MAHA BODHI SCHOOL
2018 CONTINUAL ASSESSMENT 1
PRIMARY 6 SCIENCE
(BOOKLET A)

Name : _____ ( )

Class : Primary 6 _____

Date : 1 March 2018

Total Duration for Booklets A and B : 1 h 45 min

INSTRUCTIONS TO CANDIDATES:

1. Do not turn over this page until you are told to do so.
2. Follow all instructions carefully.
3. Answer all questions.
4. Shade your answers in the Optical Answer Sheet (OAS) provided.

This booklet consists of ___ printed pages.

BOOKLET A : [28 x 2 marks = 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 your answer on the Optical Answer Sheet.**

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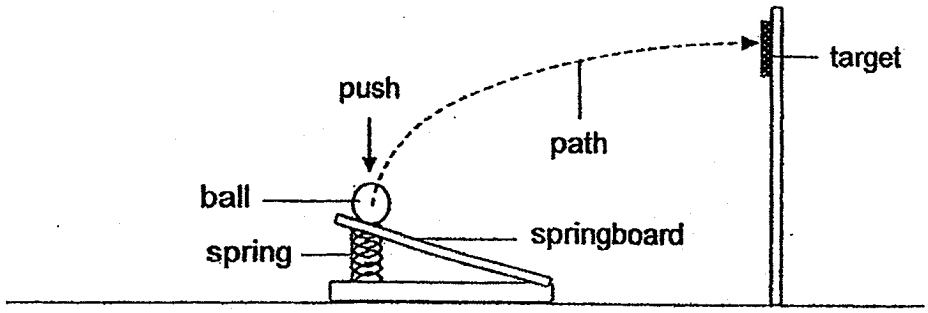
1. The diagram below shows a ball placed on a springboard.

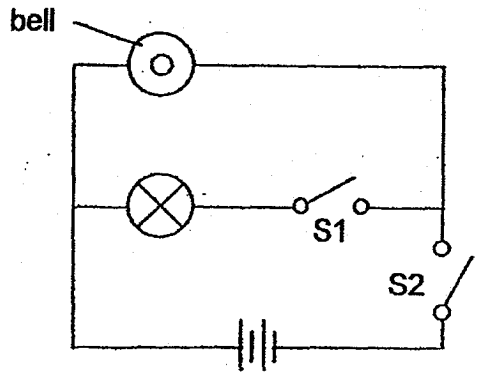


When the springboard is pushed down and released, the ball will move along the path to hit the target as shown.

Which of the following shows the correct energy changes?

(1)	chemical potential energy	→	kinetic energy	→	gravitational potential energy
(2)	elastic potential energy	→	kinetic energy	→	gravitational potential energy
(3)	gravitational potential energy	→	elastic potential energy	→	kinetic energy
(4)	kinetic energy	→	gravitational potential energy	→	elastic potential energy

2. A bell and a bulb are connected in a circuit, as shown below, in an alarm system.



Which of the following shows the correct energy conversions when S1 is opened and S2 is closed?

(1) electrical energy → sound energy

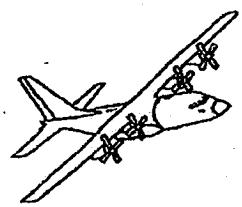
(2) electrical energy → light energy + sound energy

(3) potential energy → electrical energy → sound energy

(4) potential energy → electrical energy → light energy + sound energy

3. Which of the following does not involve any forces?

(1)

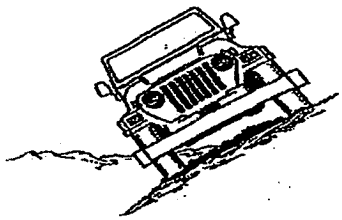


an aeroplane flying in the sky

(2)

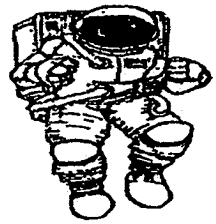
a boy writing a letter

(3)



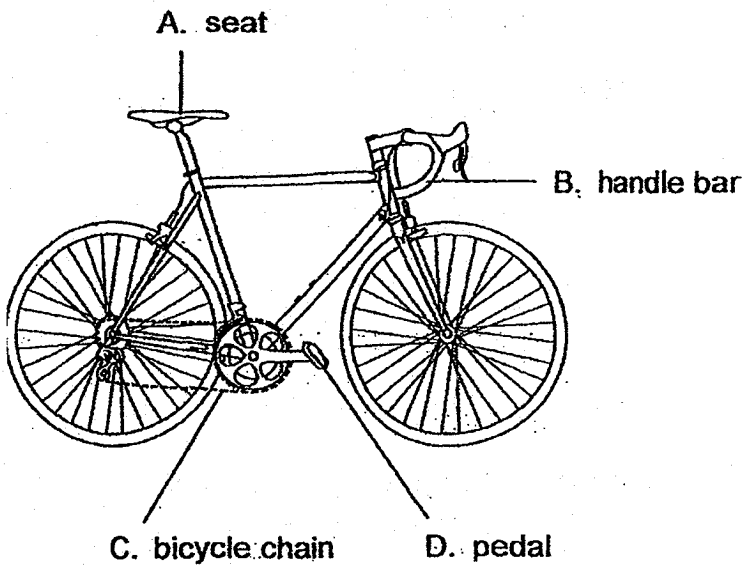
a stationary car on a slope

(4)



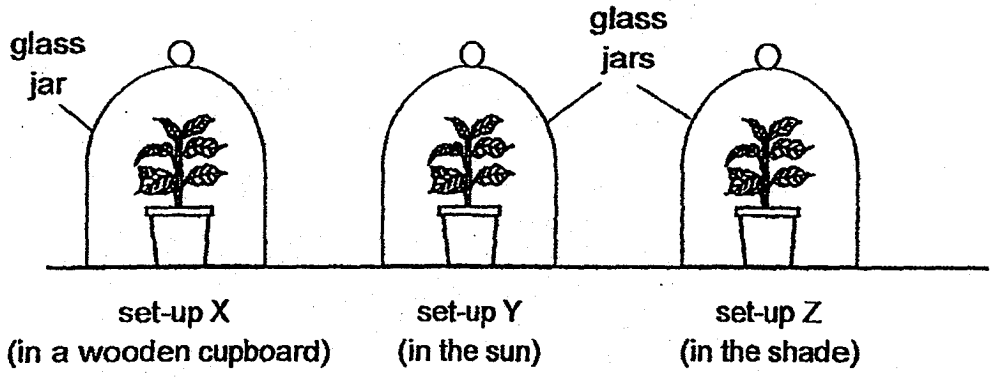
an astronaut floating in space

4. In which part of a bicycle would friction not be useful?



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

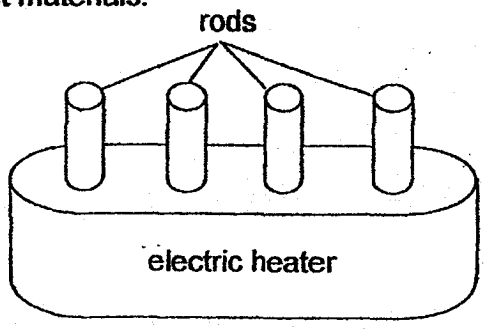
5. An experiment was carried out using three similar potted plants in different locations as shown. Each potted plant had the same amount of carbon dioxide at the start of the experiment.



Based on the amount of carbon dioxide in each set-up at the end of the experiment, which of the following is correct?

	Amount of carbon dioxide in each set-up		
	most	→	least
(1)	X	Y	Z
(2)	X	Z	Y
(3)	Y	Z	X
(4)	Z	Y	X

6. Chris set up an experiment as shown to find out the rate of heat flow in four rods made of different materials.

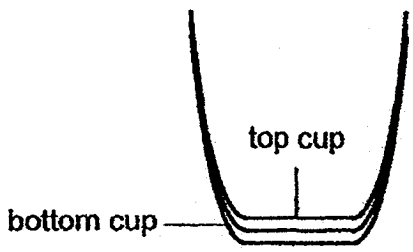


Part of each rod was inserted into the electric heater. The set-up was left in a room for a period of time.

Which of the following pairs of variables should be used in this experiment?

	Variable to change	Variable to measure
(1)	material of rod	temperature of rod
(2)	the time taken	temperature of heater
(3)	temperature of rod	material of rod
(4)	temperature of heater	temperature of rod

7. The diagram below shows three stacked cups.



Which of the following two actions are most effective in separating the stacked cups?

A. Pour hot water into the top cup.
B. Pour cold water into the top cup.
C. Immerse the bottom cup in hot water.
D. Immerse the bottom cup in cold water.

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

8. Which of the following groups shows items belonging to the same state of matter?

(1) water, oil and flour
(2) ice, sugar and flour
(3) ice, water and snow
(4) salt, sugar and coconut juice

9. Which of the following statements is/are true?

A. Ice turns into water at 0°C.
B. Water turns into ice at 0°C.
C. Water vapour cannot be seen by the naked eye.
D. Steam is the gaseous state of water at temperatures below 100°C.

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

10. Which of the following processes involves a gain in heat?

A. melting
B. boiling
C. evaporation
D. condensation

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

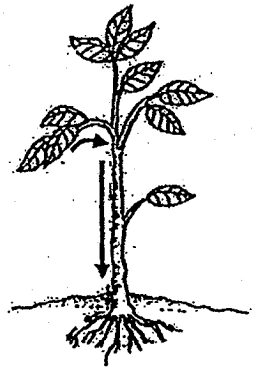
11. Which of the following is not part of the respiratory system?

(1) nose
(2) heart
(3) lungs
(4) windpipe

12. Which of the following statements about the heart is false?

(1) The heart is made of muscle cells.
(2) The heart is part of the circulatory system.
(3) Digested food in the blood passes through the heart.
(4) Blood passes through the heart once as it flows from one part of the body back to the same part.

13. Study the diagram below.

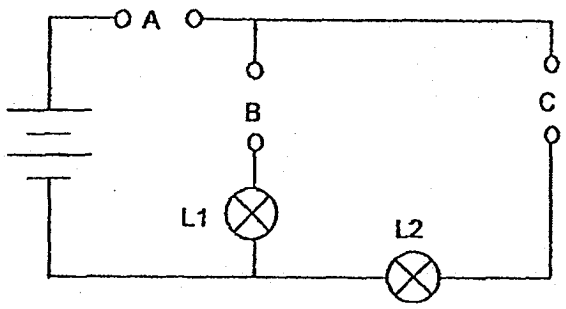


What substances are being moved as shown by the arrows above?

A. food
B. water
C. mineral salts
D. carbon dioxide and oxygen

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

14. Ali had three rods, P, Q and R, made of different materials. He placed them in various positions, A, B and C, in the circuit shown below.



He recorded the results of the experiment in the table below.
A tick (✓) in the box indicates that the bulb was lit up.

Positions where rods were placed			Bulb lit up	
A	B	C	L1	L2
P	Q	R		
Q	R	P	✓	
R	P	Q		✓

Which one of the following statements is most likely to be true?

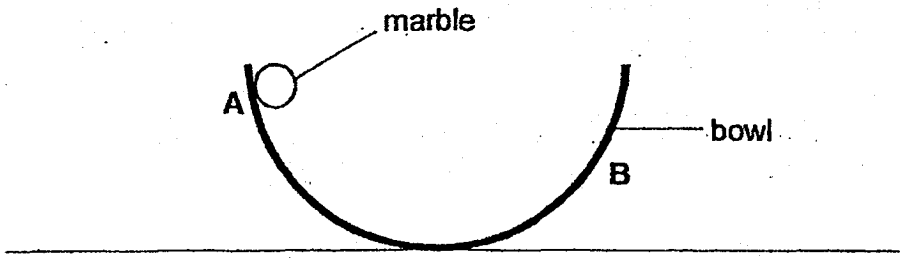
(1) Only rod Q is a conductor of electricity.

(2) Only rods Q and R are conductors of electricity.

(3) Only rods P and R are non-conductors of electricity.

(4) Only rods P and Q are non-conductors of electricity.

15. A marble was released at point A of a bowl as shown below.

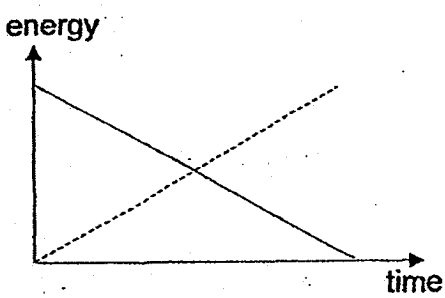


Which of the following graphs best represents the change in energy of the marble as it travelled from A to B?

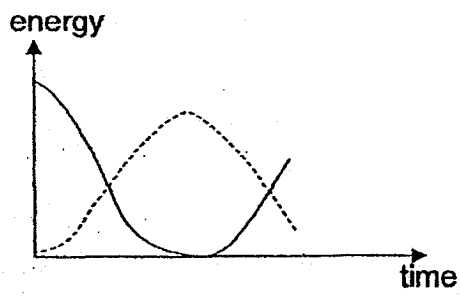
potential energy ——————

kinetic energy - - - - - - - - - - - - -

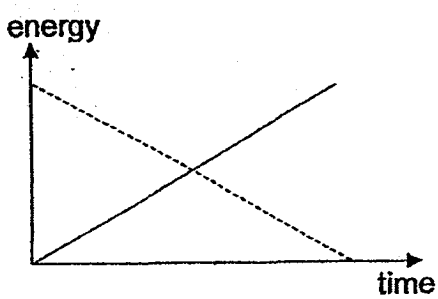
(1)



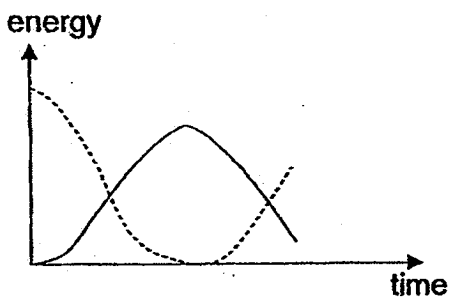
(2)



(3)



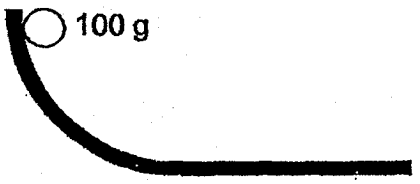
(4)



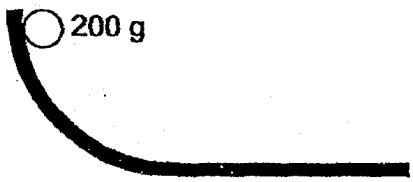
16. Alice conducted two experiments with four metal balls and four similar ramps shown below.

In her first experiment, she wanted to find out how the mass of a ball would affect the distance it moved.

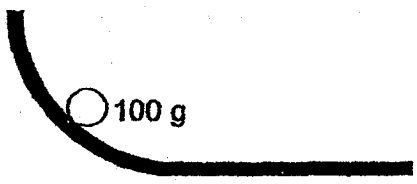
In her second experiment, she wanted to find out how the height from where the ball was released would affect the distance it moved.



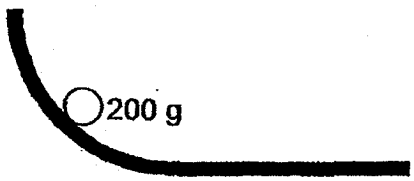
Set-up A



Set-up B



Set-up C



Set-up D

Which pairs of set-ups should she use in her two experiments?

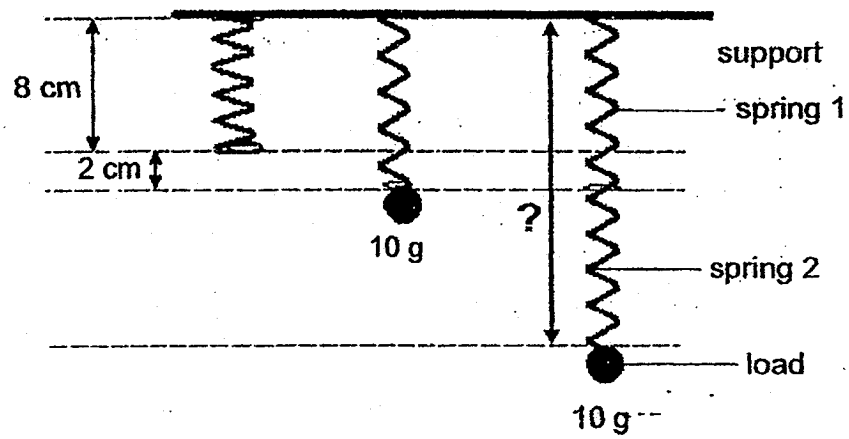
	Set-ups in first experiment	Set-ups in second experiment
(1)	A and B	C and D
(2)	B and D	A and C
(3)	C and D	B and D
(4)	A and C	A and B

17. A spring has a mass of 10 g and a length of 8 cm.

The table below shows the extension of the spring as different loads are hung from it.

Mass of load (g)	Extension of spring (cm)
10	2
20	4
30	6

The spring is then attached to another identical spring and a load of 10 g is hung at the end of one of the springs.

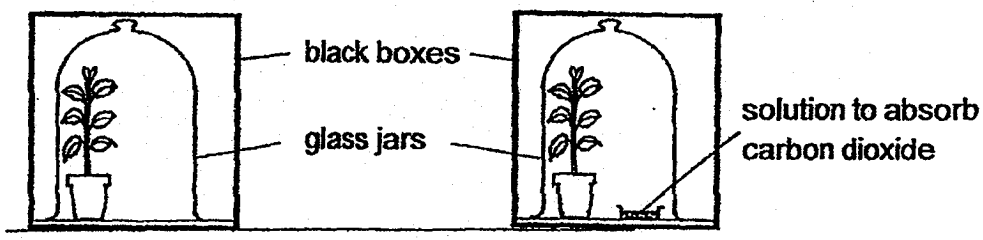


What is the distance between the support and the load of 10 g when it is hung from the two attached springs in this way?

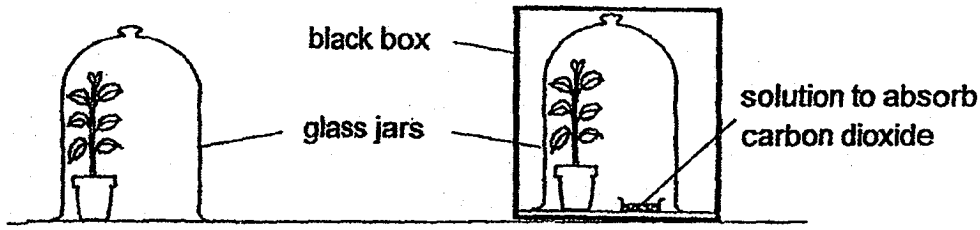
(1) 10 cm
(2) 18 cm
(3) 20 cm
(4) 22 cm

18. Which of the following set-ups should be used in a fair test to find out the condition(s) for photosynthesis to take place?

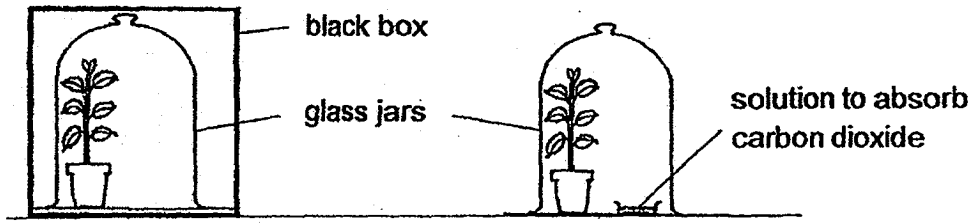
(1)



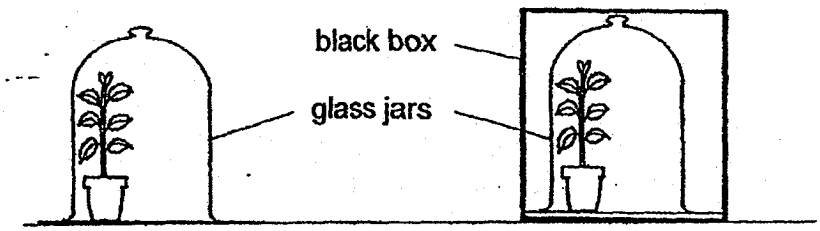
(2)



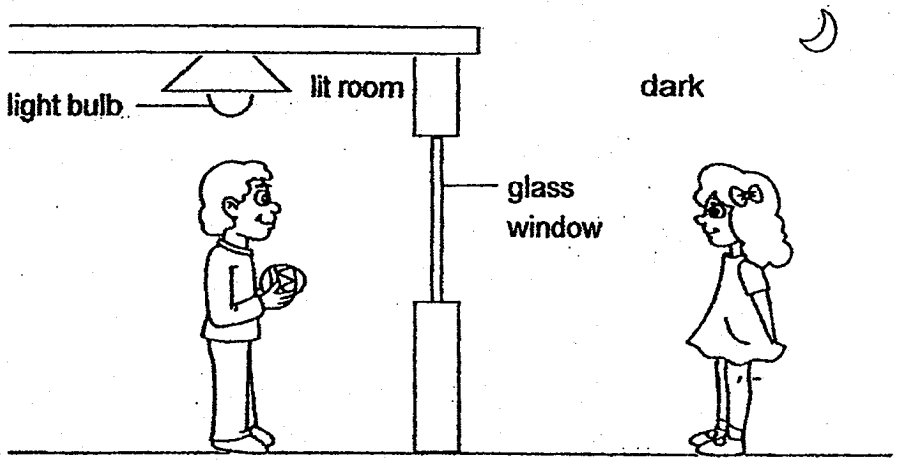
(3)



(4)



19. A boy is inside a lit room and a girl is standing in the dark outside the room.



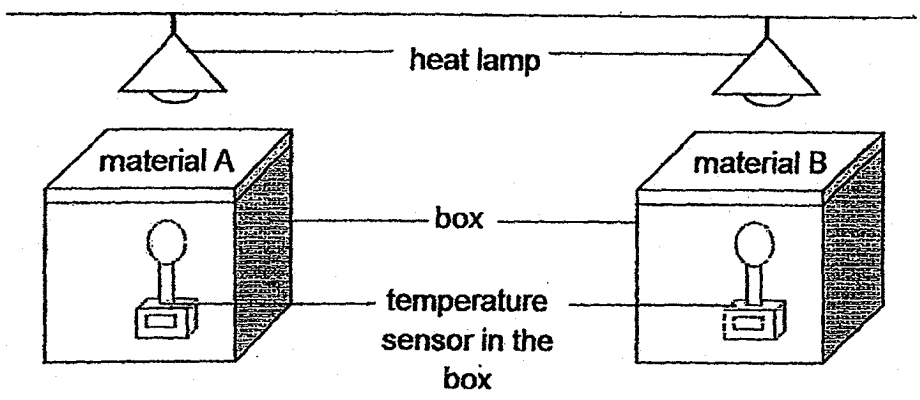
The boy looks through the glass window and can only see a reflection of himself whereas the girl is able to see the boy.

Which of the following statements best explains the above?

A. The boy reflects light into the girl's eyes.
B. The girl is wearing a bright shining dress.
C. The glass window allows light to pass through it.
D. Very little light is reflected from the girl into the room.

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

20. Sam prepared the set-up shown below to find out how the temperature of the air in a box would change with different materials covering the top. He used similar heat lamps in his experiment.



The temperature of air in each box before he turned on the heat lamp was 30°C. Sam turned on both heat lamps at the same time and the temperature of the air in both boxes was measured after the same period of time. The results are shown below.

Material	Temperature of air in the box (°C)
A	35
B	33

Based on the results, Sam chose the material that is more suitable for building houses that will keep the residents warm in cold countries.

Which of the following shows the suitable material and the reason why it is so?

	Material	Reason
(1)	A	Better conductor of heat which will allow more heat into the house.
(2)	A	Poorer conductor of heat as heat will be conducted away from the inside of the house to the outside slower.
(3)	B	Poorer conductor of heat which will trap more heat inside the house.
(4)	B	Better conductor of heat as heat will be conducted from the inside of the house to the outside faster.

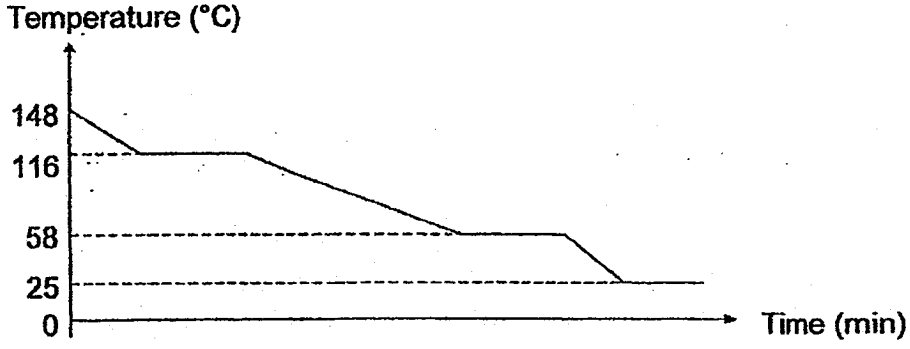
21. A boy has four pieces of metals, P, Q, R and S. He placed the metals together, two at a time, and recorded his observation in the table below.

Metals brought close together	Observation
P and Q	no attraction and repulsion
P and R	no attraction and repulsion
P and S	no attraction and repulsion
Q and R	attraction
Q and S	no attraction and repulsion
R and S	attraction

Which of the following shows the correct classification of the metals?

	P	Q	R	S
(1)	non-magnetic material	magnetic material	magnetic material	magnet
(2)	non-magnetic material	magnetic material	magnet	magnetic material
(3)	magnet	magnetic material	non-magnetic material	magnetic material
(4)	non-magnetic material	magnet	magnet	magnet

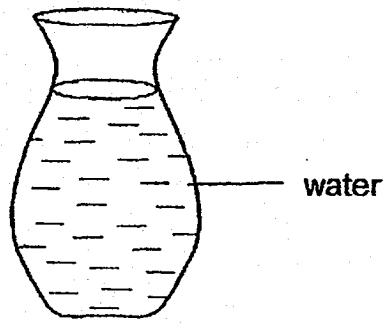
22. An unknown substance is a gas at a temperature of 148°C.
The substance is cooled down until it reaches room temperature (25°C).



Which of the following shows the boiling point of the unknown substance?

(1) 25°C
(2) 58°C
(3) 116°C
(4) 148°C

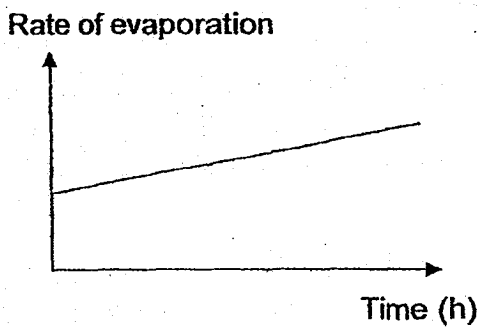
23. The diagram below shows a vase which is filled with water.



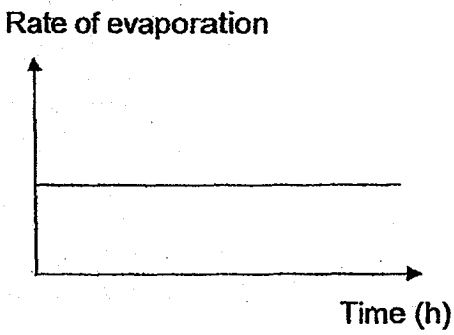
The rate of evaporation of water from the vase, at constant light intensity and temperature, is recorded over a period of time.

Which of the following graphs shows correctly the rate of evaporation of water in the vase over the period of time?

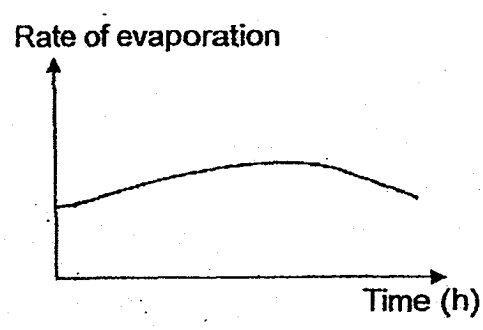
(1)



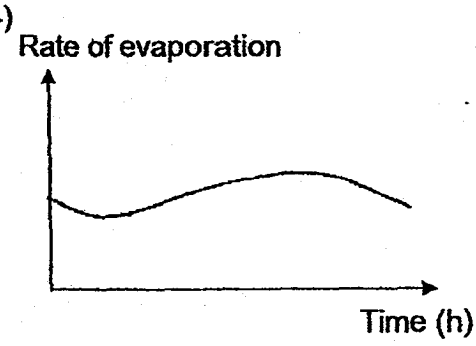
(2)



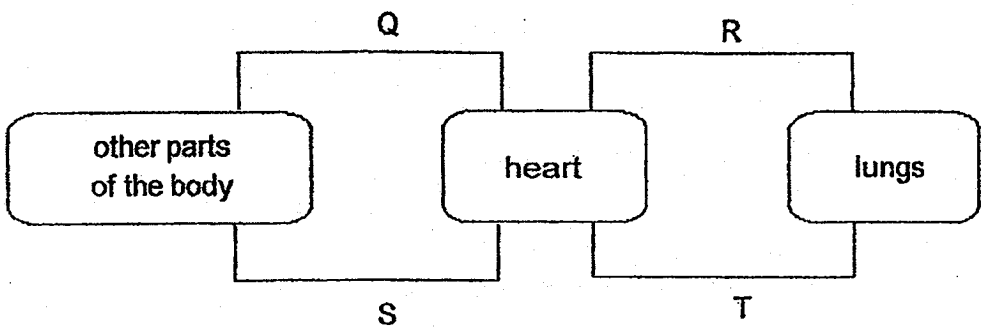
(3)



(4)



24. The diagram below shows how the blood vessels Q, R, S and T connect the heart to the lungs and the other parts of the body.



The amount of oxygen in the blood flowing through the blood vessels is shown in the table below.

Blood at	Amount of oxygen (units)
Q	98
R	65
S	72
T	99

Based on the amount of oxygen in the blood flowing through each blood vessel, which of the following correctly shows the flow of blood?

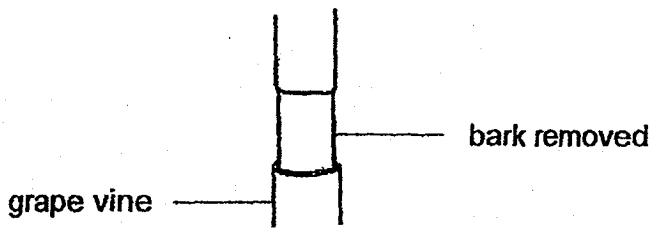
(1) T → Q → S → R

(2) T → S → Q → R

(3) R → Q → S → T

(4) R → S → Q → T

25. The bark from a section of the stem was removed from three grape vines, X, Y and Z, as shown below.



The following observations were made after two weeks.

Grape vine	Observations
X	The grape vine died.
Y	There was no observable change.
Z	The section of the vine above the cut swelled up.

Which of the following sentences is/are possibly true?

A. Grape vine X and Z had their food-carrying tubes removed.

B. All three grape vines had their food-carrying tubes removed.

C. Only the water-carrying tubes were removed from grape vine X.

D. Both the water-carrying tubes and the food-carrying tubes were removed from grape vine Y.

(1) A only

(2) C only

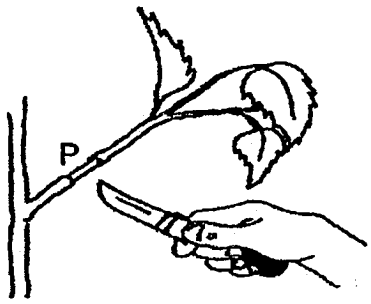
(3) B and D only

(4) A, C and D only

26. Jim placed his well-watered plant in total darkness for three days before placing it in the sun. He then cut a ring of bark from a branch at P, as shown in the diagram.

After a few days, he conducted a test on the three leaves on the branch. He dropped iodine solution on the leaves and observed that the iodine solution remained yellowish-brown. This shows that starch was not present in these leaves.

He also tested other leaves of the plant and found that starch was present in them.



Which of the following is the reason for Jim's observation?

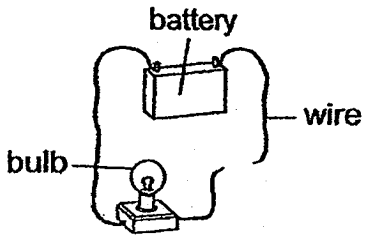
(1) He had cut the water-carrying tubes.

(2) There was a lack of water in the soil.

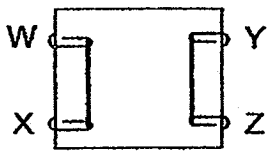
(3) He had cut the food-carrying tubes only.

(4) There was a lack of sunlight during the few days after the cut was made.

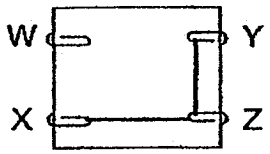
27. Klein set up a circuit tester shown below.



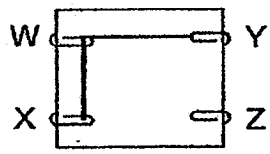
The table below shows his observations when the bulb in the circuit tester was connected to the clips (W, X, Y and Z) on his circuit cards. W, X, Y and Z are made of different materials.



Clips	Did the bulb light up?
W and X	Yes
Y and Z	No



Clips	Did the bulb light up?
X and Y	No

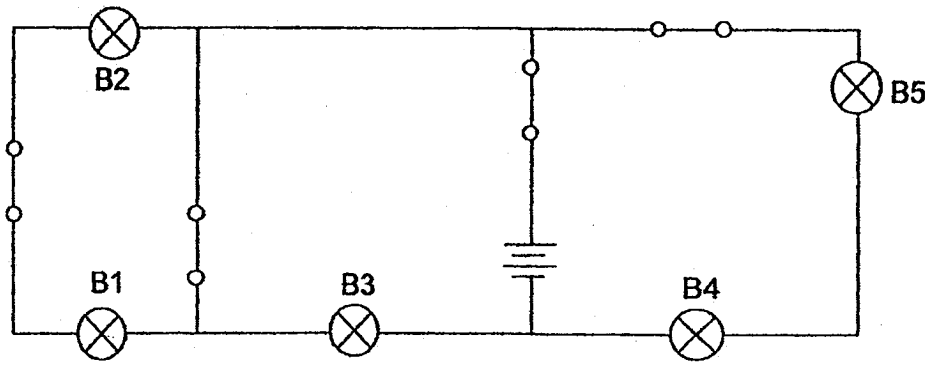


Clips	Did the bulb light up?
X and Y	Yes

Based on the information, what was the reason for Klein's observations?

(1) Two of the clips were electrical insulators.
(2) One of the clips was an electrical insulator.
(3) Two of the clips were electrical conductors.
(4) One of the clips was an electrical conductor.

28. Study the circuit diagram below.



As two bulbs have already fused, only two bulbs lighted up.

Which two bulbs have fused?

(1) B1 and B2
(2) B2 and B3
(3) B3 and B4
(4) B4 and B5

END OF BOOKLET A

GO ON TO BOOKLET B

MAHA BODHI SCHOOL
2018 CONTINUAL ASSESSMENT 1
PRIMARY 6 SCIENCE
(BOOKLET B)

Name : _____ ( )

Class : Primary 6 _____

Date : 1 March 2018

Total Duration for Booklets A and B : 1 h 45 min

INSTRUCTIONS TO CANDIDATES:

1. Do not turn over this page until you are told to do so.
2. Follow all instructions carefully.
3. Answer all questions.
4. Write all your answers in this booklet.

Booklet	Marks Obtained	Max Marks
A		56
B		44
Total		**100**

Parent's Signature : _____

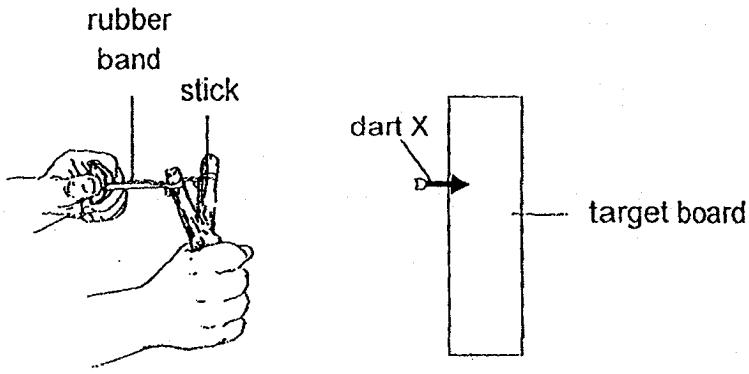
This booklet consists of 16 printed pages.

BOOKLET B : [44 marks]

For questions 29 to 41, write your answers in this booklet.

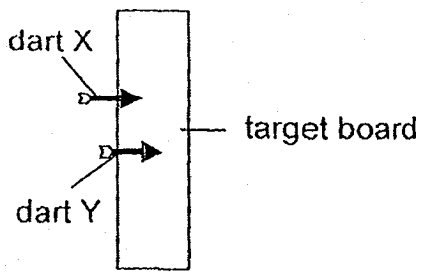
The number of marks available is shown in the brackets [ ] at the end of each question or part-question.

29. A slingshot is made up of a rubber band and a stick. The rubber band has to be pulled backwards to be stretched before it is released to shoot a dart X towards the target board as shown.



(a) State the energy form present in the rubber band as the dart is being pulled backwards. [1]

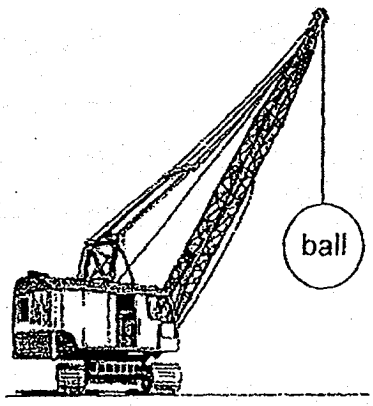
Dart Y is then shot at the same target board as shown.

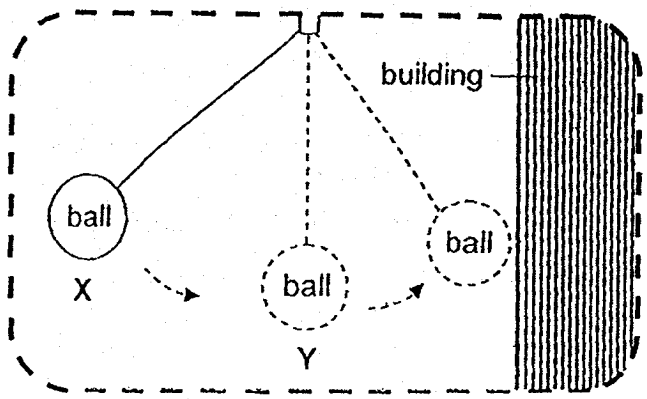


(b) Explain how dart Y has pierced deeper into the target board than dart X. [1]

Marks : / 2

30. The diagram below shows how a machine with a metal ball is used to knock down a building.





(a) State the energy changes of the metal ball as it moves from position X to Y. [1]

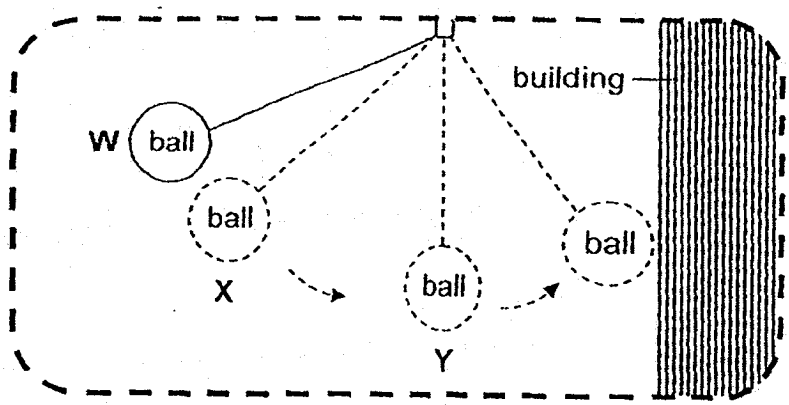
_____

(b) State the advantage if the metal ball can hit the building with more impact. [1]

_____

There are two ways to increase the hitting impact of the metal ball.

First way: The machine raises the metal ball to W as shown.
Second way: The machine moves nearer to the building.



Marks : /2

(c) Give a reason how each way can increase the hitting impact of the metal ball. [2]

(i) First way: _____

_____

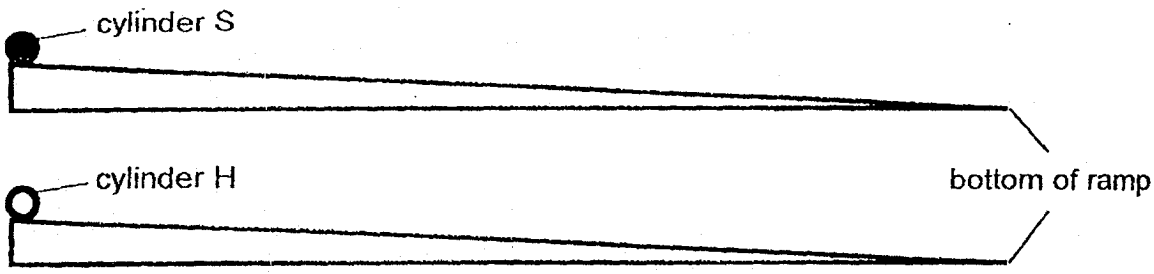
(ii) Second way: _____

_____

Marks : / 2

31. Janen has two cylinders as shown.
Cylinder H is hollow in the centre while cylinder S is solid (not hollow).

He conducted an investigation by releasing both cylinders, one at a time, at the top of the same ramp and measuring the time taken for each cylinder to reach the bottom of the ramp.



He recorded the results in the table below.

Cylinder	Time (seconds)
S	4
H	6

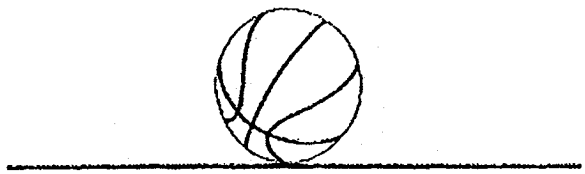
(a) Based on his findings, compare the amount of kinetic energy in the two cylinders. [1]

(b) Before Janen carried out this investigation, he had predicted that a hollow cylinder would move faster than a solid (not hollow) cylinder.

Did the results support his prediction? Using the information provided, explain your answer. [1]

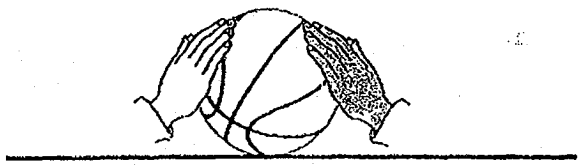
Marks : /2

32. A stationary basketball is placed on a table.



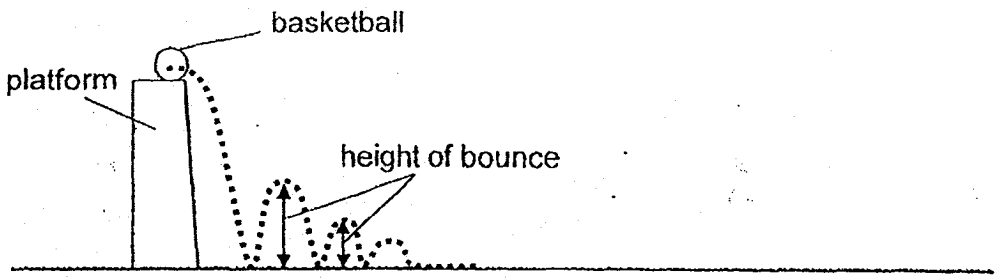
(a) What is the force acting on the stationary basketball? [1]

(b) Two boys are pushing the ball on opposite sides with the same amount of force.



State two observations that can be made about the basketball now. [1]

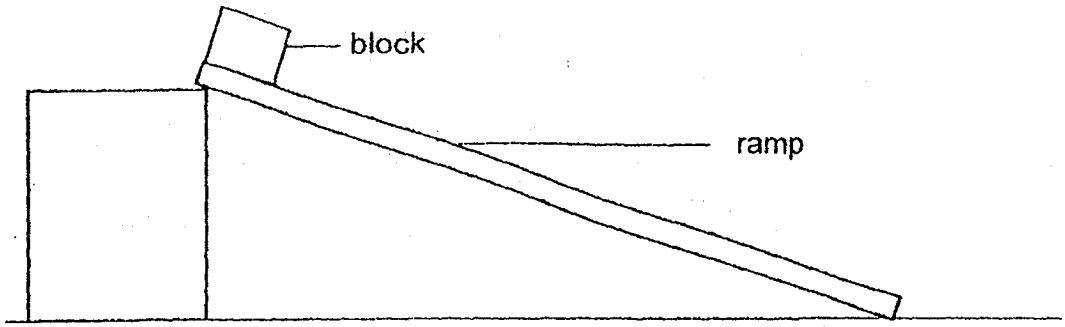
(c) When the basketball is placed on a platform and given a slight push, it hits the floor and bounces to a lower height as shown in the diagram.



Explain why the basketball bounces to a lower height after hitting the floor. [1]

Marks : /3

33. An experiment is conducted using ramps made of different materials.



The time taken for a block to slide down each ramp until it reaches the bottom of the ramp is measured and shown in the table below.

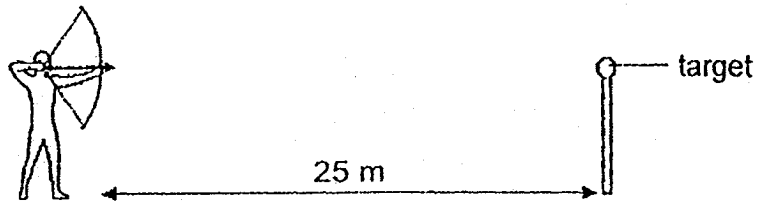
Ramp	Time taken to reach the bottom of the ramp (s)
A	4
B	6
C	3

(a) Based on the results table, which ramp has the roughest surface? Explain your answer. [2]

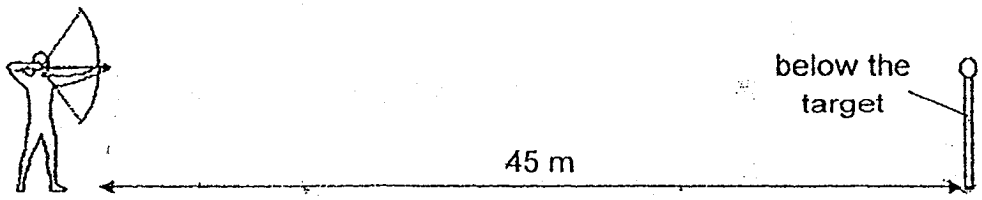
(b) Without changing any of the materials used and the design of the experiment, suggest a method to reduce the time taken for the block to slide down the ramps. [1]

Marks : / 3

34. A man shoots an arrow and hits the target 25 m away.



The man then aims at the same angle at the same target which is now placed 45 m away and the arrow hits below the target.



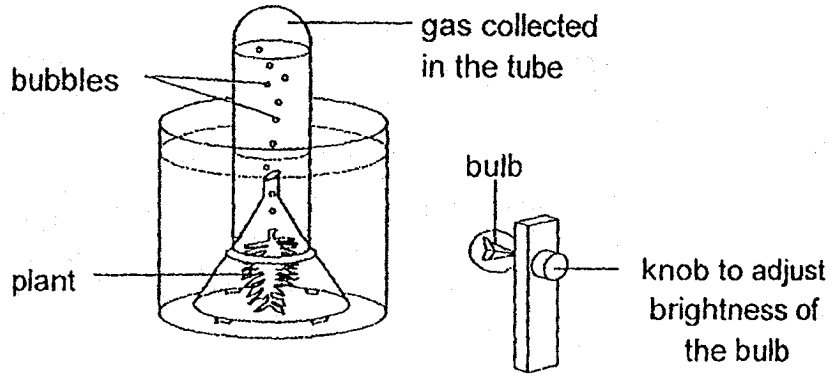
(a) Assuming there is no interference from the wind, explain why the man's arrow hits below the target when the distance between the man and the target is greatly increased. [1]

(b) How should the man adjust his aiming so that he can hit the target at a distance of 45 m? [1]

(c) How will the movement of the arrow be affected if the arrow is released from the same bow on the Moon? Explain your answer. [2]

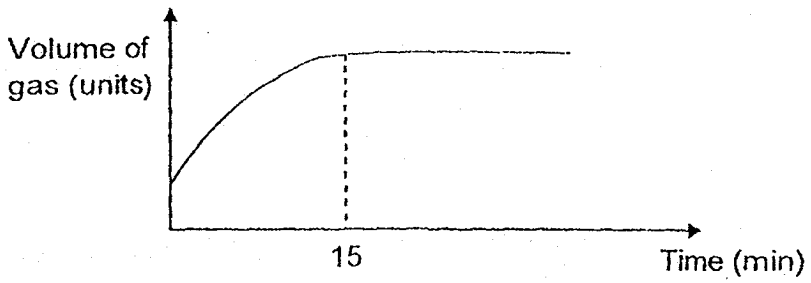
Marks : /4

35. Sam set up an experiment using a water plant as shown in the diagram.



(a) Describe the process that caused the plant to produce the gas. [1]

Sam then slowly turned the knob as he measured the volume of gas collected in the tube over a period of time. The graph below shows the results.



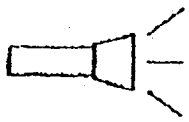
(b) What was happening to the bulb as he turned the knob? [1]

(c) Sam only stopped turning the knob when the experiment ended.

Explain what had happened from the 15th min to the end of the experiment. [2]

Marks : /4

36. Zhe Wei set up an experiment as shown below.



torch
(fixed position)

block

screen

He wanted to find out how the size of the shadow formed by the block would change when the distance between the items used were changed.

Zhe Wei recorded his observations using the table below but he did not specify what Item A and Item B were.

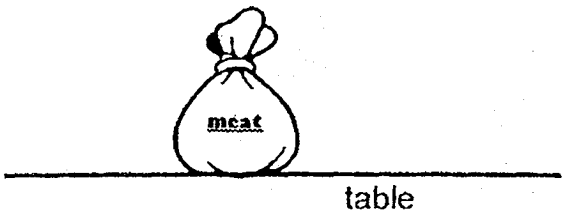
Action taken by Zhe Wei	Height of shadow
Item A was moved closer to the torch	increased
Item B was moved closer to the torch	decreased

(a) Based on the table, which item (A or B) that Zhe Wei moved, refers to the block? Explain your answer. [2]

(b) How would the size of the shadow change if the torch was moved further away from both the block and the screen? [1]

Marks : / 3

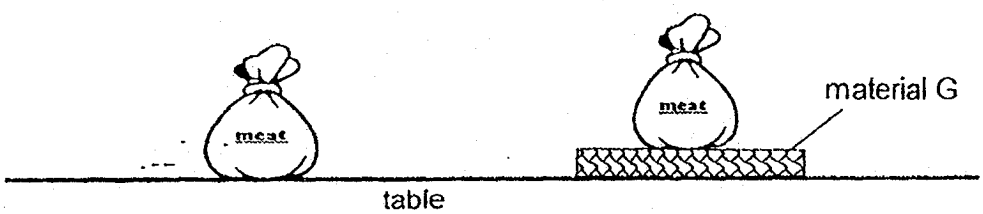
37. Eva placed a bag of frozen meat on a table as shown.



(a) After some time, the meat started thawing. During the thawing process, the frozen meat warmed up and became softer.

Explain why the meat thawed when it was left on the table. [1]

Eva then added one similar bag of frozen meat on a surface made of material G in a set-up as shown.

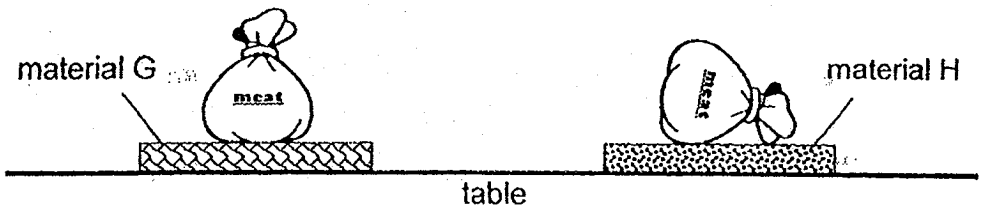


Eva observed the bag of frozen meat on the surface made of material G took a shorter time to thaw than the one placed on the table.

(b) Explain how the frozen meat on the surface made of material G was able to thaw faster than the one without. [1]

Marks : /2

Eva had another thawing surface made of material H. She set up the following experiment to compare which material would take a shorter time to thaw a bag of frozen meat completely.

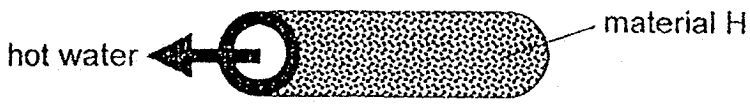


Eva had made a mistake which made this an unfair experiment.

(c) Explain how this mistake would affect the result. [1]

After correcting the mistake, Eva found out that material H took a shorter time to thaw the bag of frozen meat than material G.

In her home, pipes made of material H are used to transport hot water.
A section of the pipe is shown below.

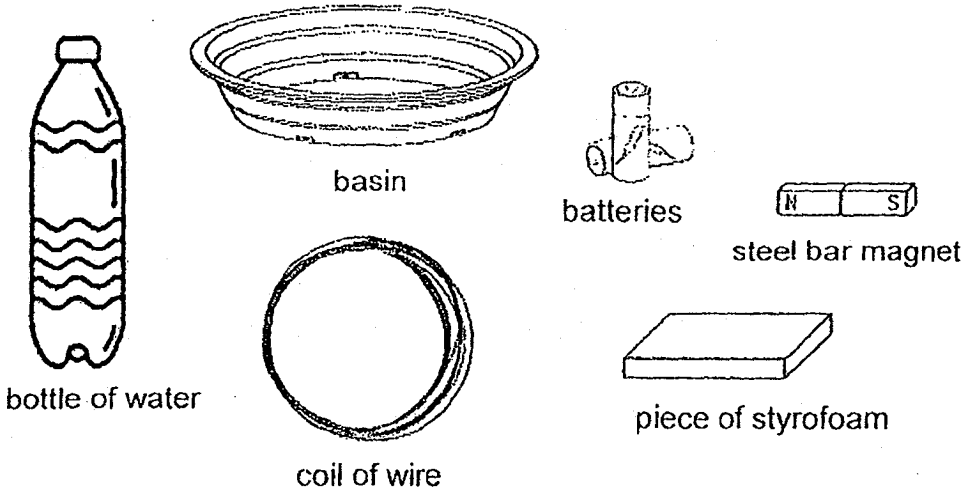


(d) Based on the information, explain why material H is not as suitable as material G to transport hot water. [1]

Marks : /2

38. A man has lost his directions in a jungle and cannot find his way out. He knows that there is a village in the north and he must head in that direction.

The diagram below shows the items that he has with him.



(a) Using some of the items stated above, describe the steps that the man can take to find his way to the village. [2]

_____

_____

_____

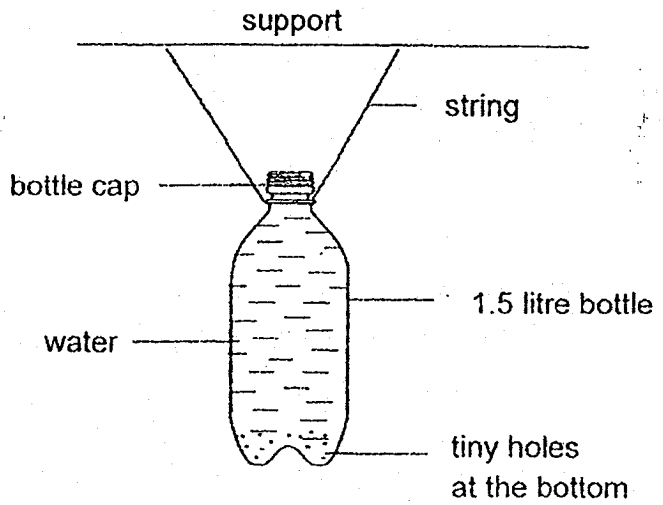
_____

(b) What is the property of the magnet that the man is making use of? [1]

_____

Marks : / 3

39. A student was given a 1.5 litre bottle with tiny holes at the bottom and two strings to make a watering can for his school garden. He filled up the bottle with water, tightened the bottle cap and hung the bottle using the two strings as shown in the diagram below.



He noticed that only a small amount of water was able to come out of the tiny holes before it stopped dripping completely.

(a) Without making any changes to the items he was given, what should the student do to allow the water to flow continuously out of the bottle? [1]

_____

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

_____

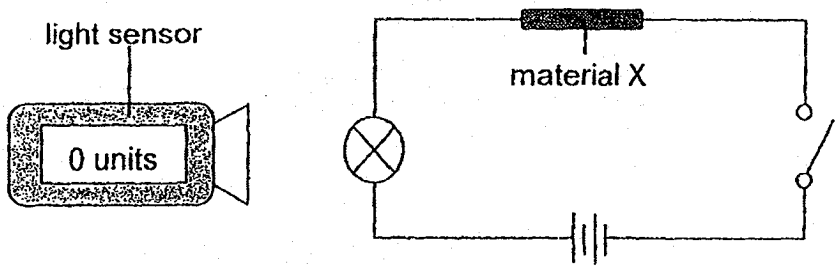
_____

(c) State the property of the water which allowed it to flow through the tiny holes. [1]

_____

Marks : / 3

40. Melvin set up a circuit in a dark room as shown.
When he closed the switch, the bulb lit up and he measured the brightness of the bulb with a light sensor.



He repeated the experiment by replacing material X with material Y and then material Z. His results are shown in the following table.

Materials	Brightness (units)		
	1st try	2nd try	3rd try
X	4	4	5
Y	9	9	10
Z	7	7	8

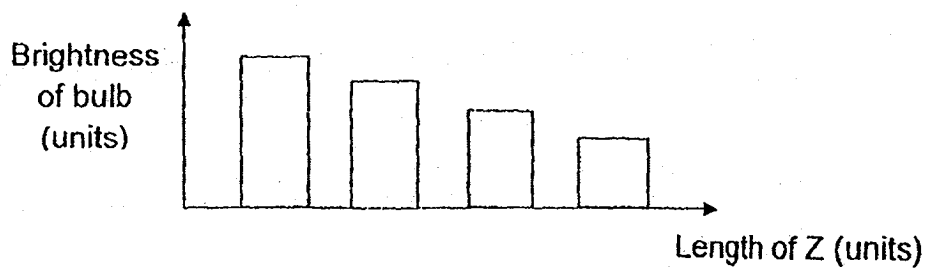
(a) State the property of the materials that caused the bulb to light up. [1]

_____

(b) The readings for his 3rd try were different from the other two.
Suggest what could have happened to cause this difference. [1]

_____

Using the same circuit, Melvin investigated how the length of material Z would affect the brightness of the bulb. His results are shown below.



Marks : /2

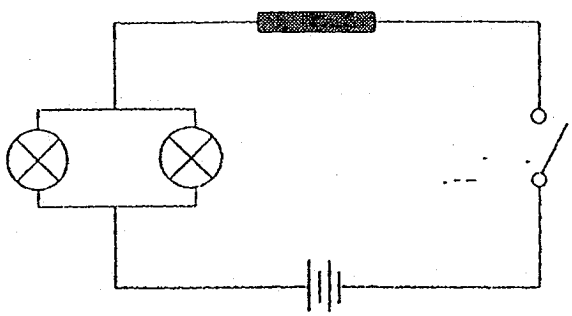
(c) Based on the graph, describe how the length of Z affected the brightness of the bulb. [1]

(d) If Melvin wanted to light up the room the brightest, [1]

(i) which material (X, Y or Z) should he use?

(ii) what length (shortest or longest) of the material should he use?

Melvin introduced another similar bulb to the circuit as shown.

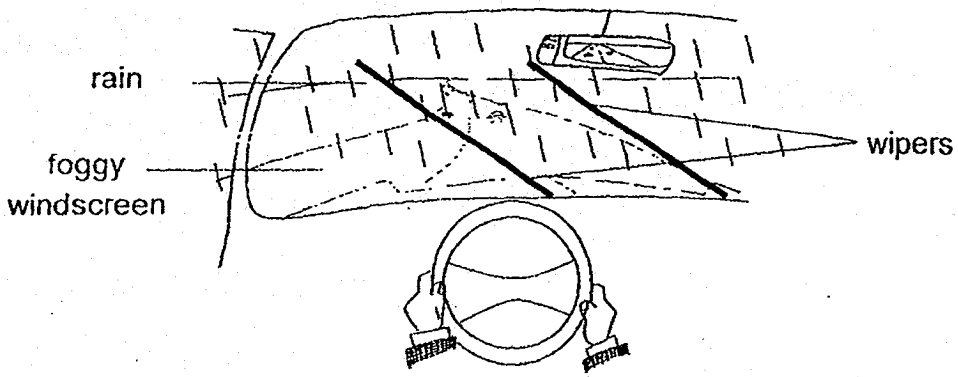


(e) State how the two bulbs were arranged. How would this arrangment of the two bulbs affect the brightness of the original bulb? [1]

Marks : /3

41. A man was driving his car in the heavy rain. The temperature outside the car was low. The man switched off the air-conditioner without opening the windows.

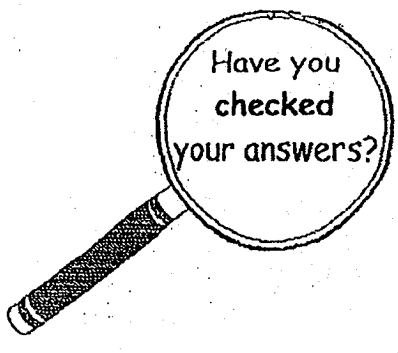
After a while, the man noticed that the windscreen became foggy with a layer of mist and he could not see clearly through the windscreen.



(a) What is the process that caused the layer of mist to be formed? [1]

(b) Explain why the man was not able to clear away the layer of mist using the wipers of the car. [1]

(c) Explain how the layer of mist was formed on the windscreen. [2]



~ END OF PAPER ~

Marks : / 4

SCHOOL : MAHA BODHI PRIMARY SCHOOL
LEVEL : PRIMARY 6
SUBJECT : SCIENCE
TERM : 2018 CA1

SECTION A

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

SECTION B

Q29)	a) Elastic potential energy b) The rubber band was pulled backward more for Dart Y than that of Dart X which meant Dart Y had more elastic potential energy and more elastic potential energy was converted to more kinetic energy. With more kinetic energy, greater force was present, causing it to pierce deeper into the target board.
Q30)	a) Gravitational potential energy → Kinetic energy b) The building would be knocked down easier and faster. c) (i) The higher the ball was lifted, the greater gravitational potential energy it has and more kinetic energy will be converted. (ii) As the force to knock the building depends on the kinetic energy, nearer to the building will ensure greater kinetic energy when it hit the wall since the greatest kinetic energy at the lowest point of the ball.

Q31)	(a) There is more kinetic energy in Cylinder H than in Cylinder S. (b) No. A solid cylinder moves faster than a hollow cylinder as a solid cylinder has greater mass and thus resulted in greater force to move the cylinder down.
Q32)	(a) Gravitational force (b) The basketball will not move and it will be squeezed to distortion. (c) The gravitational potential energy is converted into kinetic energy when the ball is release from the platform and some of the kinetic energy is converted to sound and heat energy when it hit the floor and thus it bounces to lower height after hitting the floor.
Q33)	(a) Ramp B. As Ramp B took the longest time to reach the bottom of the ramp, it has the greatest frictional force between the ramp and the block which means it has the roughest surface. (b) Put some oil under the block will help to reduce the time taken for the block to slide down the ramp.
Q34)	(a) As the arrow travels towards the target, the gravitational force acting on it pull it down and some of the elastic potential energy is converted to sound energy to overcome the air resistance. (b) He should hold the arrow a bit higher and aim at the target at a higher angle. (c) The arrow will hit above the target on the moon as the gravity attractive force is smaller on the moon, so there is a smaller downward force pulling the arrow down.
Q35)	(a) The plant will take in light from the bulb and carry out photosynthesis. It will take in water and carbon dioxide to make food and produces oxygen which is collected in the tube. (b) The bulb will be brighter as the intensity of the light from the bulb increases. (c) After 15 mins, the rate of photosynthesis did not increase but remain constant as the amount of carbon dioxide becomes the limiting variable.

Q36)	(a) Item A. When the block is moved closer to the torch, the height of the shadow increases and Item A's height increased while B decreased. (b) The size of the shadow would be smaller.
Q37)	(a) The meat gained heat from the surrounding and thus began to thaw. (b) Material G is a good conductor of heat and gained heat from the surrounding and transfer the heat to the meat. (c) The exposed surface area touches material G is different from that of H. As there should be only one changed variable, the material used, he would not be able to tell that the thawing rate is due to the different materials used. It could be contributed to the exposed surface area touches the materials. So his results will not be accurate. (d) Material H is a better conductor of heat than Material G. It will conduct heat away faster and thus the water will not be that hot at the end of the transportation of water.
Q38)	(a) Pour the bottle of water into the basin. Put the piece of Styrofoam on the water and then put the steel bar magnet on top of the Styrofoam. The magnet will point to north to indicate the direction of the village. (b) A freely suspended magnet always points to the north-south direction.
Q39)	(a) Loosen the bottle cap to allow air to enter. (b) Air occupies space. The air will enter from the top if the cap is loosen and forces the water to flow out from the tiny holes. (c) Water has no definite shape.
Q40)	(a) It is a good conductor of electricity. (b) He might have placed the light sensor closer to the bulb. (c) The longer the length of Z, the less the brightness of the bulb. (d) (i) Material Y (ii) Shortest (e) Parallel. They will be the same brightness as the original bulb.
Q41)	(a) Condensation (b) The layer of mist is formed on the inner surface of the windscreen. (c) The air inside the air is hotter than the outside temperature. So when the water vapour in the car touches the cooler surface of the windscreen, it loses heat and condenses on the inner surface of the windscreen.