Name: _____ ( )

Class: Primary 6 _____

CHIJ ST NICHOLAS GIRLS' SCHOOL

SIMPLE IN VIRTUE

STEADFAST IN DUTY

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Primary 6

First Continual Assessment – 2011

SCIENCE

BOOKLET A

2nd March 2011

Total Time for Booklets A and B: 1 hour 45 minutes

30 questions
60 marks

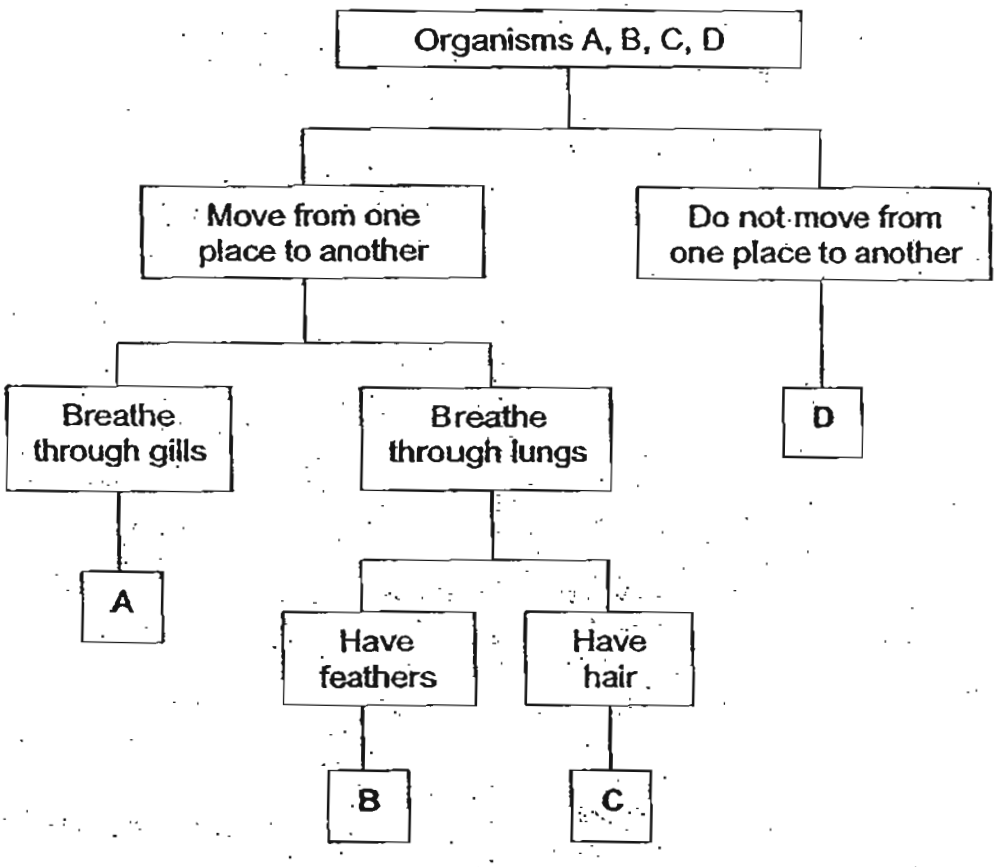
Do not open this booklet until you are told to do so.
Follow all instructions carefully.
Answer all questions.
Shade your answers in the Optical Answer Sheet (OAS) provided.

This paper consists of 26 printed pages.

Section A : (30 x 2 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 provided.

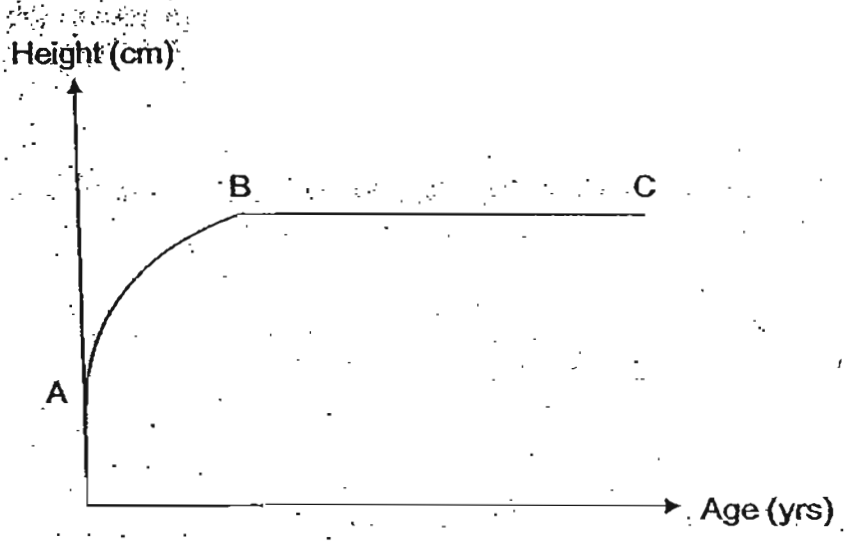
1. The classification chart below shows how organisms, A, B, C and D, are classified.



Which one of the following letters, A, B, C or D, represents a kingfisher?

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

2. The graph below shows the changes in the height of a pupil over a period of time.



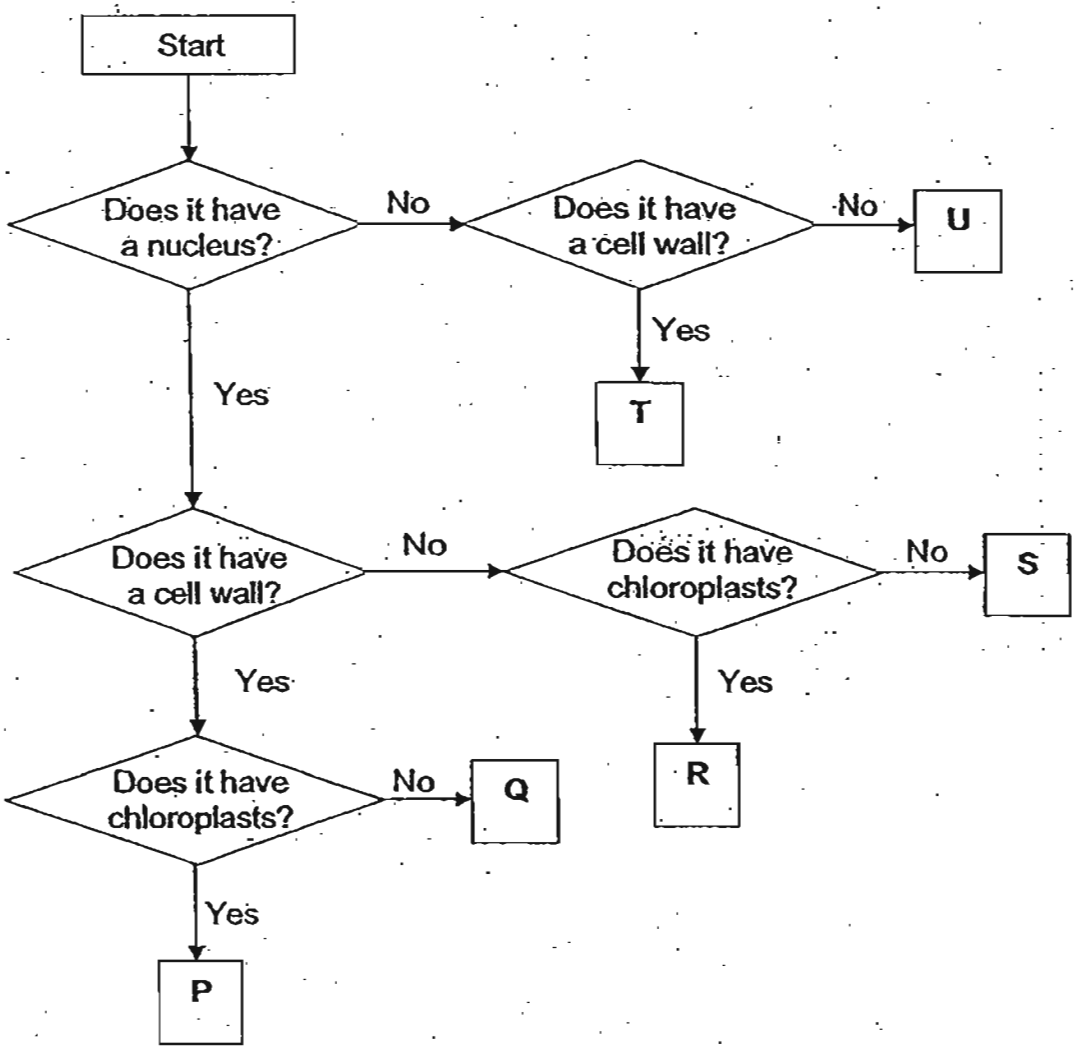
After studying the graph, 3 pupils make a statement each as shown below:

Sufen:	From A to B, there is an increase in height as the number of cells in the body increases.
Ahman:	The increase in the pupil's height from A to B is due to the cells in the body growing bigger.
Ismail:	There is no change in height from B to C as there is no cell division.

Which of the above pupils has/have made the correct conclusion(s)?

(1) Sufen only
(2) Sufen and Ismail only
(3) Ahman and Ismail only
(4) Sufen, Ahman and Ismail

3. The diagram below shows a flowchart to differentiate some cells P, Q, R, S, T and U.

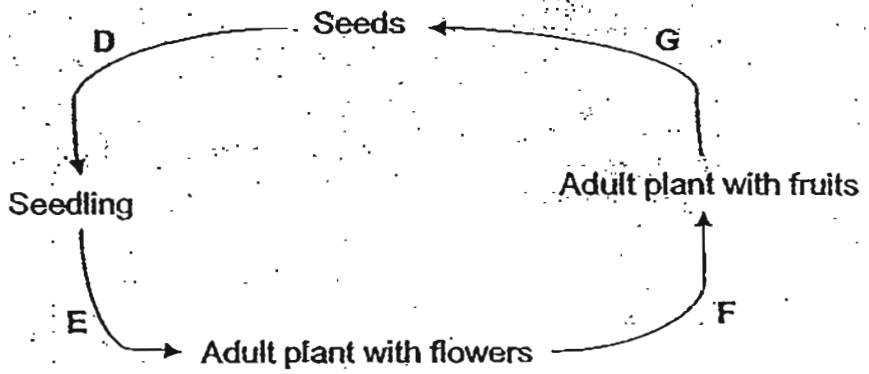


Based on the above information, which of the following statements about the above cells are definitely true?

A Cells S and U may be animal cells.
B Cells P, Q and T are taken from plants.
C Cells P and R can carry out photosynthesis.
D Cells T and U may not be cells as they do not have a nucleus.

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

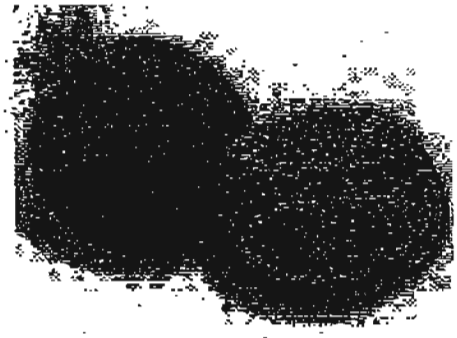
4. The diagram below shows the life cycle of a flowering plant. D, E, F and G represent the different processes in the life cycle of the plant.



Which one of the following lists correctly shows the four different processes that takes place in the life cycle of the plant?

	Process			
	Dispersal	Pollination	Fertilisation	Germination
(1)	G	E	F	D
(2)	D	F	G	D
(3)	G	F	F	D
(4)	F	E	F	G

5. The diagram below shows the cross-section of a pomegranate fruit.



Based on the diagram above, which of the following inferences is/ are correct?

A The pomegranate flowers grow in clusters.
B The pomegranate flower has many ovaries.
C The pomegranate flower has many colourful petals.
D The ovary of the pomegranate flower contains many ovules.

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

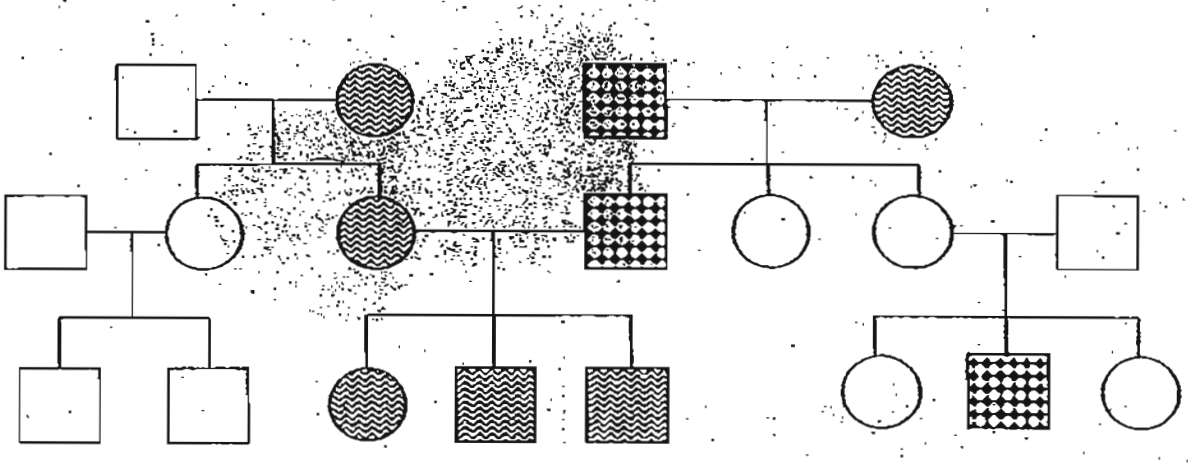
6. Hui Min germinated some green bean seeds and recorded her observations in the table as shown below.

Day	Observation
2	The seeds swell
3	The seed coats break
4	The roots start to appear
7	The shoots start to appear
14	The shrivelled seed leaves have dropped off

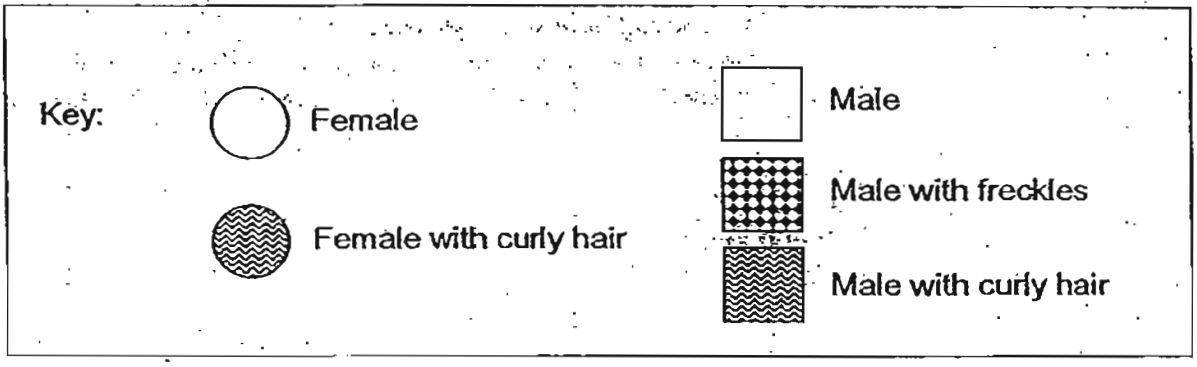
From which day onwards will the seedlings most probably be able to begin carrying out photosynthesis?

(1) Day 4
(2) Day 7
(3) Day 10
(4) Day 14

7. The diagram below shows Houston's family tree:



Houston

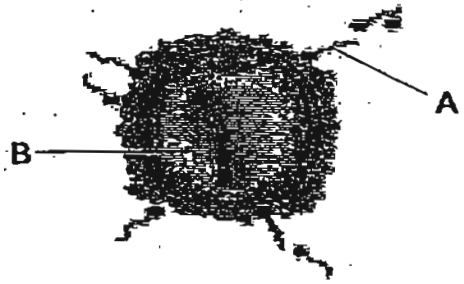


Based on the information provided above, which of the following statements are true?

A Houston has 3 aunties.
B Houston's brother will definitely bear a son with curly hair.
C Houston's mother inherited the genes for curly hair from her maternal grandfather.
D The gene that causes freckles only affects the male members of the family.

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

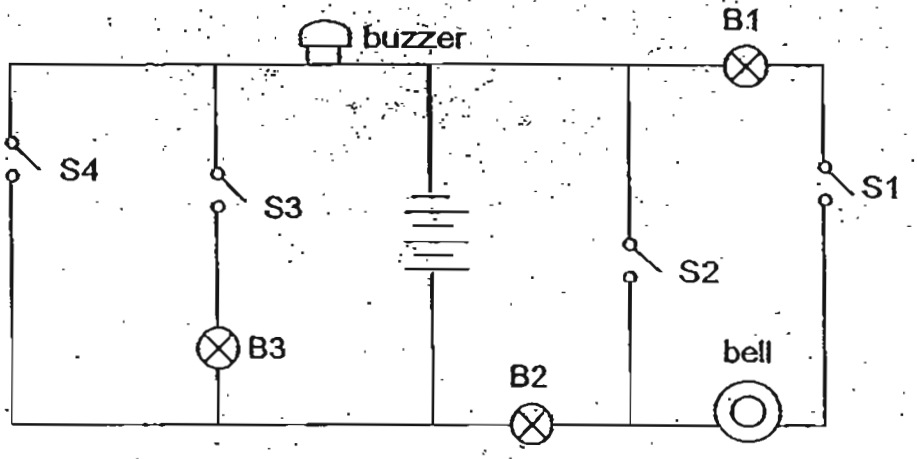
8. The diagram below shows the process of fertilisation in humans. During this process, A fuses with B.



Which of the following correctly identifies A and B and where they are produced in the human reproductive system?

	A	Produced by	B	Produced by
(1)	Sperm	Penis	Egg	Ovule
(2)	Egg	Ovary	Sperm	Testes
(3)	Sperm	Testes	Egg	Ovary
(4)	Egg	Ovary	Sperm	Penis

9. An electric circuit was set up as shown in the diagram below.

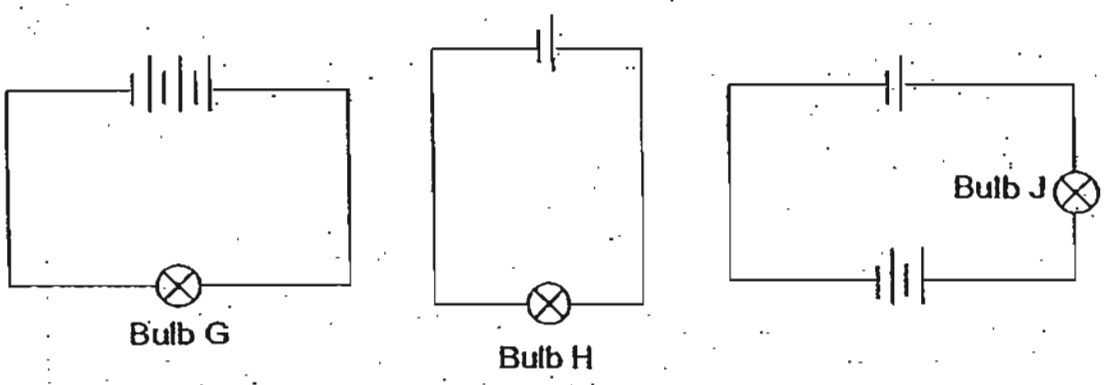


Which one of the following actions will sound the buzzer and light up one bulb only?

	S1	S2	S3	S4
A	close	open	open	close
B	open	open	close	open
C	open	close	close	close
D	open	close	open	close

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

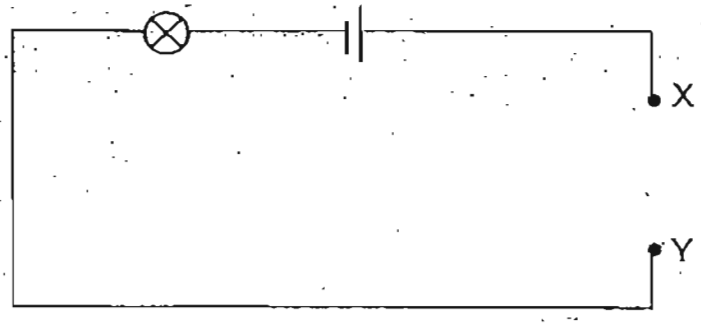
10. Yuki sets up three electric circuits as shown below. She uses identical batteries for each circuit. Which of the statements below about the circuits are correct?



A Bulb J will not light up.
B Bulb J will be dimmer than Bulb G.
C The greatest amount of electrical current flows through Bulb G.
D The least amount of electrical current flows through Bulb H.

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

11. Singa cut 4 pieces of wire, P, Q, R and S, each of different length and thickness from the same material. He then set up a circuit as shown below.



He used each of the wires to join ends X and Y and observed the brightness of the bulb. He recorded his observations in the table below.

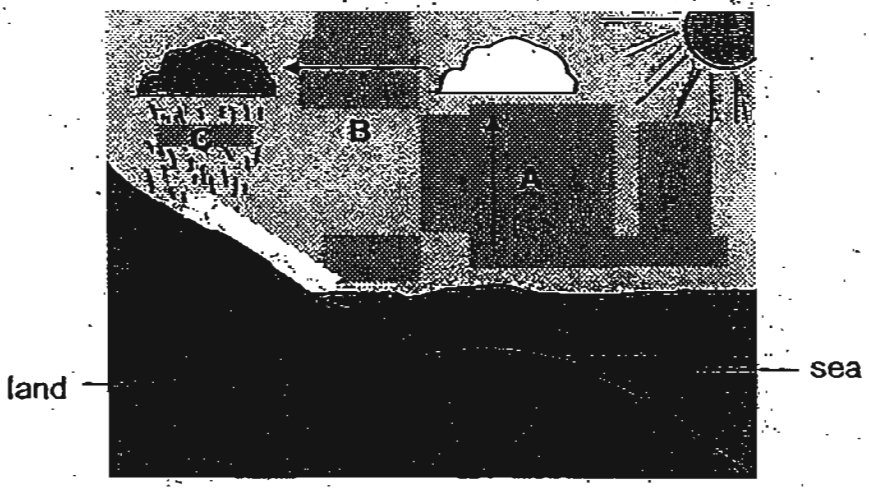
Wire	Length (m)	Thickness (mm)	Brightness of bulb
P	2	0.2	Bright
Q	2	0.3	Very bright
R	3	0.2	Dim
S	3	0.3	Bright

Based on the information in the table above, what can Singa conclude from his experiment?

A As the length of the wire decreases, the brightness of the bulb increases.
B As the length of the wire decreases, the brightness of the bulb decreases.
C As the thickness of the wire increases, the brightness of the bulb decreases.
D As the thickness of the wire increases, the brightness of the bulb increases.

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

12. Study the diagram below carefully:



At which stage, A, B or C, do evaporation and condensation take place?

	Evaporation	Condensation
(1)	A	C
(2)	B	C
(3)	A	B
(4)	C	B

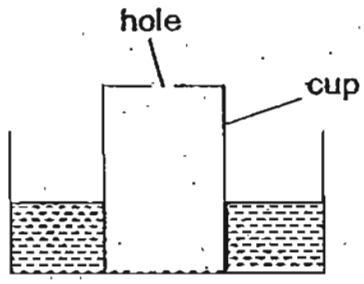
13. The table below shows the freezing points and boiling points of 4 substances, W, X, Y and Z.

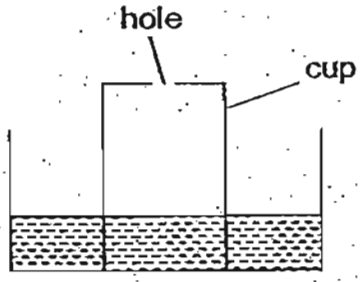
Substance	Freezing point (°C)	Boiling point (°C)
W	33	72
X	48	84
Y	52	93
Z	26	67

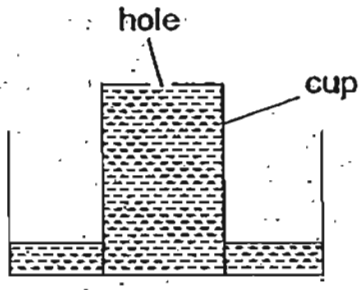
At which one of the following temperatures are the four substances, W, X, Y and Z, at the same state of matter?

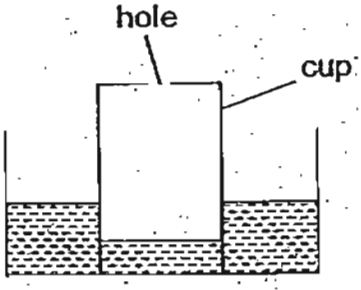
(1) 31°C
(2) 50°C
(3) 64°C
(4) 87°C

14. A hole is made at the base of a cup. Then the cup is inverted and lowered vertically into a basin of water. Which diagram shows the correct water level in the cup?

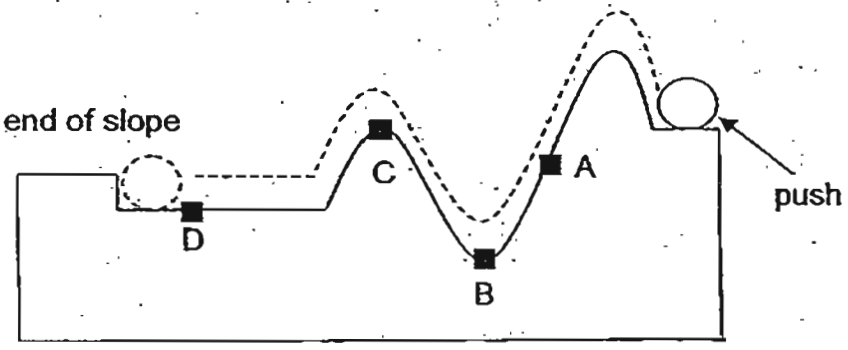
(1)


(2)


(3)


(4)


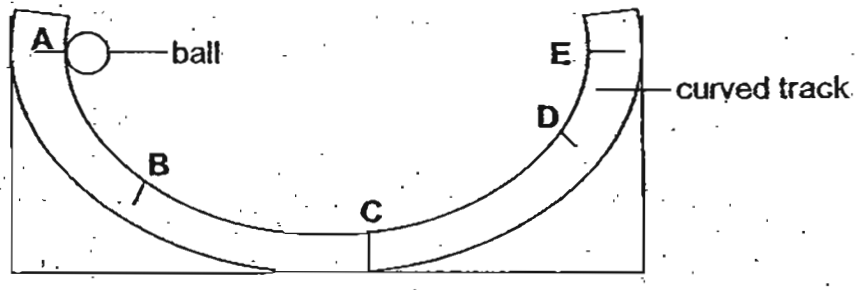
15. Joshua pushed a ball in the direction shown and it rolled towards the end of the slope.



At which point on the slope will the ball have the greatest amount of kinetic energy?

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

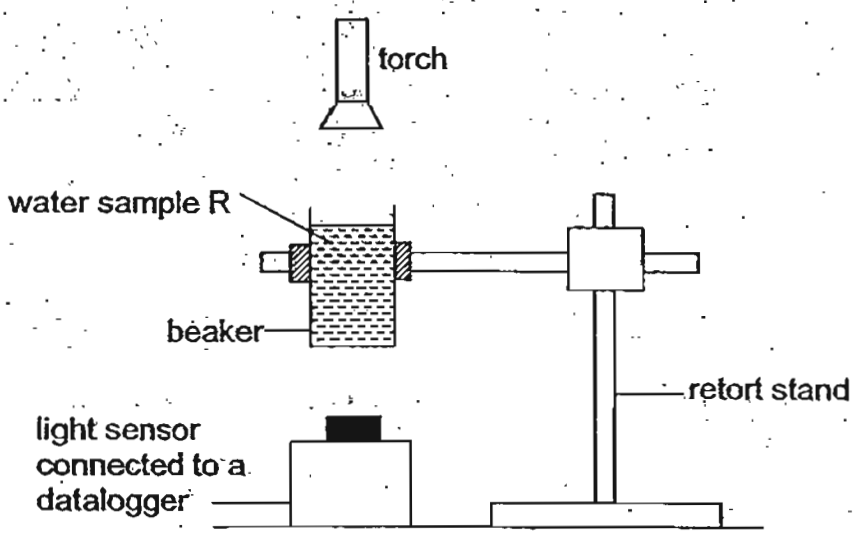
16. A ball was placed at position A and then released to roll down and along the curved track. The ball reached a maximum position before it rolled back.



Which would be the maximum position the ball would reach when it was released?

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

17. Mikyla collected 4 water samples, R, S, T and U, from 4 different ponds of similar depth. She placed 150ml of water sample R into a small beaker and set up the experiment as shown below.



Mikyla lit her torch and shone it over water sample R in the beaker. She used a data logger to measure how much light is able to pass through it. She recorded three sets of readings for water sample R.

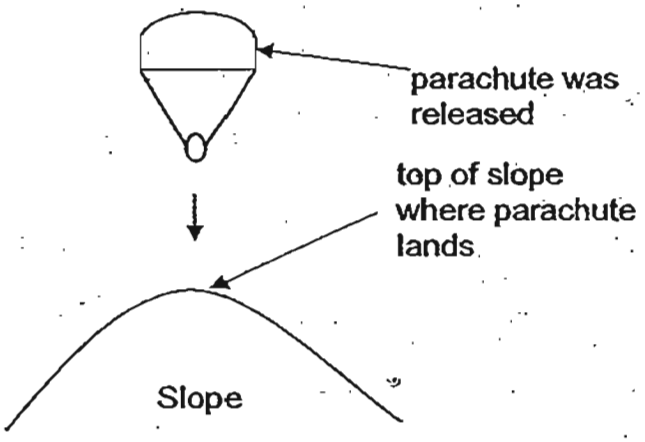
She then repeated the same procedure for the other 3 water samples, S, T and U, one at a time. She recorded her observations in the table below.

Number of readings	Reading on the light sensor for each water sample (Lux)			
	R	S	T	U
1st	501	600	50	908
2nd	495	603	55	903
3rd	503	603	57	905

In which water sample will Mikyla find the greatest number of water plants growing at the bottom of the pond?

(1) R
(2) S
(3) T
(4) U

18. A parachute was released from an airplane and it landed on the top of a slope as shown below. What is the energy conversion from the point the parachute was released to the point it landed on top of the slope?

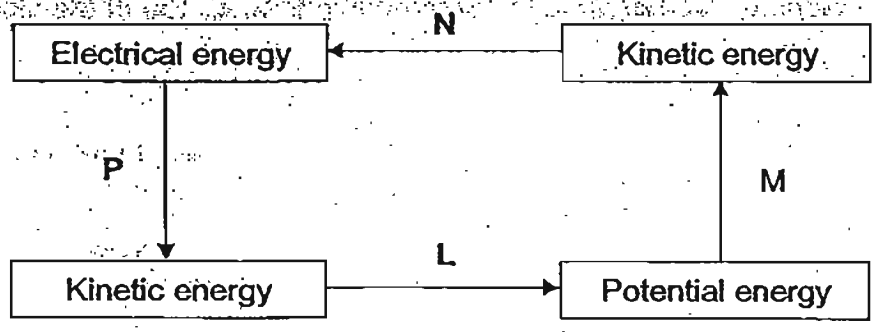


(1) potential energy → kinetic energy → sound energy
(2) kinetic energy → sound energy → potential energy
(3) kinetic + sound energy → potential energy → potential energy
(4) potential energy → kinetic energy → sound + potential + heat energy

19. Which one of the following consists of sources of energy only?

(1) sun, rock, fuel
(2) oil, air, waterfall
(3) wood, food, wind
(4) coal, magnet, natural gas

20. Look at the diagram below.

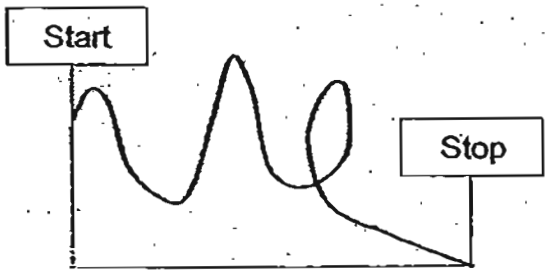


Which one of the following represents P, L, M and N?

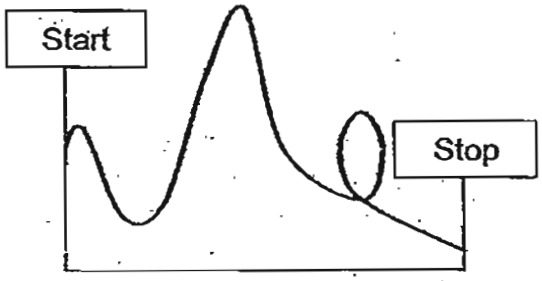
	P	L	M	N
(1)	A lift	Firing a gun	Compressing a spring	A turbine
(2)	A hairdryer	Climbing up a flight of stairs	Burning fossil fuels	Pressing the lift button
(3)	An electric drill	Winding up a toy	A Jack-in-a-box	A dynamo
(4)	A car in motion	Stretching a spring	Pulling the band of a catapult	An electric shaver

21. Roller coaster cars do not have motors and they move up and down the slopes with the energy from the height at which the ride begins. The diagrams below show four different roller coaster track designs. Which track will allow a roller coaster car to travel continuously from the beginning to the end of the ride?

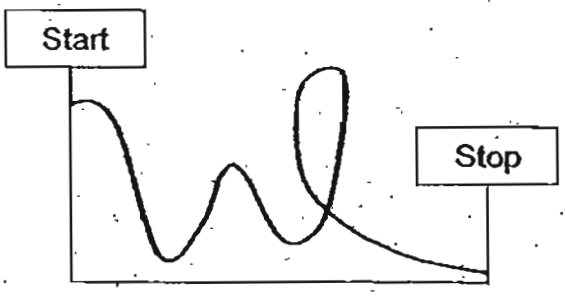
(1)



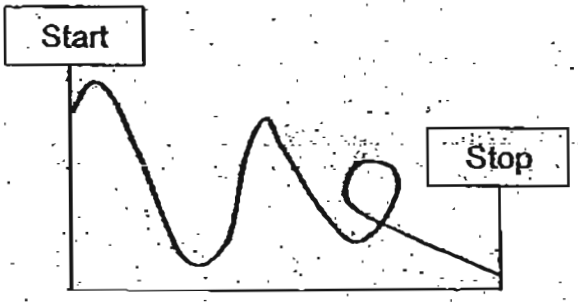
(2)



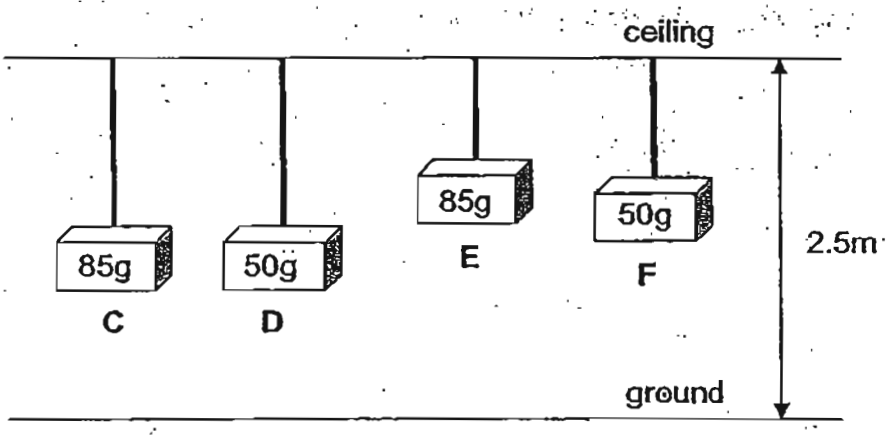
(3)



(4)



22. The diagram below shows 4 objects hanging from the ceiling which is 2.5m away from the ground.



Which of the following statements is/are true?

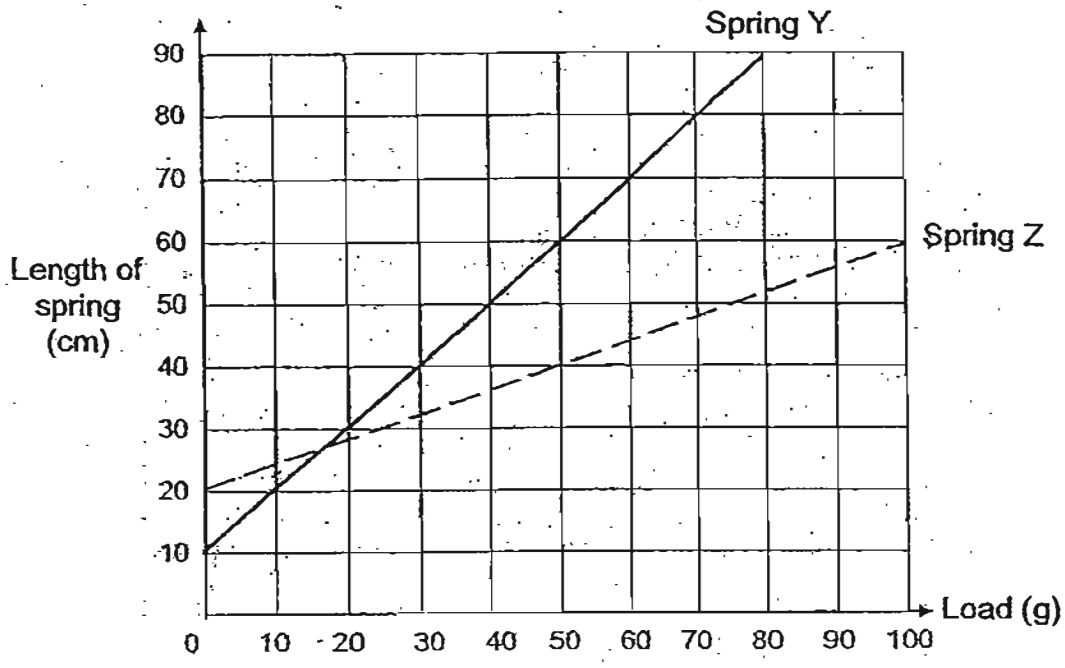
A Object C has more gravitational potential energy than object E.
B Object D has less gravitational potential energy than object F.
C Objects C and D have the same amount of gravitational potential energy.
D When the objects hit the ground, all the gravitational potential energy of the objects will be converted to kinetic energy only.

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

23. Which one of the following involves a push and a pull?

(1) A man leaning against a wall.
(2) A boy writing on a piece of paper.
(3) A tennis player hitting a tennis ball.
(4) A girl opening the door of a refrigerator.

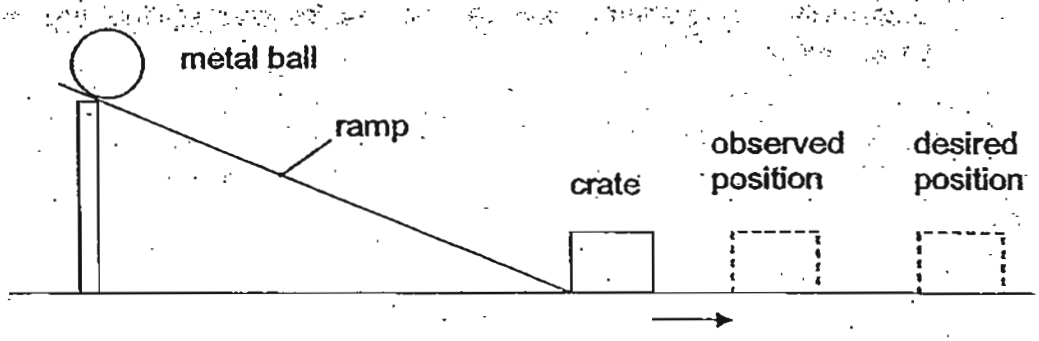
24. Avul carried out an experiment with 2 springs, Y and Z. She hung various loads on the 2 springs and measured their corresponding lengths accordingly. She then recorded the results and plotted the graph as shown below.



Based on the graph above, which one of the following shows the correct information about springs Y and Z?

	Spring with longer original length	**Spring that stretched less**
(1)	Spring Y	Spring Z
(2)	Spring Z	Spring Z
(3)	Spring Y	Spring Y
(4)	Spring Z	Spring Y

25. Shinee carried out the experiment as shown below.



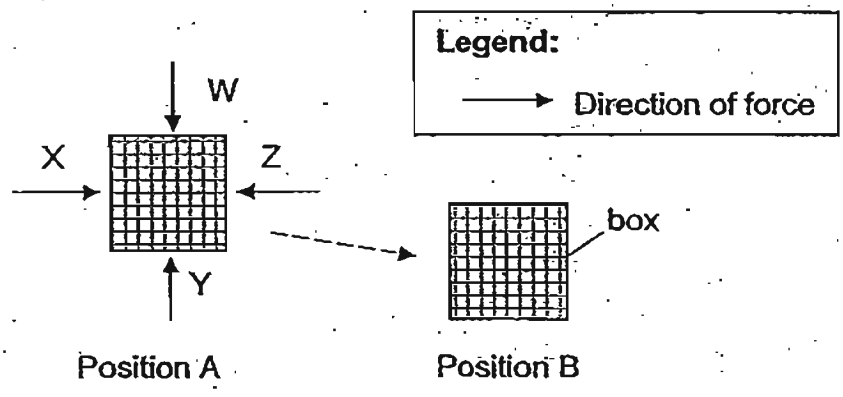
When he released the metal ball, it hit the crate, causing it to move forward. However, it did not move as far as he had wanted it to.

What were the changes he could do to the set-up to ensure that the crate would reach the desired position?

A Use a ball with a greater mass
B Lower the starting position of the ball
C Apply a layer of oil on the surface of the ramp
D Place the crate with its smaller surface area in contact with the ground

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

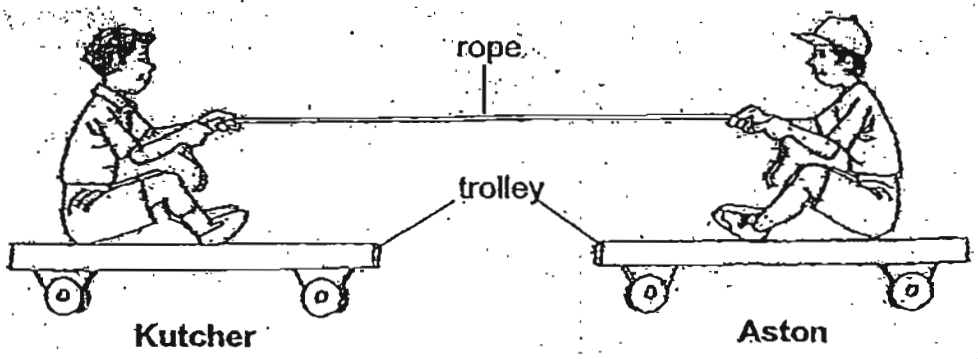
26. Four boys, W, X, Y and Z, each at one side of the box, exerted a force on the box at the same time as shown in the diagram below. The box moved from position A to position B.



Which one of the following shows the likely amount of force that was exerted by each of the boys on the wooden box?

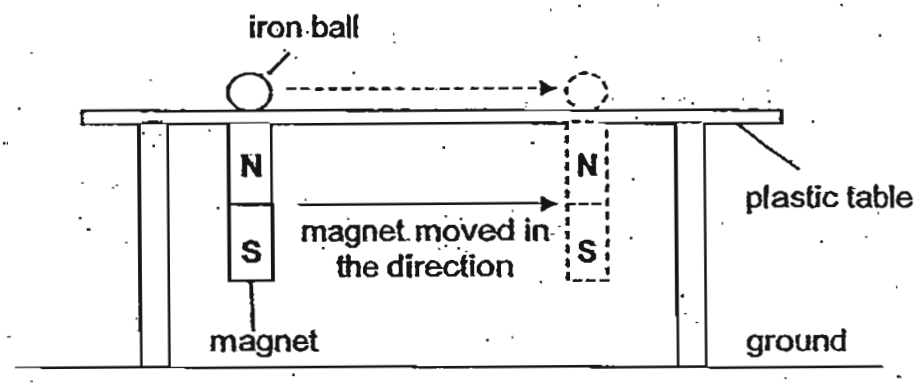
	Amount of force exerted on the wooden box (N) by			
	W	X	Y	Z
(1)	6.3	7.2	7.2	8.1
(2)	8.5	9.4	8.5	9.4
(3)	6.2	4.3	5.2	6.2
(4)	9.5	9.5	8.1	8.1

27. Two boys, Aston and Kutcher, are sitting on two similar trolleys that have been placed on level ground. They are holding a rope as shown in the diagram below. Given that Aston and Kutcher are of equal mass, what will happen the moment Aston pulls the rope?



(1) They will move towards each other.
(2) Kutcher will move towards Aston who will remain still.
(3) Aston will move towards Kutcher who will remain still.
(4) Kutcher will move forward while Aston will move backward.

28. Nikki set up an experiment as shown in the diagram below.

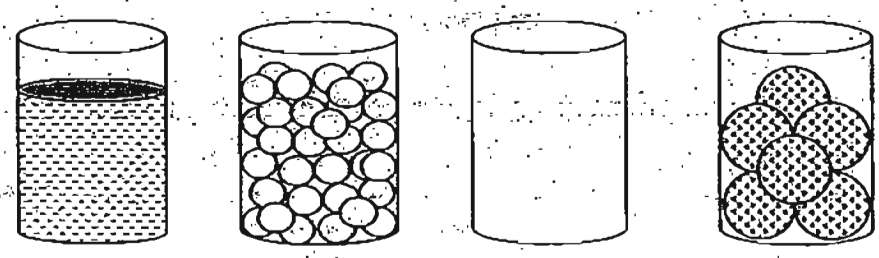


As Nikki slid the magnet along the underside of the table, the iron ball moved along the direction as shown above.

What did Nikki's experiment show?

(1) A magnet does not attract all types of metals.
(2) Plastic allows magnetic force to pass through it.
(3) Friction slows down the movement of the ball bearing.
(4) Magnetic force can pass through non-metallic materials.

29. Four identical glasses contained the following objects.



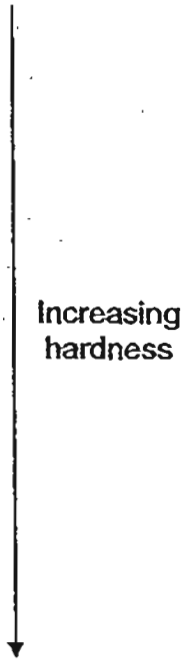
The four glasses are then placed beneath 4 taps. The taps are then turned on and water flowed into the glasses at the same rate.

In what order, from the first to the last, will the water overflow in the glasses?

(1) orange juice, golf balls, marbles, air
(2) air, orange juice, marbles, golf balls
(3) marbles, orange juice, air, golf balls
(4) orange juice, marbles, golf balls, air

30. Jean wants to identify an unknown material and she used the Moh's scale of hardness to help her. This scale compares 10 common minerals with differing degrees of hardness. A harder mineral will be able to scratch a mineral softer than it.

Moh's scale of hardness	
Hardness	**Mineral**
1	Talc
2	Gypsum
3	Calcite
4	Fluorite
5	Apatite
6	Orthoclase
7	Quartz
8	Topaz
9	Corundum
10	Diamond



Jean finds that her mineral scratches fluorite and apatite but is not scratched by orthoclase.

From this test, Jean is able to conclude that her unknown mineral has a hardness of _____.

(1) 7
(2) 5
(3) 4
(4) 3

***** END OF SECTION A *****

Name: _____ ( )

Class: Primary 6 _____

CHIJ ST NICHOLAS GIRLS' SCHOOL

SIMPLE IN VIRTUE

STEADFAST IN DUTY

德 纯 义 学

Primary 6

First Continual Assessment – 2011

SCIENCE

BOOKLET B

2nd March 2011

Booklet A	60
Booklet B	40
Total	100

Total Time for Booklets A and B: 1 hour 45 minutes

14 questions
40 marks

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

This paper consists of 17 printed pages.

_____

Parent's Signature/Date

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. Mei Lan plucks a leaf from a plant as shown in diagram A below.

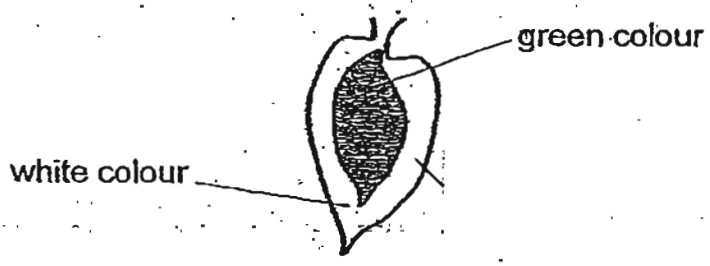


Diagram A

The plant has been placed in the sun for 3 days. The leaf above was treated before a starch test was carried out on it using iodine solution.

Diagram B below shows the results of the starch test.

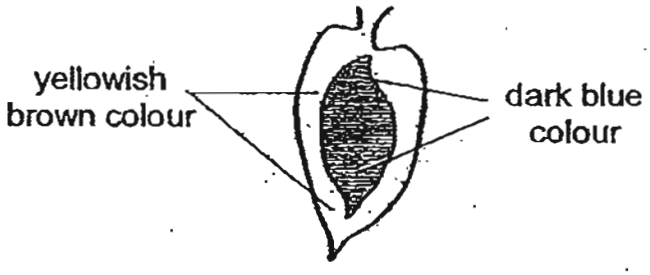
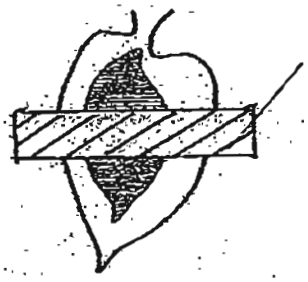


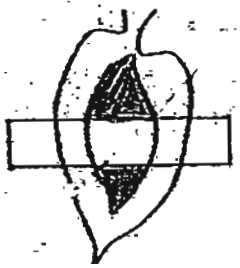
Diagram B

(a) What is the aim of Mei Lan's experiment? [1]

Mei Lan has covered both sides of another leaf from the same plant with a strip of black paper as shown below. She treated the leaf before conducting a starch test on it.



(b) Shade the parts of the leaf that would turn iodine solution dark blue. [1]

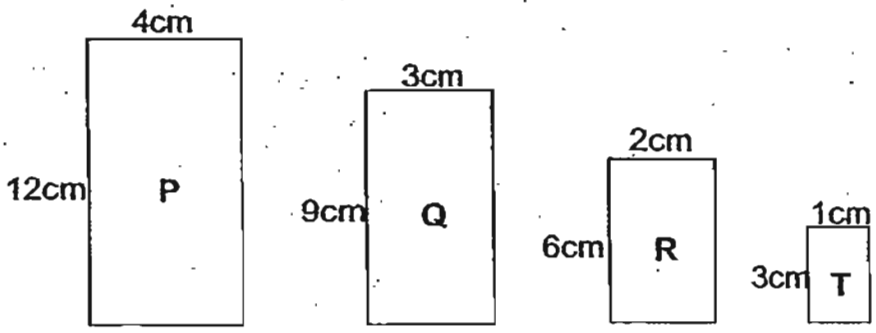


(c) What can Mei Lan infer from the results of the second experiment? [1]

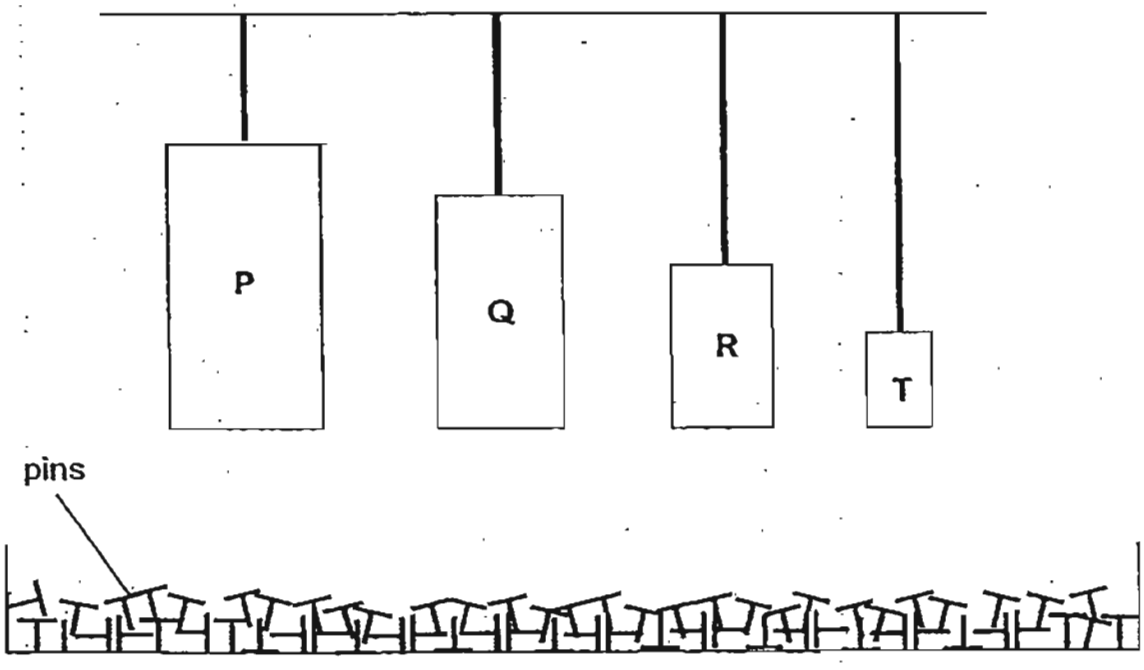
_____

_____

32. Janissa had 4 different magnets, P, Q, R and T, as shown below.



She hung the magnets an equal distance from a tray of pins as shown below.



Janissa observed the number of pins attracted by each magnet and recorded her observations in the table below.

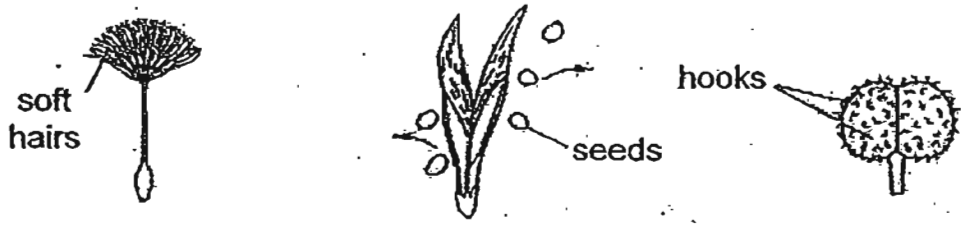
	Number of pins attracted by the magnets		
Magnet	**1st try**	**2nd try**	**3rd try**
P	5	3	4
Q	11	13	12
R	8	7	7
T	19	17	18

(a) Why did Janissa repeat her experiment 3 times? [1]

(b) From the information recorded in the table above, what can Janissa conclude about the magnets in relation to their sizes? [1]

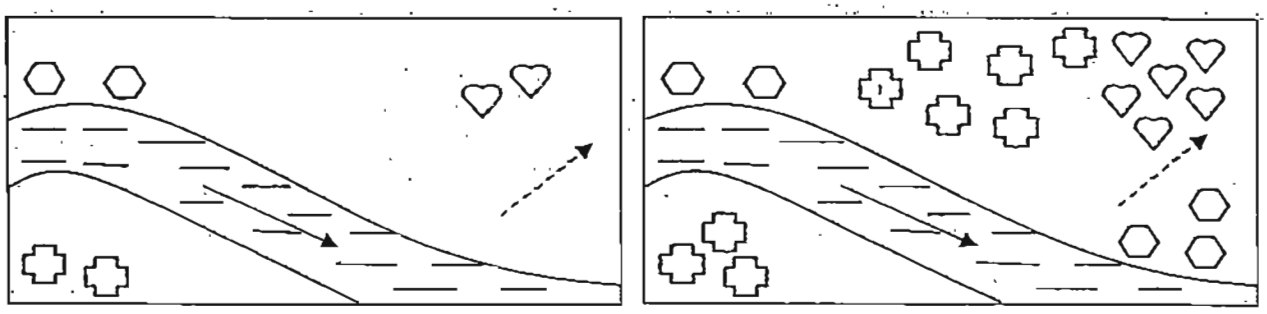
(c) Arrange the magnets in order of their strength, from the strongest to the weakest. [1]

33. The diagrams below show 3 fruits, R, S and T.

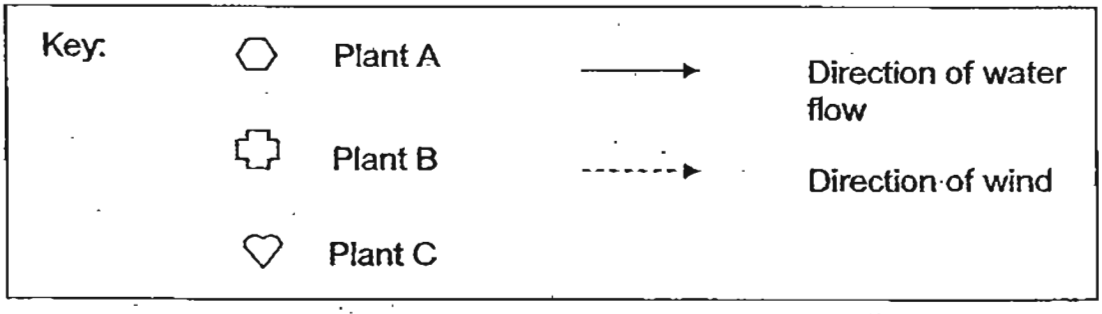


Fruit R **Fruit S** **Fruit T**

The maps below show the locations of 3 types of plants, A, B and C, on a plot of land in Years 2009 and 2011.



Year 2009 Year 2011



(a) Which plant, A, B or C, is the parent plant of fruit R? Give a reason for your answer. [1½]

_____

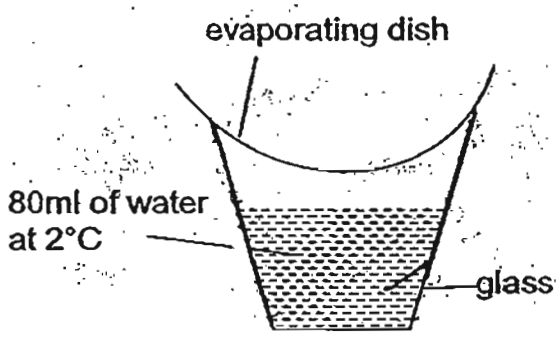
_____

(b) How is fruit S dispersed? What is the physical characteristic of S that enables it to be dispersed by the way mentioned? [1½]

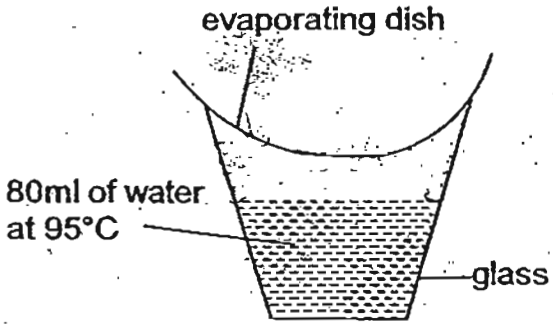
_____

_____

34. The diagram below shows 2 glasses of water that have been placed on the table.



Set-up W

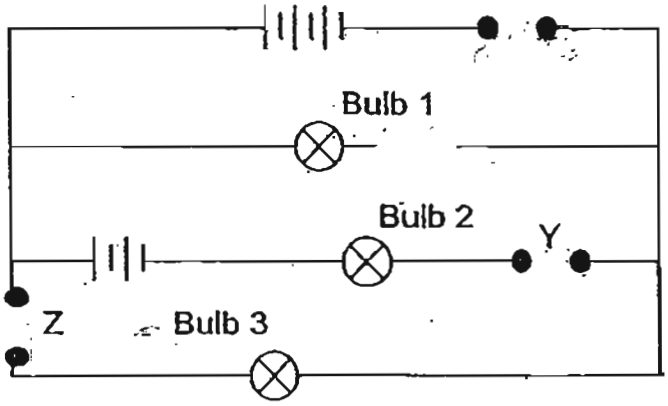


Set-up X

(a) Draw on both set-ups where water droplets will be observed. [2]

(b) Explain how the water droplets are formed for set-up X. [2]

35. Shona used the circuit below to test if objects A, B, C, D and E are made of conductors of electricity.



She connected different objects to the circuit at testing positions X, Y and Z and recorded her findings in the table below.

Objects placed at			Does the bulb light up?		
X	Y	Z	Bulb 1	Bulb 2	Bulb 3
A	B	C	√	√	√
E	D	A	√	√	
C	D	E	√	√	
E	A	B			
B	C	D	√	√	√

Shona's teacher commented that one of the testing positions that she had chosen was unsuitable for determining if all 3 objects tested at the same time were electrical conductors.

(a) Which testing position, X, Y or Z, is Shona's teacher referring to? [1]

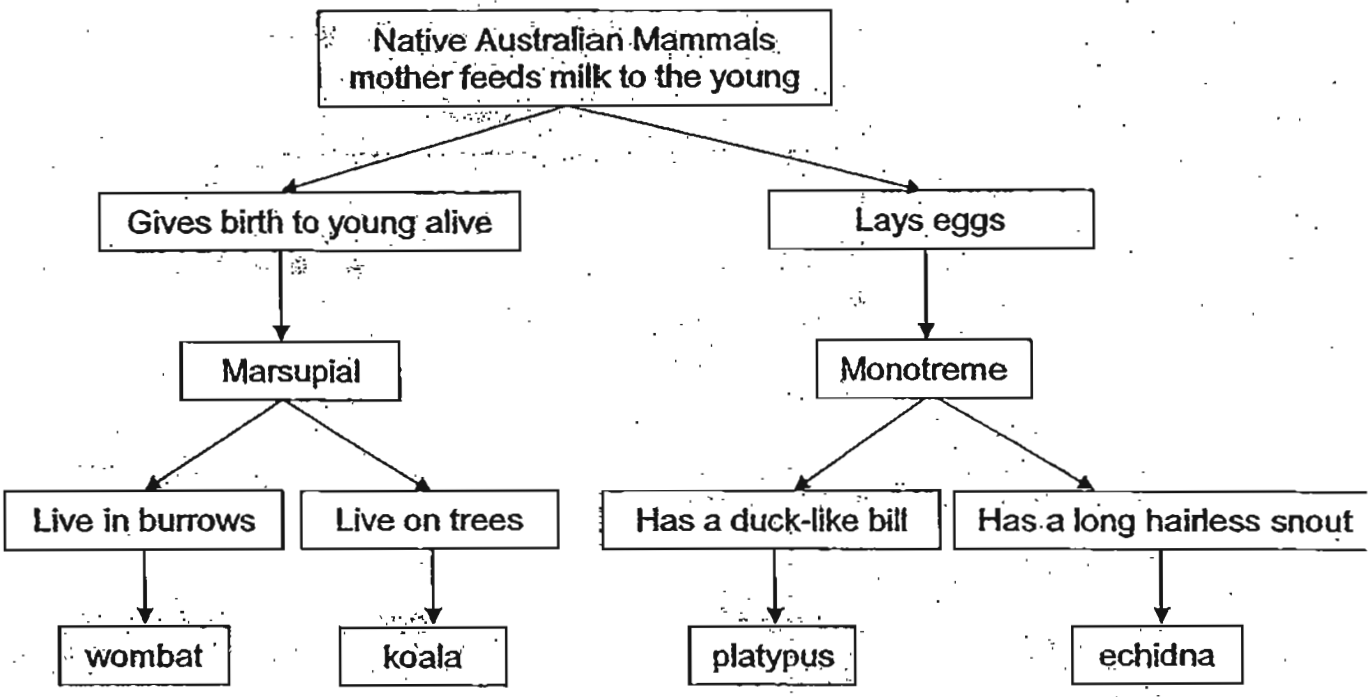
_____

(b) In the circuit diagram above, use a "N" to indicate where Shona should place the new testing position so that it will be suitable for testing if all 3 objects tested at the same time were electrical conductors. [1]

(c) Based on the results above, which of the objects is/are not electrical conductors? [1]

_____

36. The chart below is used to classify four native Australian mammals.



(a) What is the characteristic that distinguishes a monotreme from a marsupial? [1]

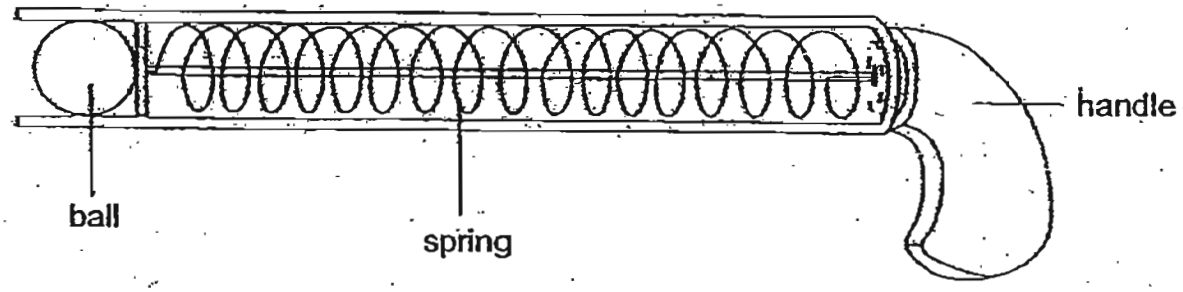
_____

(b) Based on the chart, what are the characteristics of a platypus? [2]

_____

_____

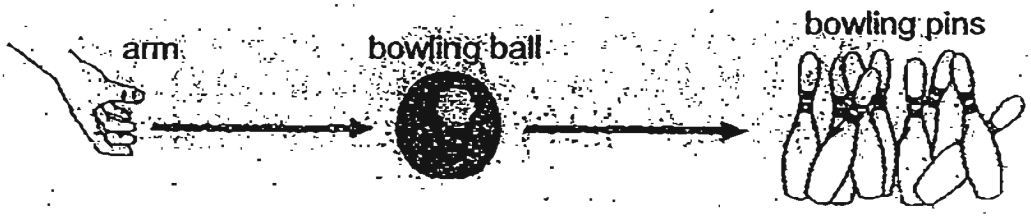
37. The diagram below shows a popgun that works using a spring. When the handle is pulled back and then released, the ball will shoot out of the popgun.



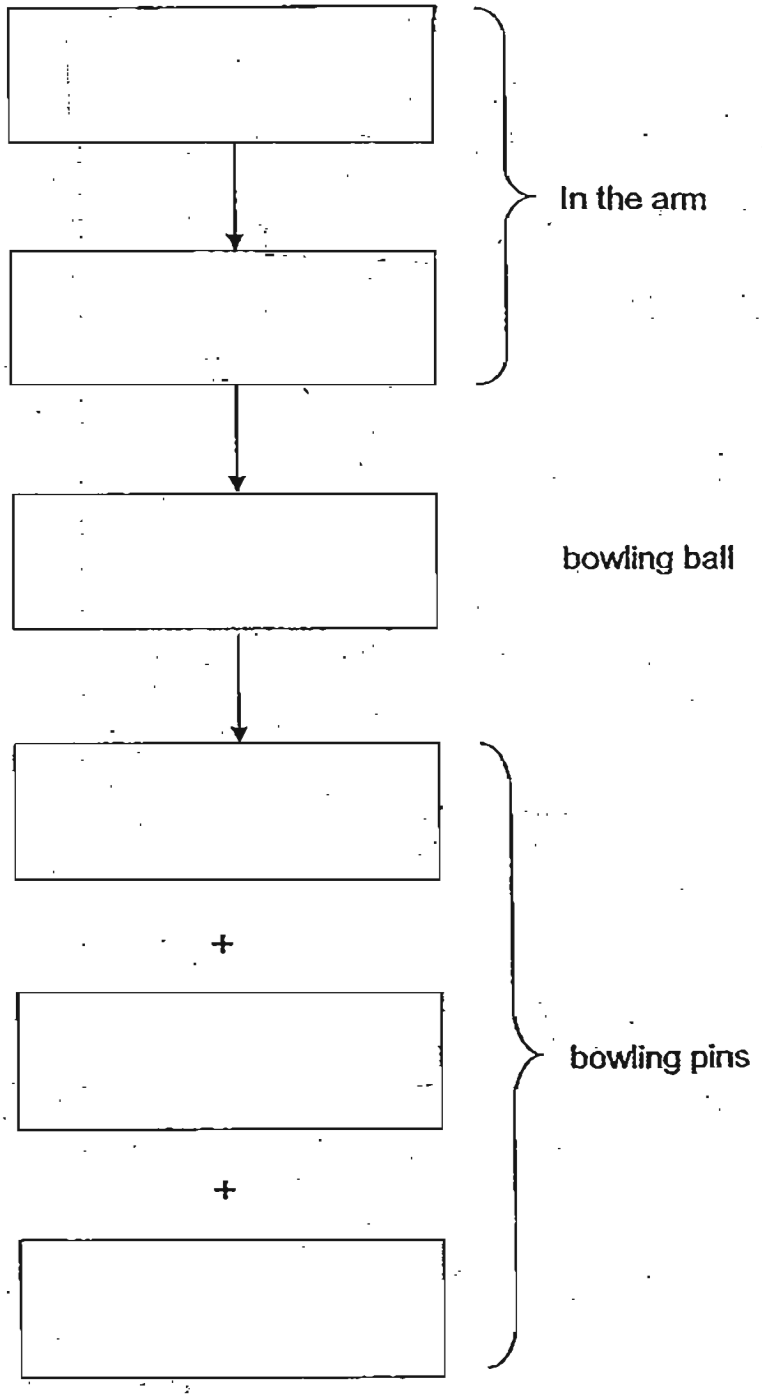
(a) Without making any changes to the popgun and using the same ball, describe how you would make the ball travel a further distance when it is shot out of the popgun. [1]

(b) Give a reason for your answer in (a). [1]

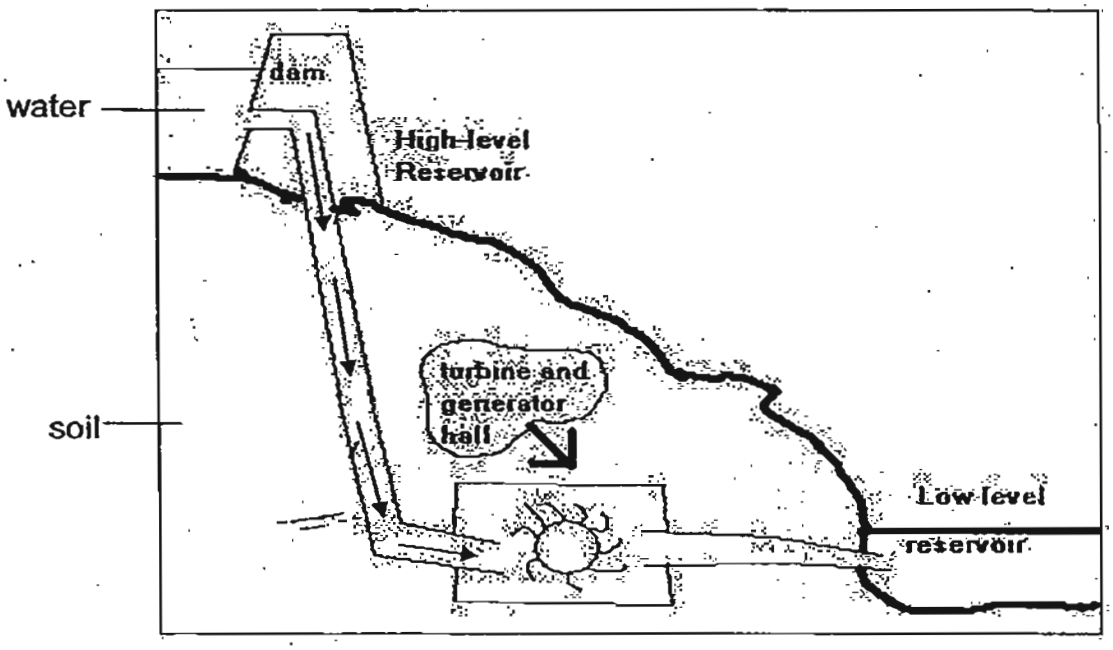
38. Karen is playing bowling with her friends at Kunick Bowling Alley. Karen releases the bowling ball which rolls along the bowling lane before it finally hits the bowling pins at the end of the lane as shown in the diagram below.



Write down in the boxes the energy conversion for the above activity. [3]



39. The diagram below shows a hydroelectric power station.



The dam is built on higher ground for storage of water, creating a large reservoir. When water flows out from the dam, it turns a turbine which is connected to a generator. Electricity is then produced.

(a) Why do you think water is stored at a higher ground in a hydroelectric plant? [1]

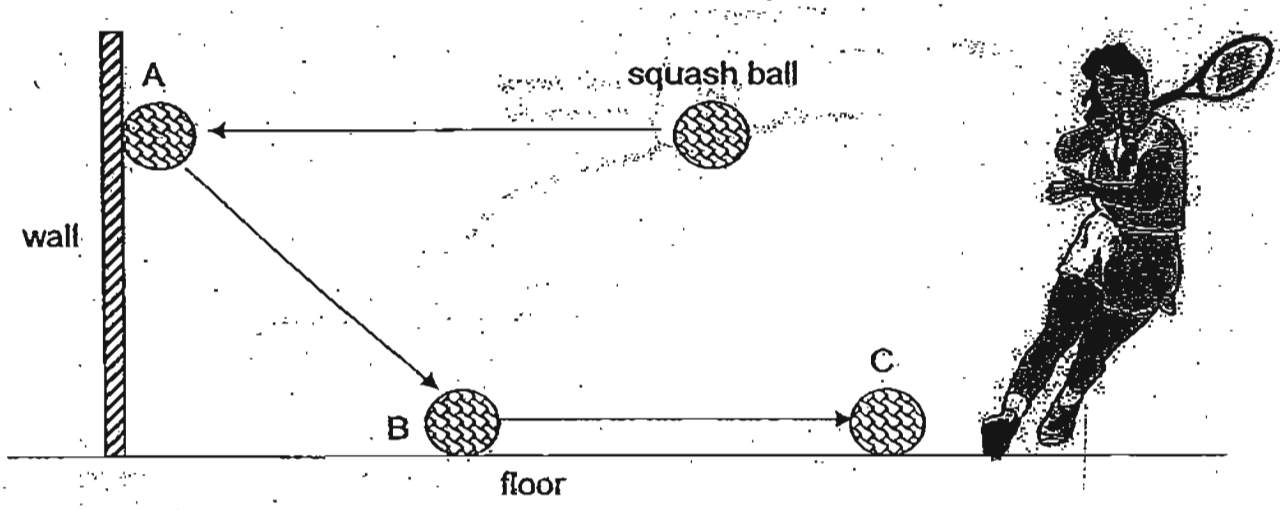
_____

(b) State one advantage of generating electricity using a hydroelectric plant? [1]

_____

_____

40. Vince hits a squash ball against the wall as shown below. The squash ball hits the wall at position A before bouncing off and landing at position B on the floor. The ball then rolled along the floor before coming to a stop at position C.

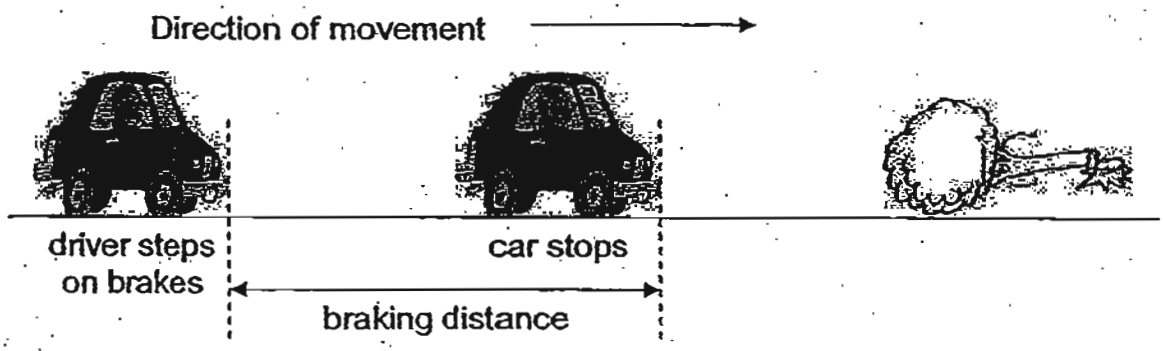


(a) What is/are the force(s) acting on the squash ball as it travels from position A to C? [1]

(b) Mark an "X" on the floor in the above diagram to show where the ball might have landed if Vince had hit the squash ball with a greater force. [1]

(c) Why did the squash ball come to a stop eventually? [1]

41. A driver travelling at 75km/h sees a fallen tree trunk in front of his car. He steps on the brakes to avoid collision with the tree trunk. There is a distance travelled by the car before it comes to a stop. This is called the "braking distance". The diagram below shows what has happened.



(a) Would the braking distance be shorter, longer or the same if [1]

(i) the driver is travelling at 110km/h?

_____

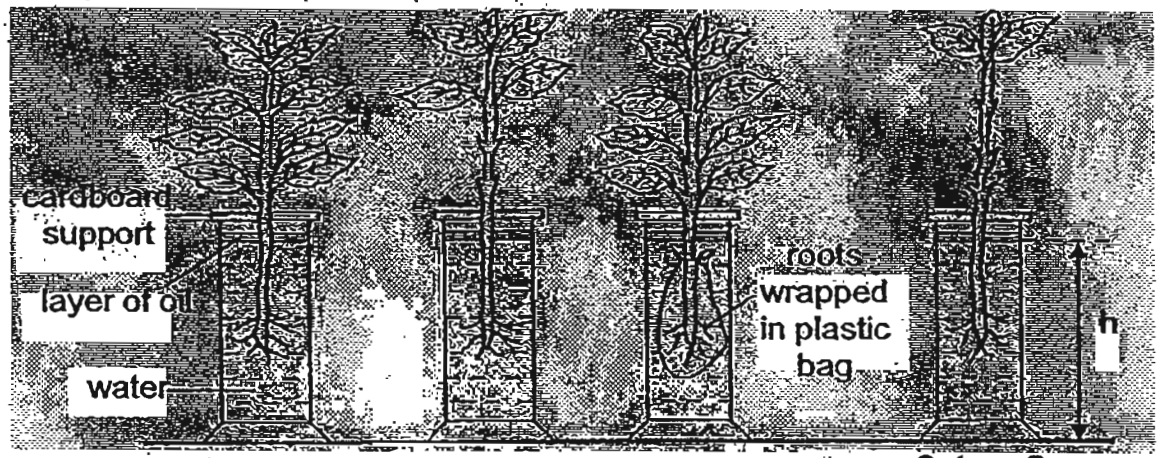
(ii) the road is wet and the driver is travelling at 75km/h?

_____

(b) Suggest a reason for your answer in (a)(ii)? [1]

_____

42. Gordon placed four plants in four identical jars, each containing water at the same level as shown below. He then placed the four set-ups, P, Q, R and S, under the sun for an hour.



(a) At the end of the experiment, Gordon measured the height "h" in each jar. He found the height "h" to be 230mm, 225mm, 220mm and 210mm. Complete the table below to show the correct results of the experiment. [1]

h (mm)	Set-up
210	
220	
225	
230	

(b) Which two set-ups should Gordon use as comparison to show that the roots of the plant absorb water? Give a reason for your answer. [2]

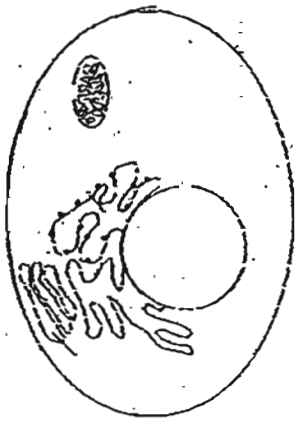
_____

_____

(c) Why did Gordon add a layer of oil to the water? [1]

_____

43. Keith observed a cell found in a multi-cellular organism using a microscope. The diagram below shows the cell that Keith observed under the microscope



He concluded that the cell was not taken from a plant.

(a) Did Keith make the right conclusion? Give a reason for your answer. [1]

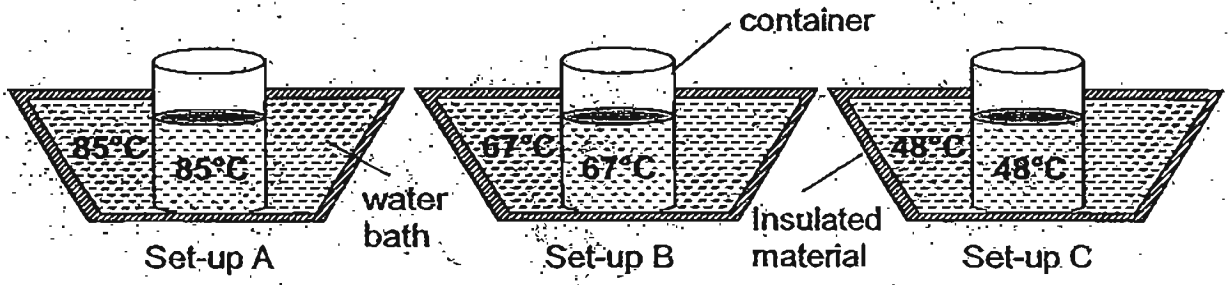
_____

(b) How will a plant be affected if all the cells are similar to the above cell? [2]

_____

_____

44. Marcus conducted an experiment using 3 set-ups as shown in the diagram below.



He recorded the results of his experiment in the table below.

Set-ups (container)	A	B	C
Initial amount of water in ~~beaker~~ (ml)	150	150	150
Temperature of water in container (°C)	85	67	48
Temperature of water bath (°C)	85	67	48
Amount of water in ~~beaker~~ (container) after 4 hours (ml)	123	135	146

(a) What is the aim of Marcus' experiment? [1]

_____

(b) What is the purpose of the water bath? [1]

_____

~~ End of Paper ~~

ANSWER SHEET

EXAM PAPER 2011

SCHOOL : CHIJ PRIMARY
SUBJECT : PRIMARY 6 SCIENCE

TERM : CA1

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

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

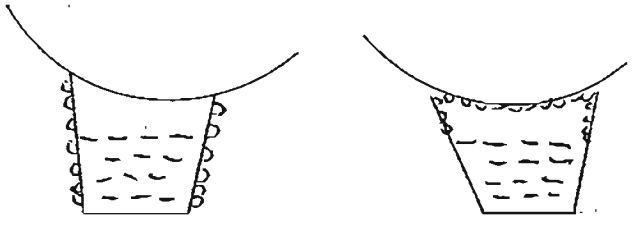
31)a)To find out if chlorophyll is necessary for photosynthesis to take place.
b)

c)The black paper is blocking sunlight from the leaf. Without sunlight,the green part of the lead which is blocked cannot make food and therefore do not turn iodine dark blue.

32)a)To get an average result which would ne more reliable.
b)Sizes of the magnets do not affect their strengths.
c)T,Q,R,P

33)a)It has soft hairs enabling it to stay afloat in the air longer to be carried away by the wind.
b)It has a dry fruit wall that splits open when ripe.

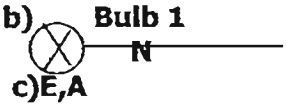
34)a)



Set-up W Set-up X

b)Hot water vapour from the hot tea rises up and touches the cool surface of the evaporating dish, condensing into water droplets.

35)a)X

b) 

c)E,A

36)a)Marsupial gives birth to young while monotreme lays eggs.

b)It has a duck-like bill, it lays eggs feeds milk to its young.

37)a)Pull the handle back a further distance.

b)When the handle is pulled back for a further distance, the spring will be compressed more. When the handle is released, the spring exerts a greater elastic spring force on the ball and shoots it further.

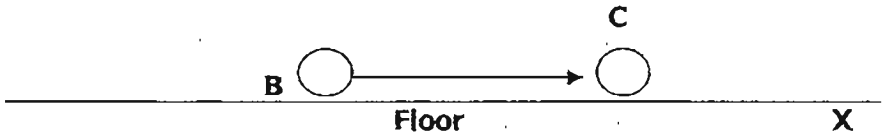
38)Chemical energy→kinetic energy→kinetic energy→kinetic energy + sound energy + heat energy

39)a)At a higher ground, there will be more gravitational potential energy. When the water flows down the pipe, more gravitational potential energy will be converted into more kinetic energy, making it move faster and thus it will turn the turbine quicker.

b)It is a renewable source of energy.

40)a)Gravitational force and frictional force.

b)



c)All its kinetic energy were converted into sound + heat energy.

41)a)i)longer ii)longer

b)The driver is travelling at the same speed but the road is wet. Friction will be reduced when there's water, so the road is more slippery and the car will have a longer braking distance.

42)a)P, Q, R, S

b)R and P. They have the same number of leaves of leaves but in R, the roots are wrapped so it is not able to take in water while in P the plant will showing that the roots absorb water.

c)All the variables of the set-ups are the same, except that R's plant's roots absorb water, but P's plant's roots can absorb water.

43)a)Yes. The cell does not have a chloroplast and cell wall.

b)They will not be in green color and will not photosynthesis.

44)a)To find out if the temperature of the water affect the rate evaporation.

b)It is to ensure that the water in the container remains the original temperature for a longer time.