HENRY PARK PRIMARY SCHOOL

2015 PRELIMINARY EXAMINATION

PRIMARY 6 SCIENCE

Booklet A

Name: _____ ( )

Class: Primary 6 _____

/60

30 Questions
60 Marks

Total Time for Booklet A and B: 1 h 45 min

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

READ AND FOLLOW INSTRUCTIONS CAREFULLY.

Booklet A (60 marks)

For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

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1. The diagram below shows Organism Y.

Organism Y

Which of the following statements about Organism Y are correct?

A: It reproduces from spores.
B: It is a non-flowering plant.
C: It does not make its own food.

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

2. Paul observed some mould growing on a slice of bread.

Which of the following must be present for the mould to grow?

A: Light
B: Water
C: Warmth
D: Oxygen

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

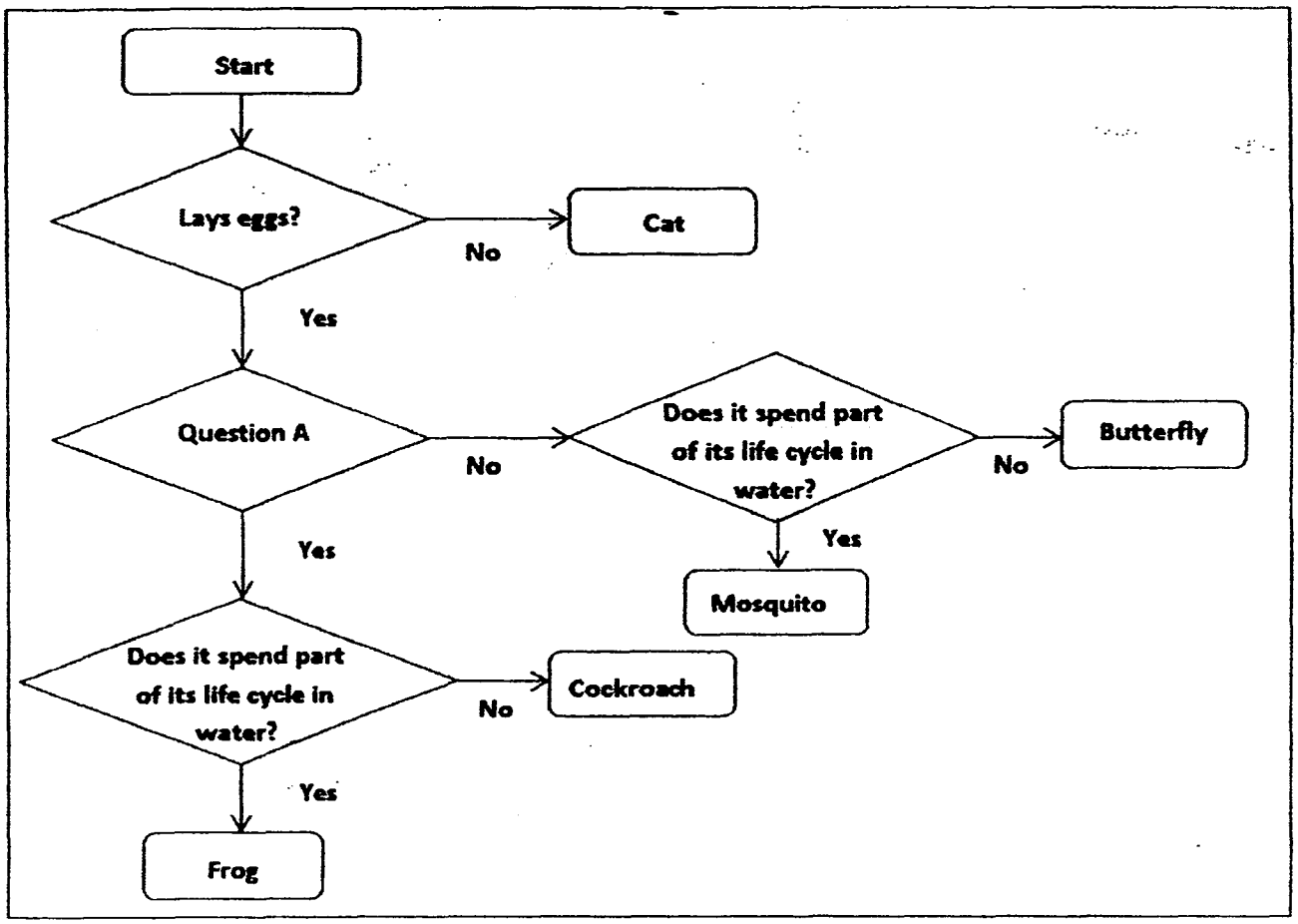
3. Study the table below carefully.

	Animal	Plant
Male reproductive part	Testis	**N**
Female reproductive part	**M**	Ovule

What are **M** and **N**?

	M	N
1)	Stigma	Anther
2)	Ovule	Ovary
3)	Ovary	Anther
4)	Stigma	Ovary

4. Study the flow chart below.



What could Question A be?

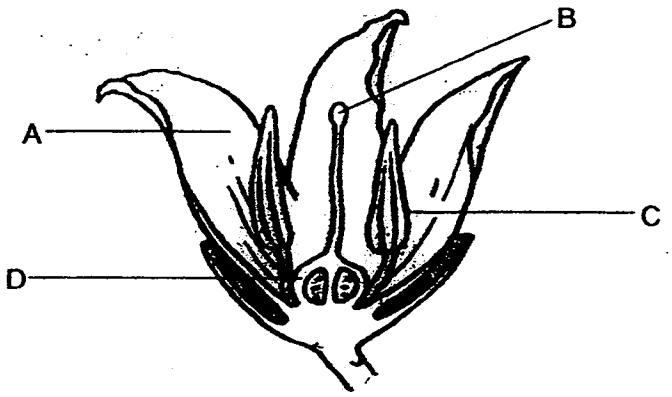
(1) Has four stages in its life cycle?
(2) Are the eggs laid on land?
(3) Has three stages in its life cycle?
(4) Does the young have wings?

5. Which of the following characteristics are **common** among mammals?

A: They have hair.
B: They have wings.
C: They reproduce by laying eggs.
D: They feed their young with milk.

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

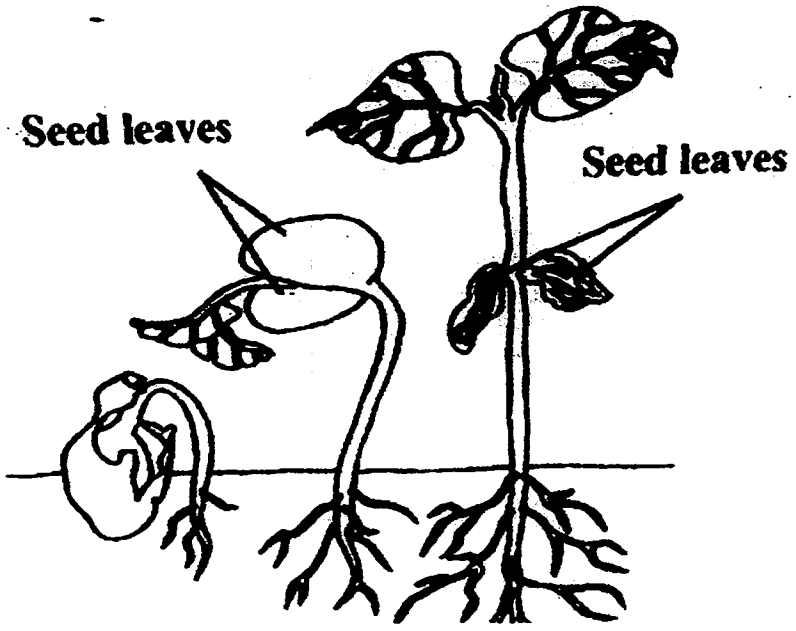
6. The diagram below shows parts of a flower.



Which of the following parts and functions are **incorrectly** matched?

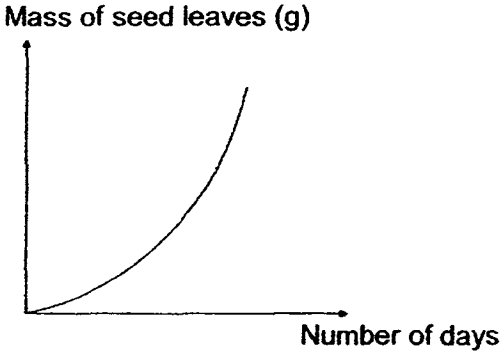
	Part	Function
(1)	A	Attracts insects
(2)	B	Produces ovules
(3)	C	Produces pollen grains
(4)	D	Develops into a fruit

7. The diagram below shows the growth of a seedling over a number of days.

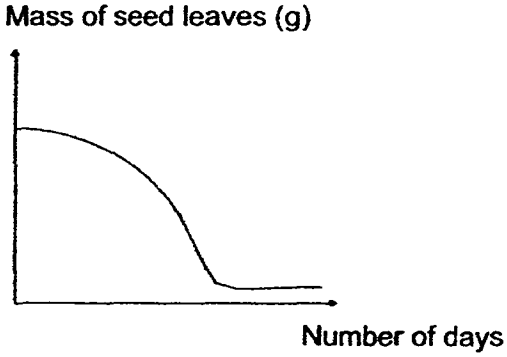


Which one of the following graphs correctly shows the change in the mass of the seed leaves?

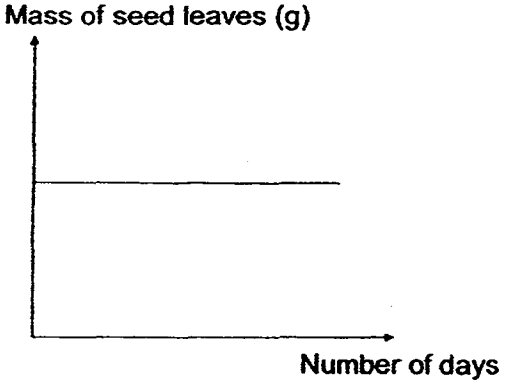
(1)



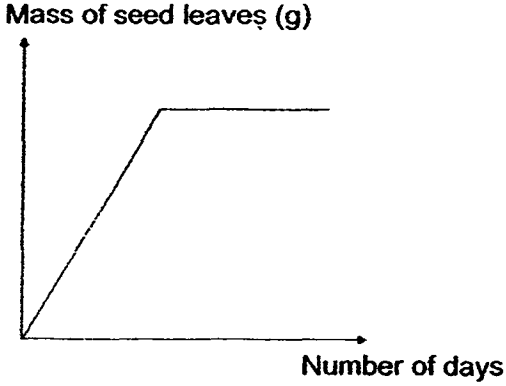
(2)



(3)



(4)



8. Sze Ann conducted an investigation on two similar flowers, **A** and **B**, which have not been pollinated yet. Both flowers are from the same plant.

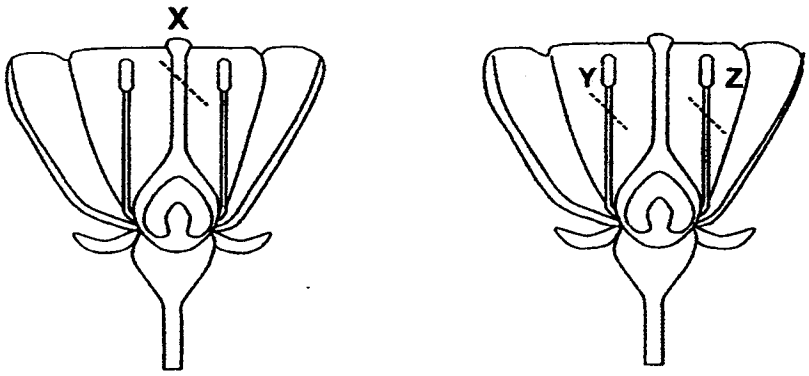
The following is the procedure of her investigation.

Step 1: Remove Part **X** from Flower **A**.

Step 2: Remove Parts **Y** and **Z** from Flower **B**.

Step 3: Place the plant in a garden that has similar plants.

Step 4: Water the plant daily.

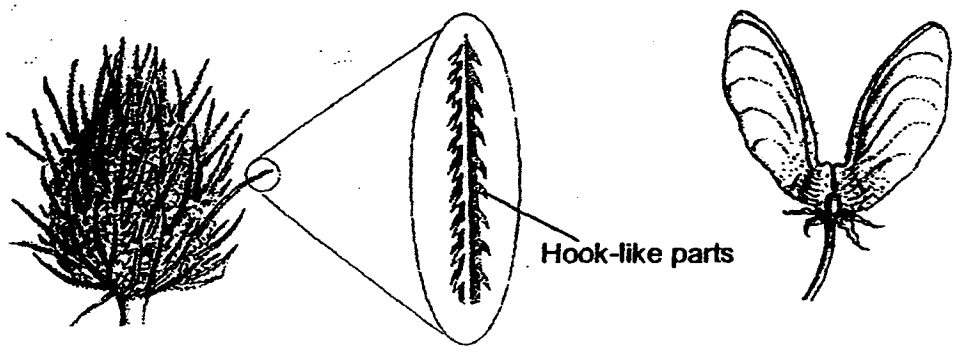


Flower **A** Flower **B**

Sze Ann predicts that the following observations will be made after some time. Which of her predictions are likely to be correct?

	Flower **A**	Flower **B**
(1)	It will develop into a fruit.	It will develop into a fruit.
(2)	It will develop into a fruit.	It will not develop into a fruit.
(3)	It will not develop into a fruit.	It will develop into a fruit.
(4)	It will not develop into a fruit.	It will not develop into a fruit.

9. The diagram below shows the fruits from two different plants.

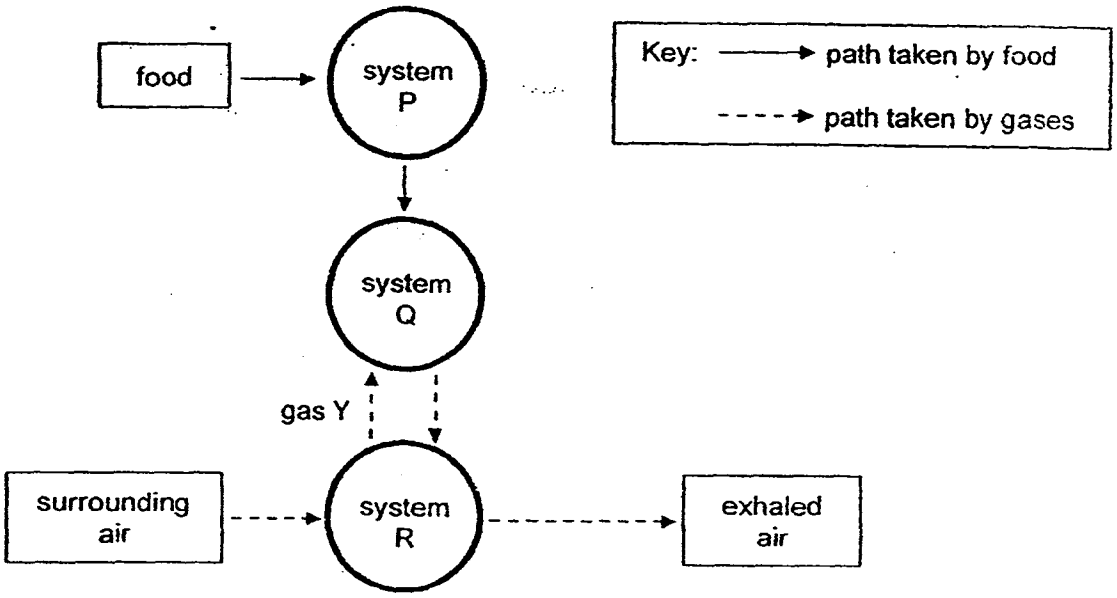


Fruit **X** Enlarged view Fruit **Y**

Which of the following shows the correct method of dispersal of fruits **X** and **Y**?

	Method of dispersal of	
	Fruit X	**Fruit Y**
(1)	Animals	Wind
(2)	Animals	Splitting action
(3)	Wind	Splitting action
(4)	Wind	Water

10. The diagram below shows how food and gases are transported in the human body.



Which systems do P, Q, and R represent and what is gas Y?

	System P	System Q	System R	Gas Y
(1)	Circulatory	Respiratory	Digestive	Carbon dioxide
(2)	Digestive	Respiratory	Circulatory	Carbon dioxide
(3)	Circulatory	Digestive	Respiratory	Oxygen
(4)	Digestive	Circulatory	Respiratory	Oxygen

( )

11. The following food relationships were observed among four organisms, P, Q, R and S in a certain habitat.

S feeds on P. Q is eaten by R. P is a predator of R. S does not feed on R but feeds on Q.

Which of the following roles in a food web are correctly matched with the organisms?

	Producer	Consumer	Both a prey and a predator
(1)	P	R	Q
(2)	R	Q	P
(3)	Q	S	P
(4)	Q	P	S

( )

12. The diagram below shows a penguin swimming in the water.

Which of the following characteristics help the penguin swim fast in the water?

	Characteristics	
	Webbed feet	Streamlined body
(1)	Yes	Yes
(2)	Yes	No
(3)	No	Yes
(4)	No	No

( )

13. Which of the following examples of behavioural and structural adaptations are correct?

	Behavioural Adaptation	Structural Adaptation
(1)	Camels search for food at night to avoid the Sun's heat.	Camels hide in the shade to avoid the Sun's heat.
(2)	Owls have sharp claws to grab their prey while flying.	Owls' keen eyes enable them to see clearly in the dark
(3)	Adult elephants form a protective circle around the young when threatened by predators.	Elephants have long and flexible trunks to reach tall trees for food.
(4)	Wolves have sharp teeth to tear the flesh of their prey.	Wolves hunt in groups to catch a prey that is larger.

( )

14. Eldric carried out an investigation on the number of birds that visited his school garden at different times of the day.

The table below shows the number of birds Eldric observed at the school garden at different times of the day, from Monday to Wednesday.

Use the information given in the table to answer questions **14** and **15**.

Time of observation	Number of birds observed at the school garden		
	Monday	Tuesday	Wednesday
9.00 am	23	25	21
1.00 pm	8	13	10
5.00 pm	17	15	12

Which one of the following is the best conclusion that can be made based on the information in the above table?

(1) Birds are most active in the morning.
(2) Birds prefer a warm surrounding to a cool surrounding.
(3) The temperature at the school garden on Wednesday was the highest.
(4) The time of the day does not affect the number of birds observed at the school garden.

( )

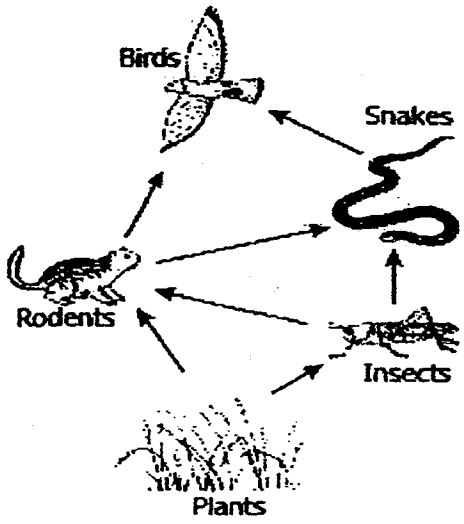
15. Which of the following steps will help to improve the reliability of the information Eldric has gathered during his investigation?

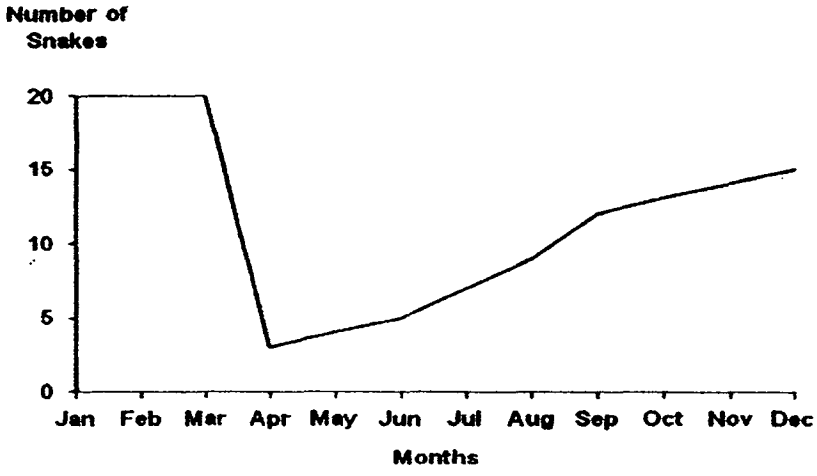
A: Count the number of birds before and after a rainfall.
B: Count the number of birds at the gardens of two other schools.
C: Count the number of birds at the school garden for another three days.
D: Count the number of birds at the school garden at 11 am and 3 pm as well.

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

( )

16. Study the food web below carefully. The organisms below were all found in a forest.





Tom recorded the number of snakes in the forest over a period of 12 months and plotted the graph above.

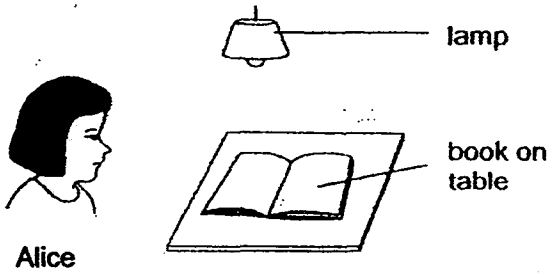
Based on the food web and the graph, which of the following are likely the reasons for the sudden drop in the number of snakes between March and April?

A: Many of the snakes died due to a disease.
B: Many new plants were planted in the forest.
C: Many of the same species of birds migrated to the forest.

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

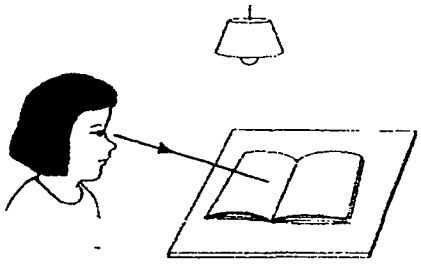
( )

17. Look at the diagram below.

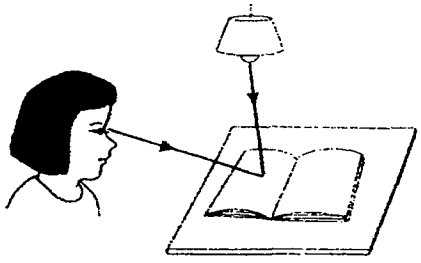


Which one of the following explains why Alice can see the book on the table?

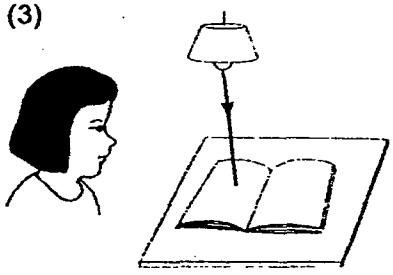
(1)



(2)



(3)



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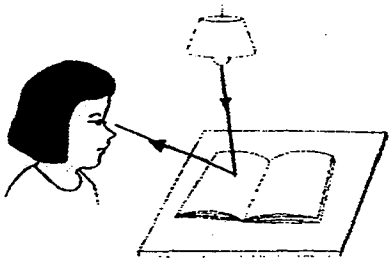

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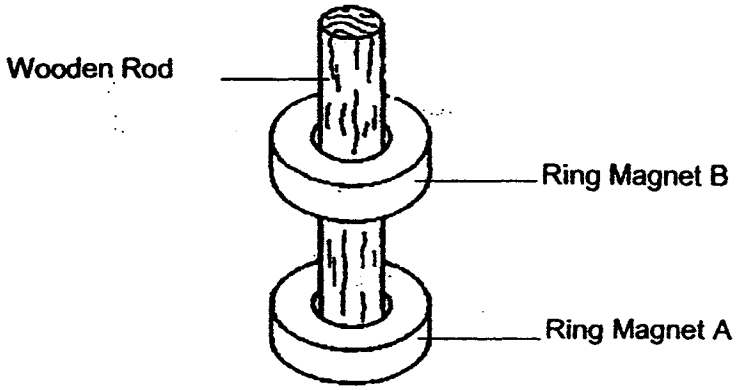
18. Molly had an experimental set-up shown below. She noticed that magnet B 'floated' above magnet A.

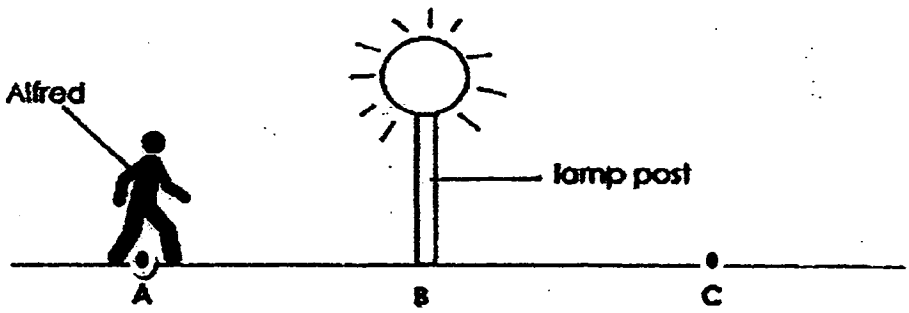


Based on the set-up above, which of the following statements are correct?

A: Magnetic force acts at a distance.
B: The like poles of the ring magnets are facing each other.
C: The unlike poles of the ring magnets are facing each other.

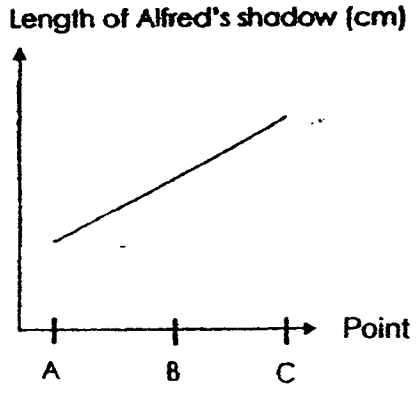
(1) A and B only
(2) A and C only
(3) B and C only
(4) A, B and C ( )

19. One night, Alfred walked from point A to point C, passing a lamp post at point B as shown in the diagram below.

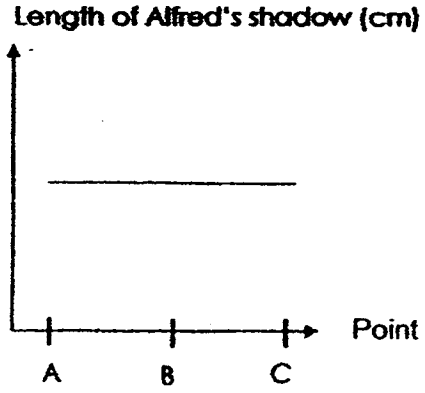


Which one of the following graphs represents the length of Alfred's shadow from point A to point C?

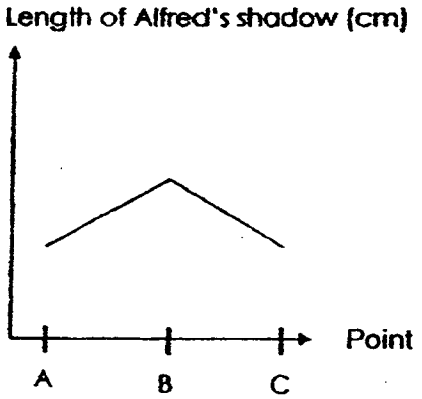
(1)



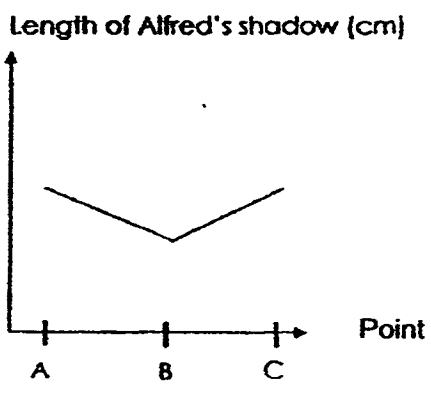
(2)



(3)



(4)



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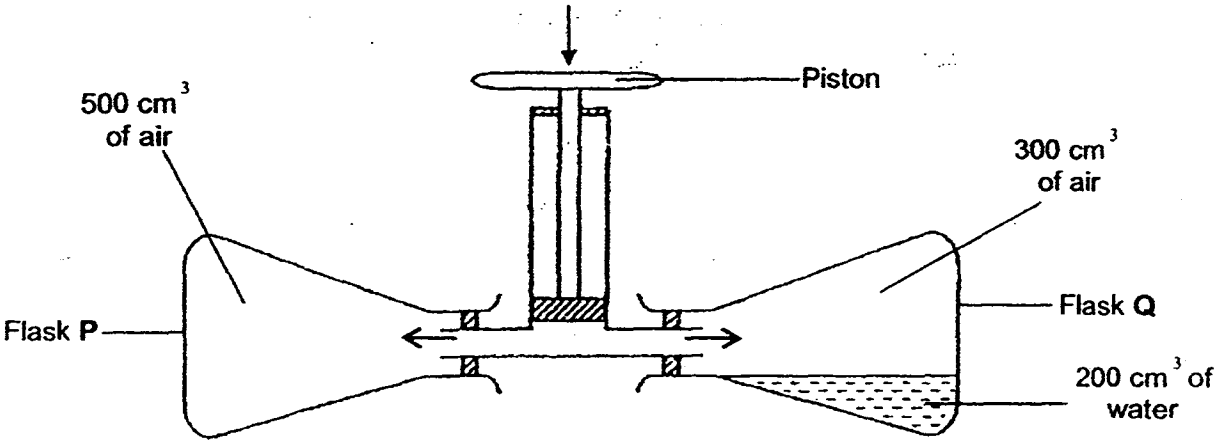
20. The set-up below contains 2 conical flasks, P and Q, each with a volume of 500 cm^3. The conical flasks are connected to a piston.



Each time the piston is pushed down, 50 cm^3 of air is forced into each conical flask.

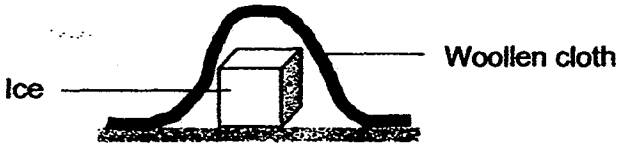
Which of the following statements about the conical flasks, P and Q, are **not** correct when the piston is pushed down?

A: Water in conical flask Q will be compressed.
B: The volume of air in each conical flask will increase.
C: The mass of air in each conical flask will increase.

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

( )

21. Which of the following correctly describes and explains what happens when a piece of ice is covered with a thick layer of woollen cloth?

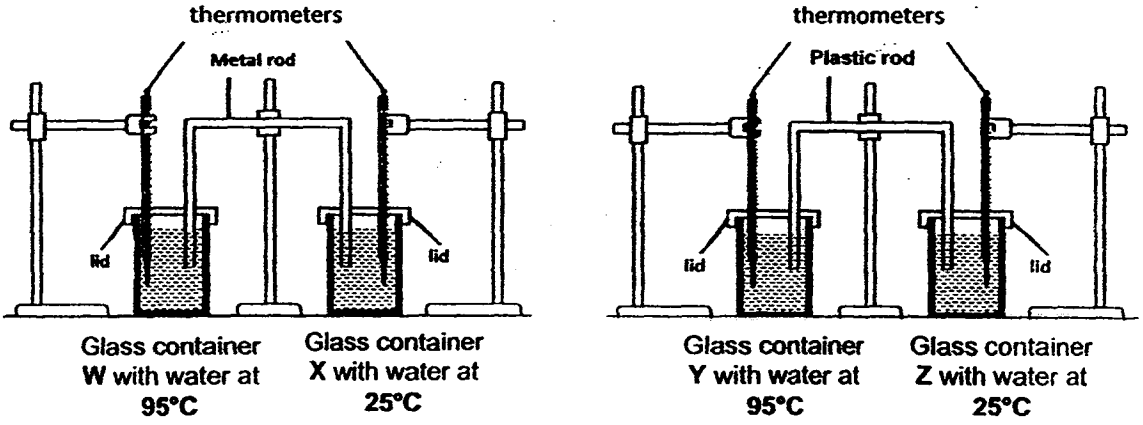


	What happens to ice	Explanation
(1)	Melts more slowly	Woollen cloth slows down heat loss from the ice
(2)	Melts more slowly	Woollen cloth slows down heat gain by the ice
(3)	Melts more quickly	Woollen cloth traps more heat to melt the ice
(4)	Melts more quickly	Woollen cloth quickens heat gain by the ice

( )

22. Matthew set up an experiment using four identical glass containers and lids at a room temperature of 30°C.

The diagram below shows the set-ups at the start of the experiment.



The metal and plastic rods used in the set-ups above are of the same thickness and length.

Based on the above experiment, which of the following statements are likely to be correct about the temperature of water in each cup after five minutes?

A: Water in glass container W will be the hottest.
B: Water in glass container Y will be hotter than that in glass container W.
C: Water in glass container X will have the lowest temperature.
D: Water in glass container X will be hotter than that in glass container Z.

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

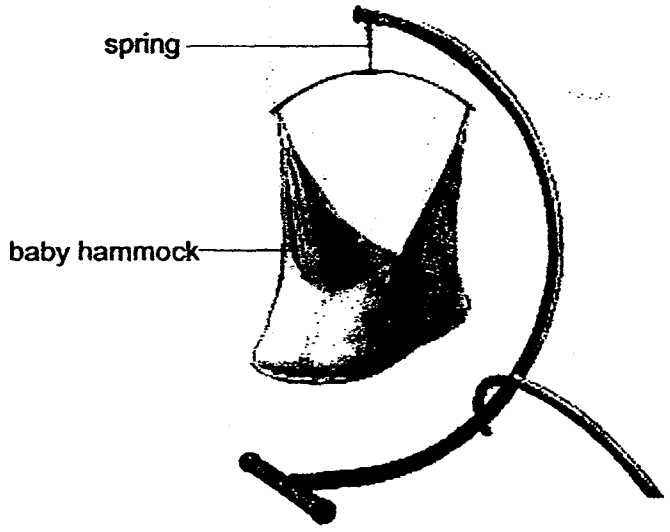
23. The diagram below shows a person playing floor ball.

Which of the following best represents the energy conversion when the person hits the ball with his stick?

	Hand with stick		Ball
(1)	Potential energy	→	Kinetic energy
(2)	Kinetic energy	→	Kinetic energy + sound energy
(3)	Kinetic energy	→	Potential energy
(4)	Potential energy	→	Kinetic energy + sound energy

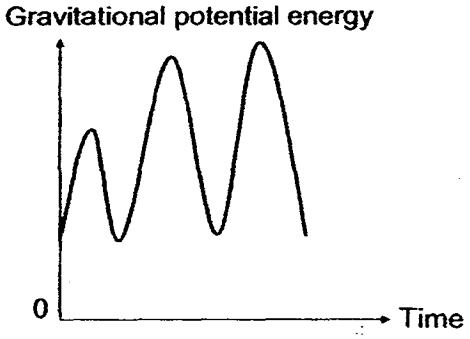
( )

24. The diagram below shows a baby hammock that will move the baby up and down to the **same height** each time to put the baby to sleep.

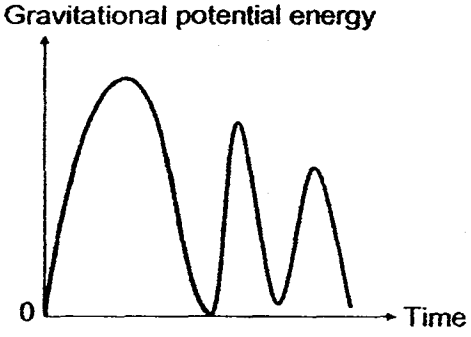


Which one of the following graphs correctly represents the amount of gravitational potential energy possessed by the baby over a period of time?

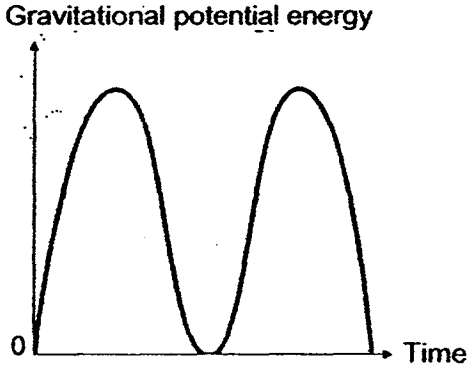
(1)



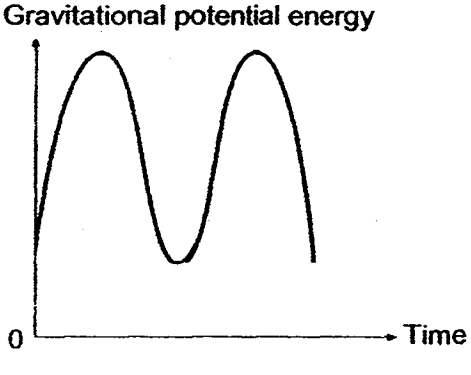
(2)



(3)



(4)



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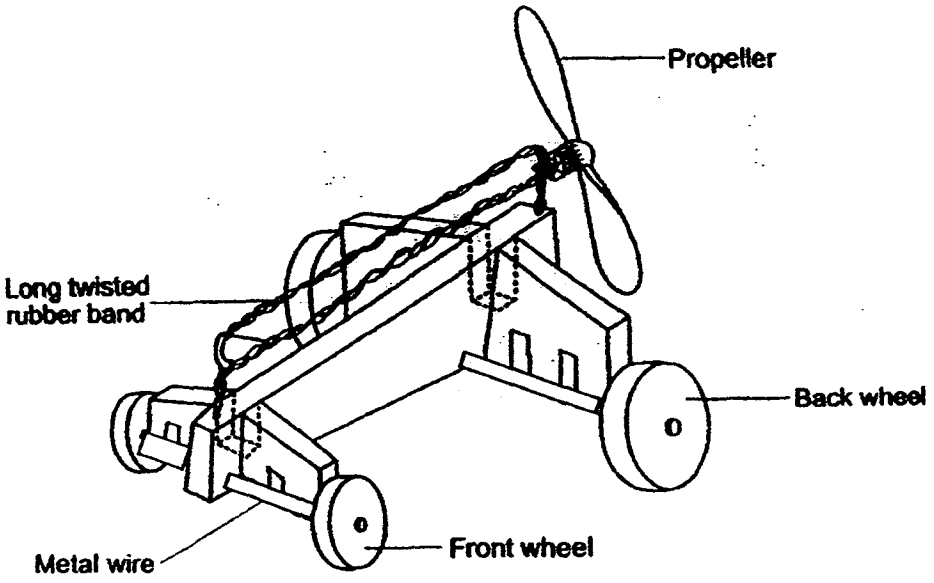
25. Study the diagram of a toy car below.

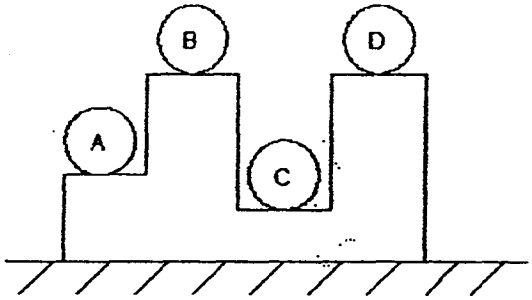


Which part of the toy car possesses the energy which enables it to move?

(1) Wheels
(2) Propeller
(3) Metal wire
(4) Twisted rubber band

( )

26. The diagram below shows four wooden balls of the same volume.
Balls A and B are 3 kg each while balls C and D are 2 kg each.



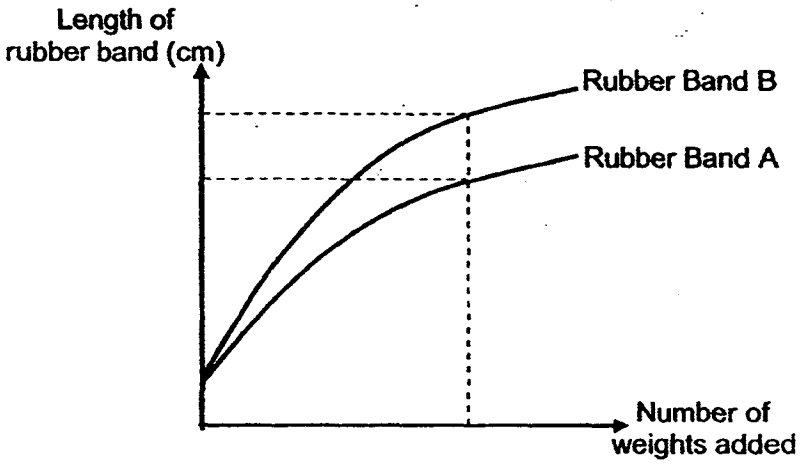
Which wooden ball possesses the **greatest amount** of potential energy?

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

( )

27. Weights are added to 2 rubber bands, A and B.

The length of each rubber band, as weights are added to them, is shown on the graph below.



Based on the graph, what can be concluded about the rubber bands A and B?

(1) Both rubber bands stretch to the same length when the same number of weights is added to each.

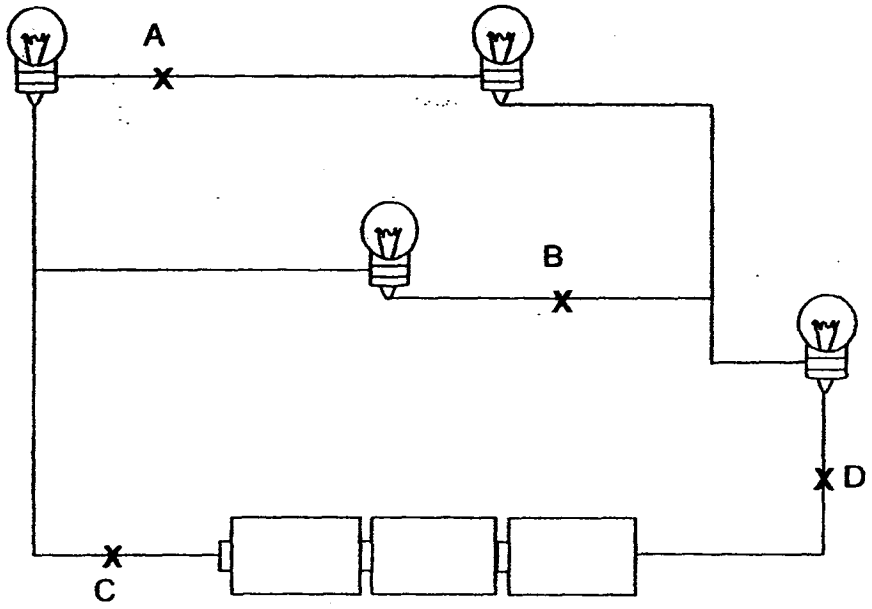
(2) B requires more weights to be added before it stretches to the same length as A.

(3) A requires more weights to be added before it stretches to the same length as B.

(4) When the same number of weights is added to the rubber bands, A would stretch longer than B.

( )

28. The diagram shows four lighted bulbs in a circuit. A switch is to be placed in the circuit so that only 2 bulbs will not light up when the switch is open.

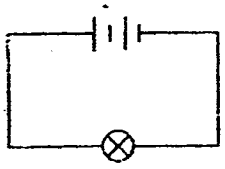


At which position, A, B, C or D, should the switch be placed?

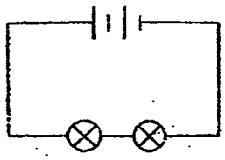
(1) A
(2) B
(3) C
(4) D

( )

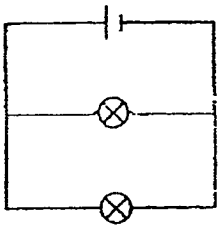
29. Study the four circuits, A, B, C and D, shown below.



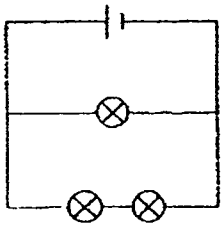
circuit A



circuit B



circuit C



circuit D

The bulbs and the batteries in the four circuits are identical. All the bulbs are lit up.

Which of the following statements about the brightness of the bulbs is correct?

(1) The bulb in circuit A is as bright as each bulb in circuit C.
(2) The bulb in circuit A is as bright as each bulb in circuit D.
(3) Each bulb in circuit B is dimmer than the bulb in circuit A.
(4) Each bulb in circuit B is dimmer than each bulb in circuit D.

( )

30. Tim breathed onto a mirror and it turned "misty".
A few minutes later, the "mist" cleared up and he was able to see himself in the mirror again.

What is the explanation for his observation?

	The "mist" on the mirror is _____.	The mirror cleared up after the "mist" had _____.
(1)	water vapour	evaporated
(2)	water vapour	condensed
(3)	water droplets	evaporated
(4)	water droplets	condensed

( )

End of Booklet A

HENRY PARK PRIMARY SCHOOL

2015 PRELIMINARY EXAMINATION

PRIMARY 6 SCIENCE

Booklet B

/40

Name: _____ ( )

Class: Primary 6 _____

14 Questions
40 Marks

Total Time for Booklet A and B: 1 h 45 min

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

READ AND FOLLOW INSTRUCTIONS CAREFULLY.

Booklet B (40 marks)

Write your answers to questions 31 to 44 in the spaces given.

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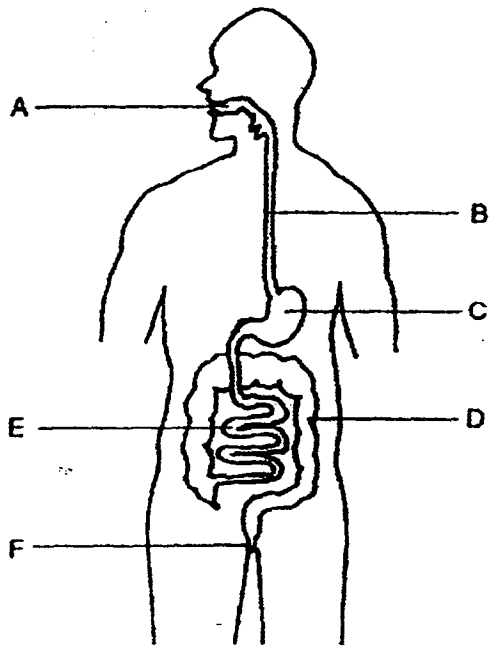
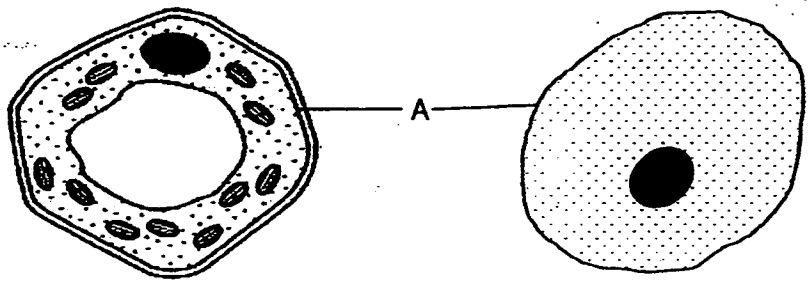
31. The diagram below shows parts of the human digestive system.



a) Name the part(s), A, B, C, D, E or F, where digestion takes place. *(1m)*

b) What is the main function of organ D?

32. The diagram below shows two types of cells, X and Y.



Cell X Cell Y

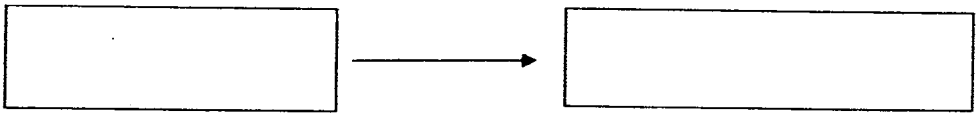
a) What is the main function of part A? *(1m)*

_____

_____

b) Energy conversion takes place during a process in one of the cells.

Write the cell, X or Y, in the blank and fill up the boxes to show the energy conversion during this process below.

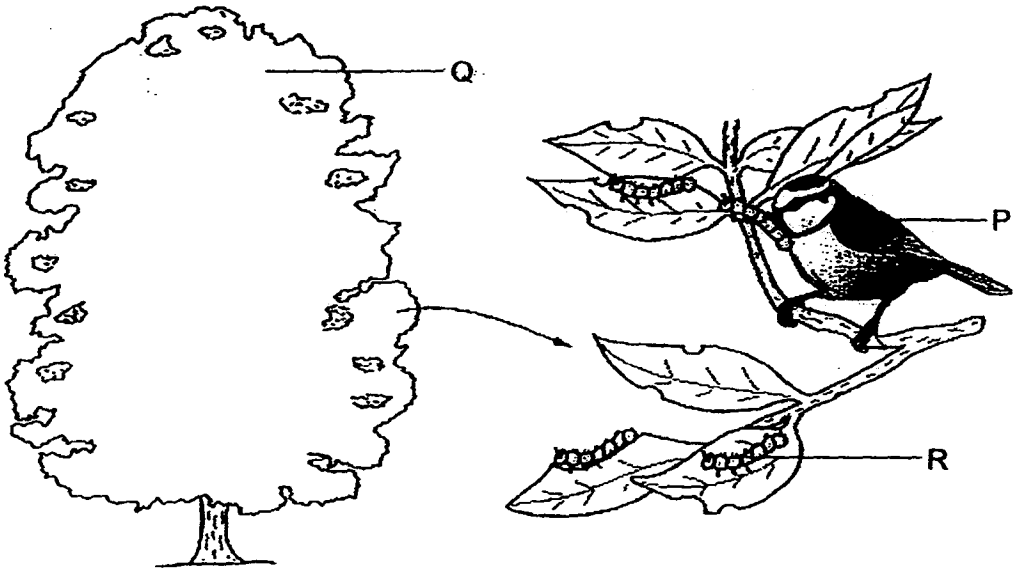


energy from the Sun energy in

cell _____ *(1m)*

(1m)

33. The diagram below shows some organisms living together in a particular habitat.



a) State one characteristic of organism P that classifies it as a bird only. *(1m)*

_____

_____

b) What is the name given to a collection of different organisms living and interacting in the same habitat? *(1m)*

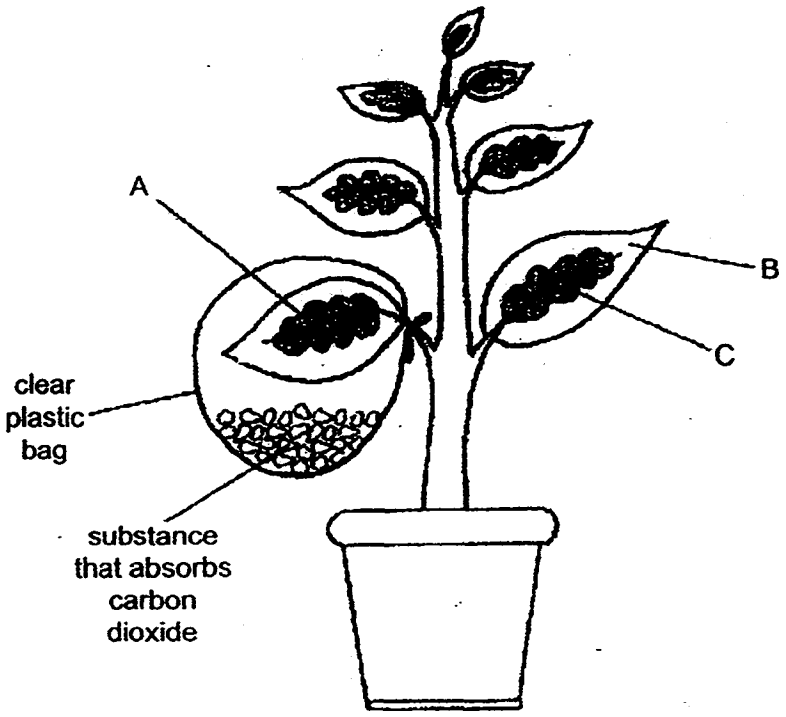
_____

c) Using the letters, P, Q and R, draw a food chain involving these organisms. *(1m)*

34. Sophia set up an experiment to find out whether carbon dioxide is needed for photosynthesis.

She used a plant with leaves that had green parts in the middle and white parts round the edges as shown in the diagram below.

The set-up was placed in the sunlight.



a) A starch test was carried out on the leaves with parts labelled, A, B and C. *(1m)*

State the part(s), A, B or C , of the leaves where :

(i) Iodine turned dark blue : _____

(ii) Iodine remained dark brown : _____

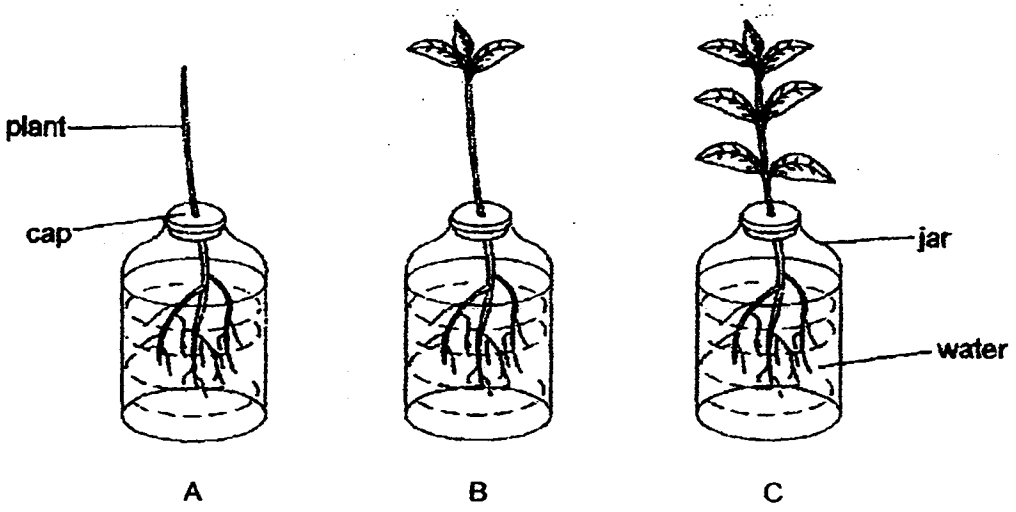
b) Give a reason for your answer in (a)(i).

_____

_____

35. Dawson carried out an experiment with three similar plants, A, B and C, to find out how the number of leaves of plants affects the amount of water taken in.

The diagram below shows the set-up of his experiment.



After two days, he measured the amount of water left in each of the jars.

The results of his experiment are shown below.

Plant	Number of leaves	Amount of water in each jar (ml)	
		Start of the experiment	After 2 days
A	0	200	195
B	3	200	180
C	7	200	143

a) Explain the purpose of setting up plant A. *(2m)*

_____

_____

b) From the results, what can Dawson conclude about his experiment? *(1m)*

_____

_____

36. Deforestation occurs in order to make land available for farming and building roads.

a) State if the amount of carbon dioxide in the atmosphere will **increase, decrease** or **remain the same** due to deforestation. *(1m)*

_____

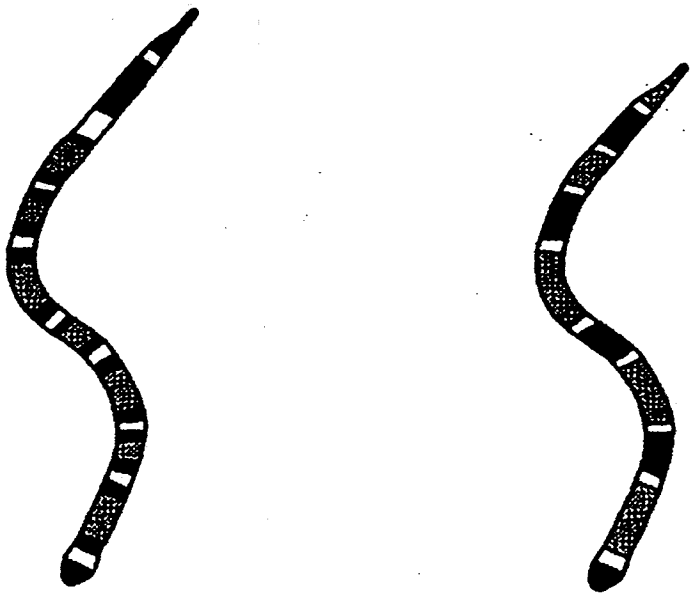
b) Give a reason for your answer in part (a). *(2m)*

_____

_____

_____

37. Two snakes, F and G, look similar. Predators are aware that snake G is poisonous.



Snake F Snake G

a) How does snake F benefit from looking like snake G? *(1m)*

_____

_____

b) Over a long period of time, due to the absence of snake G, it is possible for snake F to look less like snake G. *(2m)*

As a result, the population of snake F may start to decrease.

Explain why the population of snake F may decrease.

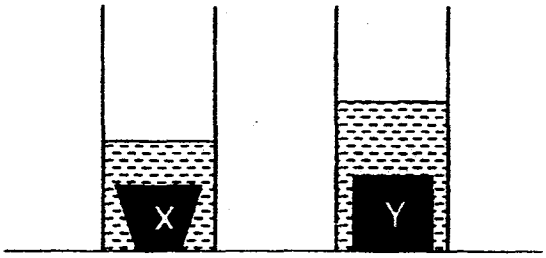
_____

_____

_____

38. Earlwin placed two different objects, X and Y, each into two similar measuring cylinders containing equal amounts of water.

The diagram below shows his observation of the objects in the measuring cylinders.



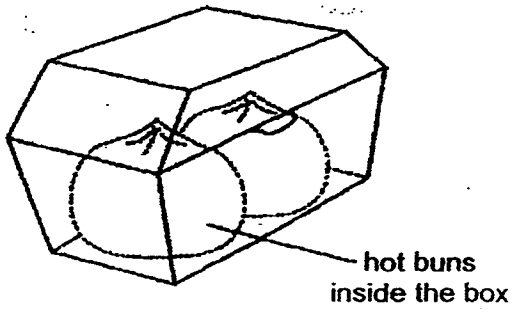
Which object, X or Y, has a greater volume? Explain your answer. *(2m)*

Object: _____

Explanation: _____

_____

39. Annabelle bought some hot buns from a store. The hot buns were placed in a box as shown below.



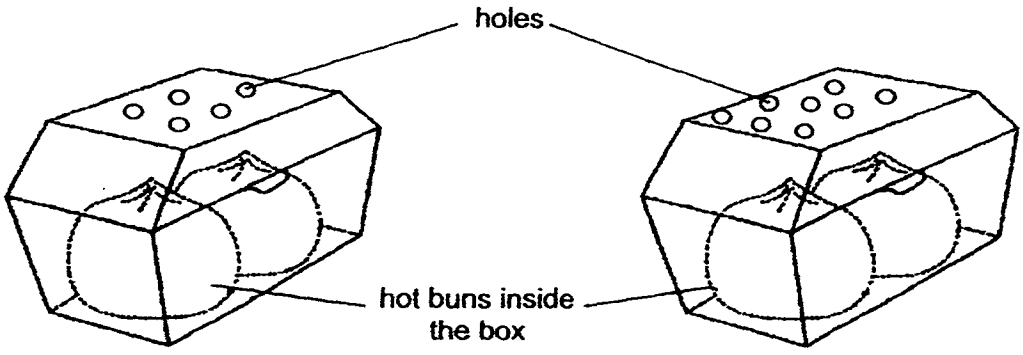
When she opened up the box, she observed that the buns were wet.

a) Explain why the hot buns in the box became wet. *(2m)*

_____

_____

At the next visit to the same store, she bought two boxes of hot buns, A and B. Then, she asked the stallholders to poke holes on the boxes as shown in the diagram below.



Box A Box B

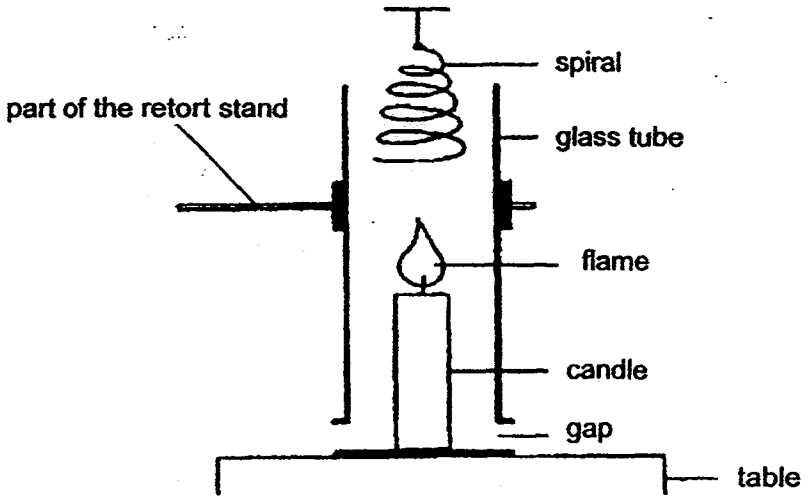
When she opened up the boxes, she observed that the buns in box A were wetter than the buns in box B.

b) Explain why this is so. *(2m)*

_____

_____

40. In the experiment below, the spiral starts to spin when the candle is lighted.



a) What energy does the candle possess?

_____

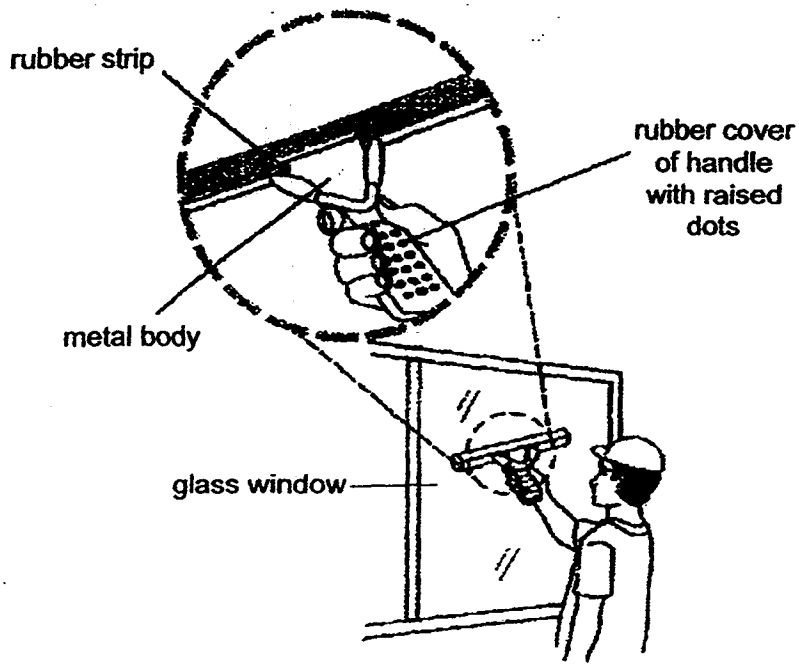
b) Explain how the heat from the flame causes the spiral to spin.

_____

_____

_____

41. The diagram below shows a worker cleaning a glass window with a tool.



a) The rubber strip of the tool does not scratch the glass window. *(1m)*

What property of the glass prevents it from being scratched by the rubber strip?

_____

_____

b) There are many raised dots on the rubber cover of the handle. *(1m)*

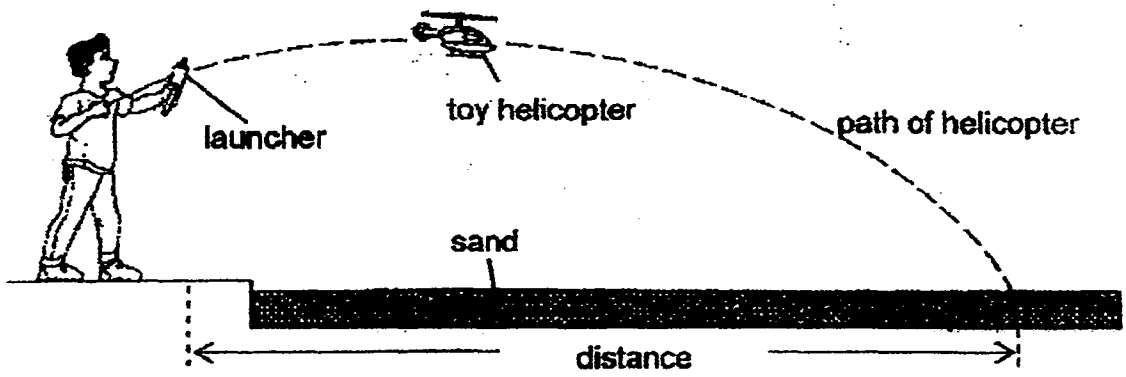
Explain how these raised dots help the worker to have a better grip of the tool while using it to clean the window.

_____

_____

_____

42. Daniel carried out an experiment with three different toy helicopters, P, Q and R, each of similar size and mass using the set-up as shown below.



He launched the helicopter and measured the distance it travelled when it lands on the sand. The results of his experiment are shown below.

Helicopter	Mass of helicopter (g)	Distance travelled (cm)		
		1st Try	2nd Try	3rd Try
P	200	220	250	241
Q	200	350	343	365
R	200	300	310	290

a) Why did Daniel carry out the experiment three times? *(1m)*

_____

b) Give a possible reason why the distance travelled by each of the helicopters of the same mass was different for each try. *(1m)*

_____

_____

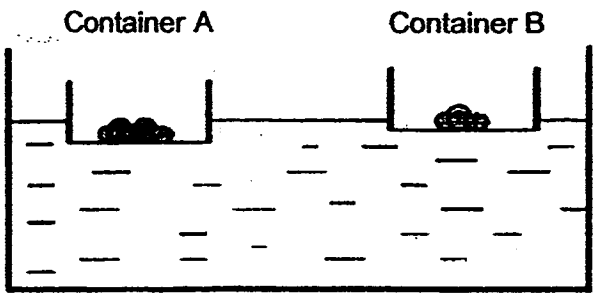
c) Sand was used for each helicopter to land after each time it was launched. *(1m)*

Explain how sand helps to measure the distance travelled by the helicopters more accurately.

_____

_____

43. William carried out an experiment with some pebbles and two similar containers, A and B. The diagram below shows his observation of his set-up.

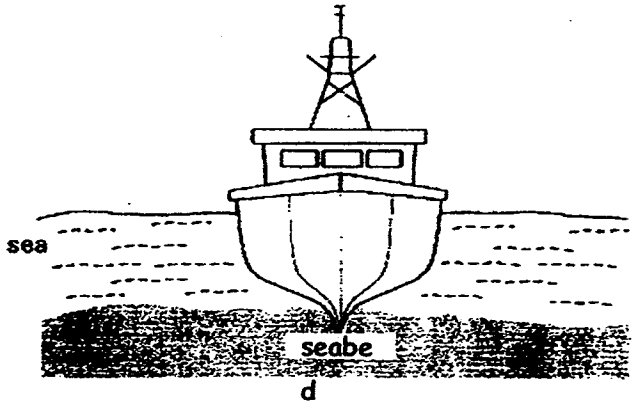


a) Based on his observation, what could William conclude about the relationship between the number of pebbles in a container and how low the container sinks in the water? *(1m)*

_____

_____

A boat carrying a full load of fish was stuck on the seabed as shown in the diagram below.



b) What could be done so that the boat could lift off the seabed and move forward? *(1m)*

_____

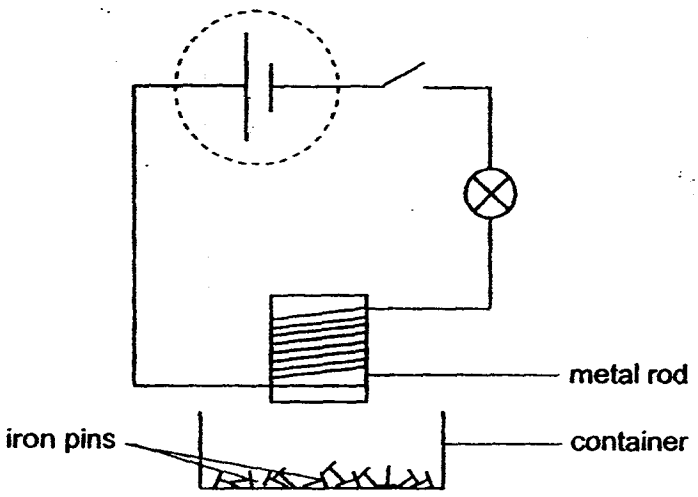
c) Explain your answer in (b). *(1m)*

_____

_____

44. Xavier set up an experiment to find out whether, iron or steel, is a better metal to make electromagnets.

The diagram shows his experimental set-up.



a) Xavier used metal rods of the same size, state **another** variable of the rod that he must keep the same in order to ensure a fair test. *(1m)*

_____

b) What can be observed about the following items when the switch is closed? *(1m)*

Iron pins : _____

Bulb : _____

c) Suggest what can be done to the part of the circuit, circled in dotted line, to increase the magnetic strength of the metal rod. *(1m)*

_____

End of Booklet B

Setters:

Mr Tan Joo Nam
Ms Ruchika
Ms Grace Chan

EXAM PAPER 2015
LEVEL : PRIMARY 6
SCHOOL : HENRY PARK PRIMARY SCHOOL
SUBJECT : SCIENCE
TERM : PRELIMINARY EXAMINATION

BOOKLET A

Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q9	Q 10
4	**4**	**3**	**3**	**2**	**2**	**2**	**3**	**1**	**4**
Q 11	Q 12	Q 13	Q 14	Q 15	Q 16	Q 17	Q 18	Q 19	Q 20
3	**1**	**3**	**1**	**4**	**2**	**4**	**1**	**4**	**2**
Q 21	Q 22	Q 23	Q 24	Q 25	Q 26	Q 27	Q 28	Q29	Q30
2	**3**	**2**	**4**	**4**	**3**	**3**	**1**	**3**	**3**

BOOKLET B - SEE ATTACHED COPY

THE END

Prelim Science – Suggested Answers for CORRECTION **Name** _____

	Answers	CORRECTIONS
31	(a) A, C, E (b) To absorb water from the undigested food.	
32	(a) Controls substances moving in and out of the cell (b) Light, Chemical potential, cell X	(b) Chemical potential
33	(a) P has feathers. (b) Community (c) Q ⟶ R ⟶ P	
34	(a) (i) C (ii) A and B (b) Green part contains chlorophyll which traps light and photosynthesises in the presence of carbon dioxide.	(b) Green part contains chlorophyll which traps light and photosynthesises.
35	(a) It is a control set-up to compare and confirm that it is the number of leaves that causes the plant to take in different amounts of water. (b) The greater the number of leaves, the greater the amount of water taken in by the plants.	
36	(a) Increase. (b) As the trees are cut down, there is less carbon dioxide being absorbed by the trees.	
37	(a) Predators will not eat snake F. (b) Predators will not mistake snake F as poisonous and start to feed on them.	
38	Object: Y Explanation: The water level is higher as the space occupied by object Y is greater.	

39	(a) Hot water vapour (from the hot buns) condensed on the inner surface of the box and the water droplets fell on the buns. (b) Less hot water vapour could escape in box A since there were fewer holes on the box.	
40	a) Chemical Potential Energy b)The surrounding air gains heat from the flame, (expands) and rises. The rising air caused the spiral to spin.	
41	(a) Glass is harder (than rubber). (b) They help to increase the friction between the hand and the handle.	
42	(a) It is to ensure the results are (more) reliable. (b) The amount of force used to launch the helicopter is different. (c) Amount of friction is increased between the helicopter and the sand so the helicopter is will not slide when it lands.	
43	(a) As the number of pebbles in the (or a) container increases, the deeper the container sinks. (b) Throw away some fish. (c) Weight of the boat is reduced.	
44	(a) Temperature of the rod. (b) Iron pins: The iron pins will be attracted by the rod. Bulb: It lights up. (c) Add more batteries (in series).	