Anglo-Chinese School (Primary)

END-OF-YEAR EXAMINATION 2014
SCIENCE
PRIMARY FIVE
BOOKLET A

Name: _____ ( ) **Class: Primary 5** ___

Date: 30 October 2014 **Duration of paper: 1 h 45 min**

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Parent's/Guardian's signature

INTRUCTIONS TO CANDIDATES

1. This question paper consists of 26 printed pages including this cover page
2. Do not turn this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all the questions in this booklet.
5. Shade you answer on the Optical Answer Sheet (OAS) provided.

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

(60 marks)

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1 The table below shows the characteristics of animals P, Q and R.

Characteristics	P	Q	R
Does the animal lay eggs?	Yes	No	Yes
Does the animal have six legs?	No	No	Yes
Does the animal have hair or fur on their bodies?	No	Yes	No

Based on the information, which one of the following correctly identifies animals P, Q and R?

	Animal P	Animal Q	Animal R
(1)	Chicken	Frog	Cockroach
(2)	Ostrich	Whale	Mosquito
(3)	Grasshopper	Penguin	Mosquito
(4)	Duck	Monkey	Caterpillar

2 Which one of the statements below shows that living things respond to changes?

(1) A shoot growing into an adult plant.
(2) A boy running to the canteen for lunch.
(3) A hen laying eggs that hatches into chicks.
(4) A girl shivering after coming out from a cold room.

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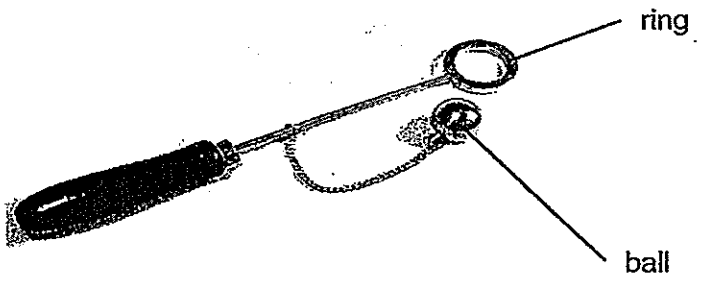
3 The ring and ball apparatus shown in the diagram below were made of the same metal.



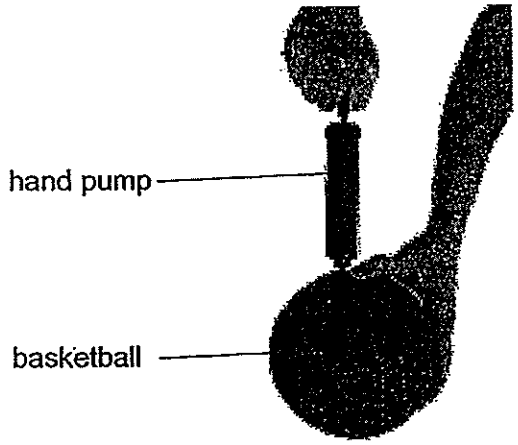
At room temperature, the ball was able to pass through the ring. After the ball was heated for five minutes, the ball was unable to pass through the ring.

Which one of the following correctly explains this observation?

	The Ball	**The Ring**
(1)	remained the same size	expanded
(2)	expanded	contracted
(3)	expanded	remained the same size
(4)	contracted	remained the same size

(Go on to the next page)

4 A basketball was pumped by a hand pump as shown in the diagram below. After the basketball was fully pumped, another 100cm^3 of air was pumped into it. The basketball retained its shape and did not burst with additional air being pumped into it.

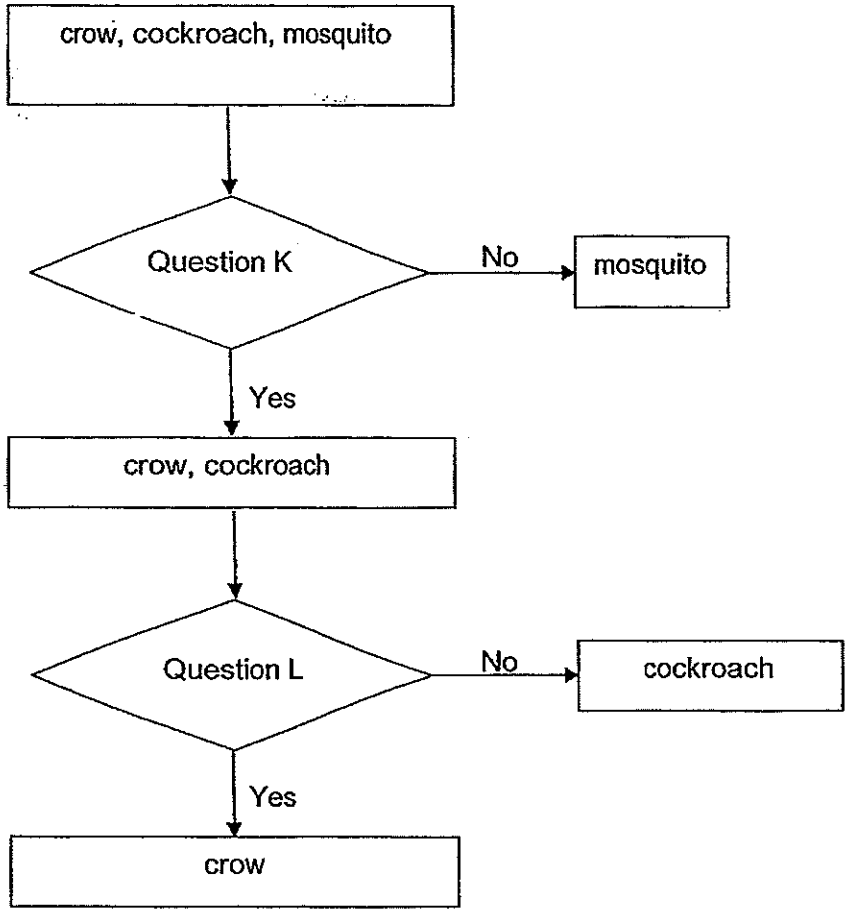


Which characteristic of air is shown in this action?

(1) Air has mass.
(2) Air occupies space.
(3) Air can be compressed.
(4) Air does not have a definite shape.

(Go on to the next page)

5 Study the flow chart below carefully.

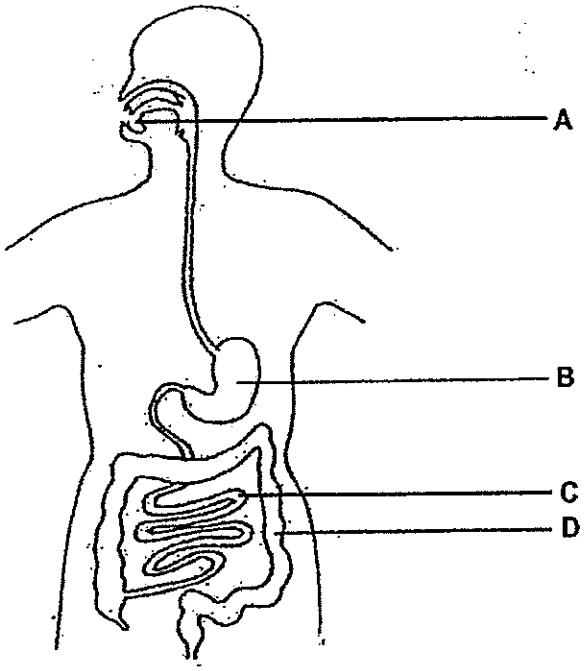


Based on the flow chart above, what should questions K and L be?

	Question K	Question L
(1)	Does it go through a four-stage life cycle?	Does the young resemble its adult?
(2)	Does it go through a three-stage life cycle?	Does the young have wings?
(3)	Does the young resemble its adult?	Does it go through a three-stage life cycle?
(4)	Does the young have wings?	Does it go through a three-stage life cycle?

(Go on to the next page)

6 The diagram below shows the human digestive system.

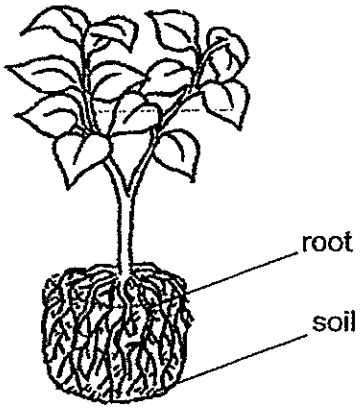


At which part(s) of the system is/are the digestive juices produced?

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

(Go on to the next page)

7 Gary observed a plant that was removed from a pot and noticed that the roots were wrapping the soil as shown below.



He made some notes on what he had observed:

A The roots help to hold the plant to the soil.

B The roots help the plant to hold onto the pot.

C The roots help to absorb water from the soil for the plant to grow.

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

(1) C only

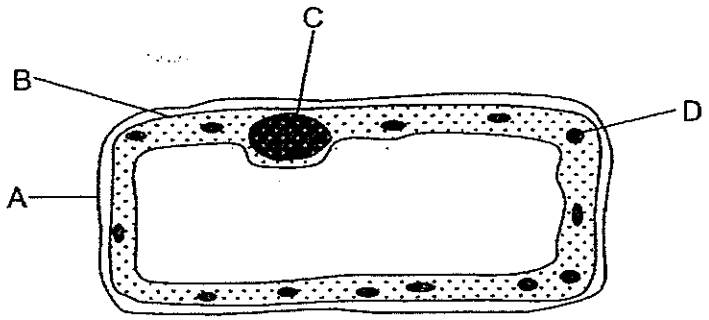
(2) A and B only

(3) A and C only

(4) B and C only

(Go on to the next page)

8 The diagram below shows the different parts of a plant cell.

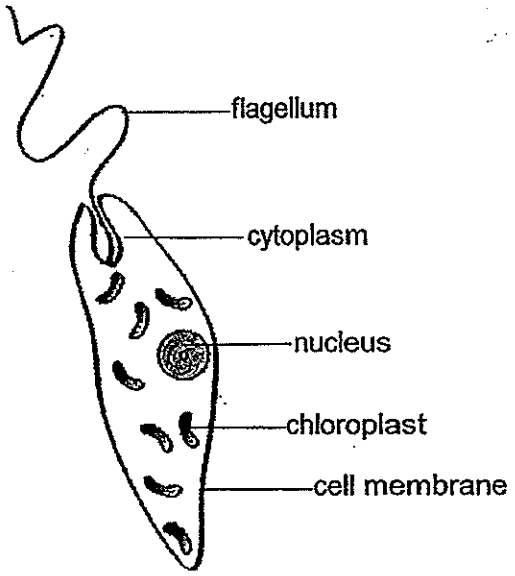


Which cell parts can also be found in an animal cell?

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

(Go on to the next page)

9 The diagram below shows a one-cell organism that lives in the pond. The flagellum helps the cell to move about in the water. It has been observed that this cell moves near the surface of the pond only in the day.



Which statement(s) explains why the cell needs to move to the surface in the day?

A The cell needs to look for food near the surface.

B The cell needs to gain heat from the sun to keep warm.

C The cell needs to trap sunlight near the surface for photosynthesis.

(1) A only

(2) C only

(3) A and C only

(4) B and C only

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10 The diagrams below show the cross-sections of a flower and the female reproductive system.

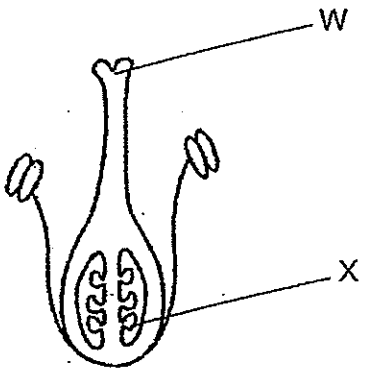


Diagram 1

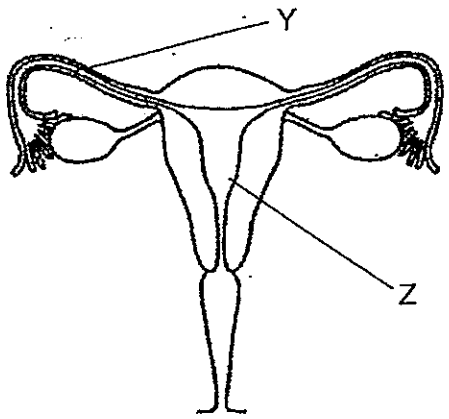


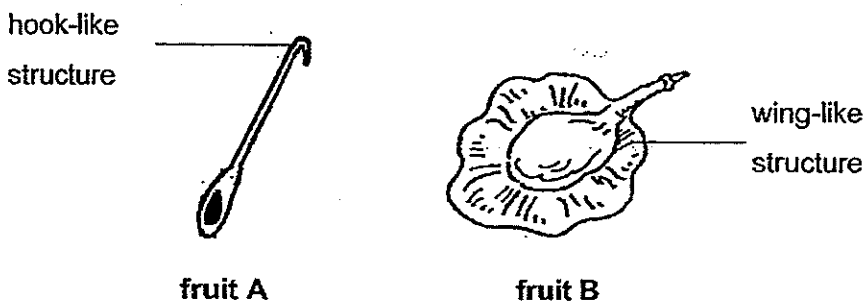
Diagram 2

Referring to the diagrams above, where does fertilisation take place in a flower and in a female reproductive system?

(1) W and Y
(2) X and Y
(3) W and Z
(4) X and Z

(Go on to the next page)

11 Compare the two fruits shown in the diagram below.



fruit A **fruit B**

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

A Fruit B is dispersed by wind.

B Both fruits are dispersed by water only.

C Fruit A clings onto the outer covering of animals.

(1) B only

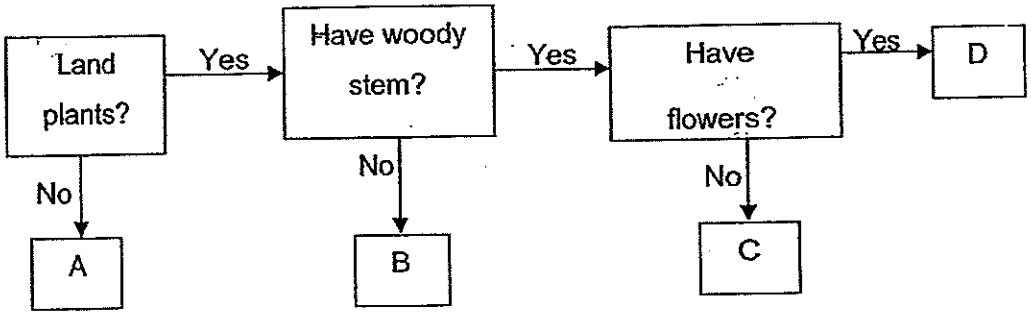
(2) C only

(3) A and B only

(4) A and C only

(Go on to the next page)

12 The flow chart below shows some of the characteristics of plants A, B, C and D.



Based on the flow chart above, which one of the following statements is correct?

(1) Plant A is a land plant.
(2) Plant B has a strong stem.
(3) Plant C has a woody stem and reproduces from seeds
(4) Plant D is a non-flowering plant that does not have a woody stem.

13 Which of the following statement(s) about the reproduction of flowering plants is/are true?

A All flowers have male and female parts.
B During pollination, pollen grains fuse with the stigma.
C The ovule becomes the seed before fertilisation takes place.
D Flower petals are brightly coloured to attract insects for pollination.

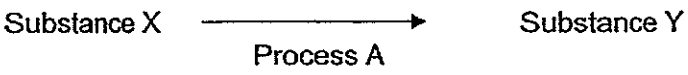
(1) D only
(2) B and D only
(3) A, B and C only
(4) B, C and D only

(Go on to the next page)

14 The table below describes two properties of substances X, Y and Z.

Substance	Property one	Property two
X	Definite shape	Definite volume
Y	No definite shape	Definite volume
Z	No definite shape	No definite volume

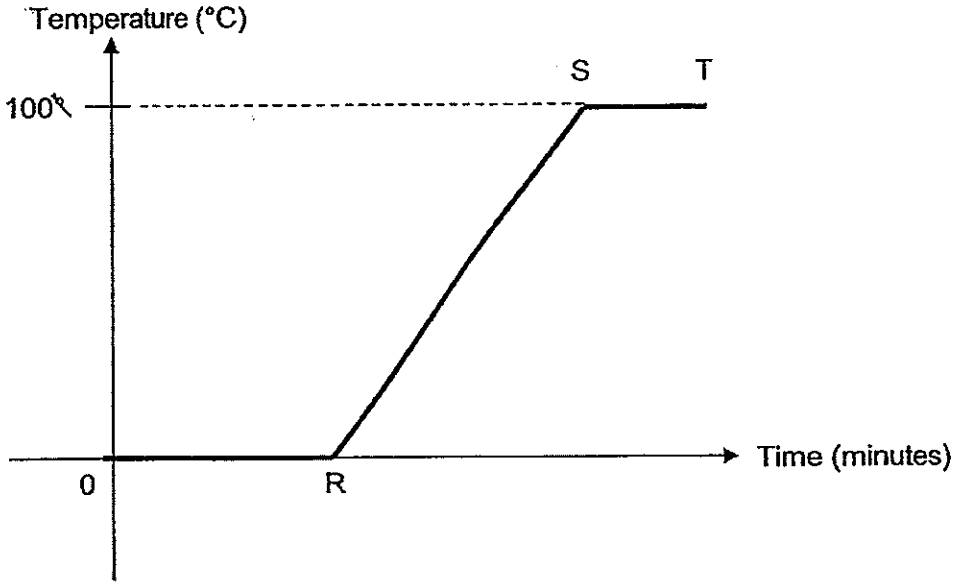
Substance X undergoes a process to become substance Y as shown in the diagram below.



Which one of the following is likely to be Process A?

(1) Boiling
(2) Melting
(3) Evaporation
(4) Condensation

15 The graph below shows how the temperature of substance X changed when it was heated with a bunsen burner.



What happened to substance X from R to S?

A Substance X was melting to become liquid.

B The temperature of substance X was increasing.

C Substance X was gaining heat from the flame of the bunsen burner.

(1) A and B only

(2) A and C only

(3) B and C only

(4) A, B and C

(Go on to the next page)

16 Jim wanted to find out which type of material allows ice to melt the fastest. He wrapped some ice in each type of material and recorded the time taken for all of the ice to melt completely. Which two variables should he keep the same in order to have a fair test?

A Temperature of the surrounding air
B Type of material used to wrap the ice
C Amount of ice wrapped in each material
D Time taken for the ice to melt completely

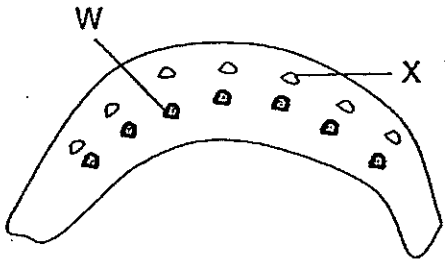
(1) A and B
(2) A and C
(3) B and C
(4) C and D

17 Which one of the following statements describes how we can contribute to water conservation?

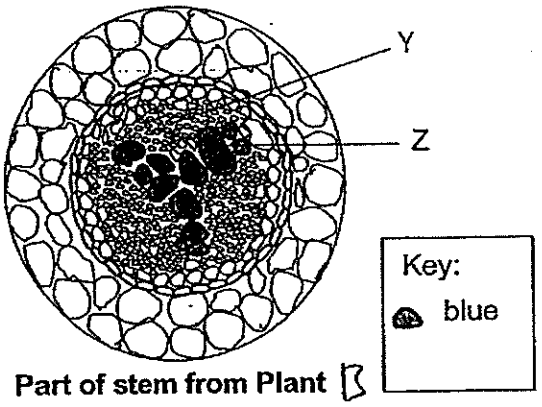
(1) John uses the water hose to wash his car.
(2) Lily turns on the tap while putting shampoo to her hair.
(3) Kathy takes a long bath after a hot day working at the farm.
(4) Peter uses the water that he had used to wash vegetables to water the plants.

(Go on to the next page)

18 Mrs Tan put the stems of plant A and plant B in blue-coloured water. After a day, she cut a part of the stem from each plant and observed them under a microscope. The diagrams below show the cross-section of each plant part.



Part of stem from Plant A



Part of stem from Plant B

Based on the diagram above, which is/are the water-carrying tube(s)?

(1) Z only

(2) X and Y only

(3) W and Y only

(4) W and Z only

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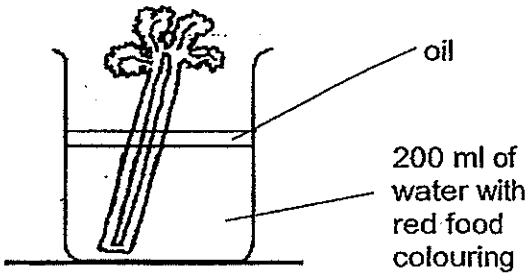
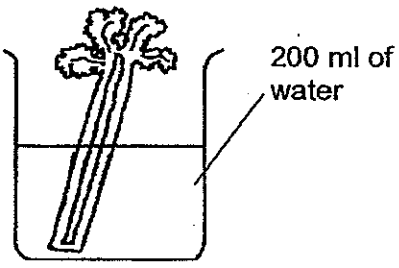
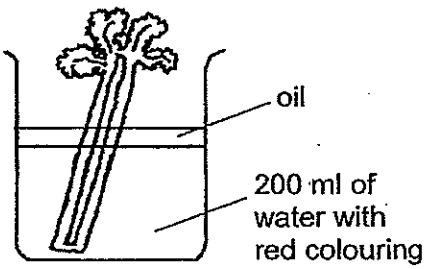
19 Juliet wants to find out if the tubes found in celery stalks transport water upwards. She sets up the experiment as shown below. Which one of the following should she use as a control?



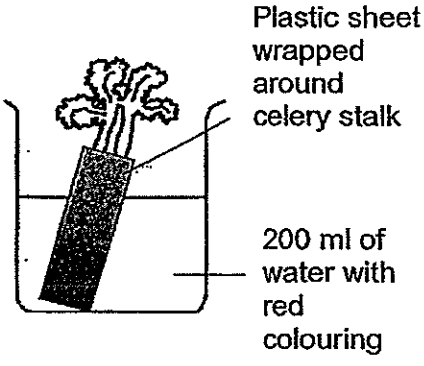
(1)



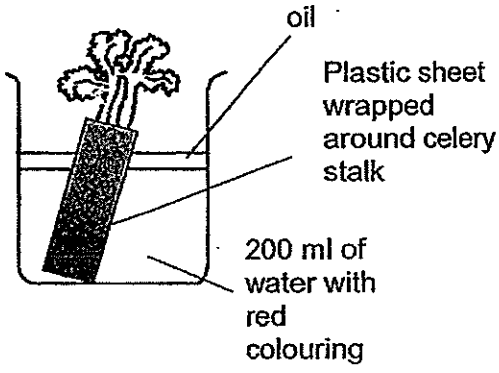
(2)



(3)



(4)



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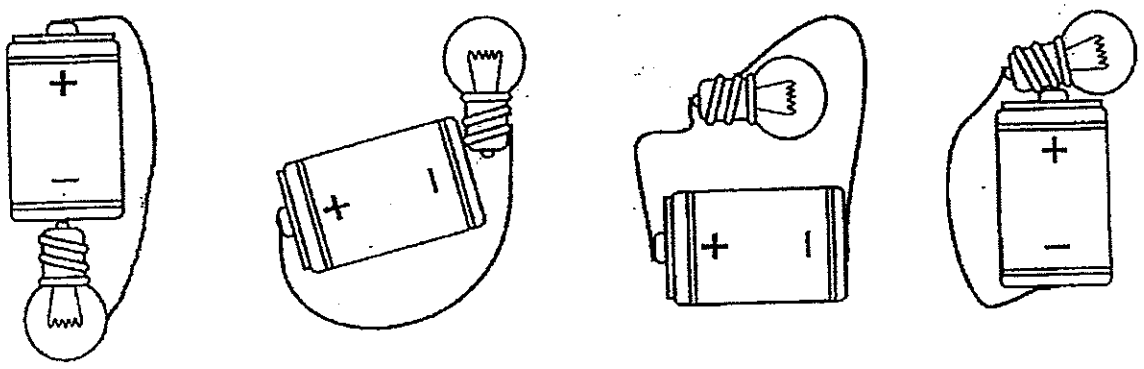
20 The diagrams below show different arrangements of a battery, a bulb and some copper wires. All components are in working conditions.



A B C D

In which two of the following circuits will the bulb light up?

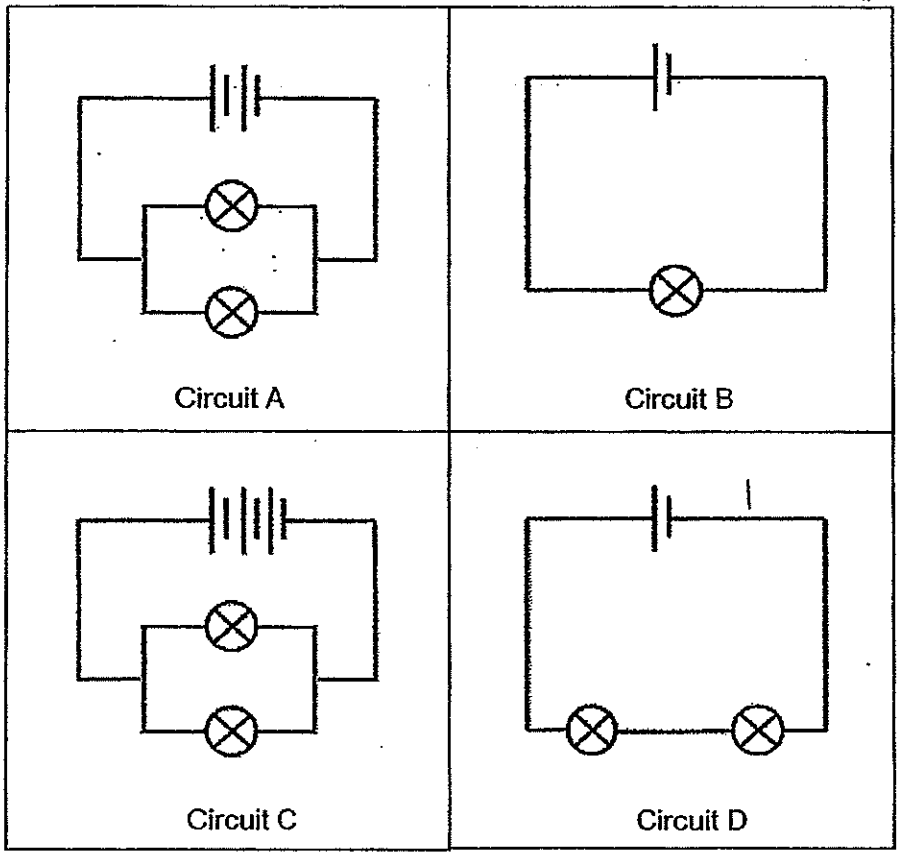
(1) A and D
(2) B and C
(3) A and C
(4) C and D

21 Jian Yong ate a bowl of cereal before he went for a run at the stadium. Which two body systems work with the circulatory system to enable him to have energy to run?

(1) Muscular and skeletal systems
(2) Digestive and skeletal systems
(3) Muscular and respiratory systems
(4) Digestive and respiratory systems

(Go on to the next page)

22 Study the four electric circuits A, B, C and D as shown below. The bulbs and the batteries in the four electric circuits are identical and are all in working conditions. All the bulbs in the four electric circuits are lit up.

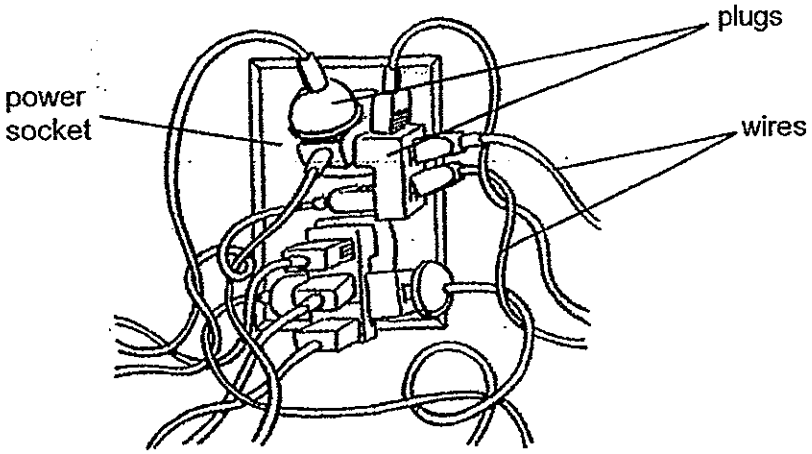


Which one of the following correctly shows the brightness of the bulbs arranged from the dimmest to the brightest?

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

(Go on to the next page)

23 Study the diagram below carefully.



Overloading at the power socket can cause an electrical hazard because it

_____.

(1) looks very untidy.

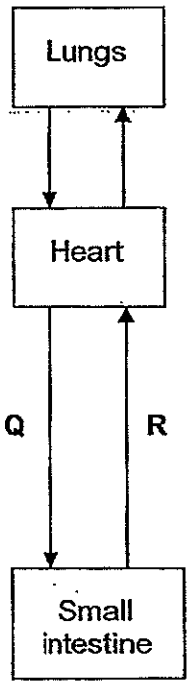
(2) may cause an electrical fire.

(3) may cause someone to trip over the wires.

(4) may cause the appliances to break down faster.

(Go on to the next page)

24 The diagram below shows the direction of blood flow in some parts of the human body.

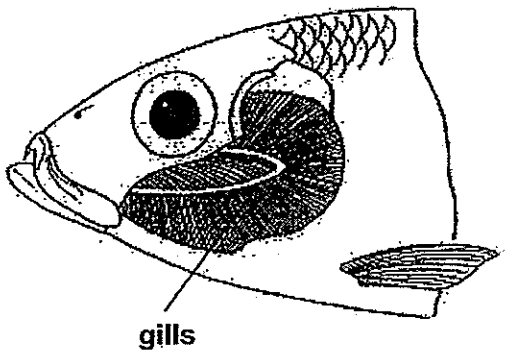


What are the differences in the amount of oxygen and the amount of digested food between the blood in Q and the blood in R after a meal?

	Q		R	
	Oxygen	**Digested food**	**Oxygen**	**Digested food**
(1)	Less	More	More	Less
(2)	More	More	Less	Less
(3)	More	Less	Less	More
(4)	Less	Less	More	More

(Go on to the next page)

25 The diagram below shows the gills of a fish.



How do the gills help the fish to breathe in water?

A It allows gaseous exchange.
B It is able to remove carbon dioxide out of the body.
C It has a large surface area to take in dissolved oxygen.
D It contains many blood vessels which carry the oxygen to other body parts.

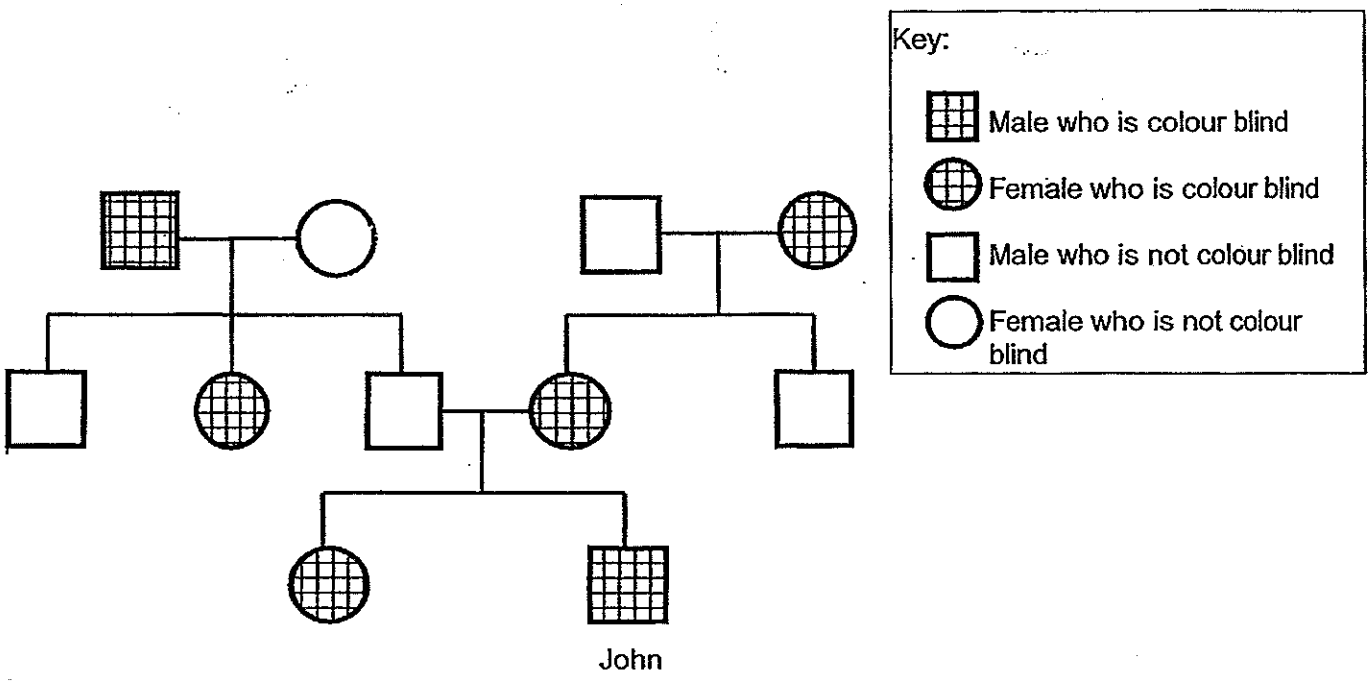
(1) B and D only
(2) C and D only
(3) A, B and D only
(4) A, B, C and D

26 Which one of the following is not a trait that is passed on from parents to their offspring in a human being?

(1) Double eyelids
(2) Natural long hair
(3) Ability to roll tongue
(4) Presence of dimples

(Go on to the next page)

27 The family tree below shows John and his family members who are either with or without colour-blindness. Study the family tree below carefully.



Based on the information given in the family tree above, which statement(s) is/are true?

A Both John's parents are colour blind.

B All the males in John's family are colour blind.

C John inherits colour-blindness from his mother.

(1) B only

(2) C only

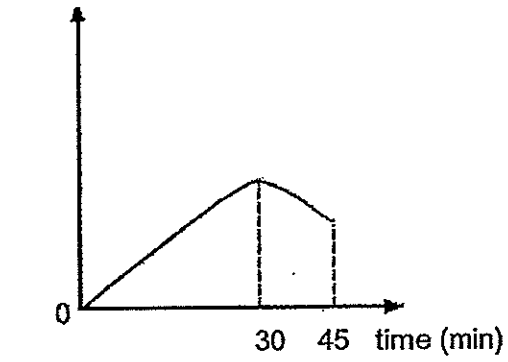
(3) A and B only

(4) B and C only

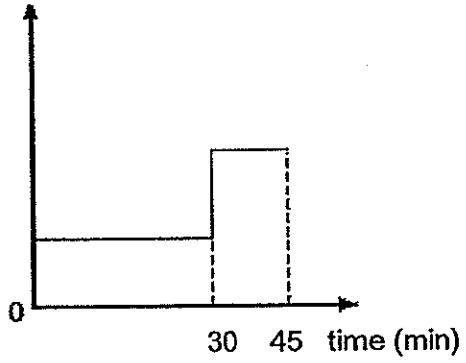
(Go on to the next page)

28 Rishi cycled continuously for half an hour on his bicycle up a hill and then took a break for 15 minutes. Which graph shows his heart rate during that 45 minutes?

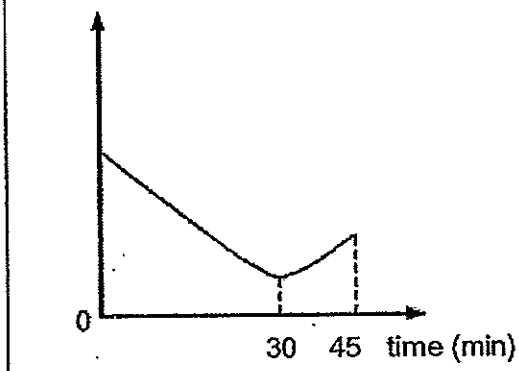
(1)



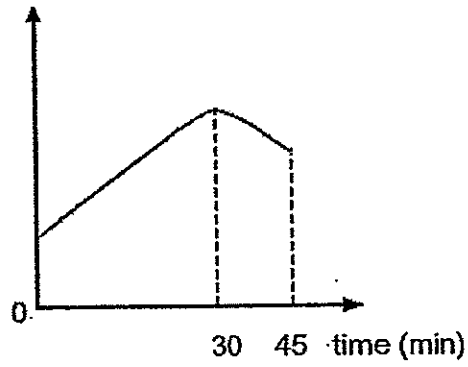
(2)



(3)



(4)



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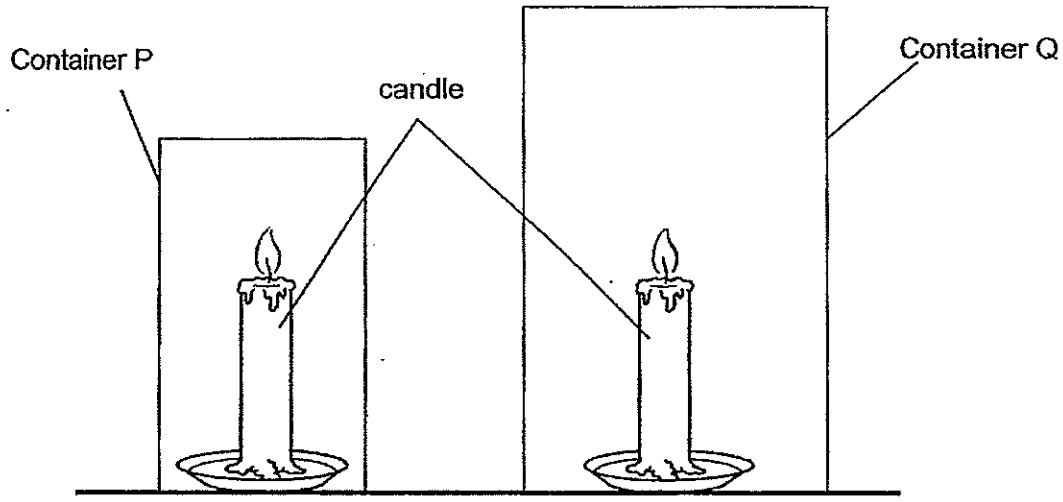
29 The diagram below shows two identical candles placed in containers of different sizes, P and Q. Both containers were filled with air and made of the same material. The time taken for each flame to go off was recorded.

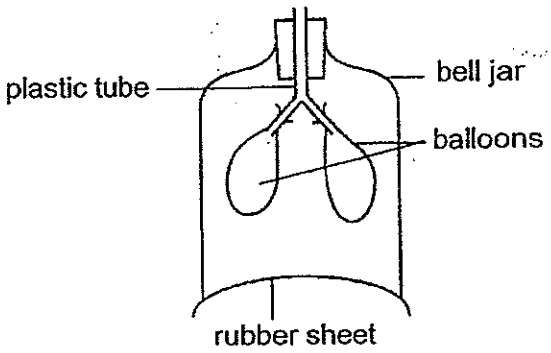


Which one of the following correctly identifies the variable to be changed and the variable to be measured?

	Changed variable	**Measured variable**
(1)	Size of container	Temperature of flame
(2)	Volume of air	Time taken for the wax to melt
(3)	Size of container	Size of flame
(4)	Volume of air	Time taken for the flame to go off

(Go on to the next page)

30 The diagram below shows a lung model.



Which parts of the human respiratory system can be represented by the plastic tube and balloons?

	Plastic tube	**balloon**
(1)	Gullet	Lungs
(2)	Windpipe	Stomach
(3)	Windpipe	Lungs
(4)	Gullet	Diaphragm

(Go on to the next page)

Anglo-Chinese School (Primary)

END-OF-YEAR EXAMINATION 2014
SCIENCE
PRIMARY FIVE
BOOKLET B

Name: _____ ( ) **Class: Primary 5** ___

Date: 30 October 2014 **Duration of paper: 1 h 45 min**

_____
Parent's/Guardian's signature

INSTRUCTIONS TO CANDIDATES

1. This question paper consists of 17 printed pages including this cover page.
2. Do not turn this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all the questions in this booklet.

BOOKLET	MAXIMUM MARKS	MARKS OBTAINED
A	60	
B	40	
Total	100	

For questions **31** to **44**, write your answers in the spaces provided.

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

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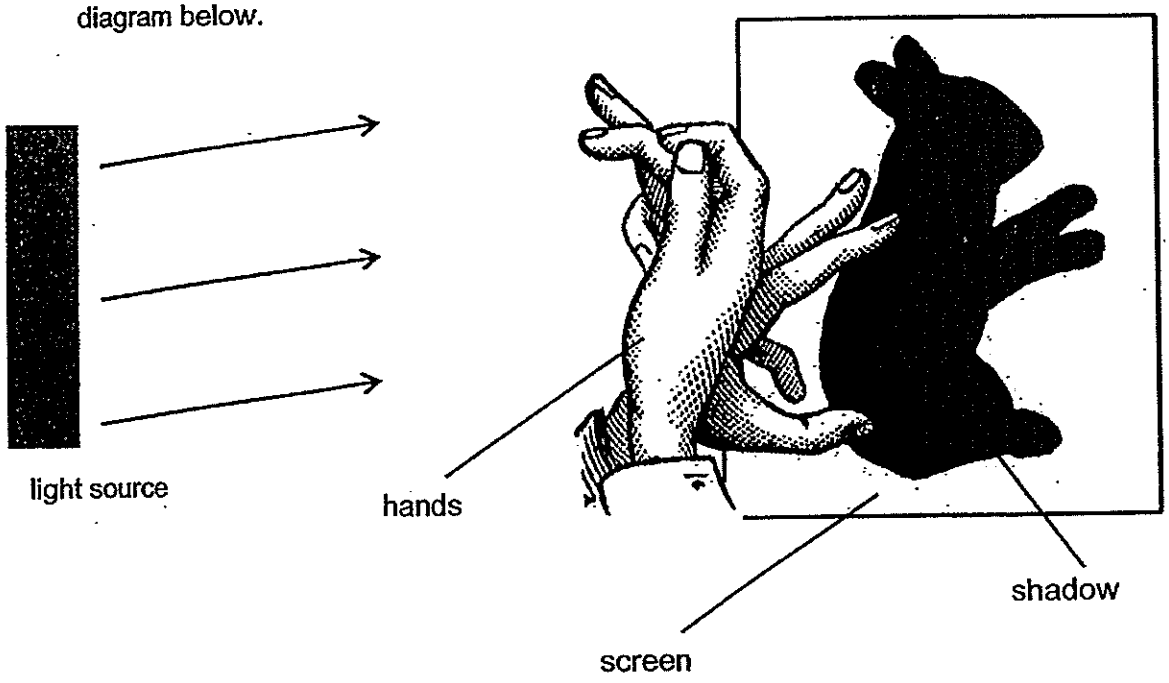
31 Kelvin made a shadow using a light source, his hands and a screen as shown in the diagram below.



(a) Suggest a way that Kelvin can make the shadow bigger? [1]

_____

_____

(Question 31 continues on page 3)

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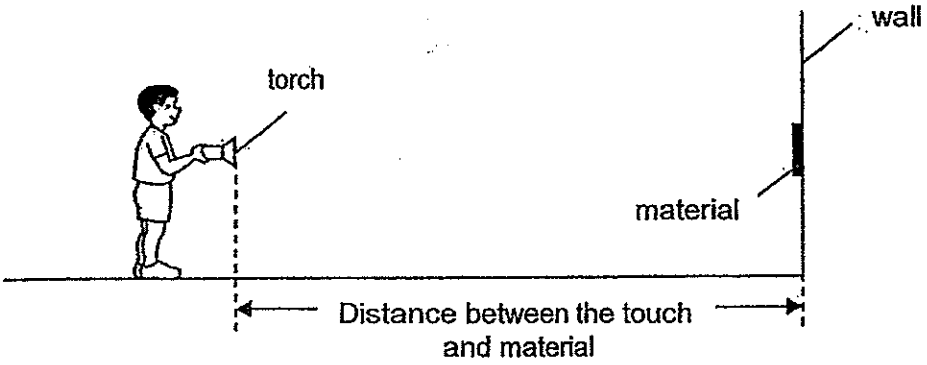
Score / 1

Ben wanted to investigate which material was best at reflecting light. He set up his experiment in a dark room as shown below.



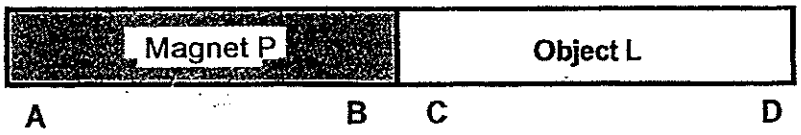
He shone the light from the torch onto material A and walked towards it. He stopped walking when he saw the material clearly and measured the distance between the ~~touch~~ torch and the material. He repeated the experiment with three other materials B, C and D and recorded his results in the table below.

Material	A	B	C	D
Distance between the ~~touch~~ torch and material (cm)	250	270	230	280

(b) Based on his results in the table above, which material is the most suitable for making a reflective vest to be used at night? Give a reason for your answer. [1]

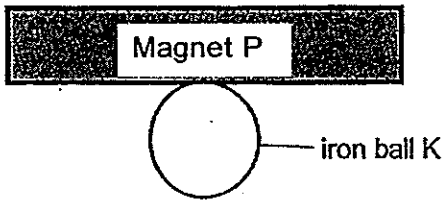
Score / 1

32 Gareth observed that magnet P attracts object L as shown in the diagram below.



(a) Give a reason why Gareth **cannot** conclude that object L is a magnet. [1]

Gareth used an iron ball, K, and placed it in the middle of magnet P as shown below.



He lifted up the magnet and found that iron ball K does not attach itself to the magnet.

(b) Explain why this could have happened. [2]

(Question 32 continues on page 5)

(Go on to the next page)

Score 1/3

An iron bar WX was magnetized using the 'stroking' method as shown in diagram 1 below. The magnetic poles of WX were shown in diagram 2.

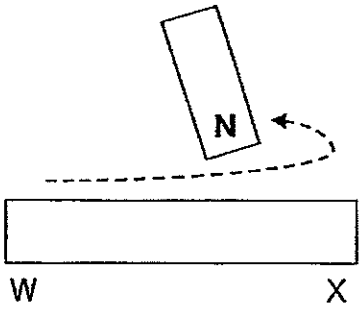


Diagram 1

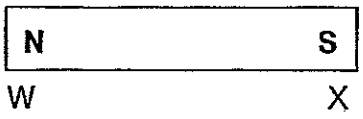


Diagram 2

An iron bar YZ was magnetized using two magnets as shown in diagram 3 below.

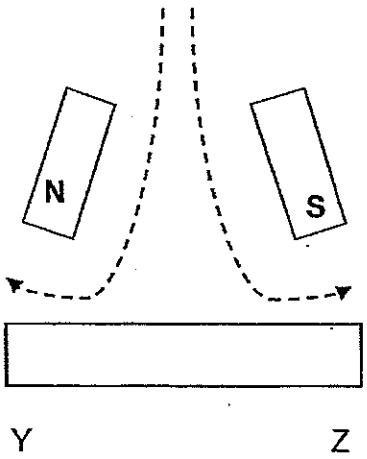


Diagram 3

(c) Identify the magnetic poles of the iron bar YZ after it has been magnetized. [1]

At Y: _____

At Z: _____

(Go on to the next page)

Score / 1

33 The table below provides some information of three different cells, A, B and C.

Parts of a cell	Cell A	Cell B	Cell C
Nucleus	Yes	Yes	Yes
Cell Wall	Yes	No	Yes
Chloroplast	Yes	No	No

(a) Based on the information above, where could the following cells most likely be found? [1]

Cell A: _____

Cell B: _____

(b) What is the function of the cell wall? [1]

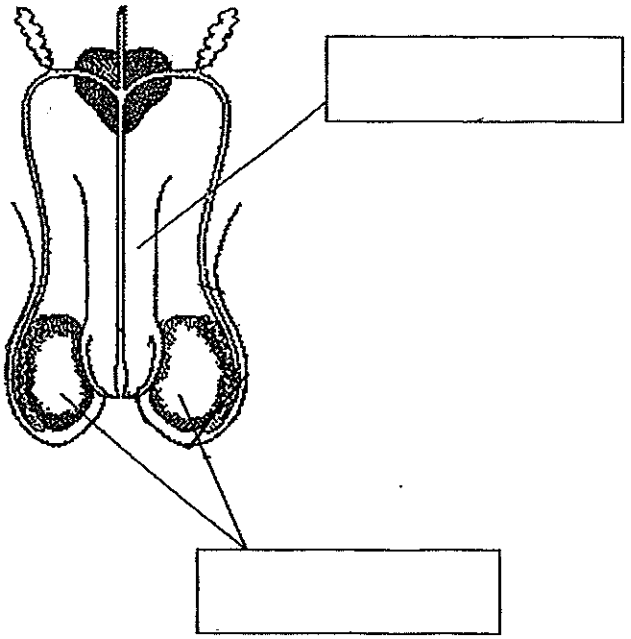
_____

_____

Score / 2

34 The diagram below shows the male reproductive system.

(a) Fill in the boxes with the correct name of the organs. [1]



(b) Circle in the diagram above the organ(s) where sperm cells are produced. [1]

(Go on to the next page)

Score	/ 2

35 The table below shows the melting and boiling points of substances W, X, Y and Z.

Substance	Melting Point (°C)	Boiling Point (°C)
W	1050°C	3918°C
X	221°C	685°C
Y	304°C	1473°C
Z	302°C	337°C

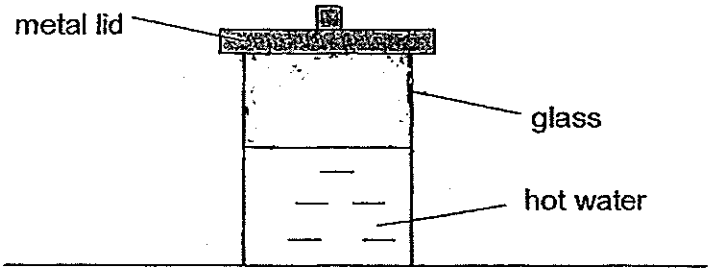
Put a tick (√) in the appropriate box in the table below to indicate the state of each of the substances, W, X, Y and Z at 400°C. [2]

Substances	Solid state	Liquid state	Gaseous state
W			
X			
Y			
Z			

(Go on to the next page)

Score 2

36 Alan put a glass of hot water on a table and covered the glass with a metal lid as shown in the diagram below. After a few minutes, he observed that some water droplets were formed.



(a) Draw in the diagram above to show where the water droplets were formed. [1]

(b) Explain how the water droplets were formed. [2]

_____

_____

_____

(c) What will be observed if hot chocolate milk is used instead of hot water? [1]

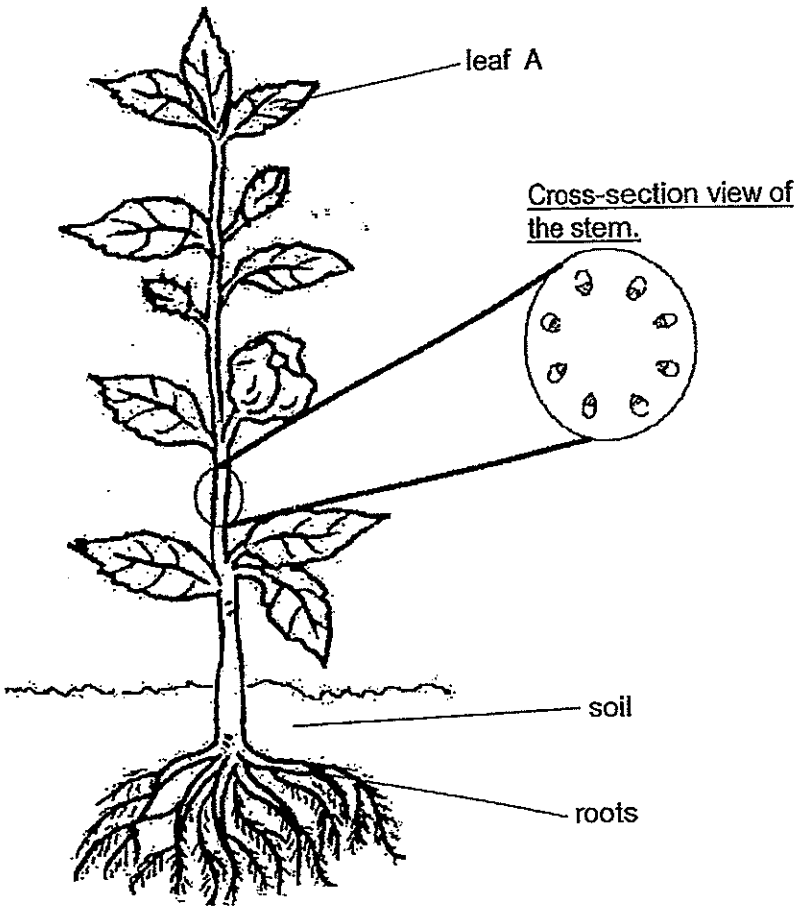
_____

_____

(Go on to the next page)

Score / 4

37 The diagram below shows a balsam plant and a cross-section view of its stem.



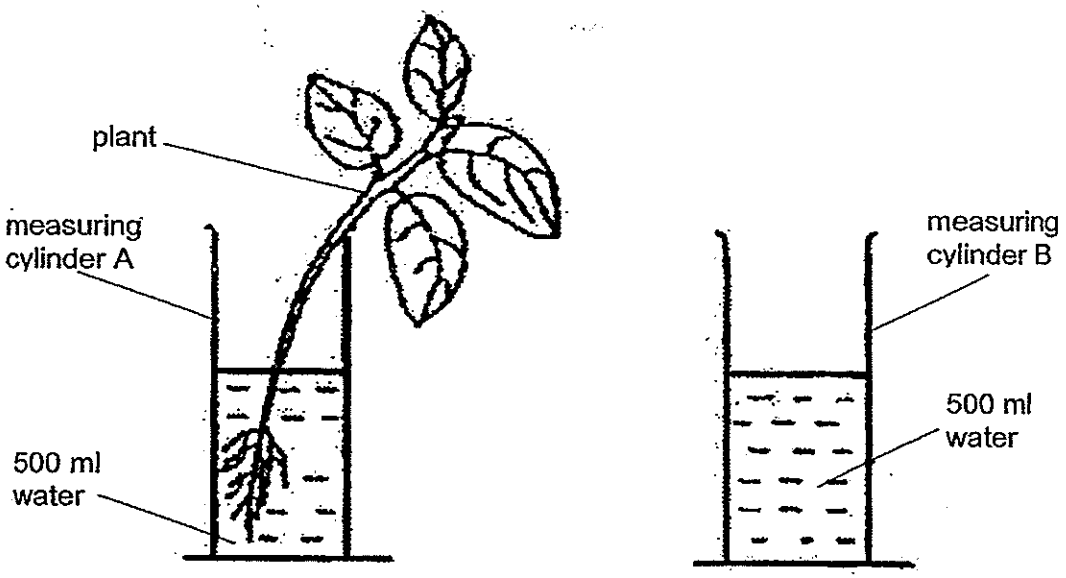
(a) Describe the path taken by water as it travels from the soil to leaf A. [1]

(b) State the important process that takes place in the leaves which requires water. [1]

(Go on to the next page)

Score / 2

38 Mike wanted to find out if water is taken in by a plant. He placed a plant only in measuring cylinder A and set up measuring cylinder B as a control as shown in the diagram below.



The measuring cylinders were left in the open for a week at the same location. Mike observed that there was a significant difference in the amount of water left in cylinder A and cylinder B.

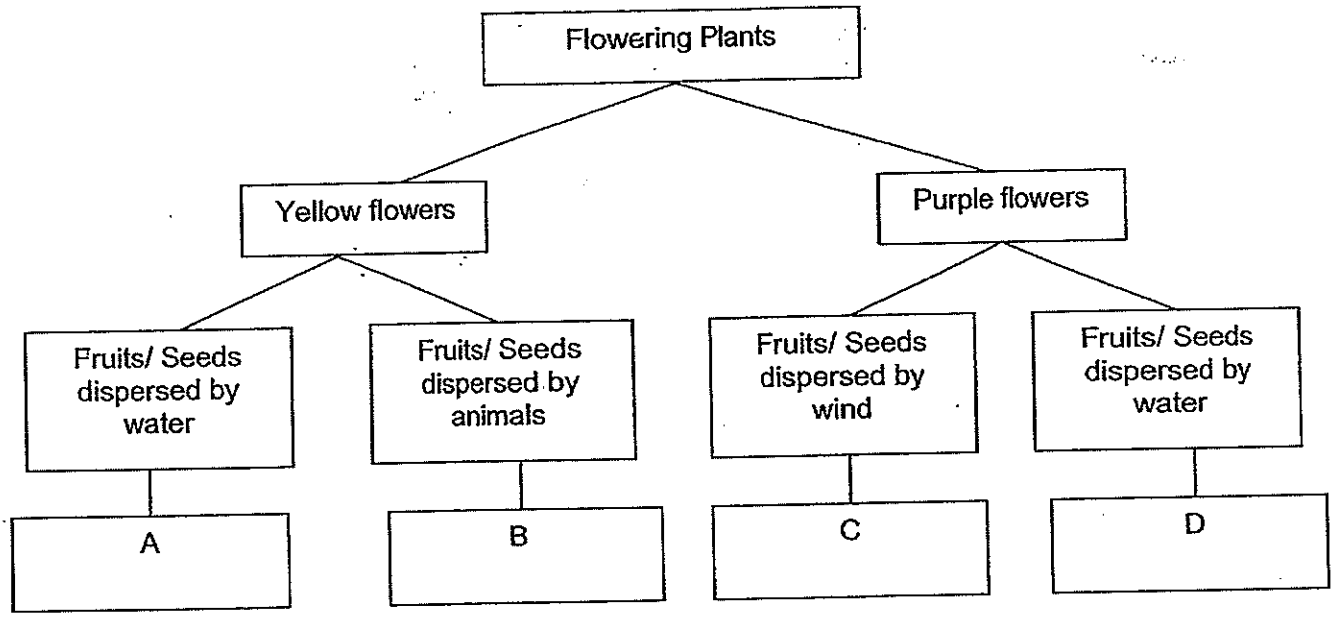
(a) Explain why there was a decrease in the amount of water in cylinder B. [1]

(b) Explain why there was a greater decrease in the amount of water in cylinder A as compared to cylinder B. [1]

(Go on to the next page)

Score /2

39 Amanda found four flowering plants, A, B, C and D on an island. They are classified in the classification chart as shown below.



(a) Based on the classification chart above, list two similarities between A and D. [2]

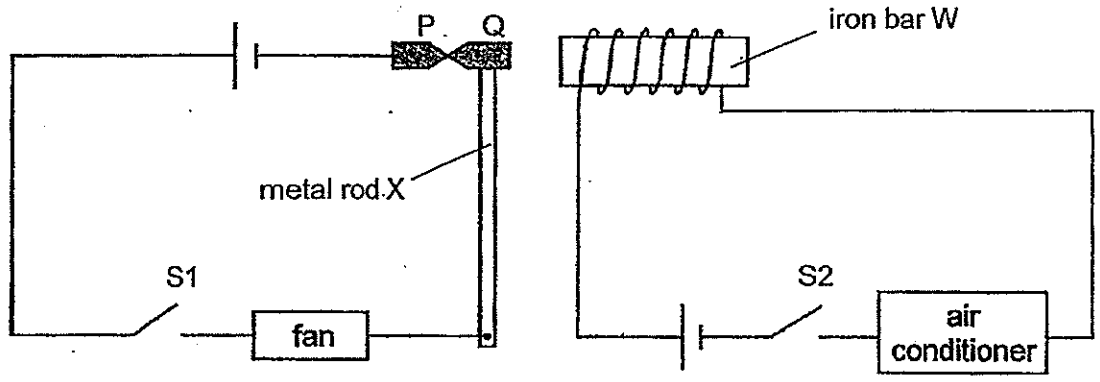
(b) Amanda found a plant which has purple flowers with wing-like structures. Which plant (A, B, C and D) should she classify this plant with? [1]

(c) Why is there a need for the seed to be dispersed from the parent plants? [1]

(Go on to the next page)

Score /4

40 The diagram below shows an electrical system is made up of both circuit 1 and 2. It was designed to conserve electricity as only either the fan or the air-conditioner can function at any one time. Both circuits are placed side by side and close to each other. An iron bar W was placed inside a coil of wire. P and Q are two iron pins in contact with each other. Pin Q is attached to a soft metal rod X which can bend to move sideways.



Circuit 1 Circuit 2

On a hot day, the switch, S1, was closed to turn on the fan. After an hour, the switch, S2, was closed as well.

(a) The fan in circuit 1 stopped spinning after S2 was closed even though S1 remained closed. Explain why the fan stopped spinning. [2]

(b) What would happen to the fan and air conditioner if pin Q is made of aluminum instead of iron and both S1 and S2 are closed?

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

(Go on to the next page)

Score /4

41 James collected the seeds of three different types of mango tree, X, Y and Z. He planted the seeds and allowed the trees to produce fruits after a few years. He noticed that the mango trees produce fruits that have different characteristics.
The table below shows the characteristics of the fruits of the three different types of mango trees.

	Tree X	Tree Y	Tree Z
Size of fruit	Small	Big	Big
Taste	Sweet	Sour	Sour
Time to ripe	Short	Short	Long

(a) James took the pollen from the flower of tree X to pollinate the flowers of tree Y and Z. Which tree's next generation, Y or Z, will he succeed in having big and sweet mango fruits that take a long time to ripe? [1]

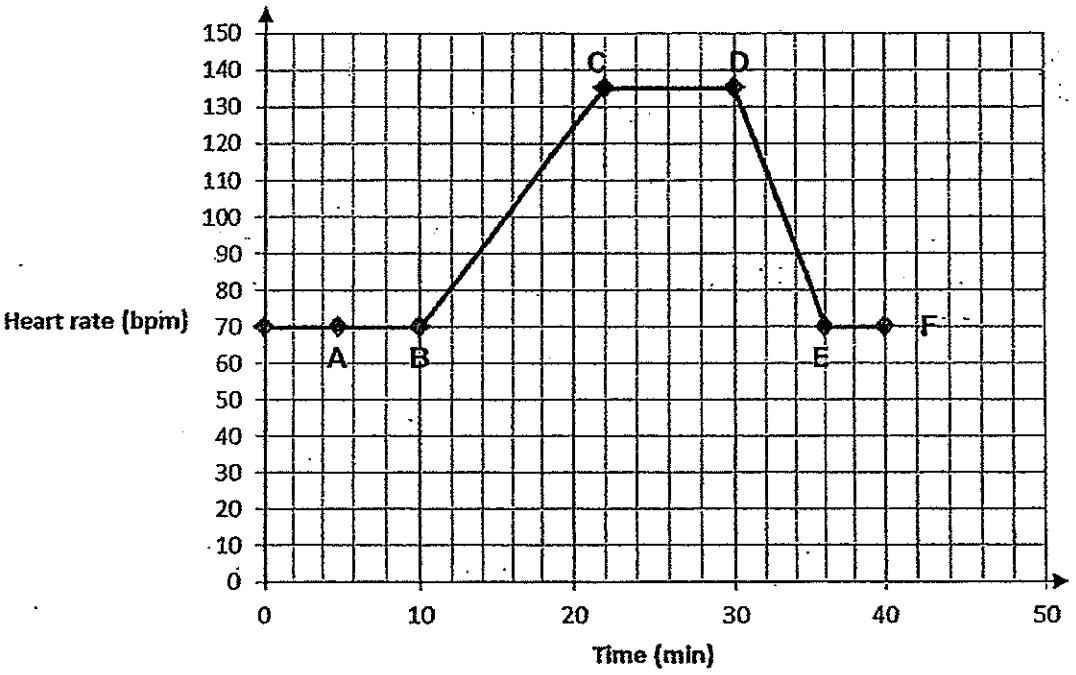
(b) Give an explanation in your answer in (a). [1]

(c) James likes to eat mango and claims that he inherited this trait from his mother who likes to eat mango too. Do you agree with James? Give a reason for your answer.

(Go on to the next page)

Score / 3

42 The graph below shows the change in heart rate of Krish before, during and after his 1.6 km run for NAPFA test.



(a) Based on the information given in the graph above only, explain how you can tell that Krish started running at point B. [1]

(b) Based on the information given in the graph above only, explain how you can tell that Krish stopped running at point D. [1]

(c) Why did Krish's heart rate increase when he was running? [2]

(Go on to the next page)

Score	/4

43 Several people were trapped in a lift for about 20 minutes. There was no fresh air entering the lift.

Based only on the information above, indicate whether each of the statements below is **True** or **False**. Put a tick (✓) in the correct box.

[2]

Statement	True	False
The amount of nitrogen increased.		
The amount of carbon dioxide remained the same.		
The amount of water vapour increased.		
The amount of oxygen decreased.		

(Go on to the next page)

44 Ali wanted to find out how the age of a person affects the lung capacity. He got three persons of different age to blow a balloon in one breath and measures the volume of air in the balloon.

The result is recorded in the table below.

Age (years)	Volume of air in balloon (cm^3)
7	400
14	600
21	800

(a) Based on the information in the table above, what is the relationship between the age of a person and the lung capacity. [1]

(b) What is one other variable that is not mentioned must Ali keep the same? [1]

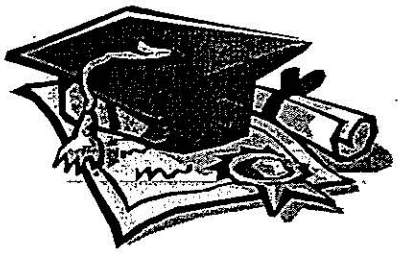
(c) What can Ali do to ensure his results are reliable? [1]

(Go on to the next page)

End of Booklet B

Check your answers carefully.

Score / 3



ANSWER SHEET

EXAM PAPER 2014
SCHOOL : ACS
PRIMARY : P5
SUBJECT : SCIENCE
TERM : SA2

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

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

31)a)Move the light source nearer to the hands.
b)It is because it can reflect light from the furthest distance compared to the other materials.

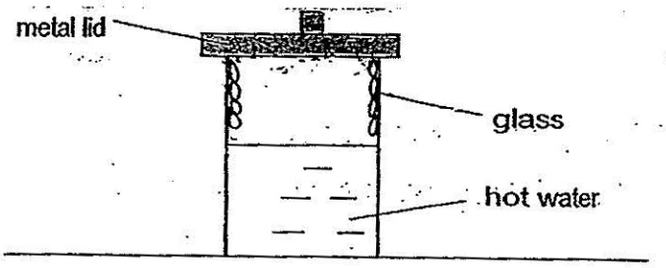
32)a)Object L did not repel from magnet P.
b)The magnetic pull is weakest at the center of the magnet and the object might be to heavy that it cannot attract the ball.
c)Y: South-pole Z: North-pole

33)a)A: In a plant cell. B: In an animal cell.
b)The function is to give the cell its regular shape.

34)a)penis
b)testes

35)W: Solid state
X: Solid state
Y: Liquid state
Z: Gaseous state

36)a)



b)The warm water vapour evaporate from the hot water vapour and touches the cooler surface of the metal lid and condenses to form water droplets.

c)water droplets.

37)a)Water is absorbed by the roots and the water went through, the xylem tube to transport water to leaf A for photosynthesis.

b)The process is called photosynthesis.

38)a)The water in cylinder B evaporated.

b)The plants roots absorb the water in cylinder A and some of the water in it evaporated too.

39)a)They are dispersed by water and they are flowering plants.

b)C.

c)To prevent overcrowding to prevent competition for space.

40)a)Electricity will flow through circuit 2 as S2 is closed and turn bar W into an electromagnet which will attract P in Q as it is made of magnetic material. Circuit 2 will be open electricity will not flow through the fan.

b)It will still work.

c)P in Q will not be attracted to Bar W, aluminum is a good conductor of electricity, thus it allows electricity to pass through it and turn on the fan.

41)a)Tree Z.

b)The tree X will pass its fruit of having sweet fruits and tree Z pass its fruit of having fruits that are big and take along time to ripe.

c)No. Liking to eat something is not a benedictory fruit.

42)a)His heat rate increases.

b)His heart rate decreased.

c)He breathe in more oxygen while running as he needed to produce more energy to run.

43)F
F
T
T

44)a)The older the person, the higher the lung capacity.
b)Gender the person doing before the experiment.
c)Repeat the same experiment a few more time and find the average to ensure his results are reliable.