

Index No.

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Anglo-Chinese School (Junior)
Anglo-Chinese School (Primary)

COMBINED PRELIMINARY EXAMINATION 2011

SCIENCE

BOOKLET A

Friday

26 August 2011

1 hour 45 minutes

NAME : _____ ()

CLASS : P6. _____

INSTRUCTIONS TO PUPILS

DO NOT TURN OVER THE PAGES UNTIL YOU ARE TOLD TO DO SO

Follow all instructions carefully.

There are 30 questions in this booklet.

Answer **ALL** questions.

INFORMATION FOR PUPILS

The total marks for this booklet is 60.

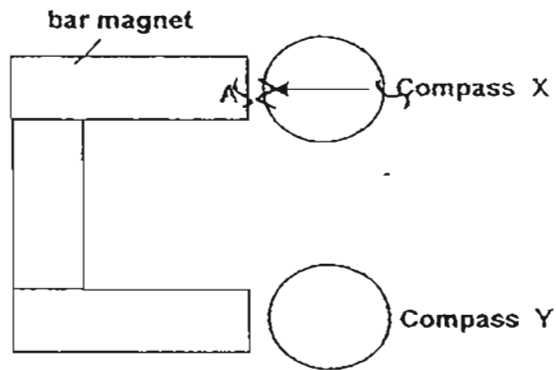
The total time for Booklets A and B is 1 hour 45 minutes.

This question paper consists of 21 printed pages. (Inclusive of cover page)

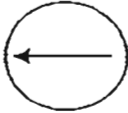
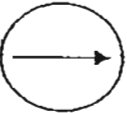
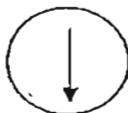
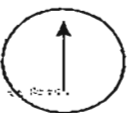
For each of the following questions from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade your answer on the Optical Answer Sheet given.

(60 marks)

- 1 Taro set up 3 bar magnets. He brought Compass X towards side A of a bar magnet as shown in the diagram below.



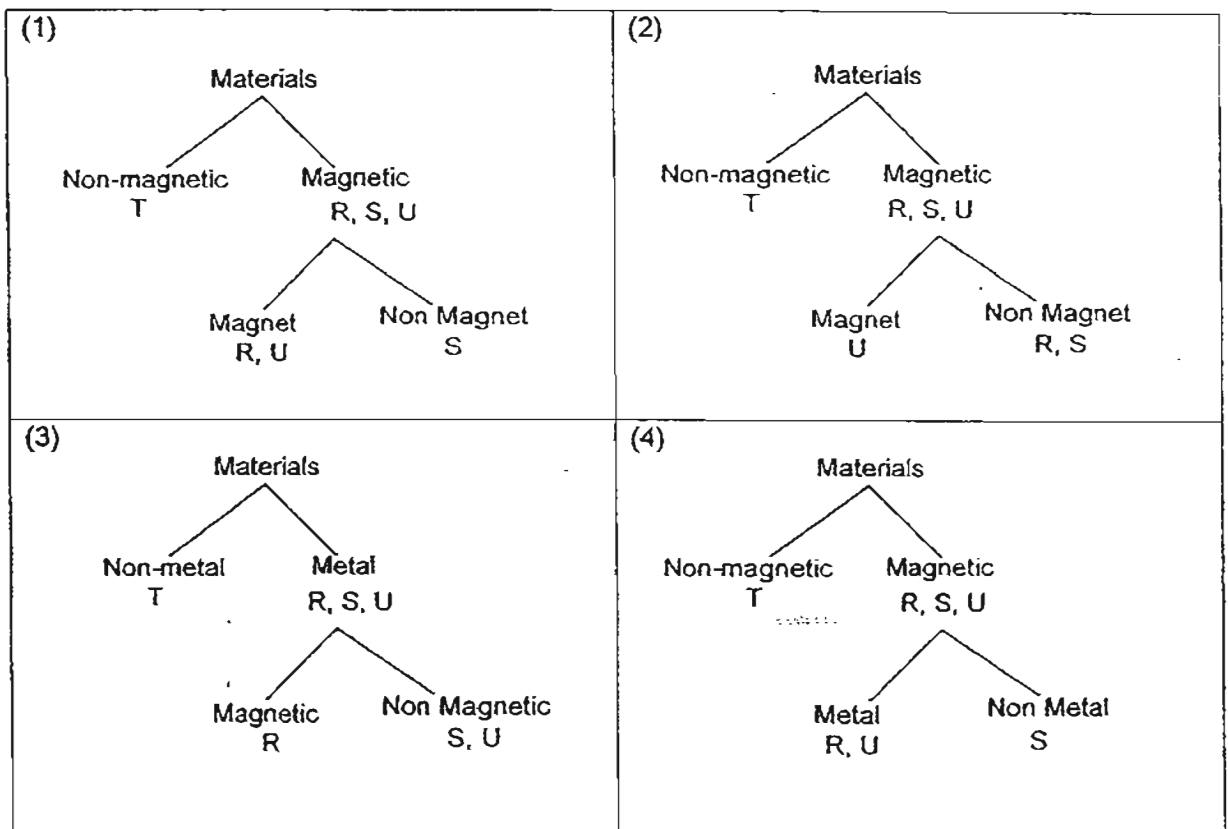
Which one of the following diagrams correctly represents the direction compass Y will point to?

(1) 	(2) 
(3) 	(4) 

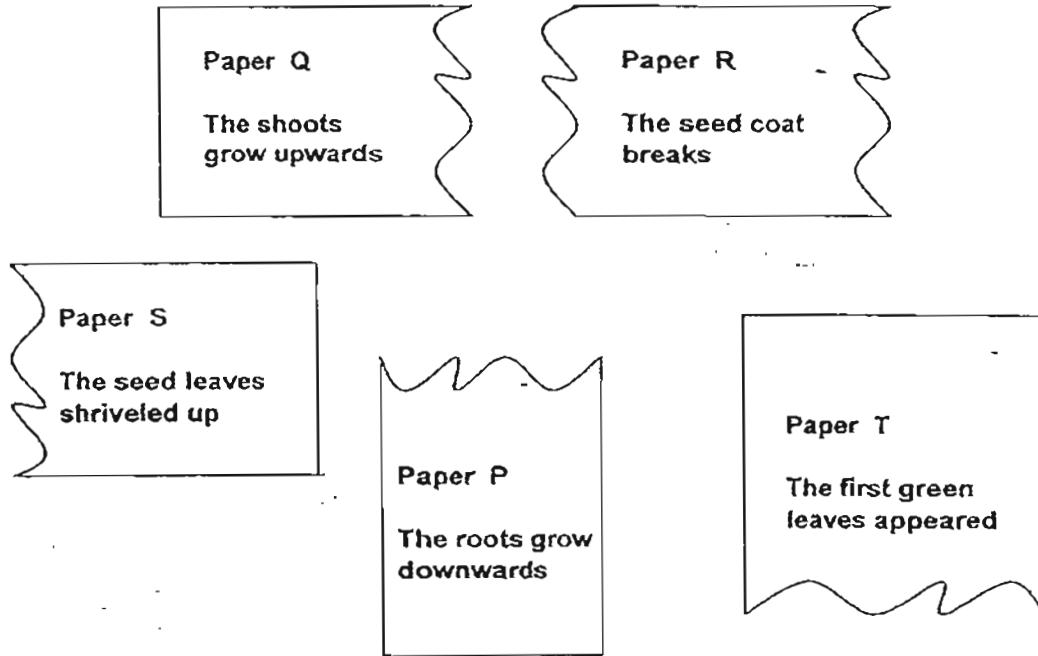
- 2 Karim tested 4 rods of different materials, R, S, T and U. He placed a magnet on the two ends of each rod and recorded his observations in the table below.

Material	Left	Right
R	attracted	attracted
S	attracted	attracted
T	not attracted	not attracted
U	attracted	repelled

Which one of the following classification charts below reflects Karim's result?



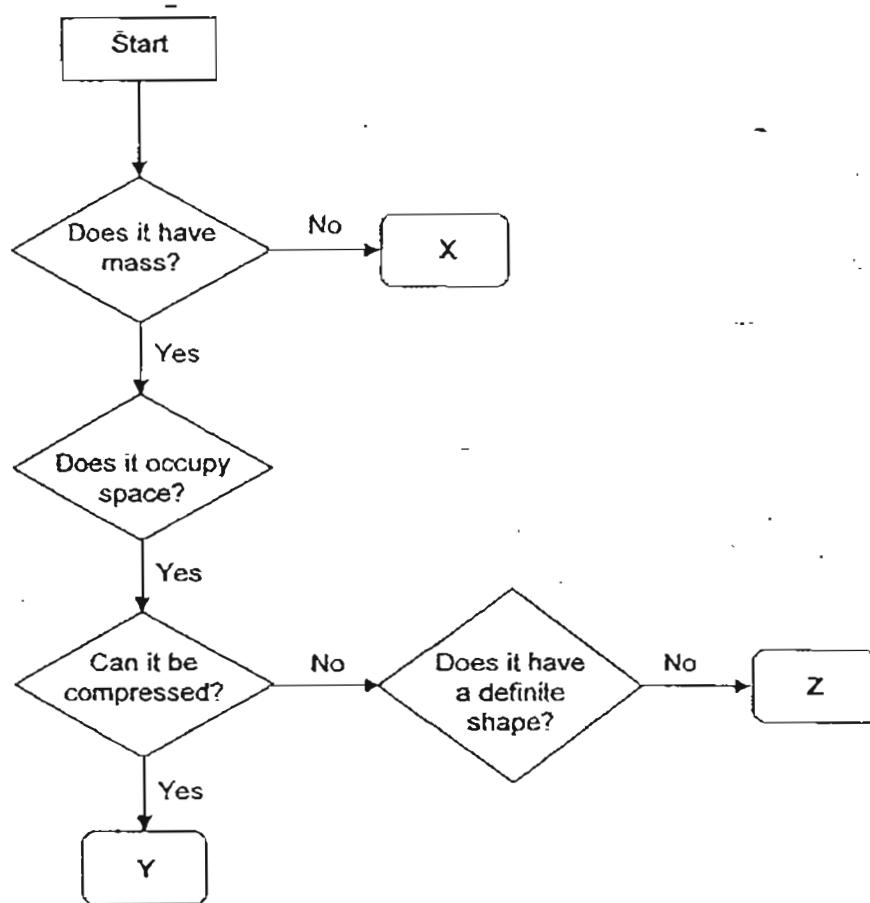
- 3 Sergio observed the stages of growth of some green bean seedlings. He recorded his observations on pieces of paper as shown below.



Which one of the following shows the correct stages of growth of the seedlings?

	1 st Stage	2 nd Stage	3 rd Stage	4 th Stage	5 th Stage
(1)	P	R	Q	T	S
(2)	P	R	S	Q	T
(3)	R	P	Q	T	S
(4)	R	P	Q	S	T

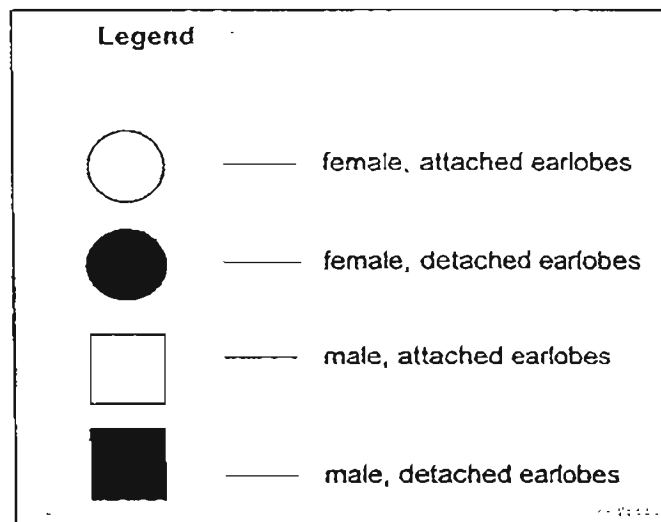
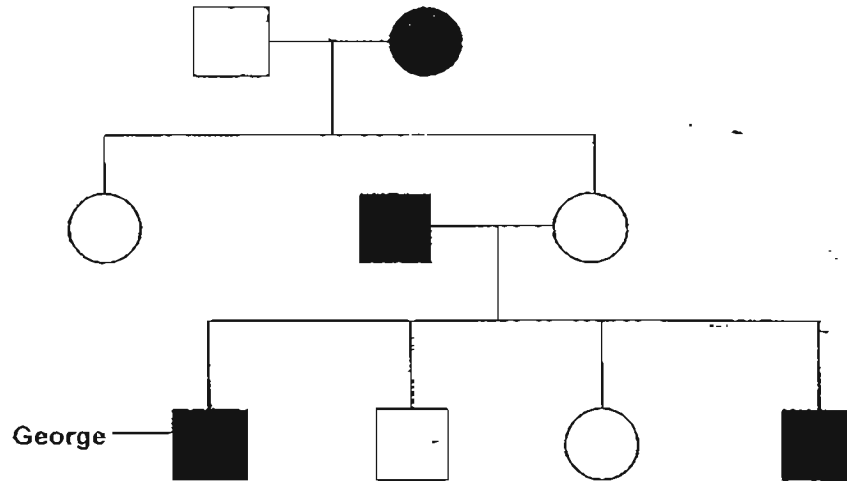
4 Study the flow chart below.



Which one of the following correctly identifies X, Y and Z?

	X	Y	Z
XX	music	oxygen	honey
XX	ice	nitrogen	jelly
XX	radio	water	petrol
XX	fire	coin	soap

5 Study the family tree of George below.



Which of the following statements are correct?

- A. George has three brothers.
- B. George's aunt has attached earlobes.
- C. George's grandmother has detached earlobes.

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

- 6 Henry conducted an experiment using 4 insect-pollinated flowers of the same species growing in a field. At the start of the experiment, different parts of the flowers (V, W, X and Y) were removed, as shown in the table below. Insects were observed by the pupils to visit the flowers freely.

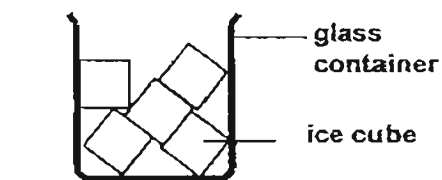
Flowers	Anthers	Petals	Stigma
V	present	removed	present
W	present	removed	removed
X	removed	present	removed
Y	removed	present	present

Which flower(s) would most likely produce fruits?

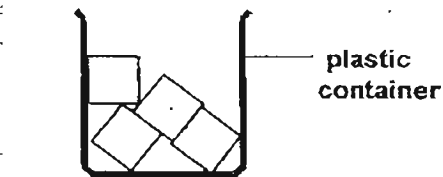
- (1) W only
 (2) V and X only
 (3) V and Y only
 (4) W, X and Y only

(3)

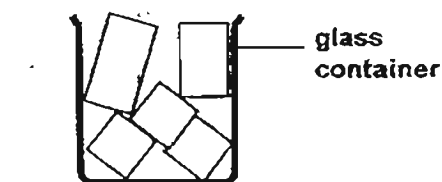
- 7 Keng Siang and Rohan conducted an experiment to see whose ice-cubes would take a longer time to melt completely. Each pupil put their ice cubes in different containers of the same size before they started their experiment. Which two set-ups should they choose for their experiment to be a fair one?



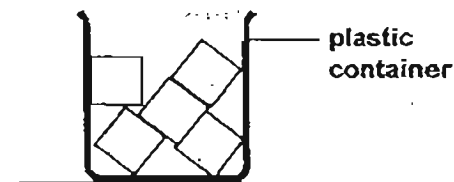
Set-up A



Set-up B



Set-up C



Set-up D

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

- 8 The chart below shows the weather conditions from Monday to Thursday. On which day did Vincent's clothes dry the fastest?

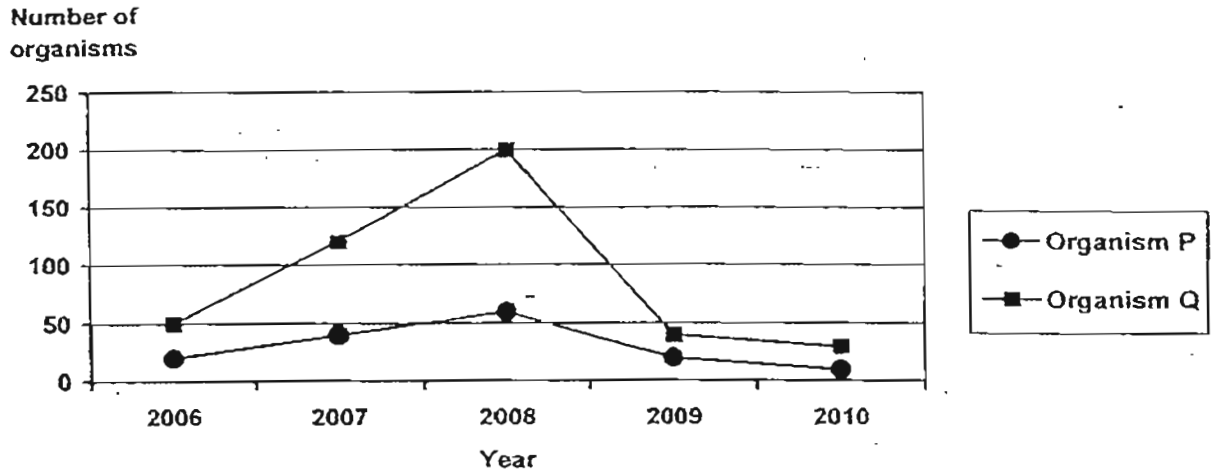
Day	Weather Condition	
Monday	no wind	sunny
Tuesday	slightly windy	cloudy
Wednesday	no wind	partly cloudy
Thursday	slightly windy	sunny

- (1) Monday
(2) Tuesday
(3) Wednesday
(4) Thursday
- 9 Daniel wants to reduce the water consumption at home. He made the following list. Which of the following actions below will help him to reduce water consumption?

- A Washing dishes under a running tap.
B Using a water hose to wash their car.
C Using a mug of water when brushing teeth.
D Reusing the water from washing vegetables to water plants.

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

- 10 Some scientists conducted a study on two types of organisms, P and Q, which were found in a community. The graph below shows how the number of organisms changed over time.



Based only on the information from the graph, the scientists wrote the following statements.

- | | |
|------------------|--------------------------------------------------------------------------------------------------------------------------|
| Daniel | The number of P and Q was highest in 2008. |
| Andrew | The population of Q increased more than that of P between 2006 and 2008. |
| Taddeus | The decrease in the number of P and Q from 2008 to 2010 could be due to P preying on Q. |
| Creighton | The introduction of a prey into the community caused the sudden decrease in the population of P and Q from 2008 to 2009. |

Whose statements are most probably correct?

- (1) Andrew and Daniel only
- (2) Daniel and Taddeus only
- (3) Andrew and Creighton only
- (4) Creighton and Taddeus only

- 11 The table below shows the characteristics of four different habitats, S, T, U and V.

Characteristics of the habitat	Habitat			
	S	T	U	V
Temperature	Varies widely	Varies widely	Some changes	Very little changes
Level of brightness	Bright	Partially shady	Partially shady	Dark
Air circulation	Good	Very good	Good	Poor

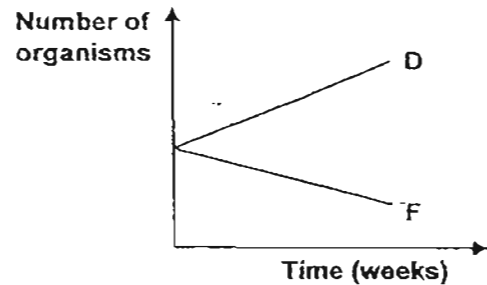
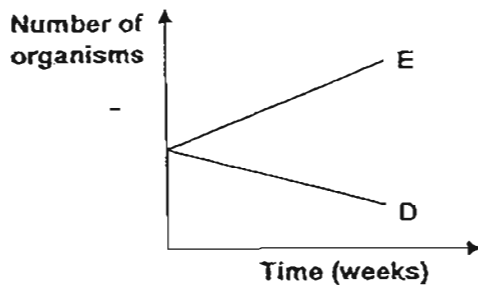
Benjamin found Organism R in one of the habitats above. The box below shows its characteristics.

It has breathing holes.
It feeds on dead matter.
It is very sensitive to light.

Using the above information, it can be deduced that Benjamin found Organism R in habitat _____.

- (1) S
- (2) T
- (3) U
- (4) V

- 12 Chern Hao caught three different types of organisms, D, E and F, from the school pond. One of them is herbivorous. He put the same number of organisms with equal number of water plants into two similar tanks. He monitored both set-ups over a few weeks and recorded the number of organisms left in each tank at the end of each week. The graphs below show how the number of organisms changed over time.



Which one of the following food chains correctly shows the above relationships?

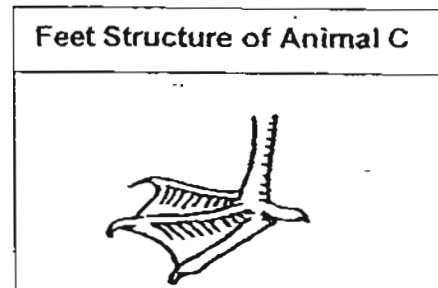
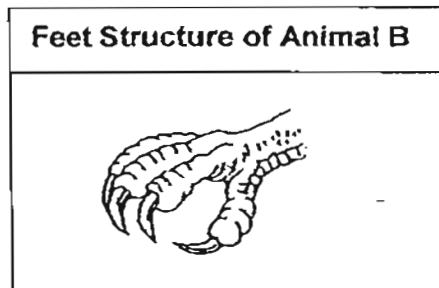
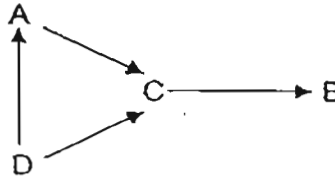
- (1) Water plant \rightarrow E \rightarrow F \rightarrow D
 - (2) Water plant \rightarrow D \rightarrow F \rightarrow E
 - (3) Water plant \rightarrow E \rightarrow D \rightarrow F
 - (4) Water plant \rightarrow F \rightarrow D \rightarrow E
- 13 The diagram below shows a type of relationship between two different organisms.



Which one of the following relationships is most similar to the one above?

- (1) A crow eating a grasshopper.
- (2) Weeds growing amongst watermelon plants.
- (3) Love grass being dispersed by a dog running past.
- (4) A bee obtaining nectar from the flowers of a mango tree.

14 Study the food web and feet structures of Animals B and C carefully.



Which one of the following shows the correct classification of Animals B and C?

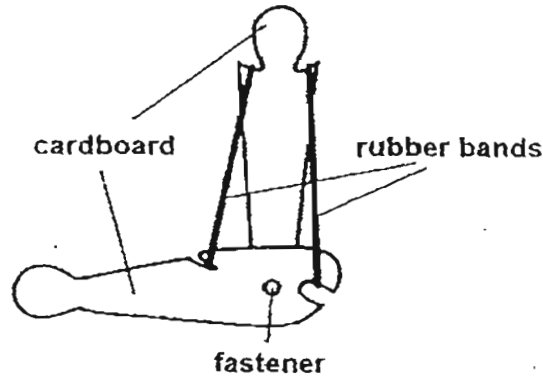
Animals					
Herbivore		Carnivore		Omnivore	
In water	On land	In water	On land	In water	On land
(1)		C	B		
(2)	C				B
(3)	B				C
(4)			B	C	

15 Which of the following are the effects of deforestation?

- A acid rain
- B soil erosion
- C loss of habitat
- D more carbon dioxide

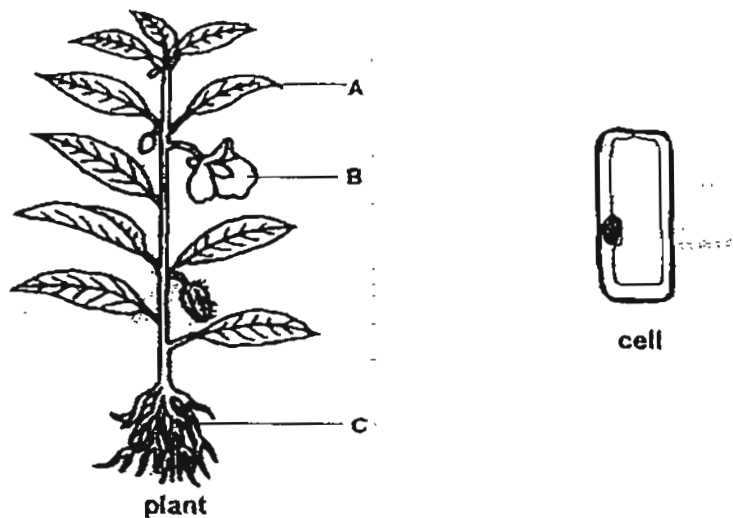
- (1) A and B only
- (2) A and C only
- (3) B, C and D only
- (4) A, B, C and D

- 16 Devi made a model to show how two systems in our body work together to perform a function. She used 2 pieces of cardboard, some rubber bands and a fastener. The diagram below shows her model.



Which two body systems does her model represent?

- (1) muscular and skeletal
 - (2) skeletal and respiratory
 - (3) circulatory and muscular
 - (4) digestive and circulatory
- 17 The diagram below shows a plant and a cell taken from it.

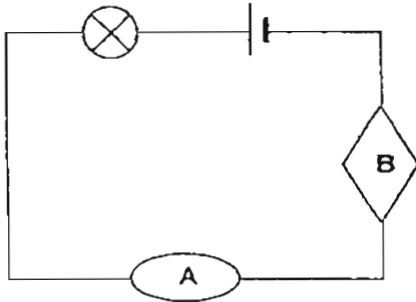


Which part(s) of the plant, A, B or C, is the cell most likely to be taken from?

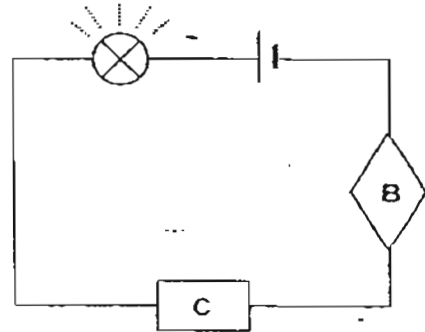
- ~~(1)~~ B only
- ~~(2)~~ B and C only
- ~~(3)~~ A and B only
- ~~(4)~~ A and C only

- 18 The circuits below show the outcome of connecting objects A, B and C, to a bulb and a battery.

bulb does not
light up

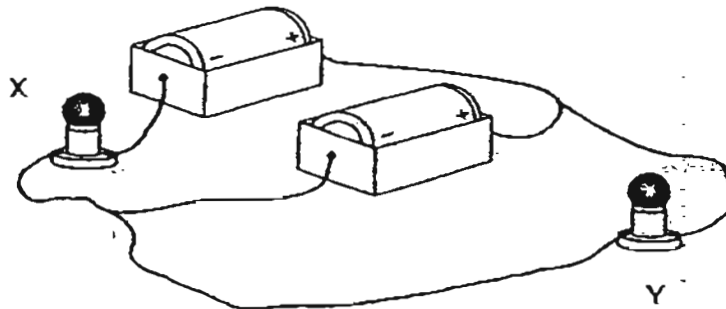


bulb lights up



Which of the following is/are conductor(s) of electricity?

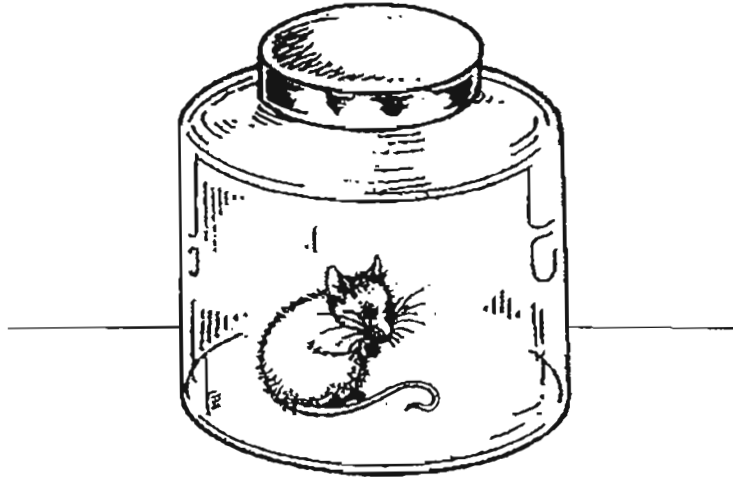
- (1) C only
 - (2) A only
 - (3) A and B only
 - (4) B and C only
- 19 Bulbs X and Y lit up when they were connected as shown below.



What will happen to Bulb X if Bulb Y is removed from the bulb holder?

- (1) Bulb X will not light up.
- (2) Bulb X gives out a dimmer light.
- (3) Bulb X gives out a brighter light.
- (4) Bulb X is as bright as it was before.

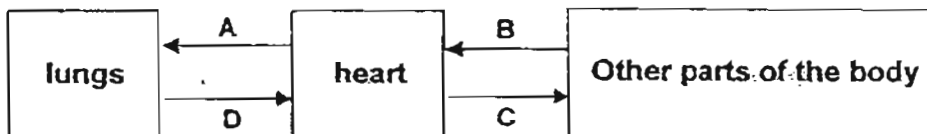
- 20 Tommy put a mouse in an air-tight container as shown below.



Which one of the following shows how the amount of gases in the container changed after 10 minutes?

	water vapour	carbon dioxide	oxygen
(1)	increase	increase	decrease
(2)	decrease	decrease	no change
(3)	no change	increase	decrease
(4)	increase	decrease	increase

- 21 The arrows below show how blood flows in our human body.

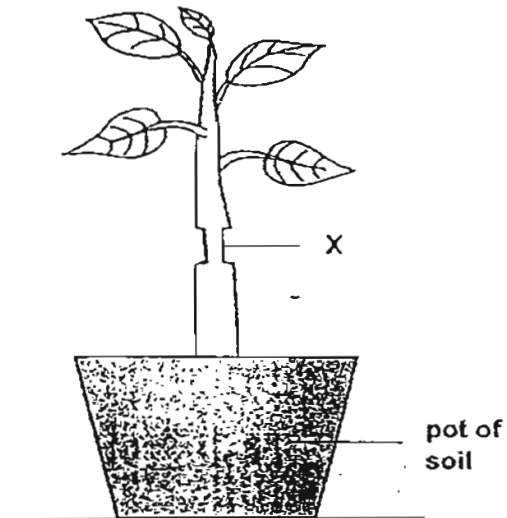


Based on the diagram above, which of the following statements is/are correct?

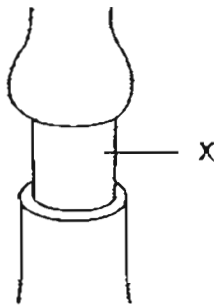
- Q The blood at A contains more oxygen than the blood at C.
 R The blood at A contains less oxygen than the blood at D.
 S The blood at B contains more carbon dioxide than the blood at C.
 T The blood at B contains less carbon dioxide than the blood at D.

- (1) Q and S only
 (2) Q and T only
 (3) R and S only
 (4) R and T only

- 22 Johari cut out the outer ring of a stem at part X of a plant. The diagram below shows how part X was cut.



He then left the plant in the open and watered it regularly. After some time, Johari observed that part of the stem above X had become swollen as shown below.

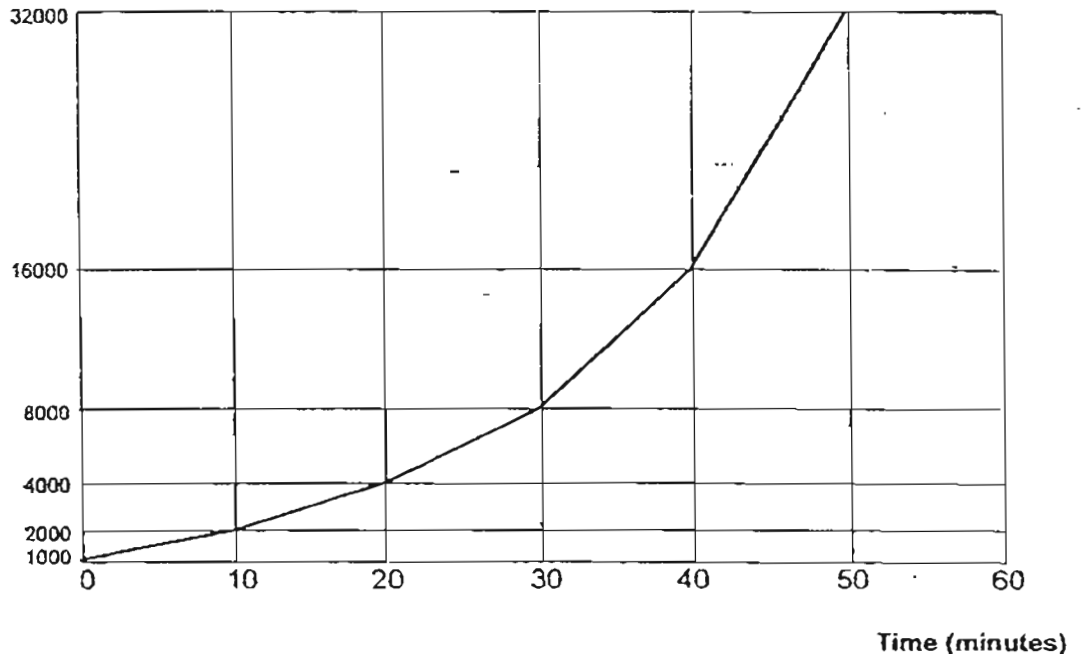


Which one of the following happened when he cut the stem?

- Only the tubes carrying food of the stem were removed.
- Only the tubes carrying water of the stem were removed.
- Both the tubes carrying food and water of the stem were removed.
- Both the tubes carrying food and water of the stem were not removed.

- 23 Bacteria need nutrients to reproduce. A colony of 1000 bacteria was put onto a plate of jelly-like substance which contained nutrient T. A bacteria count was done at intervals of 10 minutes and a graph was plotted as shown below.

Number of bacteria

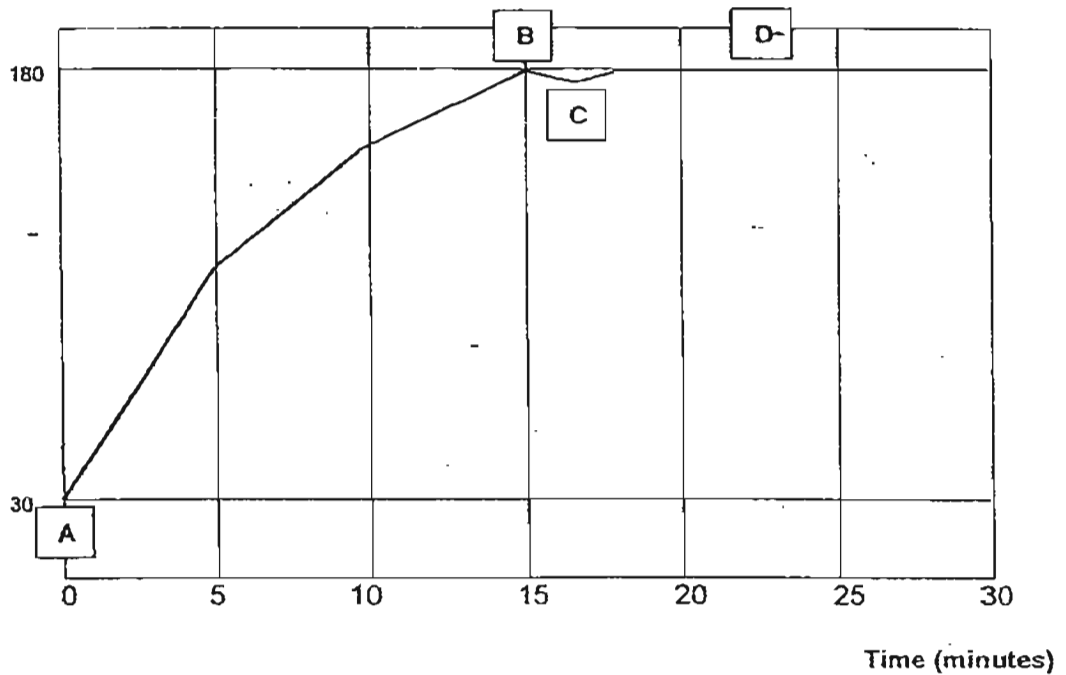


Which one of the statements below is not true based on the graph above?

- (1) Reproduction stops at the 50th minute.
 - (2) There is no reproduction between the 50th and 60th minute.
 - (3) Nutrient T is used up when the number of bacteria is 32000.
 - (4) The rate of reproduction is slowest from the 40th to the 50th minute.
- 24 Ling dropped a ball from a certain height and recorded the sound when it hit the floor. She pumped in more air into the ball each time before releasing the ball. What was she trying to find out?
- (1) If sound energy affects the mass of the ball
 - (2) If the volume of the ball affects the mass of the ball
 - (3) If the mass of the ball affects the loudness of the sound produced
 - (4) If the volume of the ball affects the time taken for the ball to hit the floor

- 25 Study the temperature change in an oven before and during the baking of a loaf of bread.

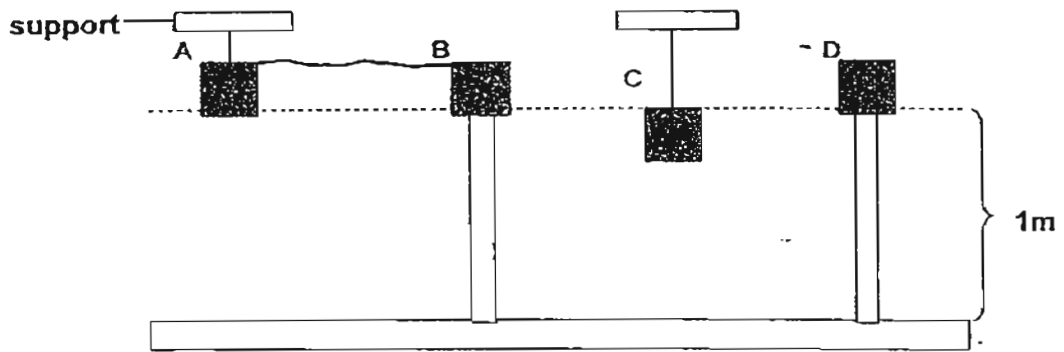
Temperature ($^{\circ}\text{C}$)



A bread recipe requires the baker to heat the oven to 180°C before putting the dough into the oven. Once the temperature reaches 180°C , the baker has to open the door and put the dough into the oven. At which point on the graph did the baking start?

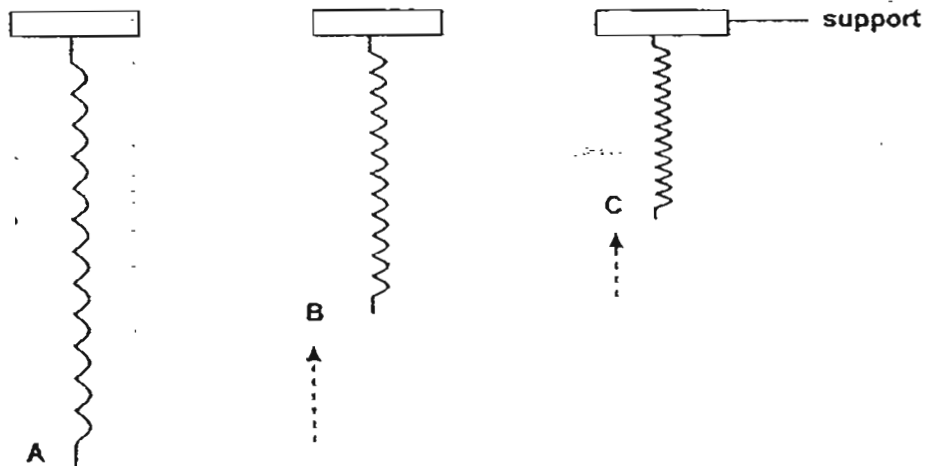
- (1) A
- (2) B
- (3) C
- (4) D

- 26 The diagram below shows 4 cubes of equal mass supported in different ways. Cubes A and C are hung from a support while B and D are balanced on their support.



Which one of the following statements is true about the amount of gravitational potential energy the cubes possess?

- ~~(1)~~ A is equal to B
~~(2)~~ A is greater than B
~~(3)~~ C is greater than D
~~(4)~~ All the cubes have the same amount
- 27 A spring is pulled to position A and then released as shown in the diagram below. The arrows represent the direction of the movement of the spring from position A to B to C where it finally stopped moving.

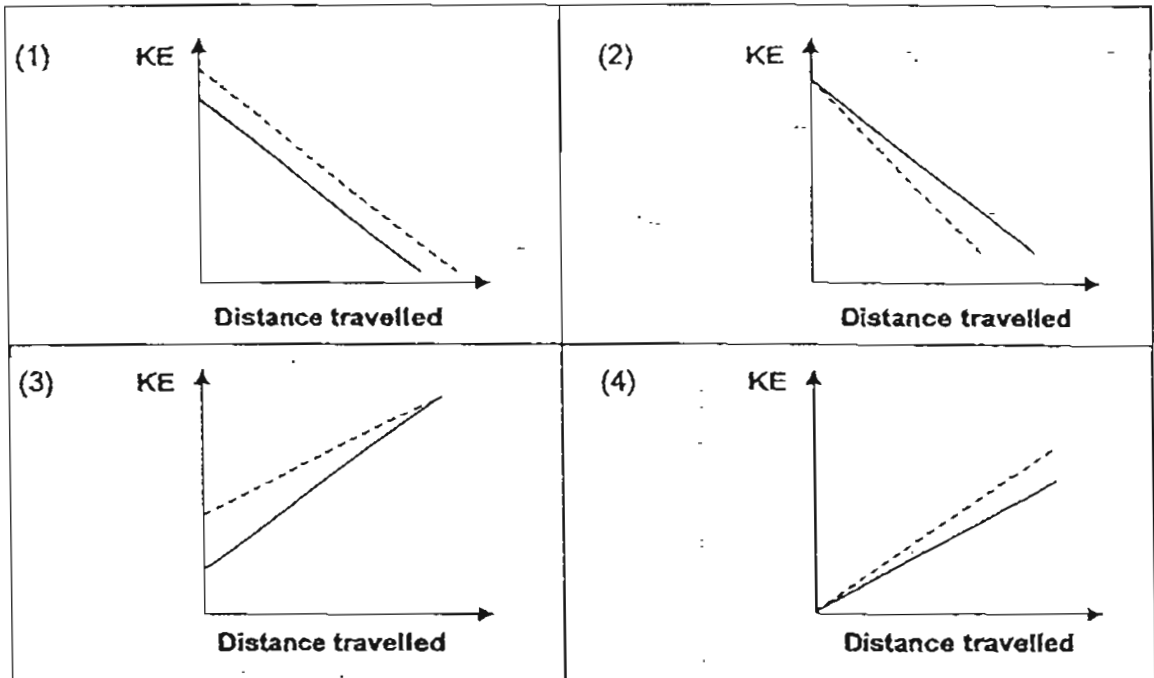


Which one of the following most likely happens at position B?

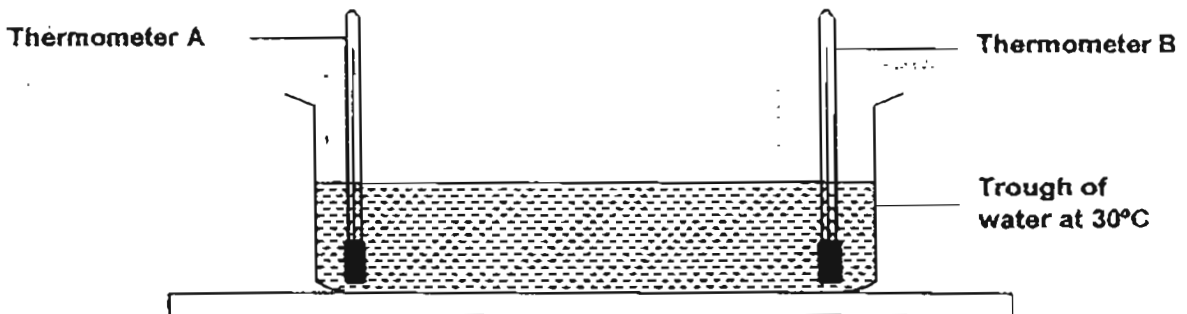
- ~~(1)~~ Gravitational potential energy is the greatest.
~~(2)~~ The amount of elastic potential energy decreased.
~~(3)~~ The spring converted kinetic energy to elastic potential energy.
~~(4)~~ Gravitational potential energy is converted to elastic potential energy.

- 28 A pair of objects A and B of different mass was dropped from the same height. Which one of the following graphs below correctly represents how kinetic energy changes with the distance travelled by the objects?

Legend	graph of object A	-----
	graph of object B	—————
	kinetic energy	KE



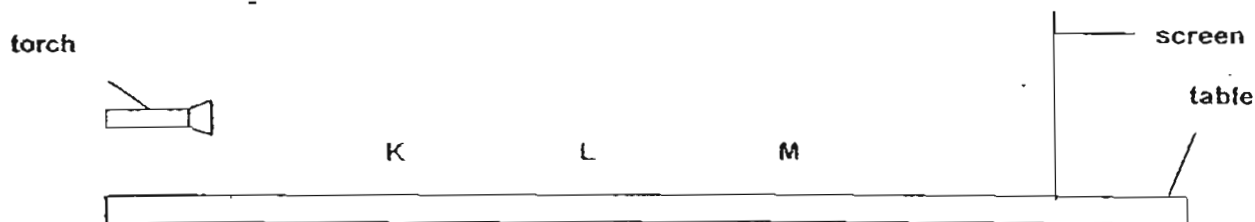
- 29 Study the set-up below.



Which one of the following will most likely happen, immediately after 20 seconds, when some ice cubes are put into the trough of water very near thermometer B?

- ~~(1)~~ Thermometer B records a decrease in temperature.
- ~~(2)~~ Thermometer A records a lower temperature than thermometer B.
- ~~(3)~~ Thermometer A records a greater increase in temperature than B.
- ~~(4)~~ Both thermometers A and B record the same decrease in temperature.

30 3 square objects at positions K, L and M were placed in a straight line. Light was shone as shown below to obtain a shadow on the screen.



The table below describes the objects.

Object	opaque	translucent	transparent	size (cm ²)
K			✓	36
L	✓			9
M		✓		16

Which one of the following shadows is most likely to be correct?

Legend

Light shadow

Dark shadow

(1)	(2)
(3)	(4)

Index No.

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Anglo-Chinese School (Junior)
Anglo-Chinese School (Primary)

COMBINED PRELIMINARY EXAMINATION 2011

SCIENCE

BOOKLET B

Friday

26 August 2011

1 hour 45 minutes

NAME : _____ ()

CLASS : P6 _____

INSTRUCTIONS TO PUPILS

DO NOT TURN OVER THE PAGES UNTIL YOU ARE TOLD TO DO SO

Follow all instructions carefully.

There are 14 questions in this booklet.

Answer **ALL** questions.

INFORMATION FOR PUPILS

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The total marks for this booklet is 40.

The total time for Booklets A and B is 1 hour 45 minutes.

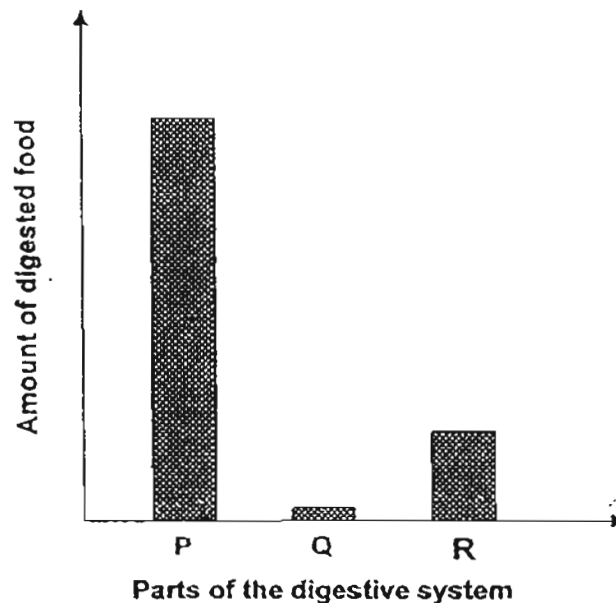
This question paper consists of 18 printed pages. (Inclusive of cover page)

BOOKLET A	/ 60
BOOKLET B	/ 40
TOTAL	/ 100
Parent's signature/ Date:	

For questions 31 to 44, write your answers in this booklet.

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

- 31 Muthu ate a chicken sandwich for lunch. The graph below shows the amount of food from the sandwich that is digested at different parts of his digestive system after his lunch.



Use the graph above to answer the following questions.

- (a) Match the following parts of the digestive system to the correct letters, P, Q and R. Write the letters in the boxes provided. [2]

Parts	Letters
Stomach	
Small intestine	

- (b) Blood vessels carry blood to and from parts of the digestive system. Explain why there are many blood vessels in the walls of the small intestine. [1]

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SCORE	/
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- 32 The table below provides some information on 3 types of cells, P, Q and R. A tick (✓) indicates the presence of the part of the cell.

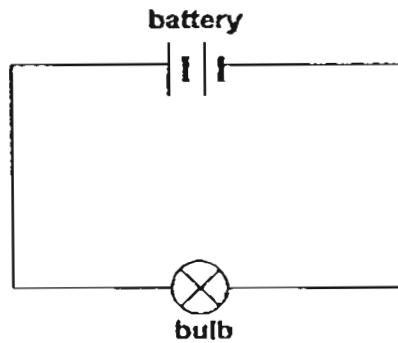
Parts of Cell	- Cell P	Cell Q	Cell R
cell wall		✓	✓
nucleus	✓	✓	✓
chloroplast		✓	

- (a) Which of the cells, P, Q and R, matches the description in the table below? Write your answers in the boxes provided. Each letter may be used more than once. [2]

	Description	Cell
(i)	The cell(s) which is/are most likely to belong to that of an animal.	
(ii)	The cell(s) which is/are most likely to be found in a plant.	
(iii)	The cell(s) which is/are most likely to be able to produce oxygen.	
(iv)	The cell(s) which is/are most likely to be able to carry out life processes	

- (b) Other than the nucleus, what is another part in which all 3 cells, P, Q and R have in common? [1]

- 33 Raju wanted to find out whether the number of bulbs connected in a circuit would affect the brightness of each individual bulb. He used a light sensor to measure the amount of light given out by each of the bulbs. His first circuit is shown below.



He set up two other circuits using 2 and 3 bulbs respectively. The table below shows the results of his experiment.

Number of bulbs	Average brightness of each bulb (unit of light)
1	800
2	800
3	800

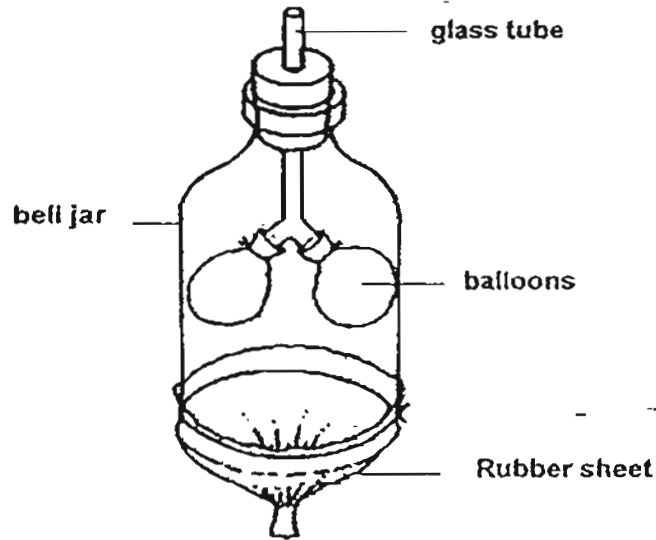
- (a) Based on the results, what can Raju conclude from his experiment? [1]

- (b) Based on the results he obtained, draw how Raju's circuit would look like with 2 bulbs in the box below. [2]

(Go on to the next page)

SCORE	3
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34 The diagram below shows a model of the respiratory system.



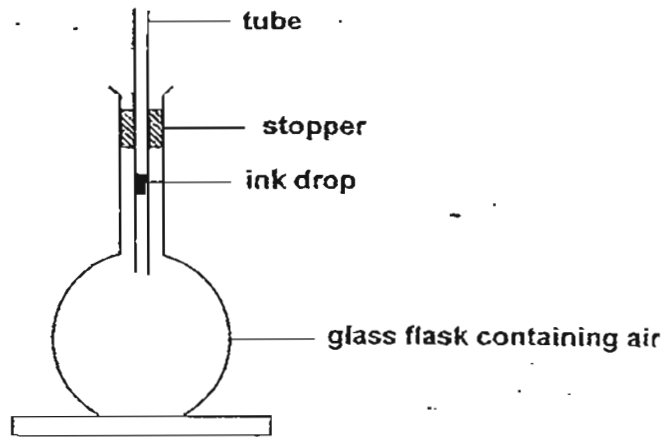
The table below shows the parts of the model and the parts of the respiratory system they represent. Fill in the missing information. [2]

Parts of the model	Parts of the respiratory system
glass tube	
balloons	
	diaphragm
	chest

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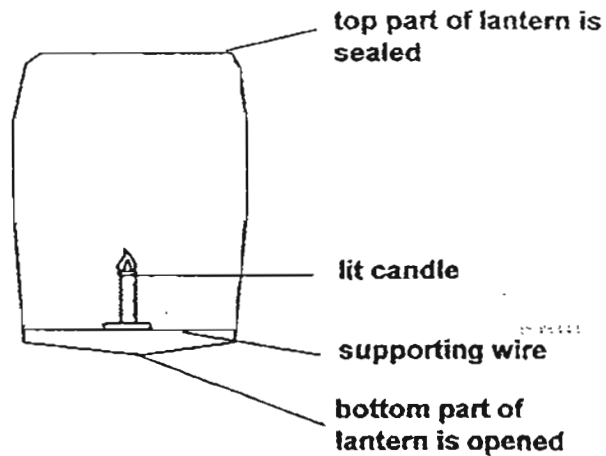
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35 Study the set-up below.



- (a) When heat was applied to the flask, the ink drop dropped a little and then rose. Explain why. [2]

The drawing below shows a traditional lantern powered by a candle flame.

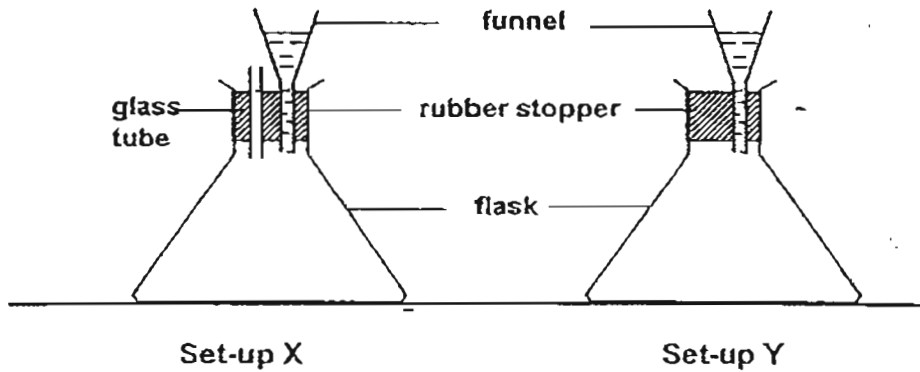


- (b) The lantern is able to float in the air until the candle flame dies out. Explain why the lantern is able to float for the period of time. [1]

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SCORE	3
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- 36 Robert set up two experiments as shown in the diagram below. In both set-ups, the rubber stopper is fitted tightly into the flask. He poured an equal amount of water into each funnel. He observed that water flowed into Set-up X but not Set-up Y.



Give an explanation for his observation in each set-up.

[2]

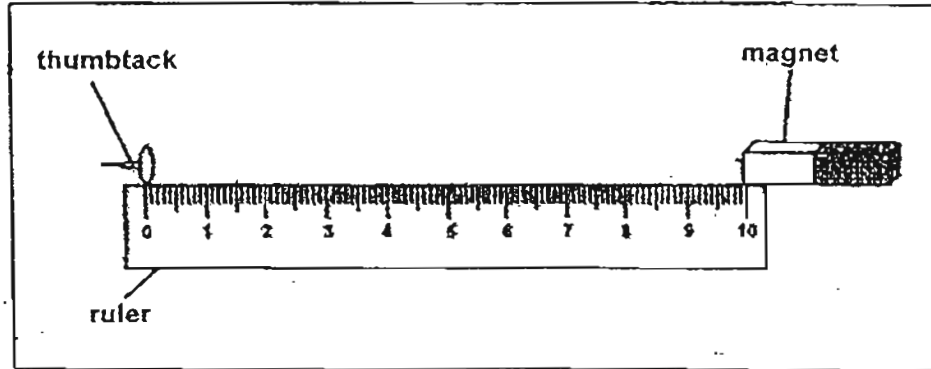
Set-up X

Set-up Y

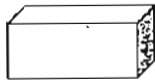
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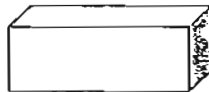
- 37 Jovan carried out an investigation as shown below. The "pulling distance" of a magnet is the furthest distance from which it is able to attract a magnetic object.



He recorded the "pulling distance" of magnets A, B and C, which are of different sizes in the table below.



magnet A



magnet B



magnet C

Results:

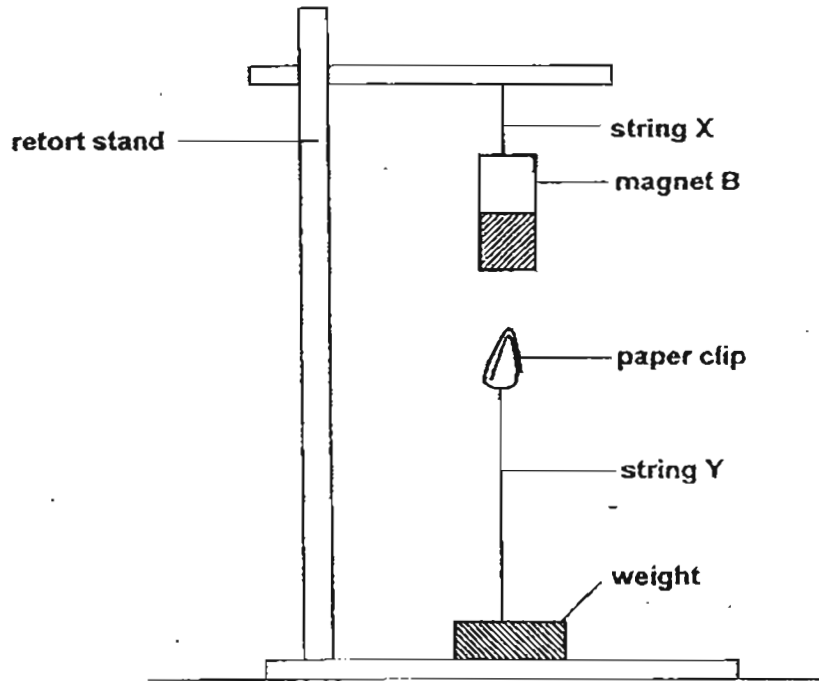
Magnet	"Pulling" Distance (cm)
A	1.5
B	3.2
C	2.8

- (a) What conclusion can Jovan make based on the results of this investigation? [1]

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SCORE	1
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Jovan used magnet B and set up the experiment as shown below.



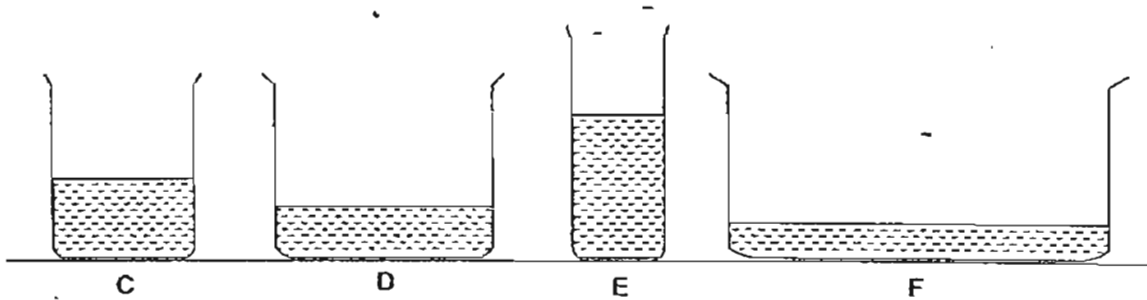
(b) What force(s) is/are acting on the paper clip? [1]

(c) What could he do if he wanted to replace the string Y with a shorter one and still have the magnet pull the paper clip up? [1]

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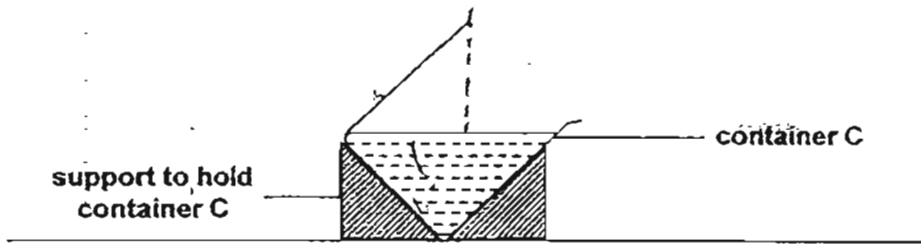
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38 Silva is conducting an experiment to find out which container allows water to evaporate the fastest. He poured 200ml of water into each of the four containers, C, D, E and F, as shown below and placed them at the same location.



(a) Arrange the containers in order of the rate of evaporation of water, starting with the one that evaporates the slowest. [1]

(b) Study the diagram above carefully and write down one property of water that you can observe. [1]



(c) Silva tilted container C as shown in the diagram above. How will the rate of evaporation be affected? Explain your answer. [1]

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SCORE	3
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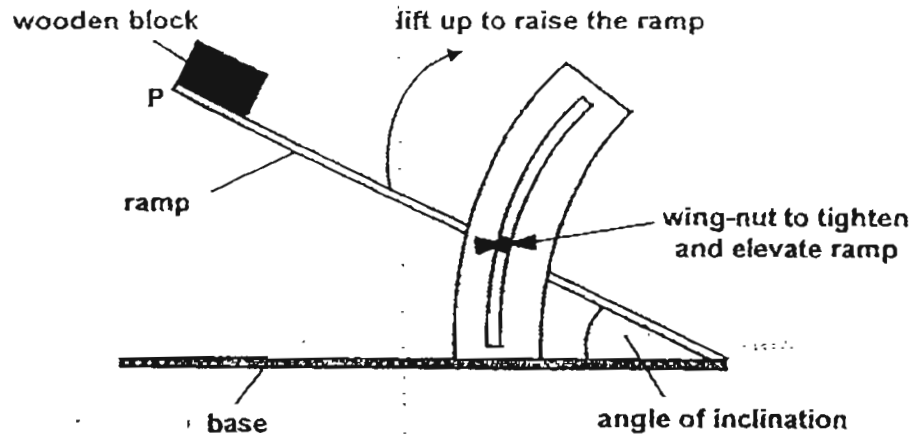
- 39 Jireh noticed that the school cleaner always put the signboard as shown below outside the toilet after she had washed and mopped it.



- (a) Explain why someone could slip and fall when the floor is wet.

[1]

Jireh then suggested to his mum to use anti-slip mats in their house toilet and bathroom. He conducted an experiment as shown below with three types of anti-slip mats (X, Y and Z) to determine the type of anti-slip mat he should use.



He conducted the experiment following the steps below:

- Step 1: Put anti-slip mat X on the ramp before it is raised.
 Step 2: Put the wooden block at point P of the ramp.
 Step 3: Raise the ramp slowly.
 Step 4: Tighten the nut when the wooden block starts to slide down the ramp.
 Step 5: Record the angle of inclination.
 Step 6: Repeat steps 1 to 5 with anti-slip mats Y and Z.

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SCORE	1
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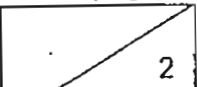
Jireh recorded the results of his experiment in the table below.

Anti-slip mat	Angle of inclination when wooden block starts to slide down
X	35°
Y	61°
Z	49°

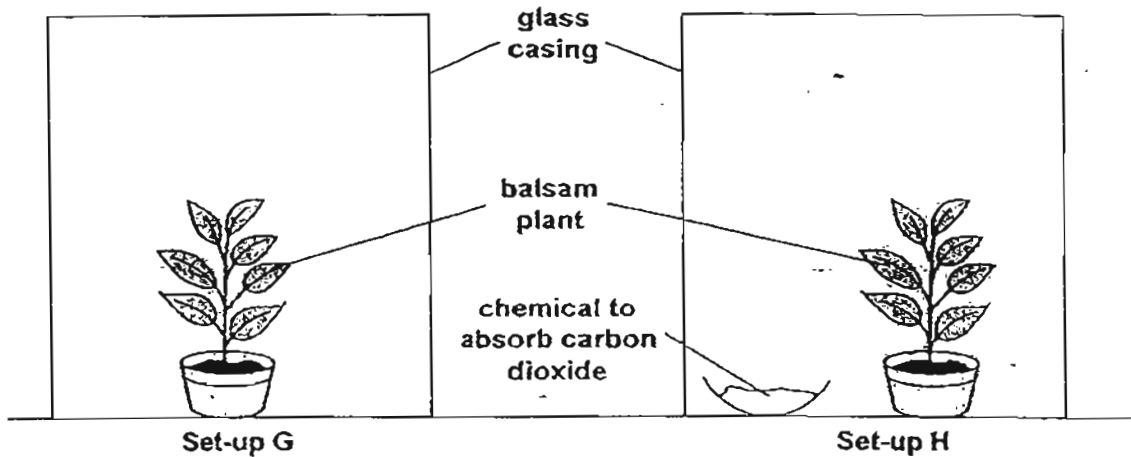
- (b) Based on the results of Jireh's experiment, which anti-slip mat can best prevent people from slipping? Explain your choice. [1]

- (c) Suggest another important variable which Jireh has to keep constant to ensure a fair test. [1]

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SCORE	
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40 Ritvik wanted to investigate the effect of carbon dioxide on photosynthesis. He first kept two similar pots of Balsam plant in a dark room for three days. After that, he used the same pots of Balsam plants to set up the experiment as shown below in a brightly-lit room.



(a) Besides finding out the changes in the composition of air, suggest what Ritvik can do to find out if photosynthesis had occurred in each set-up. [1]

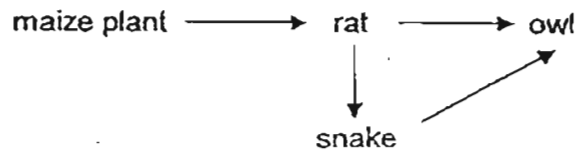
(b) Explain how by using the same type of plant ensures that the test is fair. [1]

(c) Why did Ritvik keep both plants in the dark room for three days? [1]

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SCORE	3
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41 Study the food web below.



- (a) Based on the above food web, identify the organism which is both a prey and a predator. Explain your choice. [1]

- (b) Farmer Amos noticed that his maize plantation has been infested by rats. Without introducing any new species into the above food web, suggest a suitable and safe method that can help him overcome this problem. [1]

- (c) The following year, Farmer Amos noticed a drastic decrease in the population of the owls. State two possible reasons for this occurrence. [1]

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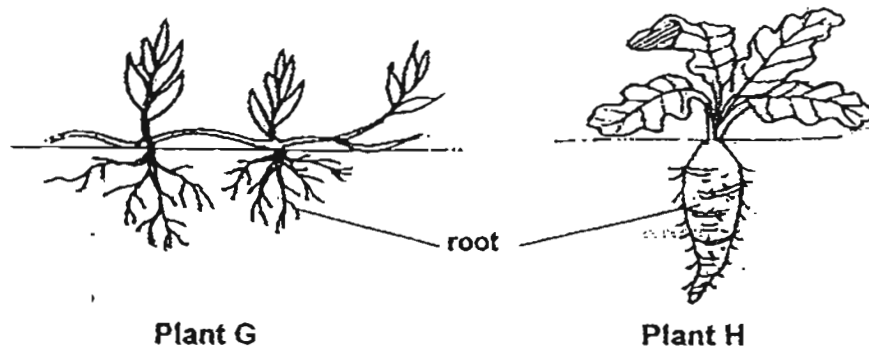
42 Like animals, plants have different adaptations to promote their survival.

- (a) Lithops, also known as living stones, are found in the dry regions of Southern Africa. Despite its small size, lithops have thick leaves which can store water to see them through months without rain.



Based on observation and the information above, state how a lithop is adapted to prevent itself from being eaten. [1]

- (b) The diagrams below show two plants with different types of roots.



A farmer chose to grow Plant G on the slope near his plantation. Suggest a reason for his choice. [1]

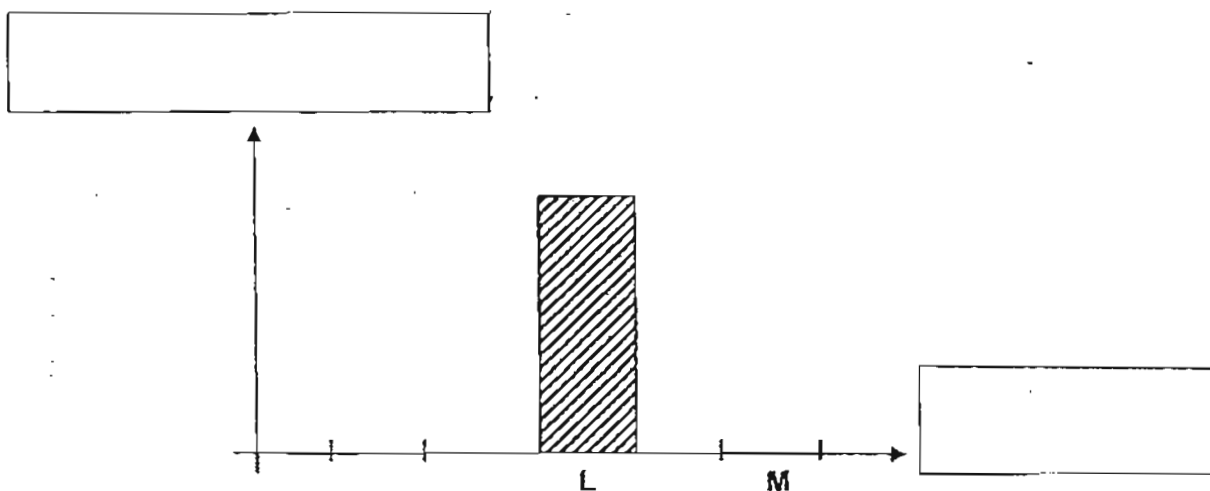
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SCORE	2
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- 43 Clement conducted an experiment to find out the effect of Chemical N on aquatic life. He added different amounts of Chemical N to three similar samples of river water (K, L and M) and put 10 fish into each sample. The table below records the number of fish alive in each sample of river water at the end of three days.

	Sample K	Sample L	Sample M
Number of fish alive	6	1	3

- (a) Using the data above, use a ruler and pencil to complete the bar graph below to show the likely amount of chemical added to each sample. Label the axes clearly. [2]



- (b) Based on the information above, state the relationship between the amount of Chemical N and the number of aquatic life that will continue to live. [1]

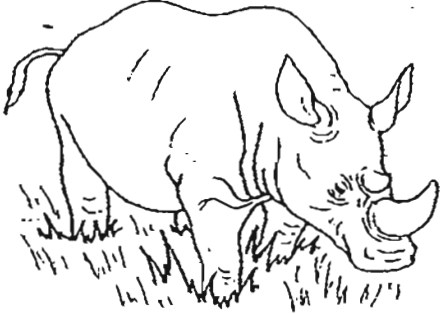
- (c) The farmers in Clement's town complained that the smoke released by the factory, which has just been built, killed their crops. The factory only discharged smoke into the air but traces of acid were found in the river water. How did the river get polluted? [1]

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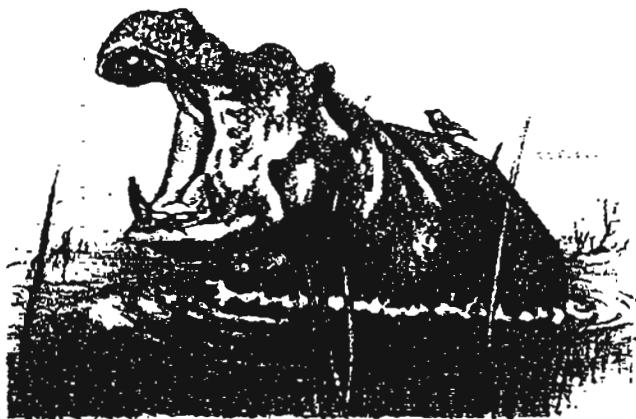
44 Different organisms have different adaptations to cope with survival.

- (a) Timothy came across an article, as shown below, on Indian Rhinoceros and the Chuya tree.

<p><i>Chuya trees and Indian Rhinoceros, found in the Nepalese forests, depend on each other to survive. The young of these trees grow better in open land. The rhinoceros feed on the fruits of the Chuya trees in the forest during the day. They only move out to graze in the grasslands by the rivers in the evening.</i></p>	
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Using the information above, explain how Chuya trees can continue to survive. [1]

- (b) Hippopotamus are usually seen submerged in the rivers during the day. They emerge from the river at dusk to graze on grassland.

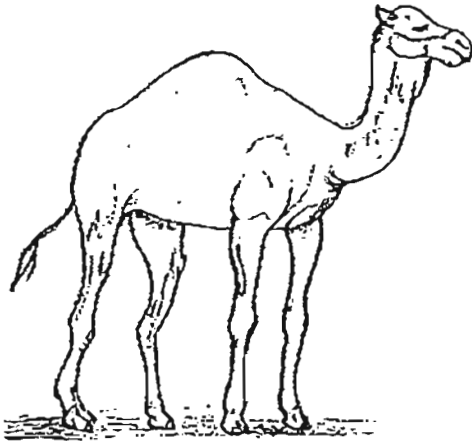


Explain why hippopotamus prefer to stay in water during the day. [1]

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SCORE	
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- (c) The diagrams below show two types of camels. Camel A lives in dry desert regions while Camel B lives in colder regions.



Camel A



Camel B

Give a reason why having thicker and longer fur can be advantageous for Camel B.

[1]

End of Paper

SCORE

1

Anglo-Chinese School
Combined Preliminary Examination 2011
Science, Primary 6
Booklet A

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
2	2	3	1	2	3	2	4	2	1
Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
4	4	4	4	3	1	2	4	1	1
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
3	1	4	3	3	1	2	4	1	1

Booklet B

Q31a) R, P

b) It is to allow digested food to be absorbed into the blood stream through the walls of the small intestine and many blood vessels increases the surface area.

Q32a) i) P | ii) Q, R | iii) Q | iv) P, Q, R

b) Cell membrane

Q33a) The number of bulbs does not affect the average brightness of each bulb.

Q34)

Parts of the model	Parts of the respiratory system
rubber sheet	wind pipe
bell jar	lungs

Q35a) Heat caused the glass flask to expand when heated, causing the ink drop to fall. However, as gasses expand more than solids, the air in the flask expanded and pushed the ink drop up causing it to rise.

b) As hot air rises, when the air in the lantern was heated, it rose up, causing the lantern to rise up with it. When the candle flame dies out, the air will cool down and will no longer rise.

Q36) Set-up X: There was another glass tube to allow air to escape the flask so as to allow the water to fall into the flask.

Set-up Y: As both air and water occupies space, the air in set-up Y could not escape so no water could flow down into the flask.

Q37a) The size of a magnet does not affect its magnetism.

b) Magnetic force, gravitational force.

c) He could shorten string Y but extend string X so the magnetic force on the paper clip is the same.

Q38a) E, C, D, F

b) Water does not have a definite shape and has the same shape as its container.

c) It will increase. As the water in container C has its surface area increased, thus increasing evaporation rate.

Q39a) Water is a lubricant which reduces the friction between the floor and a person's shoe. As there is less friction, it is easier to slip.

b) Anti-slip mat Y. It has the highest angle of inclination, thus it means more gravitational force is required to slip.

c) The wooden block has to be placed on some part of the wooden ramp.

Q40a) He could test the leaves of the plants for starch with iodine as it turns dark blue in the presence of starch which is produced during photosynthesis.

b) As different types of plants may have different photosynthesis rate.

c) It is to deprive the plants of food equally, so as to ensure a more accurate result.

Q41a) Snake, it is a predator of the rat but a prey to the owl.

b) He could increase the number owls to feed on the rats.

c) With lesser rats around, the owls could have lesser food and might have died due to starvation. With lesser rats, the snakes also could have died due to starvation.

Q42a) As the plant are found near stones, camouflaging themselves against possible predators.

b) Plant G's roots grow in a wide area, a possible reason could be to stabilize the soil on the top to prevent the soil from falling apart.

Q43a) Amount of chemical N, River water samples

b) The greater the number of chemical N, the less the number of aquatic life will continue to live.

c) The smoke discharged by the factories mixed with the rain in the air, forming acid rain. The acid rain landed in the river so some traces could be found.

Q44a) When the rhinoceros feeds on the Chuya tree fruits, it swallows its seed which are undigested, and it is passed out with the rhinoceros's faeces in the grasslands.

b) It is warmer during the day as compared to dusk, staying in water keeps them cool.

c) As Camel B lives in colder regions, thicker and longer fur helps to trap the heat within its own body to maintain warmth.