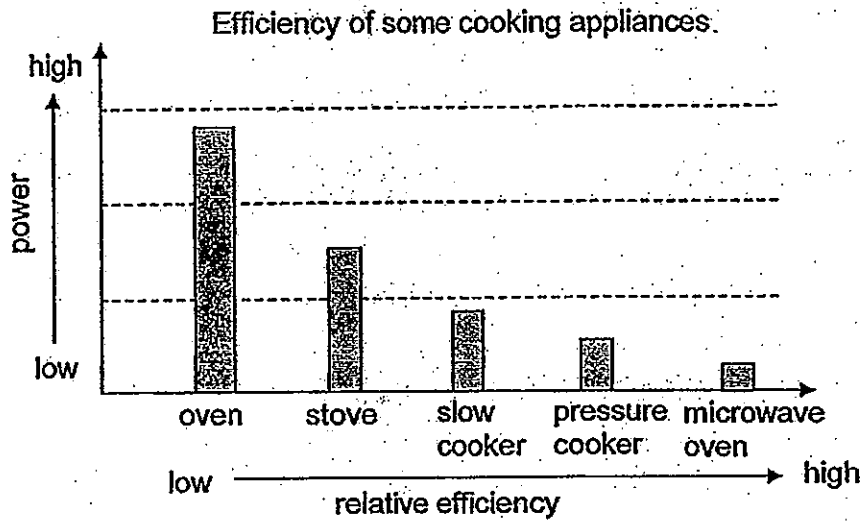


Which of the following statement(s) is/are definitely true about objects X and Y?

- A Both X and Y are magnets.
- B X is a stronger magnet than Y.
- C X is made of iron and Y is made of steel.
- D X is a magnet while Y is made of a magnetic material.

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

23. Study the graph below.



Based on the graph above, which one of the following statements is correct?

- (1) A slow cooker uses more power than a stove.
- (2) The pressure cooker is less efficient than the oven.
- (3) A microwave oven uses low power and has low efficiency.
- (4) An oven uses the most power and has the lowest efficiency.

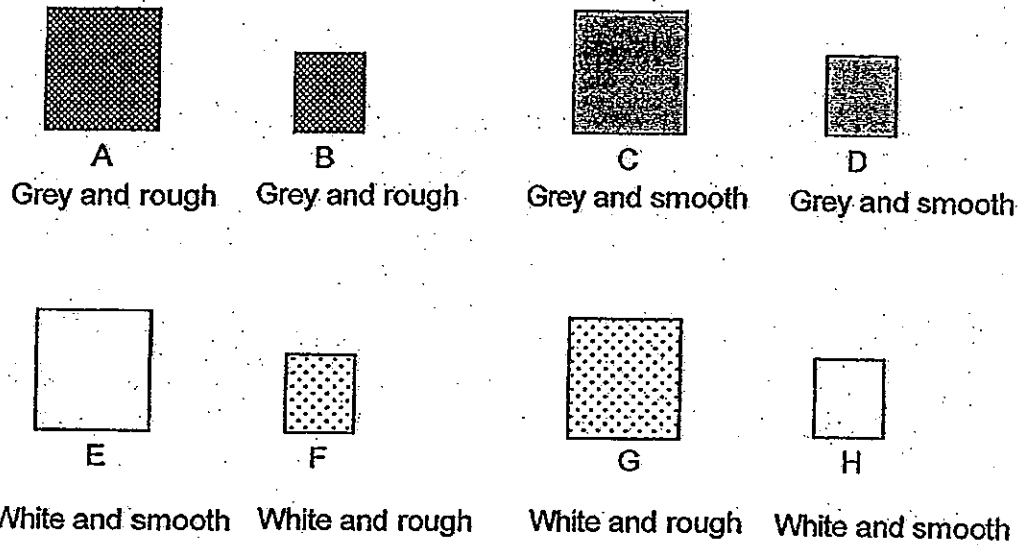
24. A rock climber is often seen dusting his hands with powder as he makes his way up the rock wall.



How does the powder help him?

- (1) It spreads friction evenly and increases contact with the wall.
- (2) It dries sweat on his hands so as to increase friction with the wall.
- (3) It decreases the surface area in contact and reduces friction with the wall.
- (4) It smoothens his hands to increase friction between his hands and the wall.

25. The diagram below shows eight tiles with different surfaces. Lela wanted to find out if the size and texture of the tile would affect the amount of heat that was absorbed.

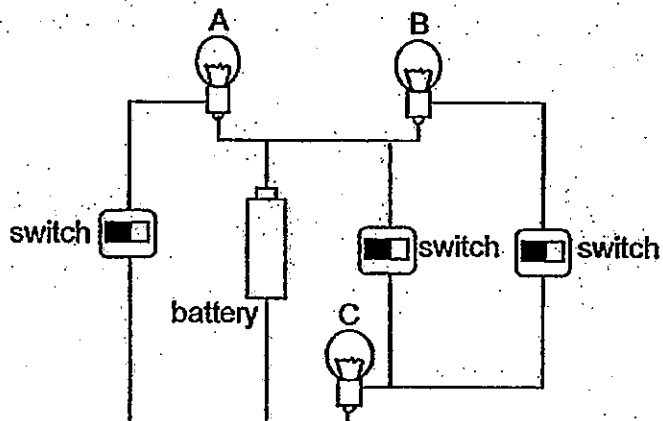


Which tiles should she use to carry out a fair test?

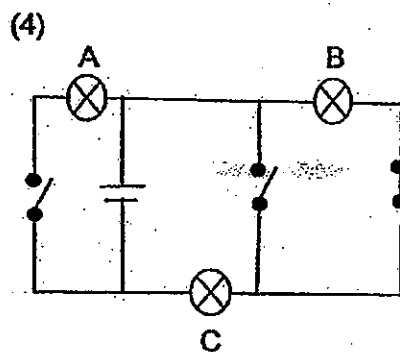
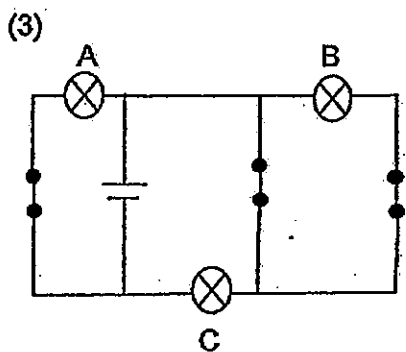
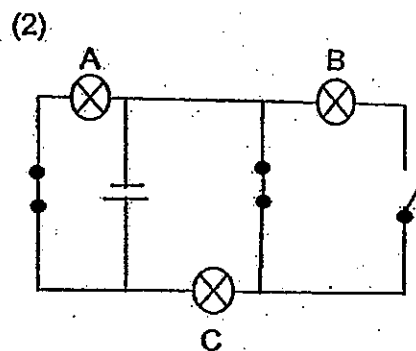
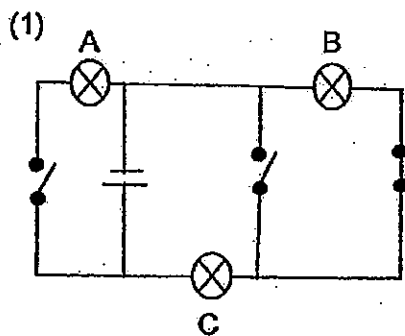
- (1) A, C and E
(2) B, D and F
(3) C, D and E
(4) E, G and H
26. Which of the following are possible causes of global warming?

- A Acid rain
B Excessive deforestation
C Melting of polar ice caps
D Flooding of coastal towns
E Increased use of fossil fuels
- (1) B and E only
(2) C and D only
(3) A, B and D only
(4) A, B and E only

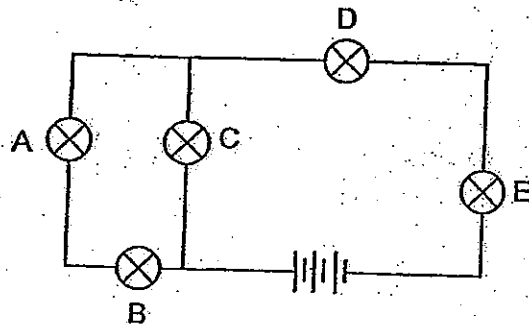
27. The diagram below shows a circuit with three similar bulbs A, B and C.



If only bulbs B and C are lit, which one of the following circuit diagrams correctly represents the circuit above?



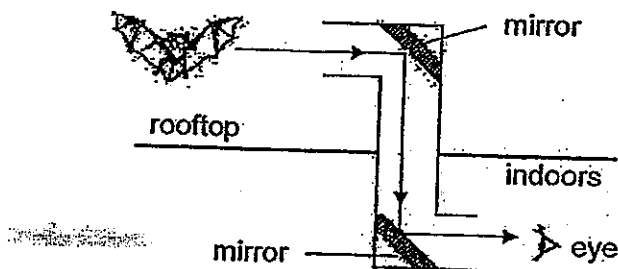
28. John set up the circuit below with three batteries and five similar bulbs A, B, C, D and E. One of the bulbs had fused, resulting in some bulbs being lighted and others not.



Which one of the following describes the bulbs correctly?

	A	B	C	D	E
(1)	lighted	not lighted	fused	lighted	lighted
(2)	not lighted	fused	lighted	lighted	lighted
(3)	lighted	lighted	not lighted	not lighted	fused
(4)	lighted	lighted	lighted	fused	not lighted

29. The diagram below shows how a periscope works.



Based on the diagram above, what can we conclude about the properties of light?

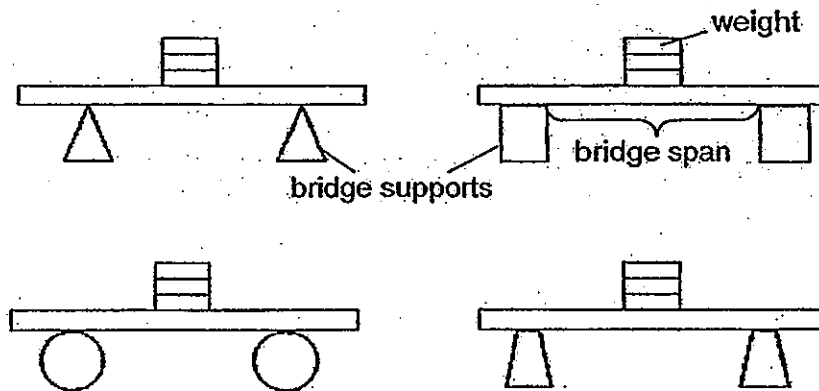
- A Light can be reflected.
 - B Light can be absorbed.
 - C Light travels in a straight line.
 - D Light can pass through transparent object.
- (1) A only
 - (2) A and B only
 - (3) A and C only
 - (4) C and D only

30. A group of students were testing different bridge supports as shown below. The supports were of the same height and made from the same plastic material.



The bridge spans in the experiment did not bend. They added blocks of the same mass to the middle of each bridge span until the plastic supports began to collapse.

The drawings of the bridges below show the tests the students carried out.



What were the students trying to find out in this experiment?

- (1) What height should the bridge supports be
- (2) What shape makes the strongest bridge support
- (3) What material makes the strongest bridge support
- (4) What bridge span length makes the bridge the strongest

~~ End of Section A ~~

Index Number:

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CHIJ ST. NICHOLAS GIRLS' SCHOOL



PRELIMINARY EXAMINATION

2013

P6 SCIENCE

(BOOKLET B)

22 August 2013

NAME : _____ ()

CLASS : Primary 6 _____

Total time for booklets A & B: 1 hour 45 minutes

14 questions
40 marks

INSTRUCTIONS TO CANDIDATES

- Do not open this booklet until you are told to do so.
- Follow all instructions carefully.
- Answer all questions and write your answers on this booklet.

Booklet A	60
Booklet B	40
Total	100

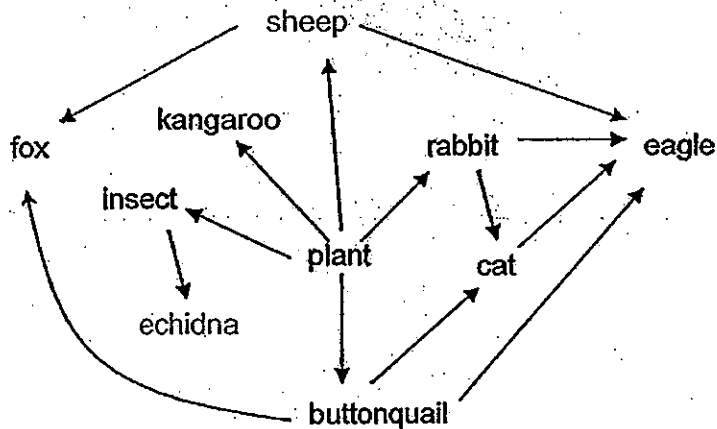
Parent's Signature/Date

This booklet consists of 16 printed pages.

Section B (40 marks)

For questions 31 - 44, write your answers in this booklet.
The number of marks available is shown in brackets [] at the end of each question or part question.

31. The buttonquail is a native animal of a certain island. Foxes, rabbits, cats and sheep are animal species introduced to the island by humans. The diagram below shows the main food web in the island.



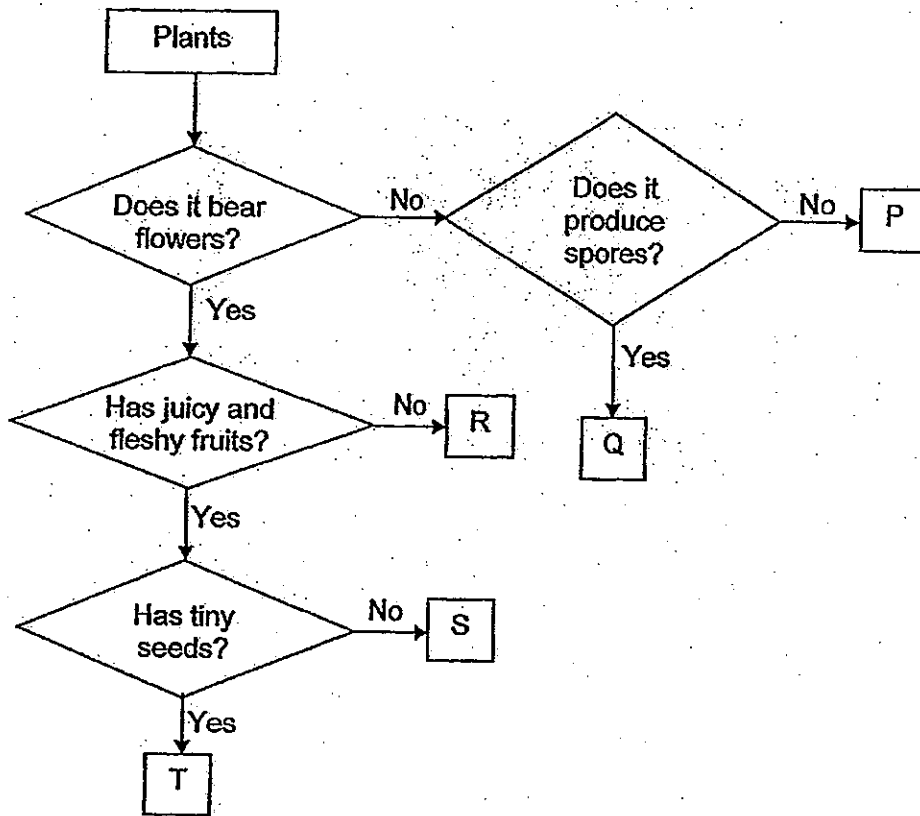
(a) Based on the above food web, which introduced animal(s) compete(s) with the buttonquail for food? [1]

(b) Which introduced animal(s) is/are predator(s) of the buttonquail? [1]

(c) What will happen to the population of echidna when the foxes are wiped out? [½]



32. Study the flowchart below.



(a) Use the flowchart above to identify the following organisms. Write the correct letters, P, Q, R, S or T, in the boxes provided. [2]

Tomato

Moss

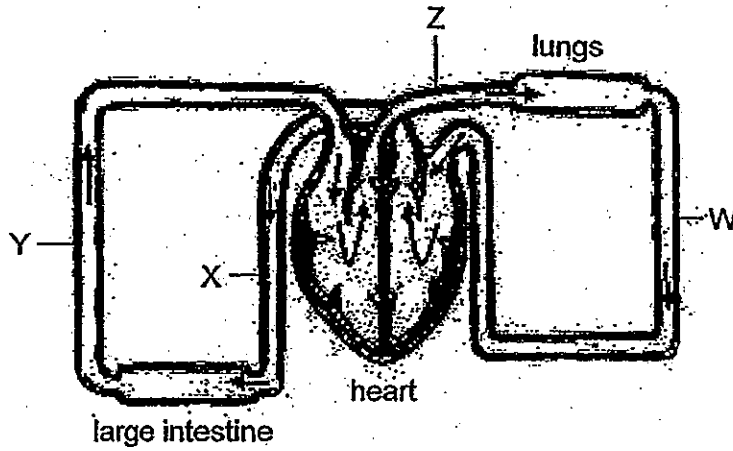
Conifer

Mimosa

(b) Can bracket fungus be represented by letter Q? Explain your answer. [1]



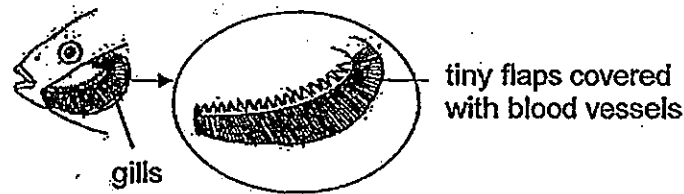
33. The diagram below shows how blood flows in certain parts of the human body. W, X, Y and Z represent blood vessels. The arrows show the direction in which blood flows.



- (a) The blood at Y contains a greater amount of carbon dioxide than at X. It also contains a greater amount of a substance A. What is this substance? Give a reason for your answer. [2]

- (b) At which part of the circulatory system, W, X, Y or Z, does the blood contain the least amount of oxygen? [1]

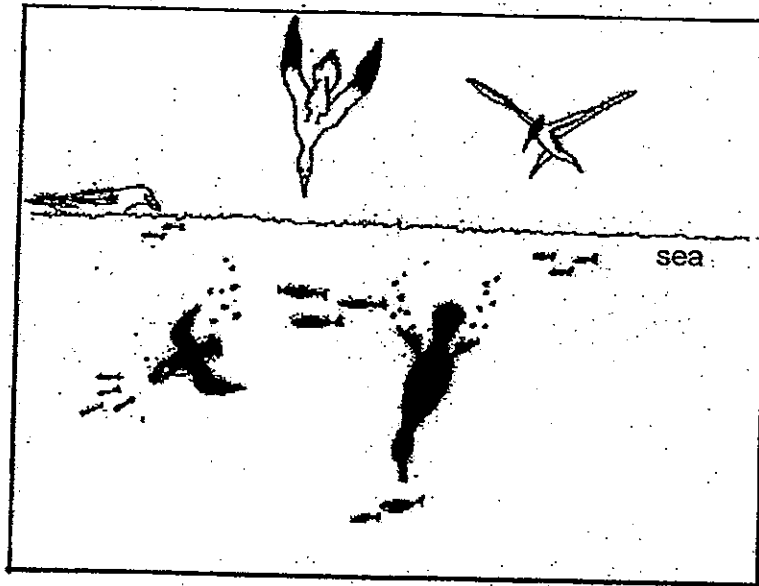
The diagram below shows the gills of a fish. The gills have many tiny flaps.



- (c) What type of adaptation is this and how does it help the fish to survive? [1]



34. The diagram below shows some birds in their habitat. An oil spill will affect all the organisms in the community.



- (a) Explain how the oil spill will affect the birds directly. [2]

(i) _____

(ii) _____

- (b) Explain how the oil spill will affect the algae in the sea. [1]



35. Alex was told that seeds need water, oxygen and suitable warmth to germinate. He set up the experiment as shown in Figure 1 below to investigate one of the conditions necessary for germination to take place. Chemical K absorbs carbon dioxide in the air. Figure 2 shows the result of his experiment a few days later.

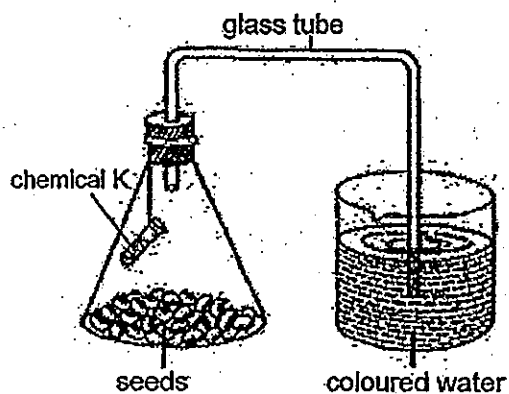


Figure 1

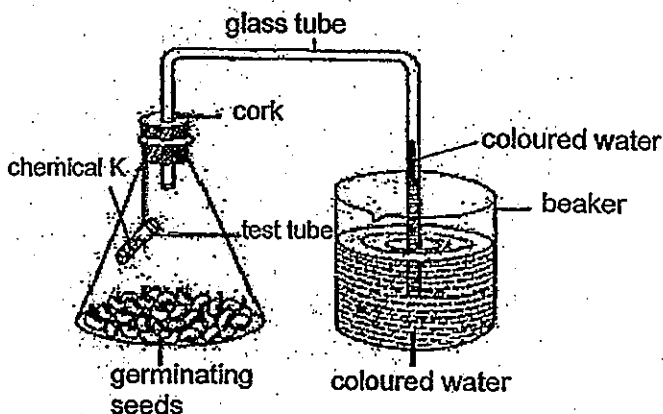
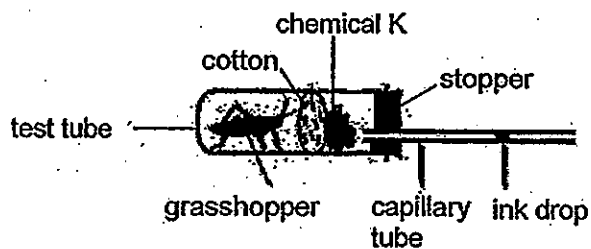


Figure 2

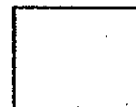
- (a) Based on the set-up above, what is the hypothesis of his experiment? [1]

- (b) Alex observed that the coloured water had moved up the glass tube after the seeds started to germinate. Explain why the coloured water moved up the glass tube. [1]

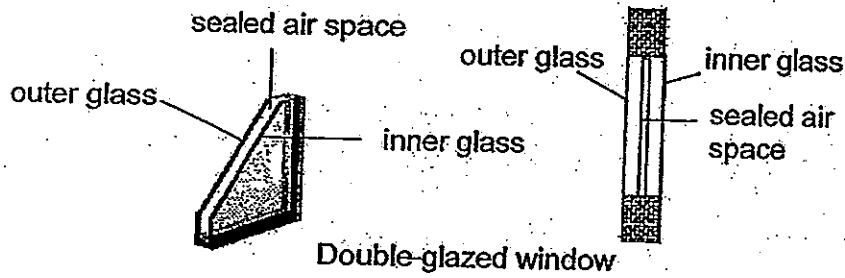
Alex carried out another experiment with a grasshopper as shown in the diagram below.



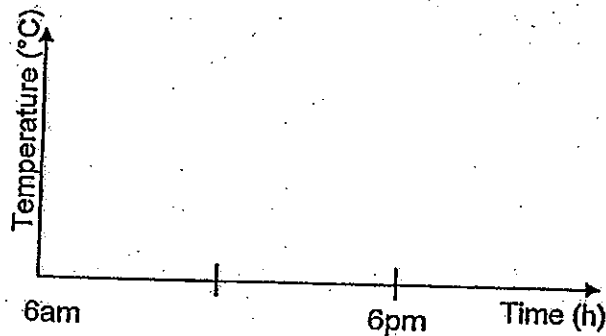
- (c) What would happen to the drop of ink in the capillary tube after a while? [½]



36. A room fitted with double-glazed windows will be cooler than one with the normal glass windows. The diagram below shows two different views of a double-glazed window.



The graph below shows how the temperature in the living room would vary with the normal glass windows.



(a) Draw another line in the graph above to show how the temperature in the living room would vary with the double-glazed windows. [1]

(b) Explain your graph in (a) above. [1]

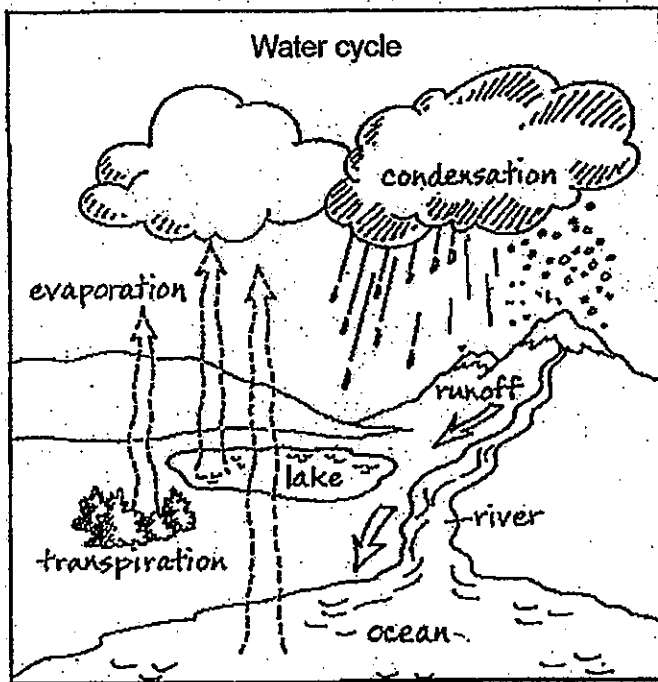
At night, some birds puff up their feathers as shown in the diagram below.



(c) Why do some birds puff up their feathers at night? [1]



37. The diagram below shows the water cycle.



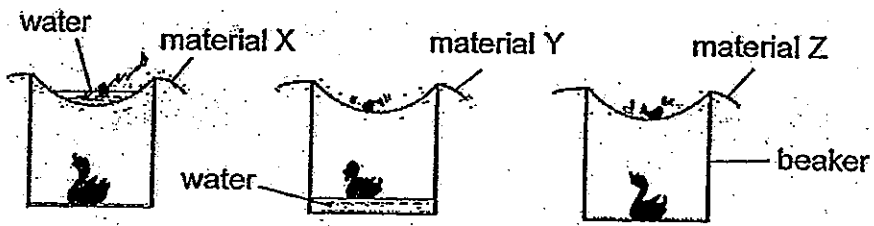
(a) What is the main source of energy for the water cycle? [1]

(b) Why is the water cycle important for all living things? [1]

(c) During evaporation a liquid changes into a gas while during condensation a gas changes into a liquid. State one other difference between the two processes. [1]



38. Three pieces of different materials, X, Y and Z, were placed over the mouth of similar empty beakers as shown in the diagram below. The same amount of water was poured onto each of the materials. The diagram below shows the results of the experiment.



(a) From the results, which one of the materials, X, Y or Z, is the most absorbent? [½]

(b) Explain your answer in (a) above. [1½]

(c) Based on the results, which one of the materials, X, Y or Z, is the most suitable for making a tent? Give a reason for your answer. [1]



39. Jackson put a balloon in a bottle as shown in Figure 1. He tried to inflate the balloon by blowing air into it as shown in Figure 2. He managed to inflate the balloon a little but found it hard to inflate the balloon further even though there was ample space in the bottle.

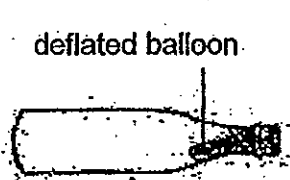


Figure 1

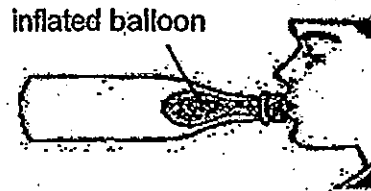
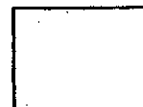


Figure 2

- (a) Explain why Jackson could inflate the balloon inside the bottle a little at the start of the experiment. [1]

- (b) Explain why Jackson could not further inflate the balloon. [1]



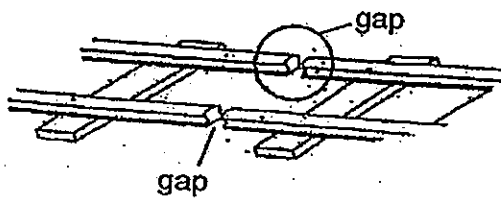
40. Jane took out a jar of strawberry jam from a refrigerator but she could not turn the metal lid on the jar.



- (a) Suggest one way that Jane could make it easier to turn and open the lid of the jar. [1]

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

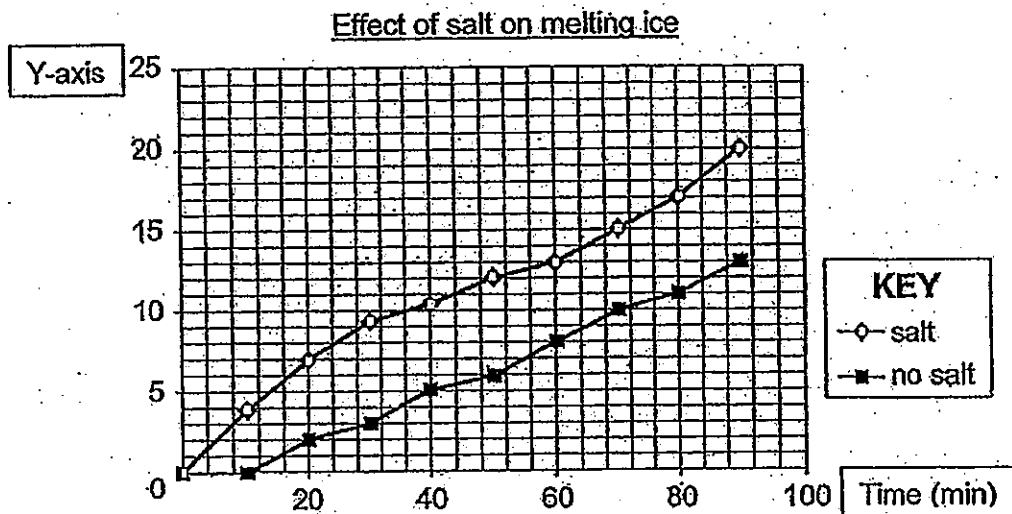
The diagram below shows the gaps on a railway track.



- (c) Why is there a need to leave a gap at the joint between two rails? [1]

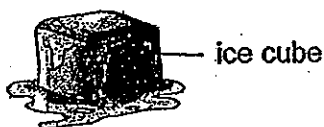


41. Meiling carried out an experiment to investigate the effect of salt on melting ice. She collected and measured the amount of water from the melting ice at 10-minute intervals. The graph below shows the results of her experiment.



- (a) What is the correct label for Y-axis? [1]

- (b) What can Meiling conclude from her results? [1]



- (c) Meiling carried out another experiment with two ice cubes of the same size, one wrapped with aluminium foil and the other with tissue paper of the same thickness as the foil. Which ice cube will melt faster? Explain your answer. [1]



42. The diagram below shows the mechanism of a door bell as shown in figure 1. When the switch is closed, the hammer will strike the gong as shown in figure 2.

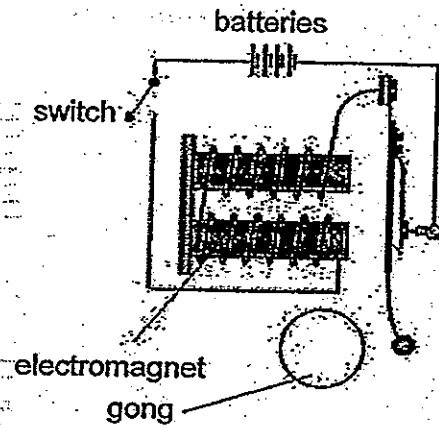


Figure 1

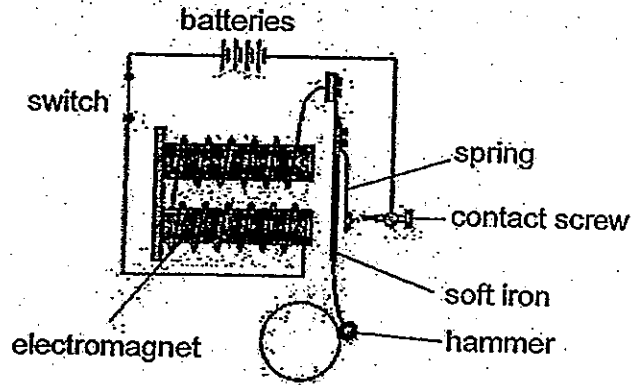
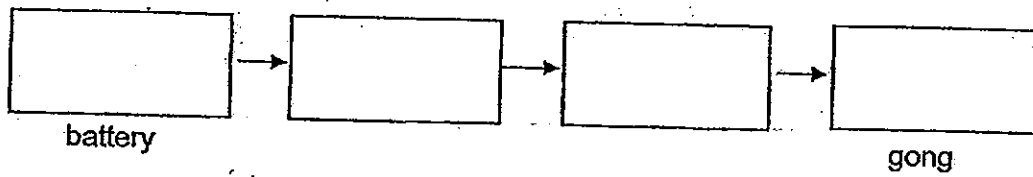


Figure 2

- (a) Describe and explain what will happen to the electromagnet when the hammer struck the gong. [2]

- (b) State the main energy conversion that takes place when the switch is closed. [2]



43. The diagrams below show the experiment that Sam set up to find out how objects A and B interact with the magnet. Object A was made of glass while object B was made of a different material. The two objects have the same mass. The length of the spring is shown in Figure 1 after object A was placed on it, Sam repeated his experiment by replacing object A with object B. The length of the spring is shown in Figure 2 when object B was placed on it.

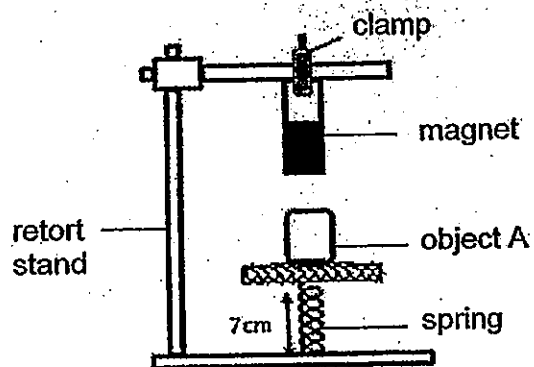


Figure 1

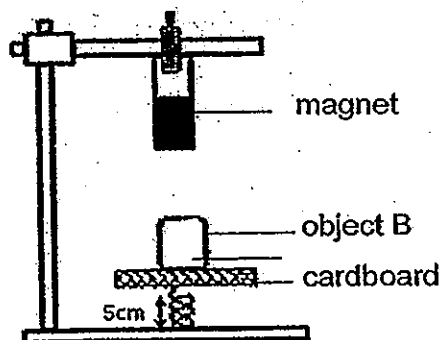
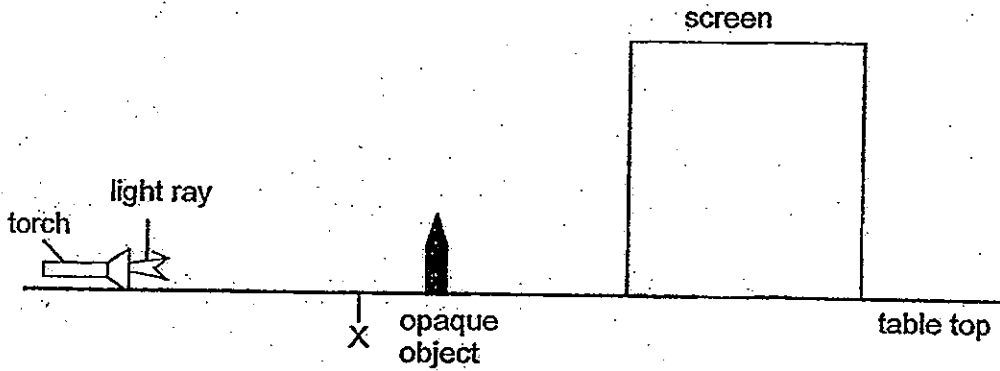


Figure 2

Explain clearly what could have caused the change in the length of the spring when object B was placed on the cardboard. [2]

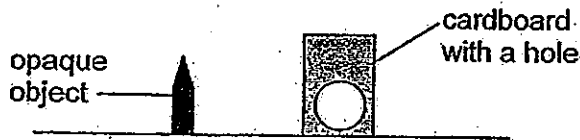


44. The diagram below shows an opaque object placed between a light source and a screen.

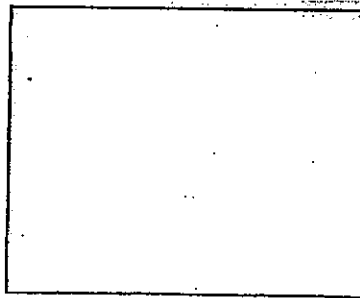


- (a) Draw the shadow of the object on the screen. [1]

The diagram below shows the relative sizes of a piece of cardboard with a hole and the opaque object.

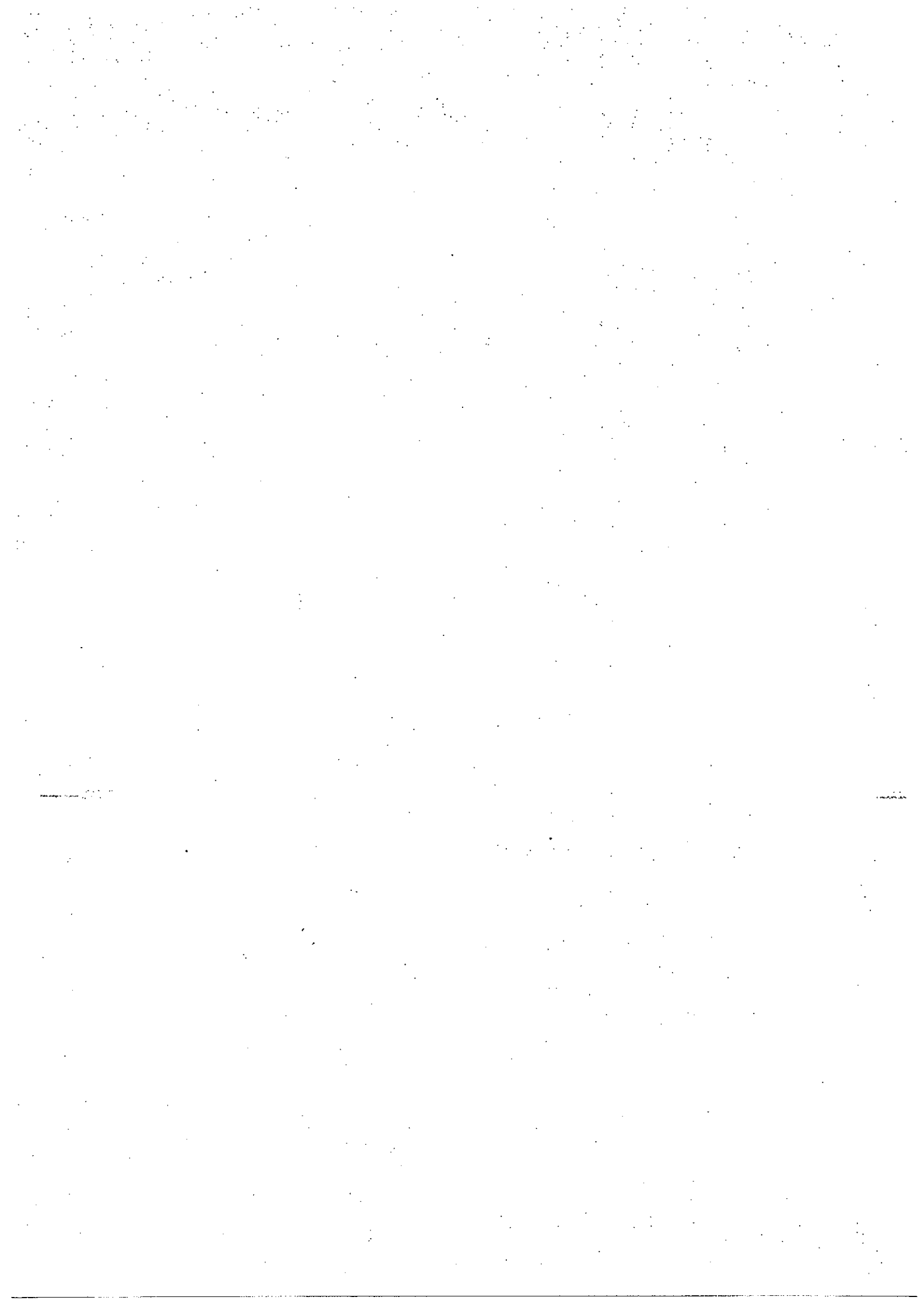


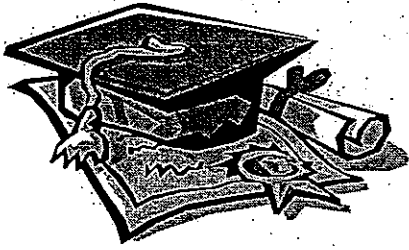
- (b) If the piece of cardboard is placed at position X between the object and the torch, draw the new shadow cast on the screen in the space below. [1]



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ANSWER SHEET

EXAM PAPER 2013

SCHOOL : CHIJ

SUBJECT : PRIMARY 6 SCIENCE

TERM : PRELIM

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

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

- 31)a) Sheep and rabbit.
b) Cat and foxes
c) The population of the echidna would decrease.

- 32)a) T Q
P R
b) No. It is even a plant.

33)a) It is water. Water is absorbed in the large intestine into the blood stream, therefore the blood that goes through the large intestine will have more water than before.

b) Z.

c) It is a structural adaptation. The tiny flaps covered with blood vessels absorb dissolved oxygen so that the fish can respire and live.

34)a) i) When the birds dive into the water to get food and come out, the oil from the oil spill would coat their feathers. They would not be able to fly and will either drown or get eaten.

ii) The oil might enter their respiratory system, preventing them from breathing causing them to die.

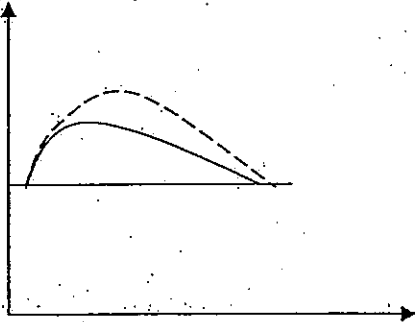
34)b)The oil would prevent sunlight from reaching the algae, and the algae would not be able to photosynthesis and will die.

35)a)Seeds need oxygen to germinate.

b)The seeds respired and produced carbon dioxide which was desorbed by Chemical K, the oxygen level decreased as the seeds used the oxygen to respire. The amount of air in the set-up decreased and the coloured water moved up to the empty space.

c)The ink drop would move towards the test tube.

36)a)



b)The air trapped in the double glazed window is a poor conductor of heat which reduces the heat transfer from outside to the room, so the temperature in the room is lower.

c)They puffed up their feathers to trap air within their feathers to reduce loss of body heat as air is a poor conductor of heat.

37)a)The sun.

b)It ensures the constant supply of fresh water so that at the living things have enough water.

c)Evaporation involves heat gain while condensation involves heat loss.

38)a)Z.

b)All the water was absorbed into material Z, allowing not a single drop of water to drop into the beaker or stay on material Z.

c)X. A tent has to be water proof so that when it rains, the users can stay dry. X is water proof, as the water is unable to go through X, therefore X is the best material for making tents.

39)a)Air could be compressed but not too much. When Jackson blew into the balloon, the air blew into the balloon took up space and some of the air in the bottle was compressed. However, Jackson could not blow in more air anymore at the air could not be compressed further.

b)The air in the bottle could not be compressed further therefore when the air blew into the balloon took up space, there was no more space for the balloon to be inflated.

40)a) She could put the lid of the jar into a bowl of hot water.

b) Matter expands when heated and the lid would expand causing it to be bigger and easier to take off the jar.

c) On a hot day when the rails are heated, the rails would expand as matter expands when heated. If there was no gaps, the railway would turn crooked and the train would not be able to travel on it.

41)a) Amount of water from the melting ice.

b) Salt causes the melting ice to melt faster.

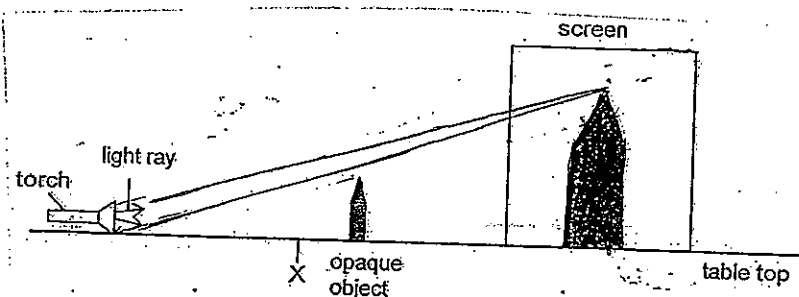
c) The ice cube wrapped in aluminium foil. Aluminium foil is a better conductor of heat than tissue paper, causing the heat from the surrounding air to be conducted to the ice cube faster, causing it to melt faster than the ice cube wrapped in tissue paper.

42)a) The electromagnet would become not magnetic anymore as when the electromagnet attracts the soft iron, causing the hammer to hit the gong, the contact screw would be unable to touch the spring causing it to be an open circuit, de-magnetising the electromagnet.

b) Chemical potential energy \rightarrow Electrical energy \rightarrow Kinetic energy \rightarrow Kinetic sound energy

43) Magnetic repulsion. Object B was a magnet and the like poles of Object A and the magnet were facing each other, causing B to repel and compress the spring, causing the length of the spring to decrease.

44)a)



b)

