Continual Assessment 1 2017
STANDARD SCIENCE
Primary 6

Total Marks: 56

Name: _____

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

Date: 3 March 2017 Parent's Signature: _____

Booklet A

Instructions to Pupils:

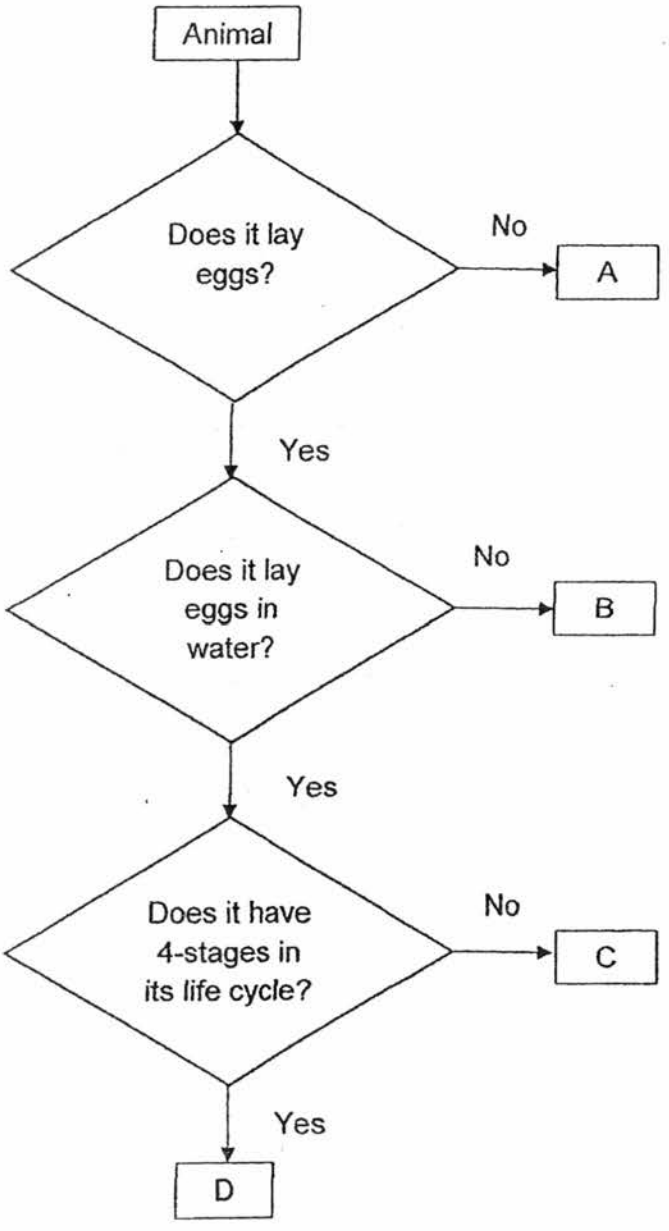
1. Do not open the booklets until you are told to do so.
2. Follow all instructions carefully.
3. This paper consists of 2 booklets - Booklet A and Booklet B
4. For questions 1 to 28 in Booklet A, shade the correct ovals on the Optical Answer Sheet (OAS) provided using a 2B pencil.
5. For questions 29 to 42, give your answers in the spaces given in the Booklet B.

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Part I (56 Marks)

For each question from 1 to 28, 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. Study the flowchart below.

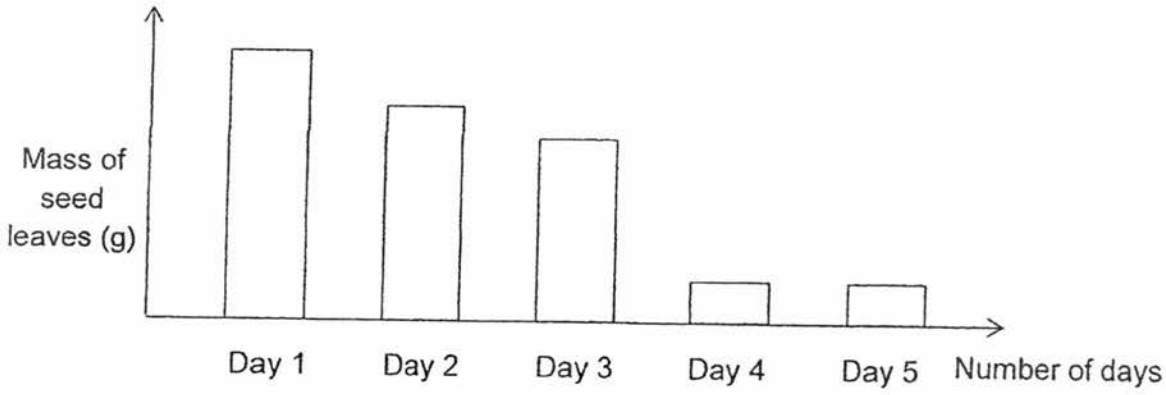


Which one of the following best represents a mosquito?

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

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2. The graph below shows the change in the mass of the seed leaves of a young plant over a period of 5 days.



Sarah, Johan, Keith and Diana wrote the following statements based on the graph above.

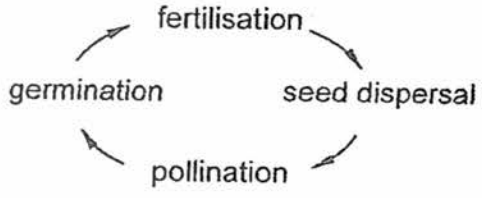
Sarah: The mass of the seed leaves will increase after Day 5.
Johan: The leaves will make food for the young plant after Day 4.
Keith: The young plant will die as the mass of the seed leaves decreases.
Diana: The seed leaves provide food for the young plant from Day 1 to Day 4.

Whose statements are correct?

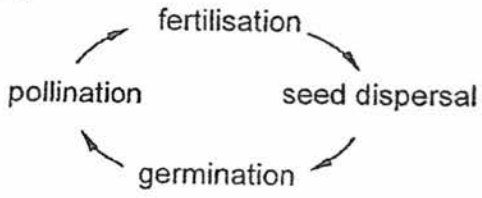
(1) Sarah and Johan
(2) Sarah and Keith
(3) Johan and Diana
(4) Keith and Diana

3. Which one of the following shows the correct sequence of processes in the sexual reproduction of flowering plants?

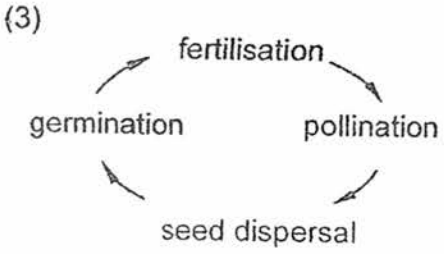
(1)



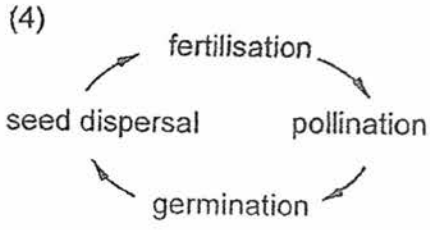
(2)



(3)

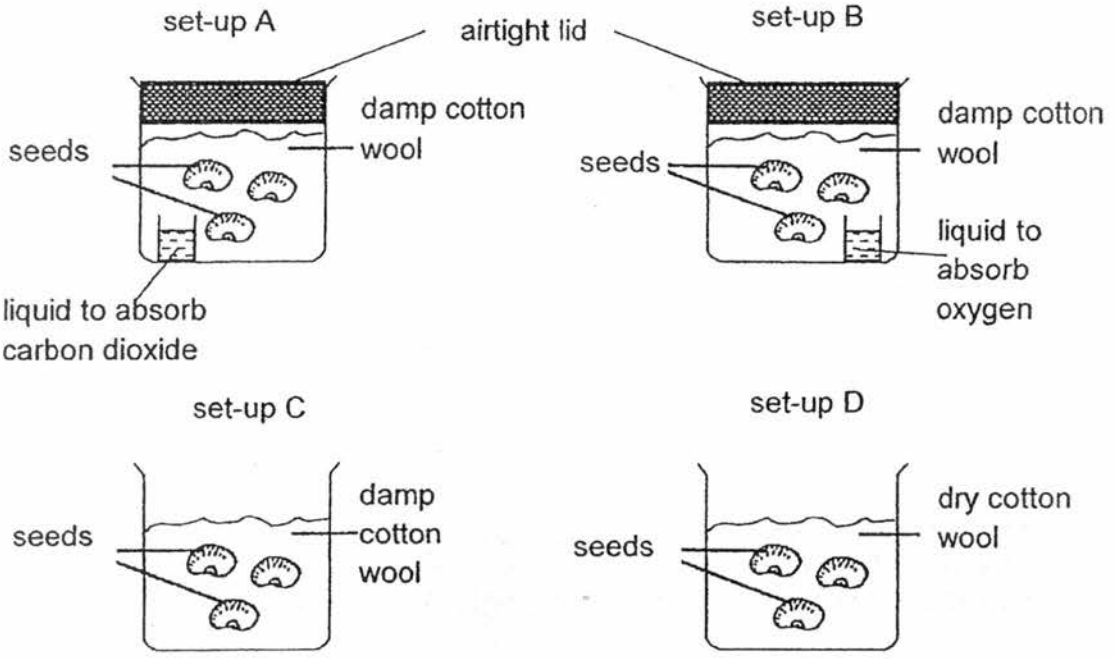


(4)



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4. Salina placed the same type of seeds in four identical containers as shown below. She covered set-ups A and B with an airtight lid, and placed the four set-ups next to the window at room temperature.



In which set-up(s) would the seeds most likely start to germinate?

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

5. The table below describes the differences in sexual reproduction between a flowering plant and a human.

	Plant	Human
Female reproductive cell	ovule	S
Male reproductive cell	pollen grain	P
Formed after fertilisation	seed	Q

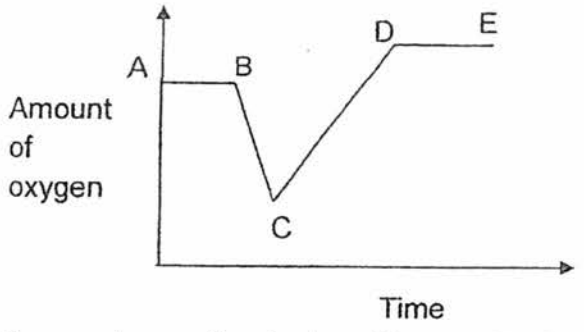
Which one of the following correctly identifies S, P and Q?

	S	P	Q
(1)	sperm	foetus	egg
(2)	egg	sperm	foetus
(3)	ovary	sperm	foetus
(4)	foetus	egg	ovary

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6. Zul has an aquarium filled with water plants and fishes. He connected a datalogger to his aquarium to measure the amount of oxygen in the aquarium over a 24 hr period.

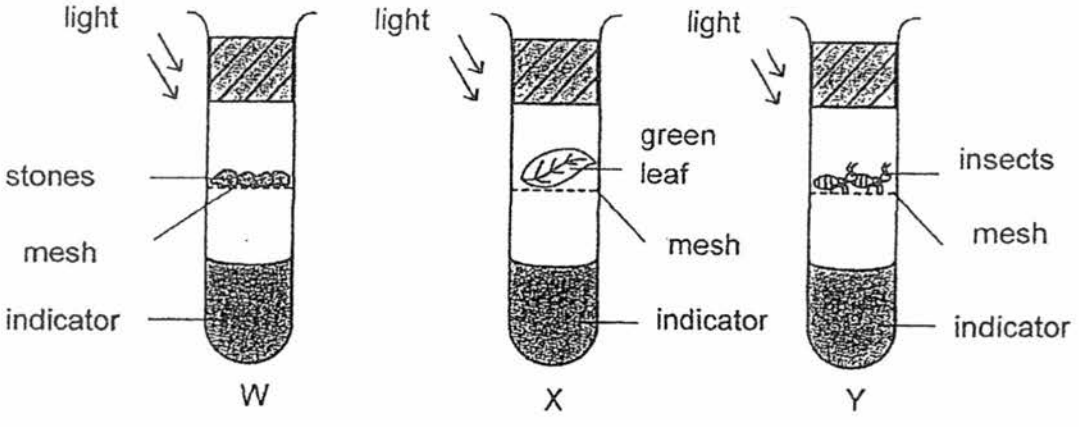
The graph from the datalogger shows the following information.



At which part of the graph was the plant unable to make food?

(1) From A to B only
(2) From B to C only
(3) From C to D only
(4) From D to E only

7. Three test tubes were set up as shown below. At the start of the experiment, the indicator in each test tube is blue. In the presence of an increased amount of carbon dioxide, the indicator changes from blue to red.

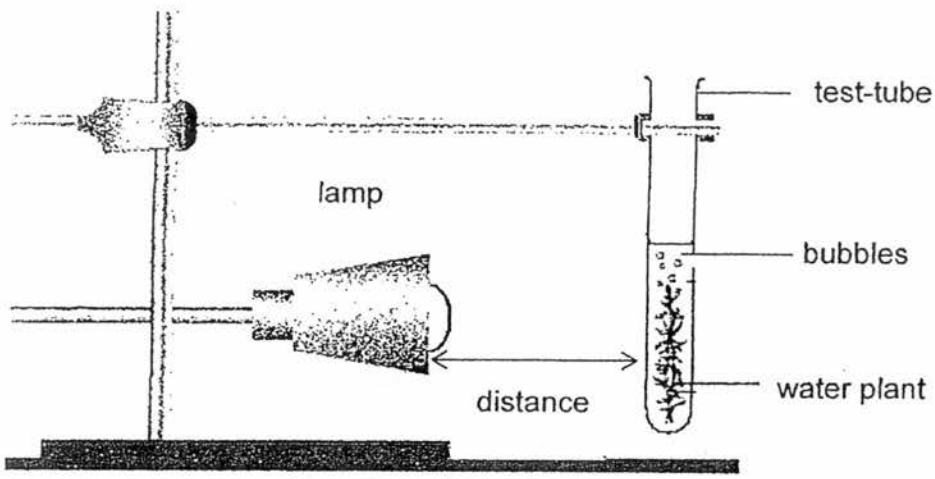


What will be the colour of the indicator in each test tube after two hours?

	W	X	Y
(1)	blue	blue	blue
(2)	blue	red	red
(3)	blue	red	blue
(4)	blue	blue	red

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8. Stanley carried out an experiment on photosynthesis. He set up the apparatus as shown below. When the lamp was switched on, he observed bubbles in the water.



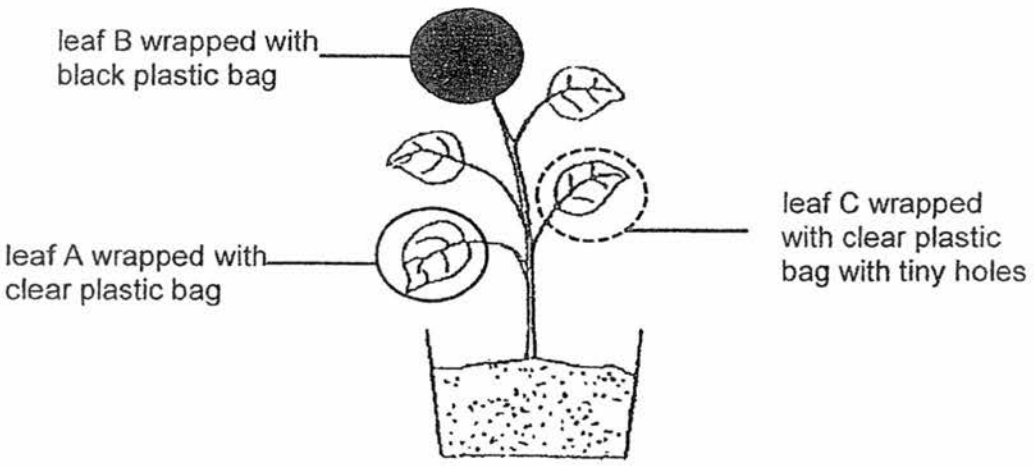
Which of these variables can affect the number of bubbles produced by the water plant?

A: Size of the test-tube
B: Distance from the lamp
C: Brightness of the lamp
D: Amount of oxygen dissolved in the water

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

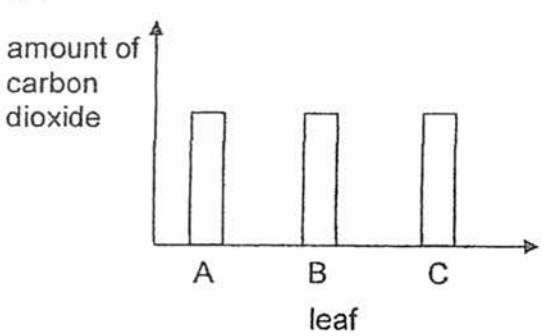
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9. Emma set up an experiment as shown below. She wrapped three similar leaves in different types of plastic bags of the same size. She placed the potted plant under the sun for several hours.

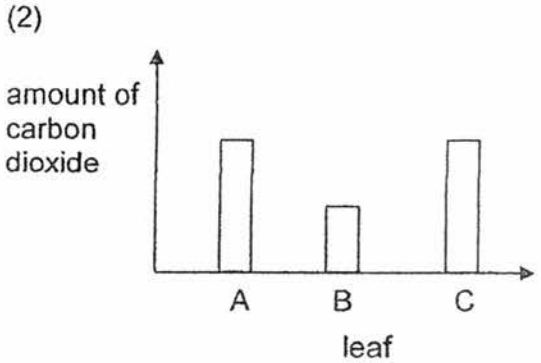


Which of the following graphs represents the amount of carbon dioxide in the plastic bags at the end of her experiment?

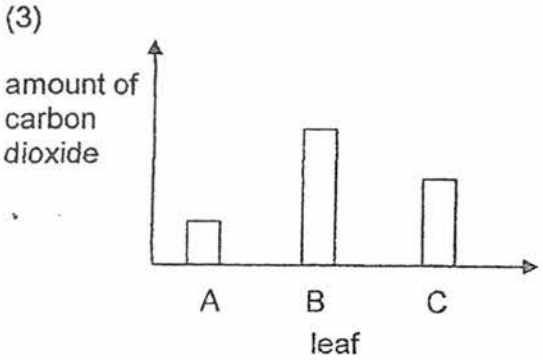
(1)



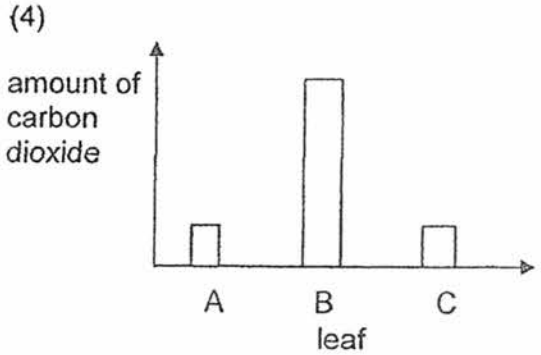
(2)



(3)



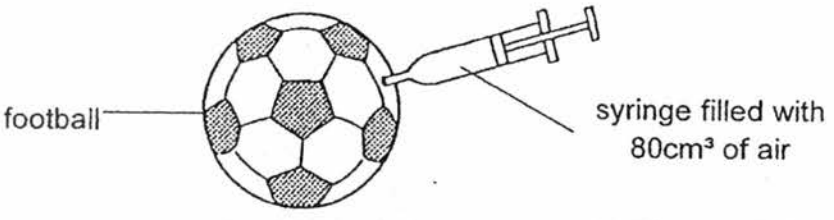
(4)



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10. Which one of the following properties can differentiate a liquid from a gas?
(1) Has mass
(2) Occupies space
(3) Has a definite shape
(4) Has a definite volume

11. Ali has a football which can hold 350cm³ of air. He used a syringe and removed 80cm³ of air from the football as shown in the diagram below.

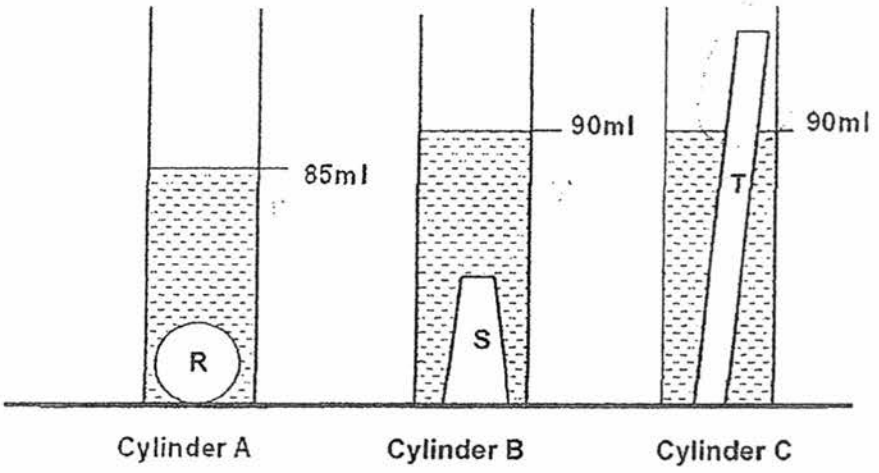


How did the volume of the air in the football and the mass of the football change ?

	Volume of air in the football	Mass of the football
(1)	decreased	decreased
(2)	increased	increased
(3)	decreased	remained the same
(4)	remained the same	decreased

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12. An experiment was conducted on 3 different objects (R, S and T). Each object was placed into measuring cylinders A, B and C respectively, filled with 80ml of water at the start.



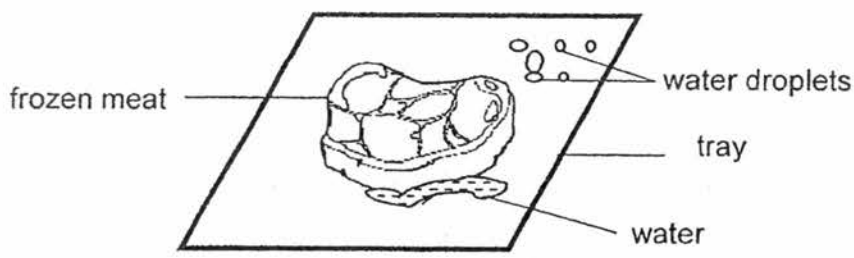
Which of the following can be concluded about objects R, S and T?

A: Object T has the largest volume.
B: Object T has a greater mass than Object R.
C: Object S has a greater volume than Object R.
D: Objects S and T have the same mass and volume.

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

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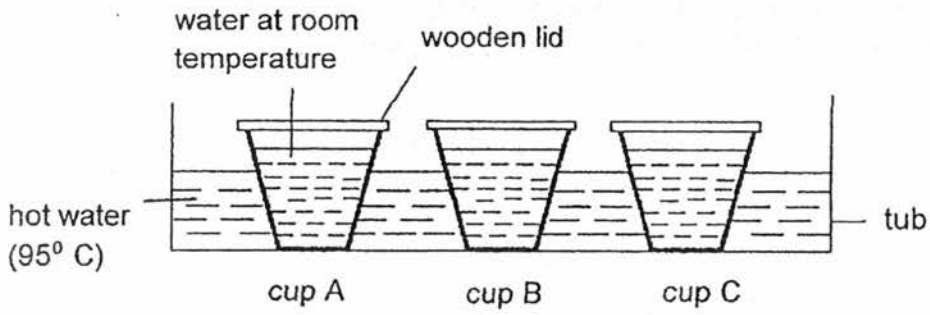
13. Mrs Tan took a piece of frozen meat covered with ice and placed it on a tray as shown in the diagram below. After some time, water appeared on the tray and the meat was not frozen.



Based on the above observations, which one of the following is **NOT** correct?

	substance	gained heat	lost heat
(1)	ice	√	
(2)	tray		√
(3)	frozen meat	√	
(4)	water vapour in the air	√	

14. Andy poured equal volumes of water at room temperature into three cups of different material. He placed the cups in a tub of hot water as shown below and covered each cup with a wooden lid.



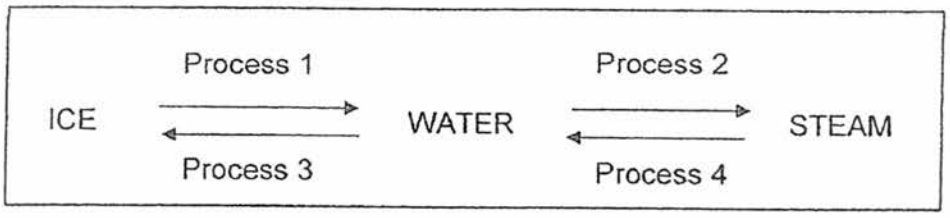
He measured the temperature of water in each cup after some time.

Andy concluded that the material of cup B was the best conductor of heat.
What was the most likely observation for Andy to make such a conclusion?

(1) The temperature of the water in cup A was the lowest.
(2) The temperature of the water in cup C remained the same.
(3) The temperature of the water in the cups A, B and C increased.
(4) The increase in the temperature of water in cup B was the highest.

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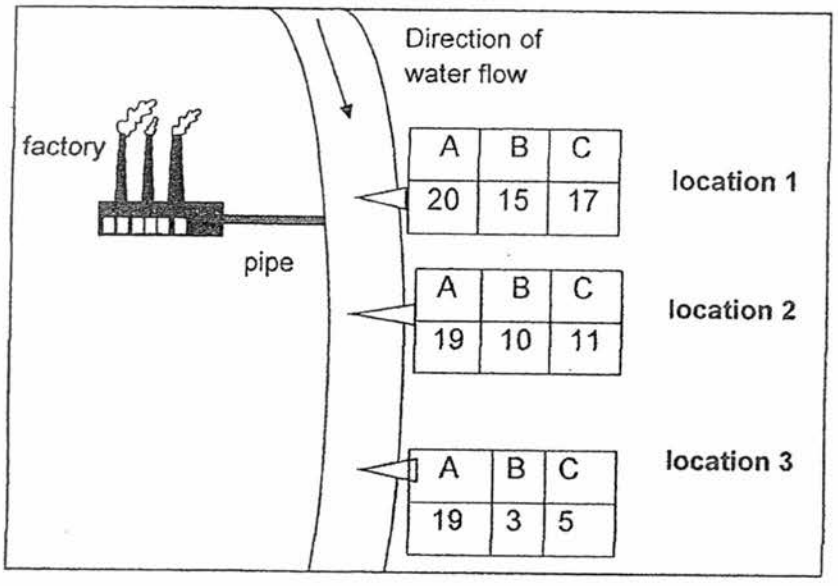
15. The diagram below shows the change of state for water.



What are the names of the processes?

	Process 1	Process 2	Process 3	Process 4
(1)	condensation	freezing	melting	boiling
(2)	melting	condensation	freezing	boiling
(3)	boiling	melting	condensation	freezing
(4)	melting	boiling	freezing	condensation

16. The diagram below shows the number of animals A, B and C found in a stream at locations 1, 2 and 3 after the factory was built. Waste is released into the water by the factory.

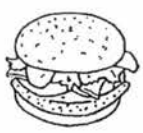


Mr Tan wants to conclude that the animals B and C are most affected by the factory waste.
Which one of the following information does he need?

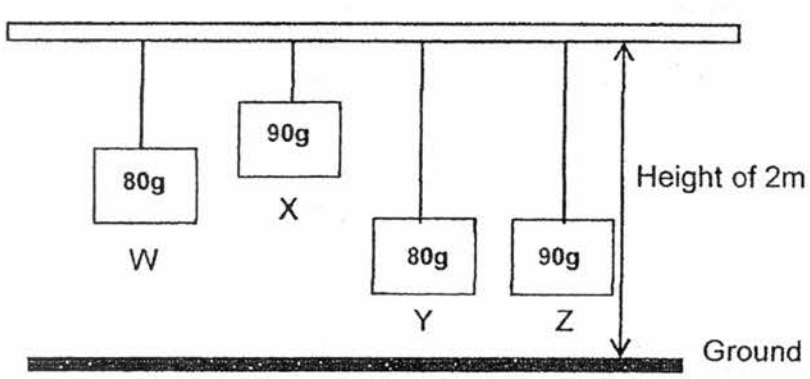
(1) The amount of waste discharged into the water.
(2) The types of waste substances discharged into the water.
(3) The number of animals A, B and C at the three locations before the factory was built.
(4) The average number of animals A, B and C at the three locations after the factory was built.

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17. Which of the following best matches the main form of energy present in the diagram shown?

	Running water 	Food 	Lightning strikes a tree 	Boy on diving board 
(1)	Kinetic energy	Potential energy	Heat energy	Kinetic energy
(2)	Sound energy	Heat energy	Light energy	Potential energy
(3)	Kinetic energy	Potential energy	Heat energy	Potential energy
(4)	Sound energy	Kinetic energy	Sound energy	Kinetic energy

18. The diagram show 4 objects which are hung from the ceiling.



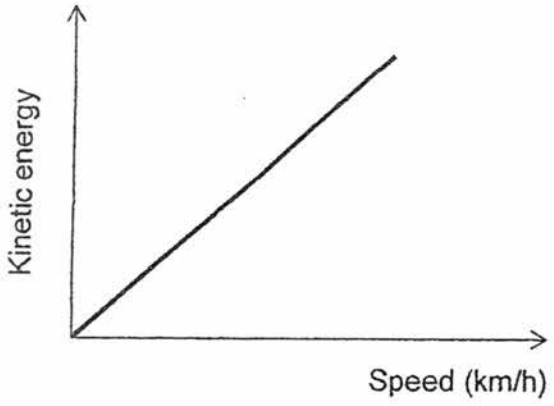
Which of the following statement(s) is/are correct?

A: Object X has more potential energy than object Z.
B: Object Z has more potential energy than object Y.
C: Objects W and Y have the same amount of potential energy.

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

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19. John conducted an experiment to find out if the speed of a car affects the amount of kinetic energy it has. He plotted his results as shown below.



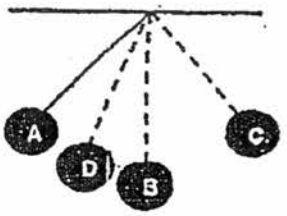
Based on the graph, what conclusion(s) can be drawn?

A: The car has no kinetic energy when it is at rest.
B: The faster the car moves, the more kinetic energy it has.
C: The mass of the car does not affect the amount of kinetic energy it has.

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

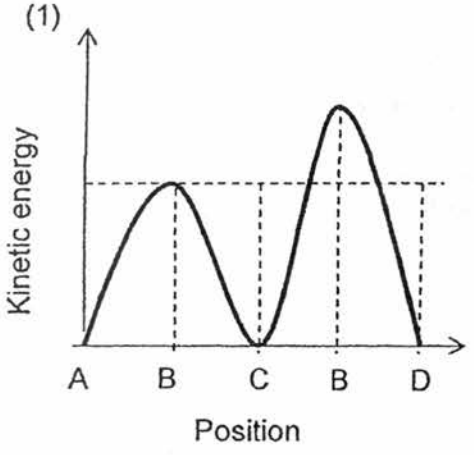
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20. Xavier carried out an experiment with a pendulum as shown in the diagram below. He released the metal ball at position A and let it swing to position C and then back to position D.

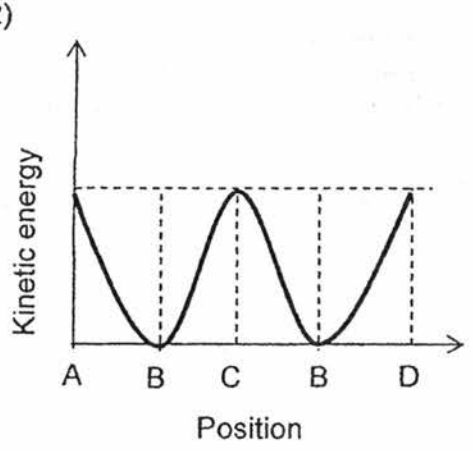


Which one of the following graphs shows the change in kinetic energy of the metal ball as it swung from A to C and then back to D passing through position B at both times?

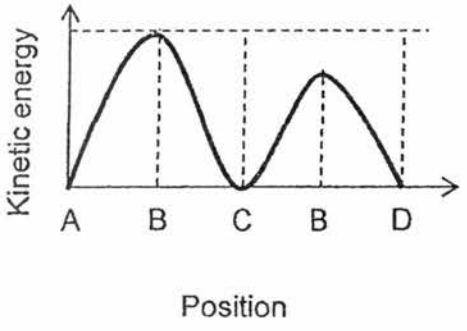
(1)



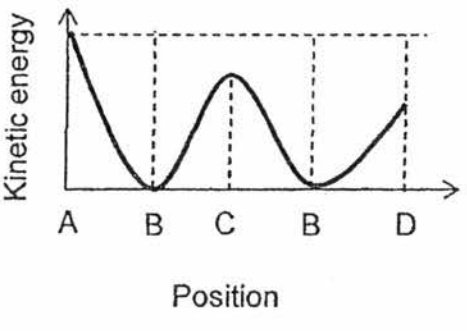
(2)



(3)

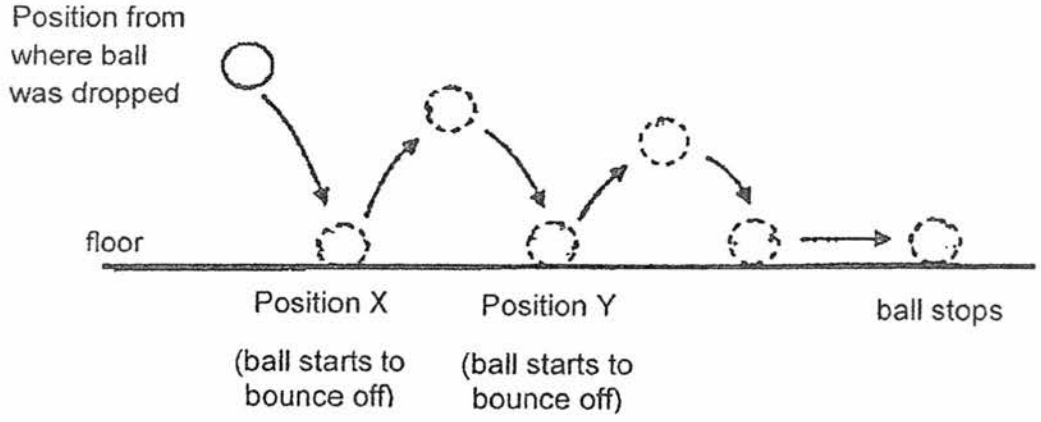


(4)



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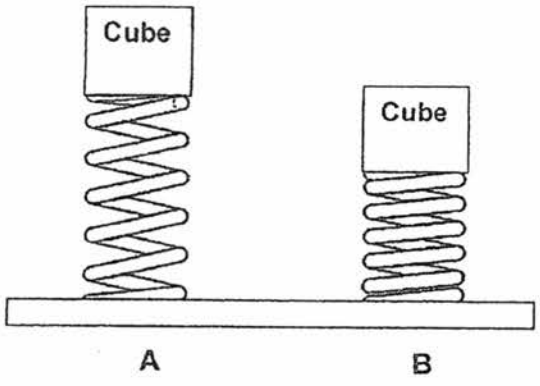
21. A rubber ball was dropped onto the floor as shown in the diagram below. The ball bounced several times making a sound each time it hit the floor.



Which one of the following statements is true about the energy in the ball as it moved from position X to position Y?

(1) The ball has no kinetic energy at both positions X and Y.
(2) The ball has more kinetic energy at position X than at position Y.
(3) The ball has the less kinetic energy at position X than at position Y.
(4) At position X, all the potential energy is converted to only kinetic energy.

22. Jason placed two different cubes on two identical springs. As a result, the springs, as shown in set-ups A and B, were compressed as shown below.



Based on his observation, Jason can conclude that _____.

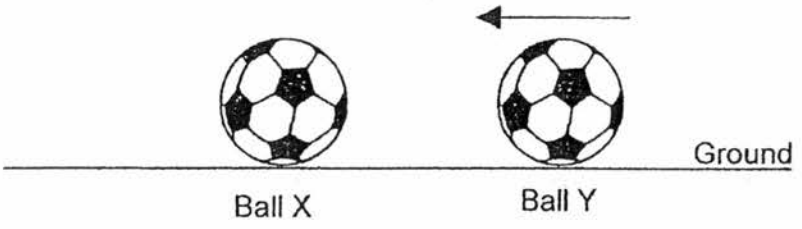
(1) Cube in A is heavier than Cube in B.
(2) The spring in A has less potential energy than in B.
(3) The spring in A has more potential energy than in B.
(4) The potential energy in the spring in A will be converted to more kinetic energy than in the spring in B.

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23. When a force is applied to an object, which of the following is not an effect of the force?

(1) The object rotates.
(2) The object moves faster.
(3) The object increases in mass.
(4) The object moves in the opposite direction.

24. Ball X is not moving. Ball Y is moving towards ball X.

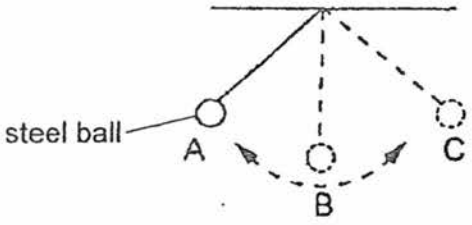


What will happen to Ball X when Ball Y touches it?

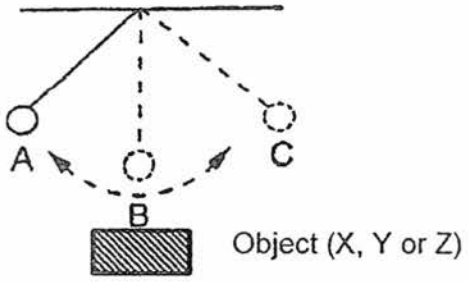
(1) Stops moving
(2) Starts moving
(3) Changes direction
(4) Slows down in speed

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25. Faith set up an experiment by letting a steel ball swing from point A to point C. It took 15 seconds to come to rest at position B.



She repeated the experiment by placing different objects X, Y and Z under position B respectively, using the identical set-up above.



The results obtained are shown in the table below.

Object	Time taken for the ball to come to a complete stop at B (s)
X	3
Y	10
Z	15

Based on the results obtained, which one of the following deductions can be made?

(1) Objects X, Y and Z are magnets.
(2) Object X is the weakest magnet.
(3) Object Y is a weaker magnet than object X.
(4) Object Z is made of a non-magnetic metal.

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26. Mr Quek used a large force to push two boxes up a slope as shown in Diagram 1. Then, he moved the same two boxes with a trolley up the same slope using a smaller force as shown in Diagram 2.



Diagram 1

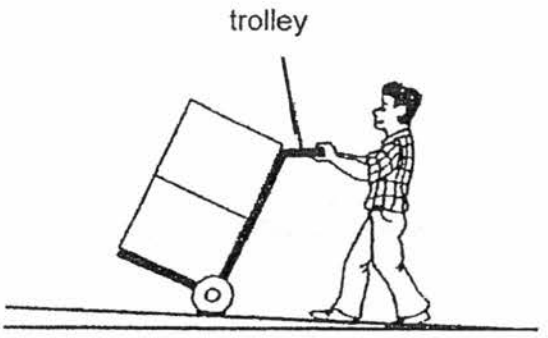
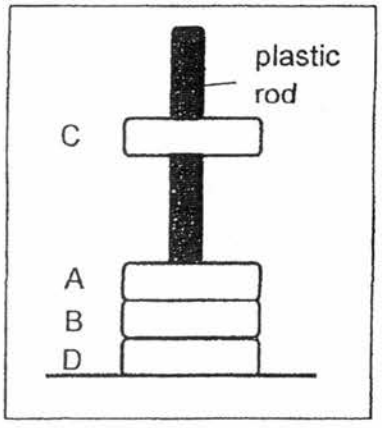


Diagram 2

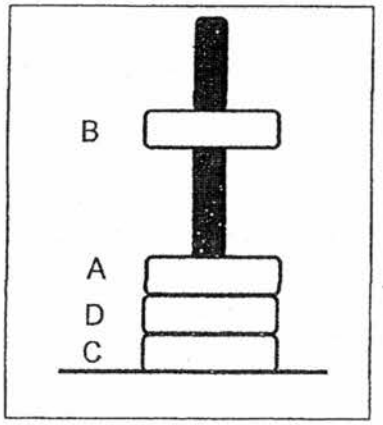
Which one of the following statements explains why Mr Quek used a smaller force to push the boxes with a trolley?

(1) Friction is reduced.
(2) There is no friction.
(3) The boxes have a smaller mass.
(4) The weight of the boxes is reduced.

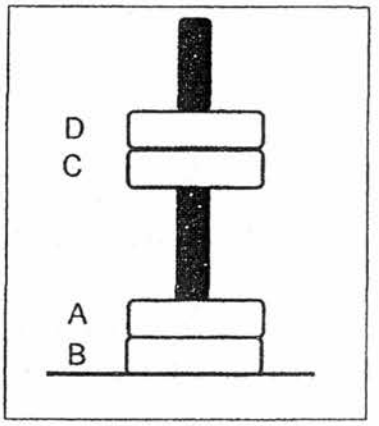
27. Chloe placed four iron rings A, B, C and D through a smooth plastic rod in three different arrangements as shown below.



Arrangement 1



Arrangement 2



Arrangement 3

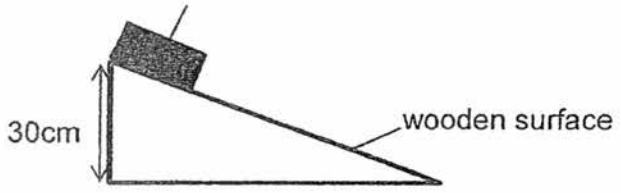
Based on the observation above, which of the following iron rings are <u>definitely</u> magnets?

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

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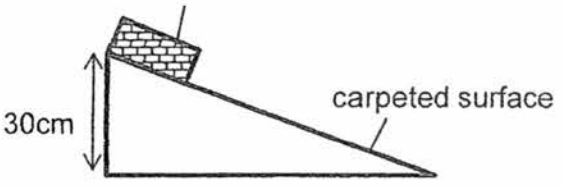
28. Joshua conducted an experiment with blocks of different masses. He released the blocks from the top of the ramps with different surfaces as shown below.

600g block



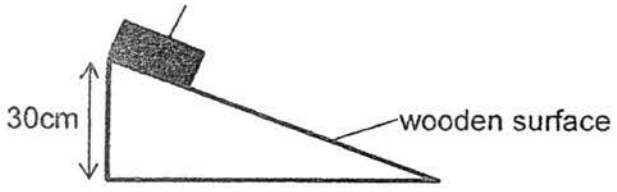
Set-up P

300g block



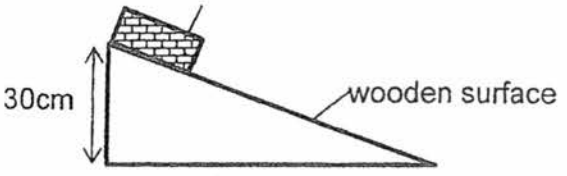
Set-up Q

150g block



Set-up R

300g block



Set-up S

He wanted to investigate how the time taken by the block to slide down the ramp depends on the mass of the block and the surface of the ramp. Which pairs of set-ups should he use in his investigation?

	Time taken depends on	
	Mass of the block	**Surface of the ramp**
(1)	Q and S	P and R
(2)	R and S	Q and S
(3)	P and Q	Q and S
(4)	P and S	Q and R

End of Booklet A

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Continual Assessment 1 2017
STANDARD SCIENCE
Primary 6

Name: _____ Total Marks: /100

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

Date: 3 March 2017 Parent's Signature: _____

Booklet B

Instructions to Pupils:

1. For questions 29 to 42, give your answers in the spaces given in Booklet B.

	Maximum	Marks Obtained
Booklet A	56 marks	
Booklet B	44 marks	
Total	100 marks	

* This booklet consists of 15 printed pages. (including the cover page)

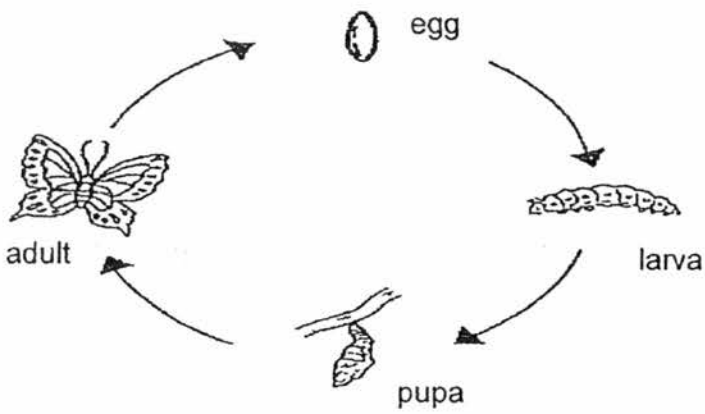
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Part II (44 Marks)

For questions 29 to 42, write your answers in the space provided.

29. Philip studied the life cycle of a butterfly as shown below.



(a) At the larval stage, the young of the butterfly has to go through a process to grow bigger. Name this process. [1]

_____

(b) The adult butterfly lays eggs on leaves.
Why does it lay eggs on leaves? [1]

_____

_____

(c) Philip classified butterfly as an insect. State one characteristic that helped him classify butterfly as an insect. [1]

_____

_____

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30. Rahimah grew two plants, A and B, of the same kind in her garden. She recorded the number of flowers and fruits grown on both the plants in the table below.

Number of days	15	25	35	45
Number of flowers on plant A	25	37	50	65
Number of fruits on plant A	0	0	21	35
Number of flowers on plant B	15	24	40	60
Number of fruits on plant B	0	0	0	0

(a) Explain why there is no fruit in plant B. [1]

_____

_____

(b) Rahimah also noticed many bees flying around her garden. Explain how the bees are helpful to plants A and B. [1]

_____

_____

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31. Study the diagram below.



fern



mushroom

(a) Give one difference between the fern and the mushroom shown above in terms of how they obtain food. [2]

_____

_____

_____

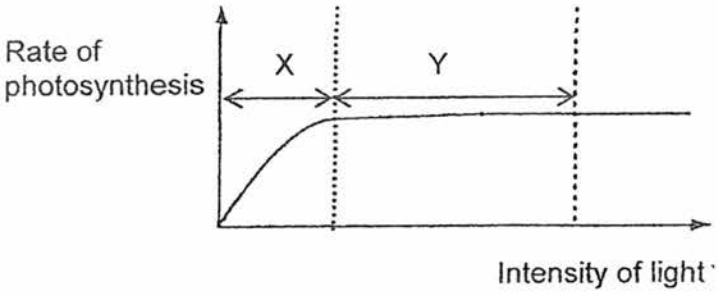
(b) Explain how the fern and the mushroom prevent overcrowding at a place. [1]

_____

_____

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32. The graph below shows how the intensity of light affects the rate of photosynthesis of plants.



(a) Based on part X of the graph, what is the relationship between the intensity of light and rate of photosynthesis? [1]

_____

_____

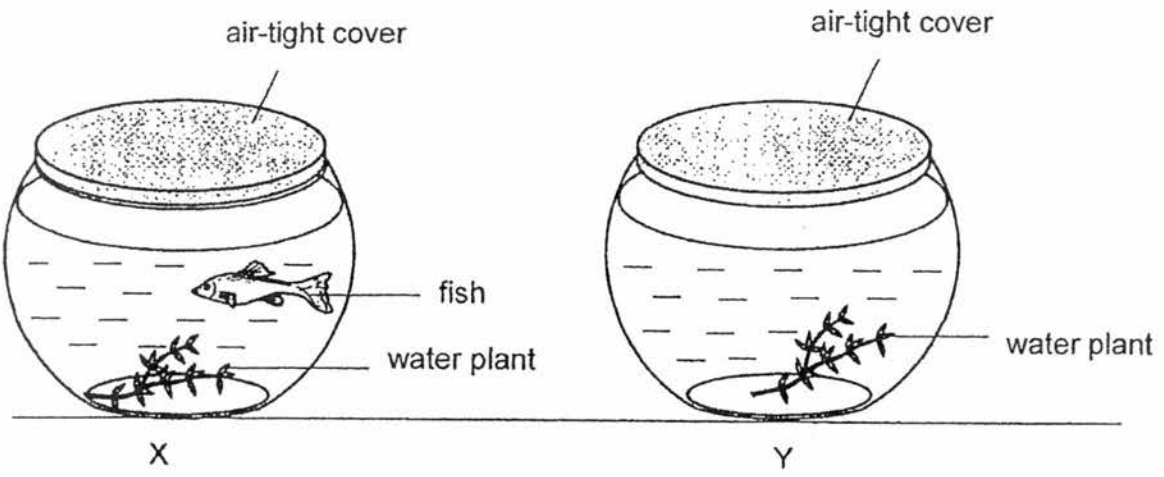
(b) The rate of photosynthesis at part Y remained the same even though the intensity of light was increased. Explain why. [1]

_____

_____

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33. Study the two fish bowls, X and Y below.



In the bowls above, the water contains air and sufficient food for the fish to eat. Both bowls were placed in bright light.

(a) After several hours, what happened to the amount of carbon dioxide and oxygen in bowl Y? Explain why. [2]

_____

_____

_____

_____

(b) Without adding water plants, what could you change in the bowl X for the fish to survive longer? Explain why. [2]

_____

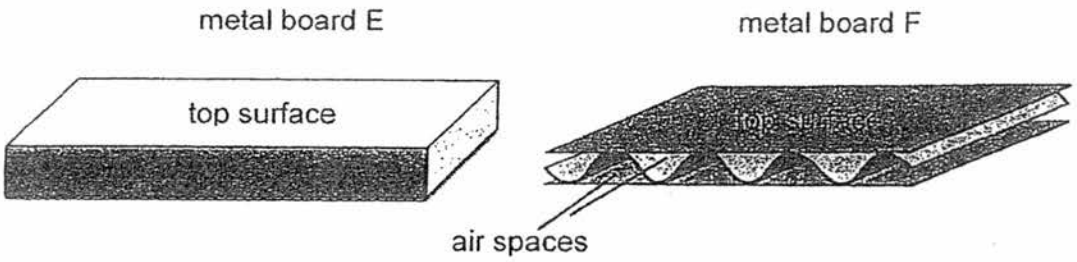
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34. The pictures below show 2 types of board made of similar metal, E and F.



Ryan cut both metal boards into the same size and thickness and placed them on a hot plate.

(a) After a few minutes, he found that the top surface of E felt hot but the top surface of F did not. Explain why. [2]

(i) metal board E:

_____

_____

(ii) metal board F:

_____

_____

(b) Give a reason how each of the following actions helps to make his experiment a fair test. [2]

(i) using similar metal for the two boards

_____

_____

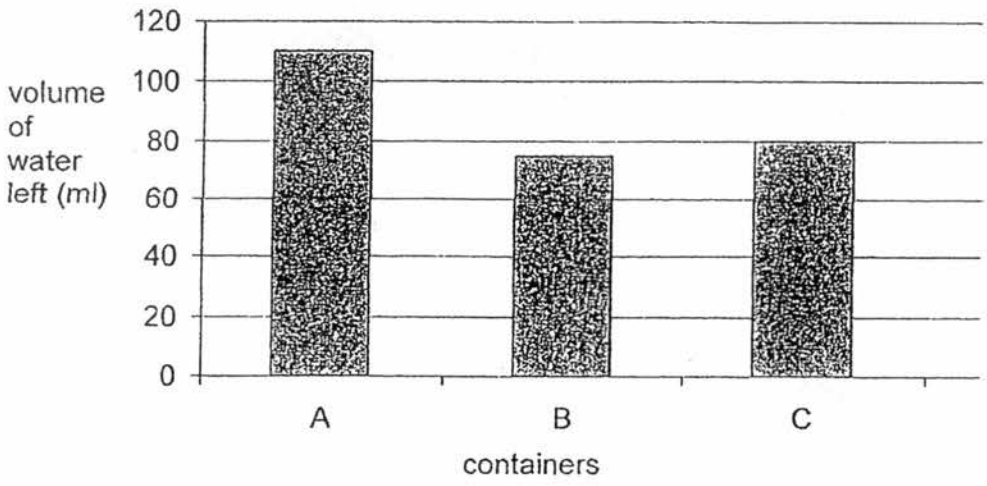
(ii) using the same hot plate

_____

_____

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35. Sandra filled three containers, A, B and C of different sizes and shapes with 300ml of water. She placed them out in the same open field from morning till late afternoon. After 9 hours, she recorded the volume of water left in each container in a bar chart shown below.



(a) What can she conclude about the rate of evaporation for the three containers? [1]

_____

_____

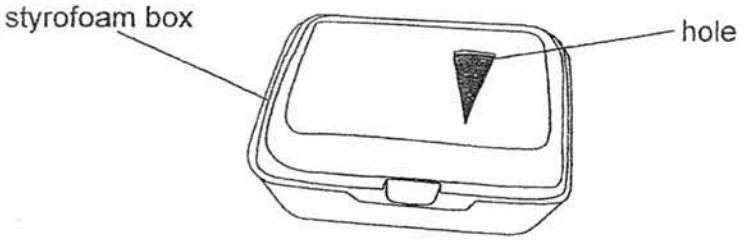
(b) State two factors that could have affected the rate of evaporation in the three containers. [2]

_____

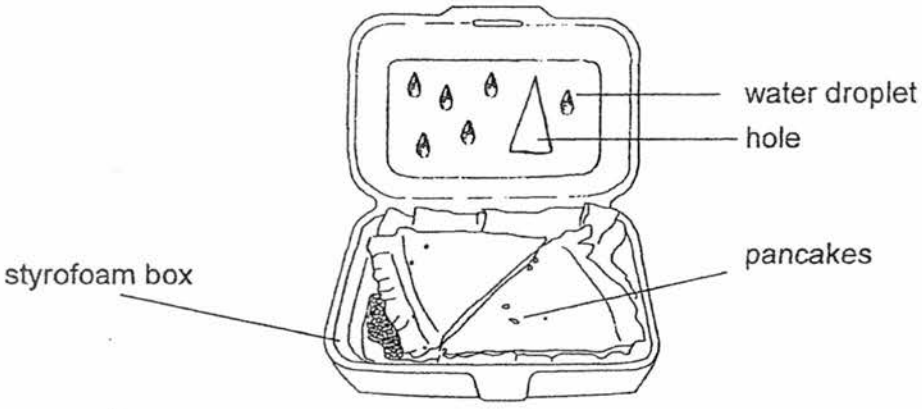
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36. Lily went to a store to buy some pancakes. The sales assistant packed her pancakes which were still hot into a styrofoam box with a triangular cut as shown in the diagram below.



When she opened the box at home, she noticed some water droplets on the inner surface of the cover.



(a) Explain how the water droplets appeared on the underside of the cover. [2]

_____

_____

_____

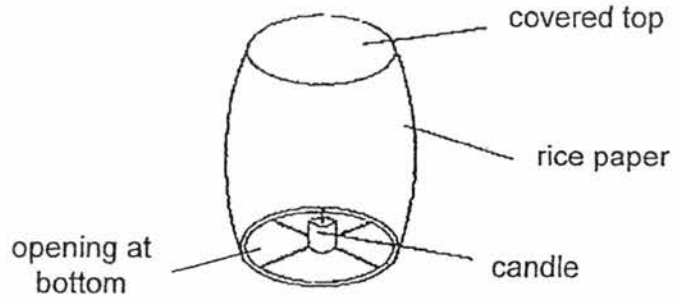
(b) Explain how the hole reduced the amount of water droplets formed on the underside of the cover. [1]

_____

_____

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37. Sky lanterns are made of rice paper and works like a hot air balloon. It has a covered top and an opening at the bottom. A candle is lit which caused the lantern to rise up into the air.

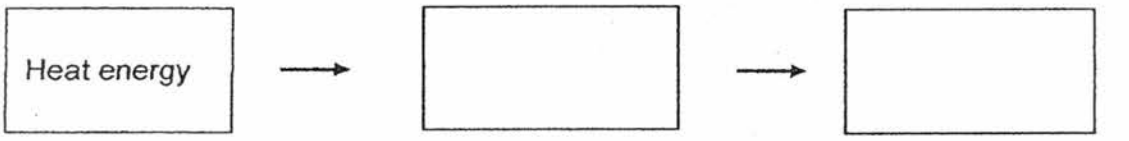


Sky lantern

(a) Identify the source of energy for the rising sky lantern. [1]

_____

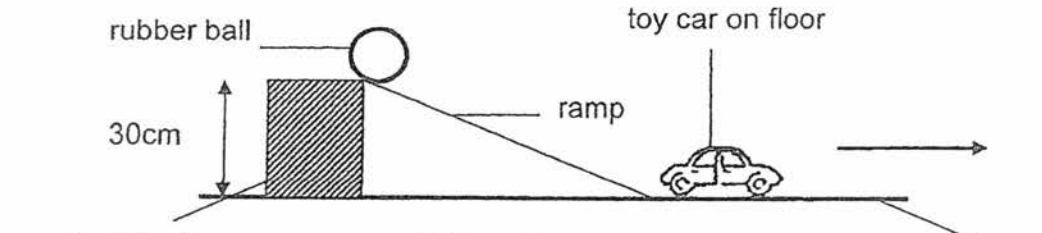
(b) State the energy changes when the candle is burnt for the sky lantern to rise up into the air? [1]



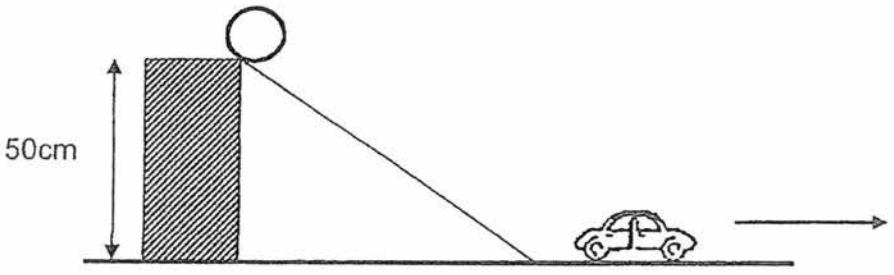
(candle flame) (air in lantern) (rising air in lantern)

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38. Cathy carried out an experiment using identical rubber balls, wooden ramps and toy cars. Wooden block of different heights were also used as shown below.



Set-up A



Set-up B

When Cathy released the ball from the top of the ramp, the ball rolled down and hit the toy car. She measured the distance travelled by the toy car along the floor.

(a) State one possible aim for her experiment. [1]

_____

_____

(b) Based on your answer in (a), state one other variable you must keep the same. [1]

_____

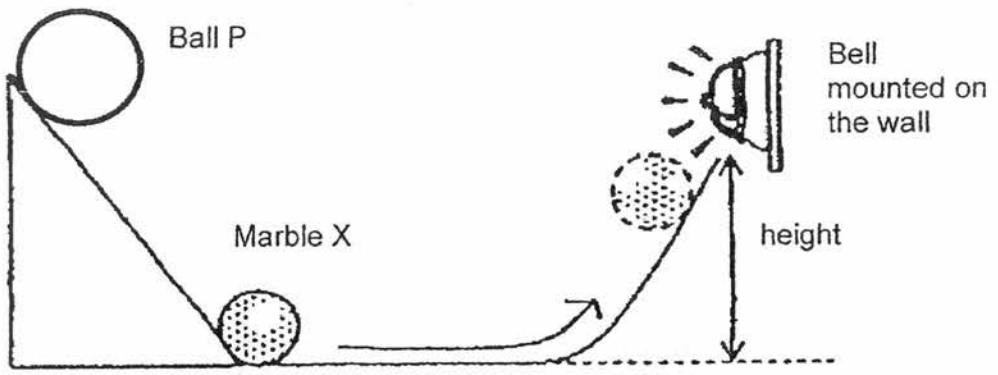
(c) List two ways Cathy can decrease the distance travelled by the toy car in set-ups A and B. [1]

(i) _____

(ii) _____

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39. Jason conducted an experiment using the set-up as shown below.



A

Jason wanted to find out the mass of the ball required to move Marble X to hit the bell. Ball P was released to hit Marble X. Marble X moved in the direction as shown in the set-up. He repeated the experiment with Balls Q, R and S. He recorded his results in the table below.

Ball	Mass of ball (g)	Height moved by Marble X (cm)	Did the bell ring?
P	25	7	No
Q	50	9	No
R	75	14	No
S	100	20	Yes

(a) What is the relationship between the mass of ball used to hit Marble X and the height moved by Marble X? [1]

_____

_____

(b) Why was Ball S able to hit the bell? [2]

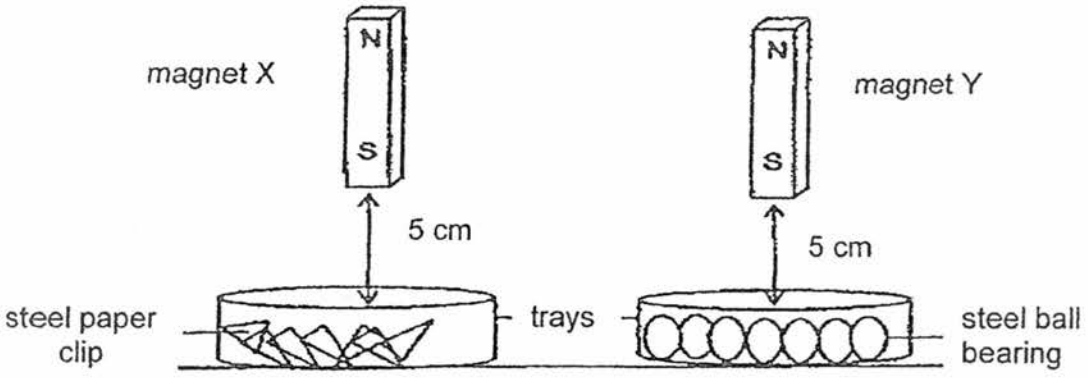
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_____

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40. Jane conducted an experiment to find out if Magnet X or Magnet Y was stronger as shown below. The strength of the magnet is determined by the number of objects picked up by the magnet. The two similar containers were filled with the same number of steel paper clips and steel ball bearings.



Her teacher said that her experiment was not a fair one.

(a) What change should Jane make to her set-up to ensure a fair test? [1]

_____

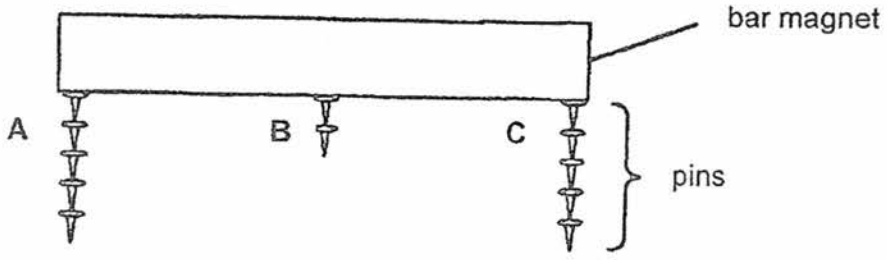
_____

(b) How does the change in (a) ensure a fair test? [1]

_____

_____

Jane then placed pins, one at a time, at A, B and C on Magnet X, until no more pins could be attracted by the magnet. The result is as shown below.



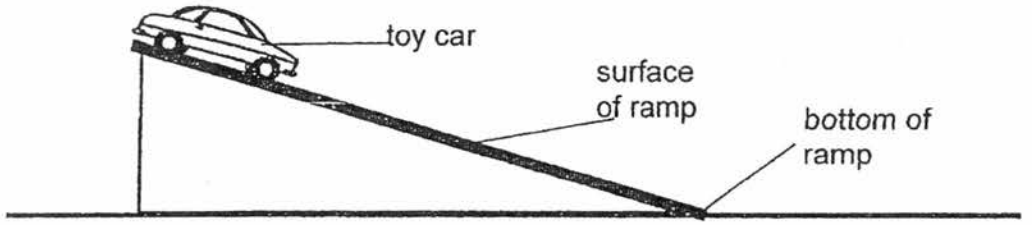
(c) What could Jane conclude about Magnet X based on her observation? [1]

_____

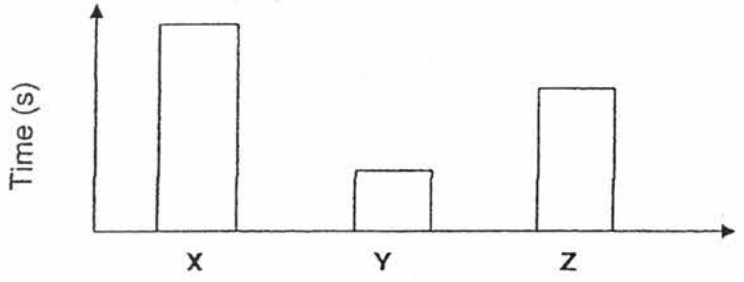
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41. An experiment was conducted using the set-up below.



The graph below shows the time taken for the toy car to reach the bottom of the ramp for the three different types of surfaces, X, Y and Z.



(a) Explain why using the same toy car in the experiment ensures a fair test. [1]

_____

_____

(b) How would you ensure the experiment is reliable? [1]

_____

_____

(c) Why did the toy car eventually come to a stop? [1]

_____

_____

(d) Based on the graph, which surface would you choose to make the bathroom floor to prevent slipping? Explain why. [2]

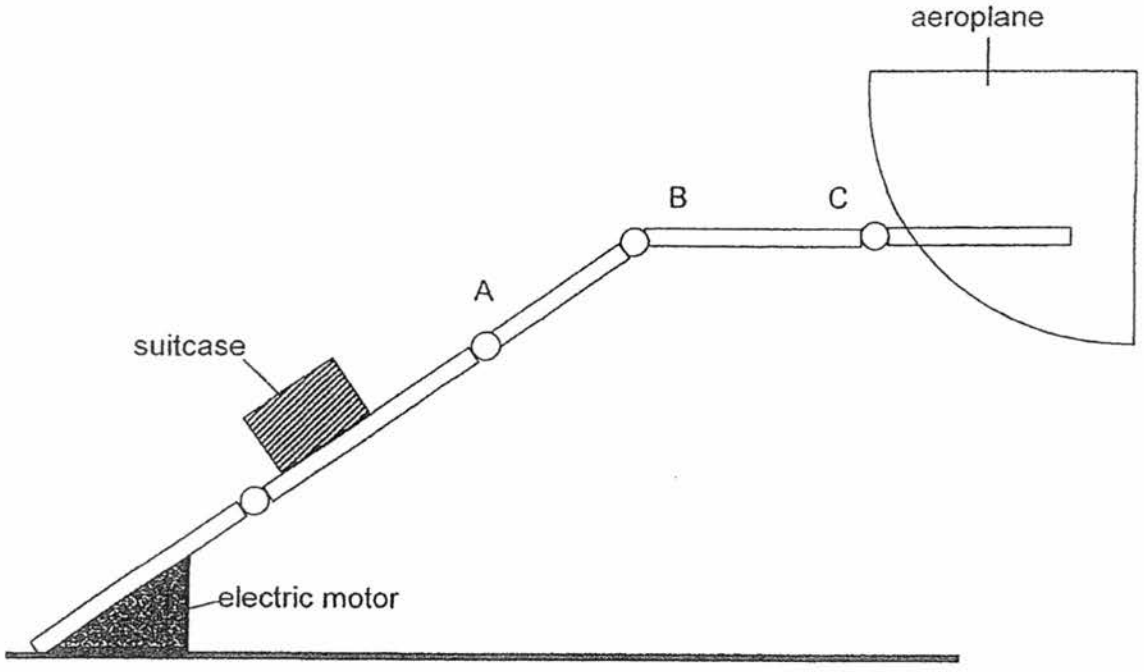
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42. The diagram shows a belt carrying a suitcase into an aeroplane using an electric motor.



(a) What happens to the amount in potential energy of the suitcase as it moves from points A to B and then to C? [2]

(i) A to B : _____

(ii) B to C : _____

(b) Give reasons for your answers in (i) and (ii). [2]

_____

_____

_____

End of Booklet B

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YEAR : 2017
LEVEL : PRIMARY 6
SCHOOL : ROSYTH
SUBJECT : SCIENCE
TERM : CA1

Booklet A

Q1	Q2	Q3	Q4	Q5	Q6	Q7
4	3	2	2	2	2	4
Q8	Q9	Q10	Q11	Q12	Q13	Q14
3	3	4	4	2	4	4
Q15	Q16	Q17	Q18	Q19	Q20	Q21
4	3	3	2	2	3	2
Q22	Q23	Q24	Q25	Q26	Q27	Q28
2	3	2	3	1	3	2

Booklet B

Q29 (a) **Moulting**

(b) **So that when its eggs hatch, they will be able to eat the leaves.**

(c) **It has three body parts.**

Q30 (a) **The flowers in plant B are male flowers.**

(b) **They can help pollinate the flowers by transferring the pollen grain from flower B to the stigma of a flower.**

Q31 (a) **The fern makes food for itself while the mushroom grows and feeds on other dead organisms.**

(b) **They produce spores which are light which can be easily carried away by the wind further from the parent.**

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Q32 (a) As the intensity of light increases, the rate of photosynthesis also increases.

(b) It had reached a certain limit and could no longer photosynthesise.

Q33 (a) The carbon dioxide decreased while the oxygen increased as the plant had photosynthesized thus, taking in carbon dioxide and giving out oxygen.

(b) Remove the air tight cover. The amount of air would increase along with the oxygen as it would be able to enter the water.

Q34 (a) (i) Heat can travel to the metal board easily.

(ii) There were air spaces and air is a poor conductor of heat thus, it took more time for heat to travel through it.

(b) (i) Ensure that the metal have the same ability to conduct heat.

(ii) There would be the same intensity of heat.

Q35 (a) The rate of evaporation is the fastest in container B followed by container C and container A.

(b) Exposed surface area, temperature of water.

Q36 (a) The water vapour the cooler surface of the cover and condensed to water droplets.

(b) The hole allows water vapour to escape so less water vapour will condense.

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Rosyth Ca1

Q37 (a) Candle

(b)

Heat energy	→	Kinetic energy

Q38 (a) To find out if the height of the wooden block affects the distance travelled by the car.

(b) Surface of the floor / starting point of car / ball on the ramp.

(c) (i) Use a lighter ball.

(ii) Use a heavier car.

Q39 (a) As the mass of the ball increases, the height moved by Marble X also increases.

(b) Ball S has the greatest mass hence it will have the most potential energy which is converted to the most kinetic energy, causing Marble X to move the greatest height in order for the ball to rim.

Q40 (a) Change the ball bearings to steel paper clips.

(b) To confirm that the number of paper clips is affected by the strength of the magnet only.

(c) Magnetic force is stronger at the ends than the middle.

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Q41 (a) The mass of the toy car would remain the same.

(b) Repeat the experiment a few times and take the average results.

(c) All of its kinetic energy had been converted to other forms of energy.

(d) Surface X. The toy car took the longest time to reach the bottom of the ramp shows surface X has a rougher surface thus increasing the friction between the person and the floor hence surface X is most suitable to prevent slipping.

Q42 (a) (i) A to B : Increases

(ii) B to C : Remains the same

(b) From A to B, the height increases and from B to C, the height remains the same.

End

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