Name: _____( )

Class: Primary 5 _____

CHIJ ST NICHOLAS GIRLS' SCHOOL

Primary 5

Semestral Assessment 2

SCIENCE

BOOKLET A

27 October 2017

Total Time for Booklets A and B: 1 hour 45 minutes

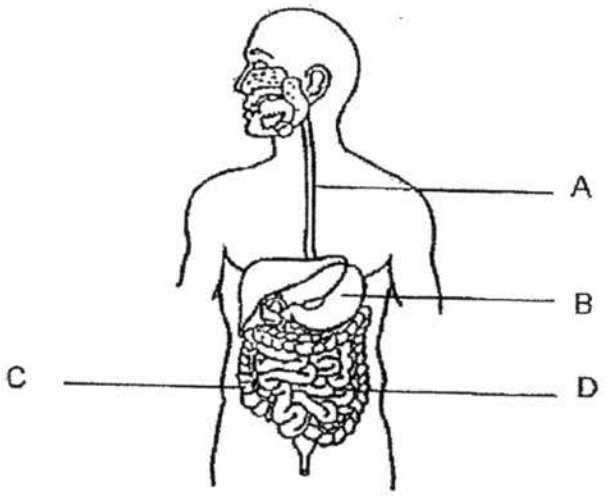
28 questions
56 marks

Do not open this booklet until you are told to do so.
Follow all instructions carefully.
Answer all questions.

This booklet consists of 18 printed pages.

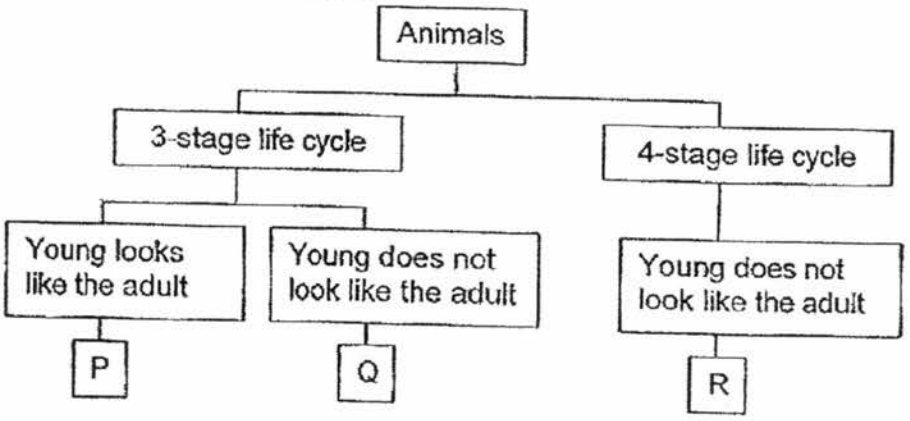
Section A (28 x 2 marks = 56 marks)
For each question from 1 to 28, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). **Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet provided.**

1. Which part of the human digestive system A, B, C or D shown below absorbs all the digested food?



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

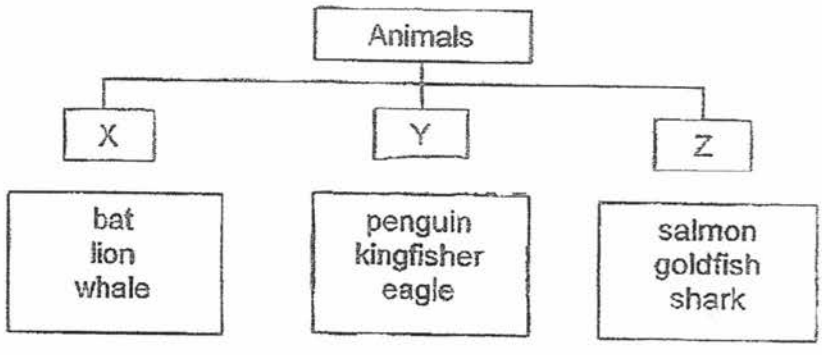
2. Study the classification chart below.



Which one of the following is most likely to be animals P, Q and R?

	P	Q	R
(1)	mealworm beetle	frog	grasshopper
(2)	grasshopper	frog	mealworm beetle
(3)	mealworm beetle	grasshopper	frog
(4)	grasshopper	mealworm beetle	frog

3. Study the classification chart below.



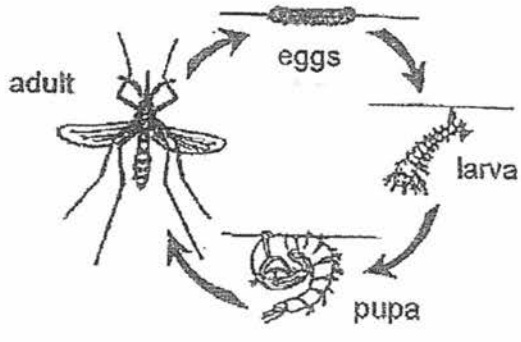
Chloe made four statements about the chart.

A All the animals in group Y can fly.
B The animals in group X feeds milk to their young.
C The animals are grouped according to their body covering.
D All the animals in group Y and Z reproduce by laying eggs.

Which statements are correct?

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

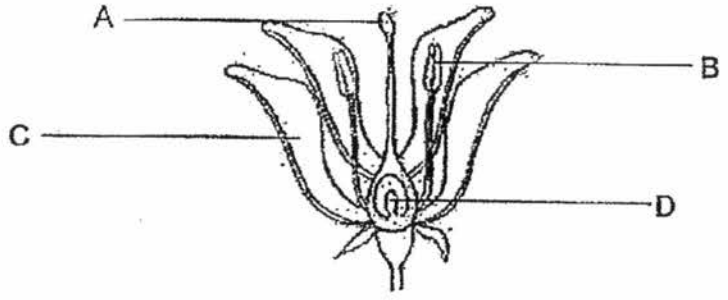
4. The diagram below shows the life cycle of a mosquito.



Which of the following statements about the stages in the life cycle of a mosquito is true?

(1) The pupa does not need to feed at this stage.
(2) The adult stage is the easiest stage to get rid of.
(3) The eggs can also be laid on land as they are laid in a case.
(4) Both the larva and pupa breathe through gills when they are underwater.

5. The diagram below shows flower P. Two parts of flower P were removed before pollination could occur. After some time, a fruit is formed.



flower P

Which two parts of flower P had been removed?

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

6. A, B, C and D are cells taken from different parts of a plant and an animal. A tick (✓) indicates the presence of the part in the cell.

Part \ Cell	A	B	C	D
Nucleus	✓	✓	✓	
Chloroplast		✓		
Cell wall	✓	✓		
Cell membrane	✓	✓	✓	✓
Cytoplasm	✓	✓	✓	✓

Based on the table above, which cell(s) can be found in a plant?

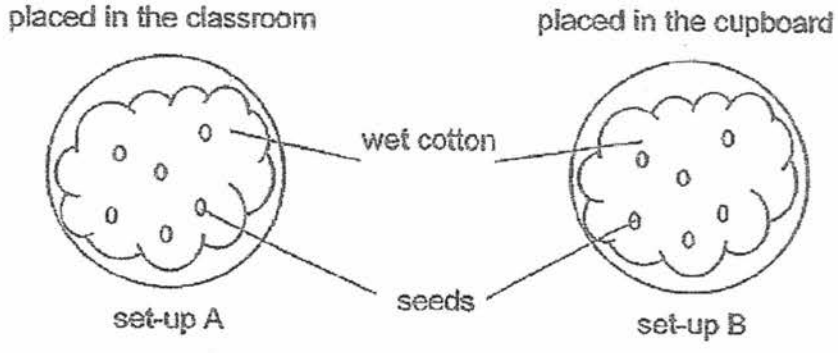
(1) B only
(2) A and B only
(3) C and D only
(4) A, B and C only

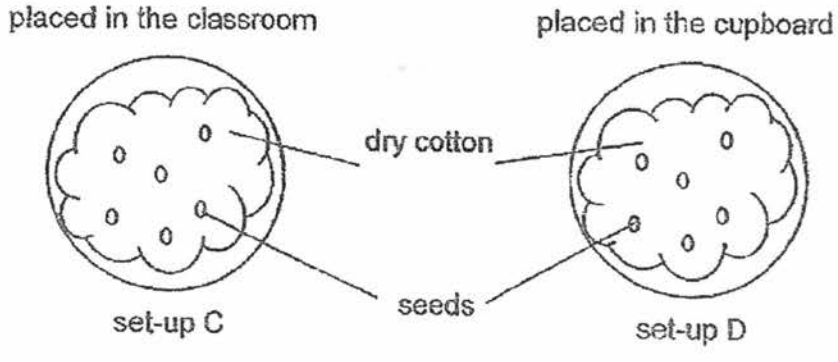
7. Which of the following statements about cells is/are true?

A All cells have a regular shape.
B All cells are the building blocks of life.
C All cells are made up of cell membrane, cytoplasm and nucleus.
D All cells come in different sizes and structures to suit their specialised functions.

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

8. Four set-ups A, B, C and D are shown below.

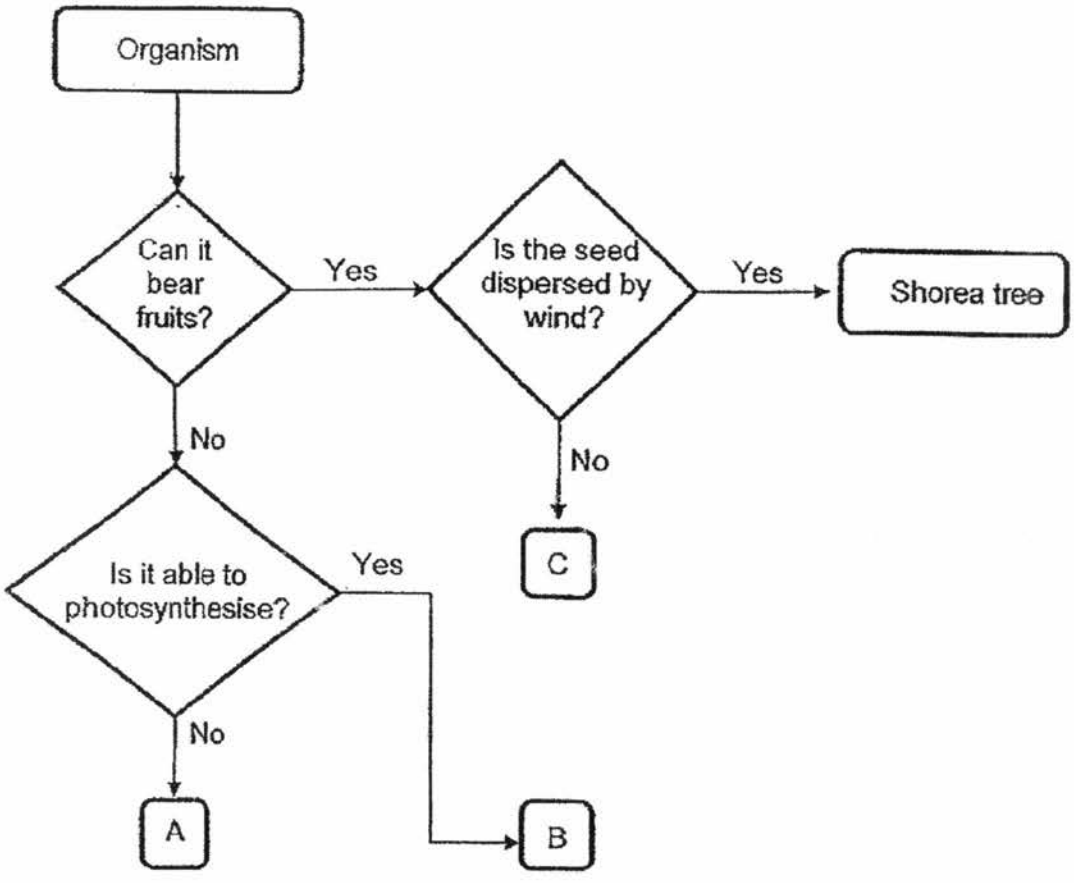




In which of the set-up(s) will seeds germinate?

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

9. Study the diagram below.



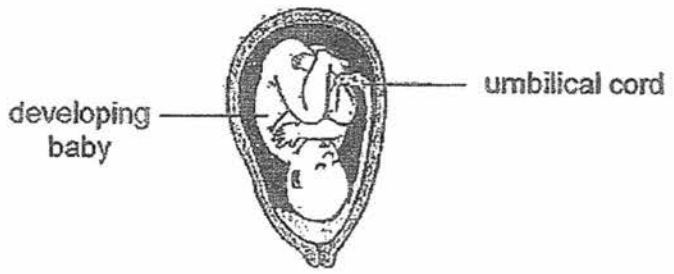
Which one of the following correctly represents A, B and C?

	A	B	C
(1)	mushroom	fern	coconut tree
(2)	fern	coconut tree	mushroom
(3)	mushroom	coconut tree	fern
(4)	fern	mushroom	coconut tree

10. Which one of the following characteristics is <u>not</u> passed on from the parents to their offsprings?

(1) hair colour
(2) fingerprints
(3) attached ear lobes
(4) ability to roll the tongue

11. The diagram below shows a developing baby in the mother's womb connected to the mother by an umbilical cord.



Which of the following statements correctly describe the functions of the umbilical cord?

A It allows the baby's heart to beat at a regular rhythm.
B It removes blood rich in carbon dioxide and waste from the developing baby.
C It supplies blood rich in oxygen and digested food from the mother to the developing baby.
D It helps to break food down into simpler substances for absorption into the bloodstream.

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

12. Which of the following substances are transported by both the tubes in the human circulatory system and plant transport system?

A food
B water
C oxygen
D waste materials

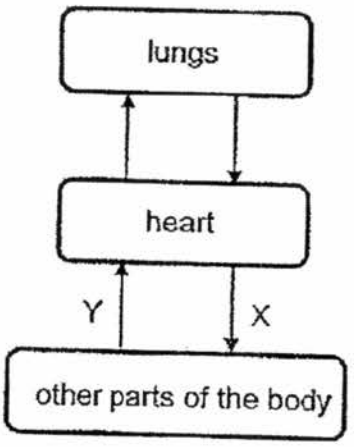
(1) A and B only

(2) B and D only

(3) A, B and C only

(4) A, B, C and D

13. The diagram below shows how blood flows in some parts of the body.

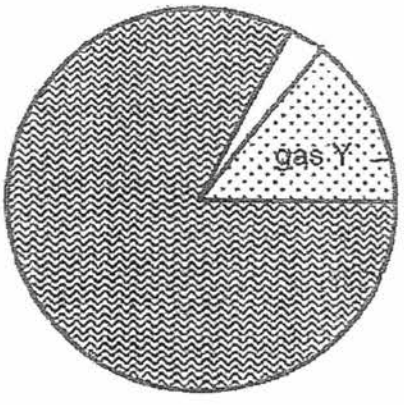


Which of the following statements are true of the blood flowing in blood vessels X and Y?

A Blood in X contains more oxygen than blood in Y.
B Blood in Y contains more oxygen than blood in X.
C Blood in X contains more carbon dioxide than blood in Y.
D Blood in Y contains more carbon dioxide than blood in X.

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

14. The pie chart below shows the composition of gases in the air.

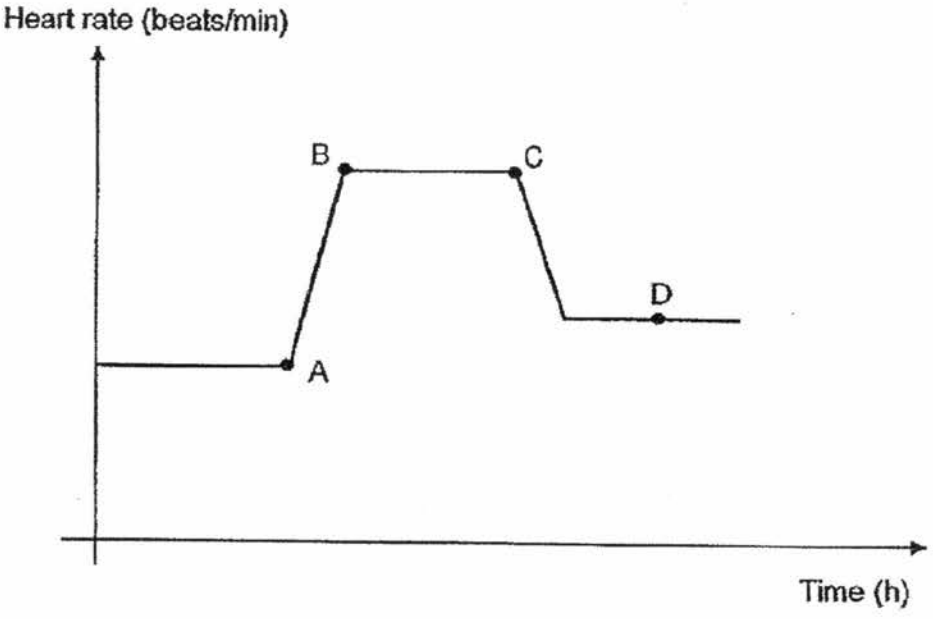


Which of the following are true of gas Y?

A Needed for respiration
B Produced during burning
C Needed for photosynthesis
D Produced during photosynthesis

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

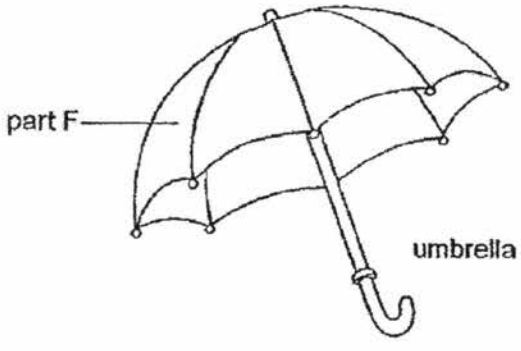
15. The following graph shows Glenn's heart rate over a few hours.



At which point A, B, C or D did Glenn start exercising?

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

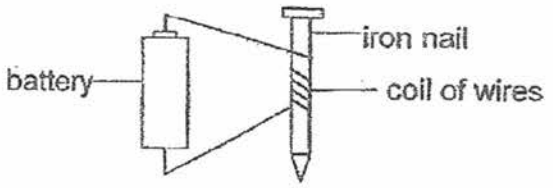
16. Megan uses an umbrella to keep out the rain and the sun.



Which of the following states correctly the properties of part F?

(1) strength and flexibility
(2) strength and waterproof
(3) transparency and waterproof
(4) transparency and ability to float or sink

17. An iron nail becomes a temporary magnet when it is placed in a coil of wire connected to a battery as shown below.



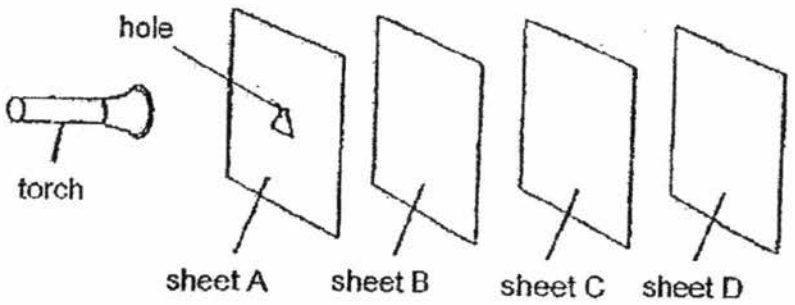
Hana wants to find out whether the number of turns of the coils affects the strength of a magnet.

Which of the two set-ups should she use in order to conduct a fair test?

Set-up	Number of coils	Number of battery/batteries
A	10	1
B	10	3
C	20	2
D	20	3

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

18. The experiment shown below is carried out in a dark room.

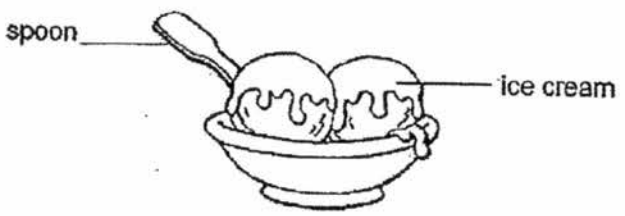


Sheets A, B, C and D are arranged in a straight line. When the torch is switched on, a bright triangular patch of light is seen on Sheet C only.

Which one of the following correctly describes the properties of the materials that sheets A, B, C and D are made of?

	Allows light to pass through	Does not allow light to pass through	Not possible to tell
(1)	A and B	D	C
(2)	A and D	C	B
(3)	B	C	A and D
(4)	B	A and C	D

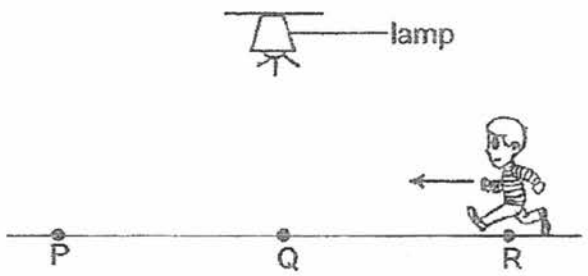
19. Mrs Soh left her spoon in a bowl of ice cream as shown below. After some time, she felt that the spoon was cold as she lifted it up from the bowl of ice cream.



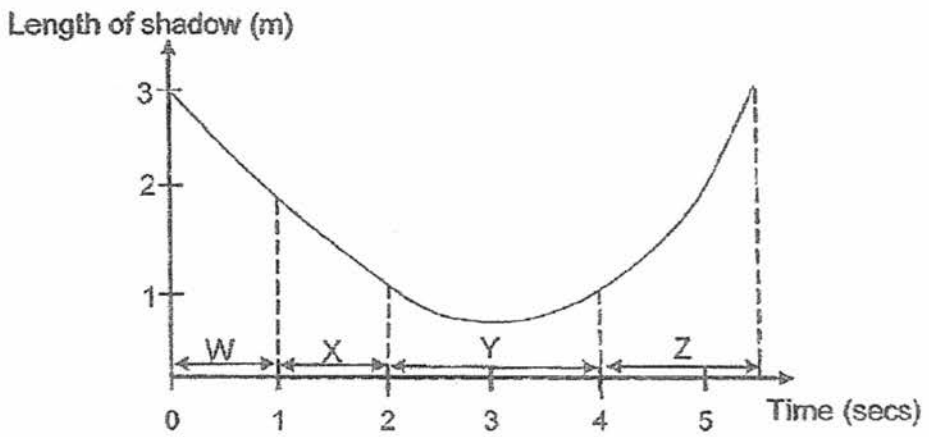
Which one of the following correctly explains why the spoon was cold?

(1) The spoon lost heat to the ice and to her hand.
(2) The spoon gained heat from the ice cream and from her hand.
(3) The spoon lost heat to the ice cream and gained heat from her hand.
(4) The spoon gained heat from the ice cream and lost heat to her hand.

20. Justin walked from R to P as shown in the diagram below.



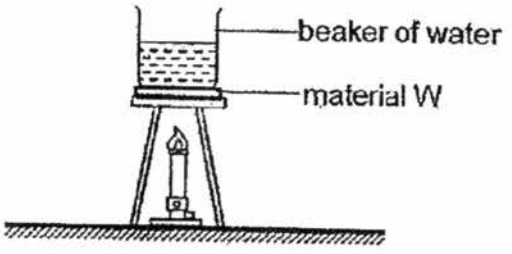
The graph below shows how the length of Justin's shadow changes as he walked from R to P.



Which part of the graph W, X, Y or Z shows Justin standing at Q?

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

21. Mia conducted an experiment using the set-up shown below.



She recorded the time taken for the water to boil when different materials, W, X and Y were placed below the beaker of water in the table below.

Material	Conductivity of Heat	Time taken for water to start boiling (min)
W	very good	10
X	poor	10
Y	good	10

After completing the experiment, Mia realised that she did not remember how much water she had used.

Which one of the following most likely shows the volume of water used at the start of the experiment?

	W (ml)	X (ml)	Y (ml)
(1)	100	250	350
(2)	100	350	250
(3)	350	250	100
(4)	350	100	250

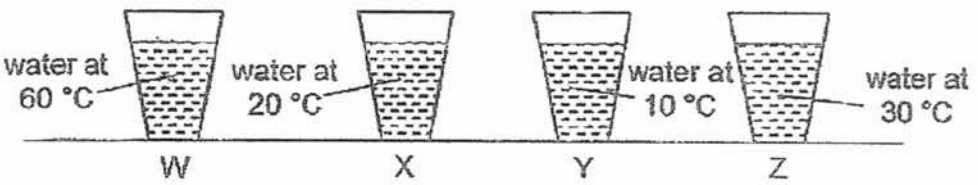
22. The table below shows the melting and boiling points of two substances, K and L.

Substance	Melting point (°C)	Boiling point (°C)
K	44	280
L	110	180

Which of the following shows the correct state of K and L at 100°C?

	K	L
(1)	solid	solid
(2)	liquid	liquid
(3)	solid	liquid
(4)	liquid	solid

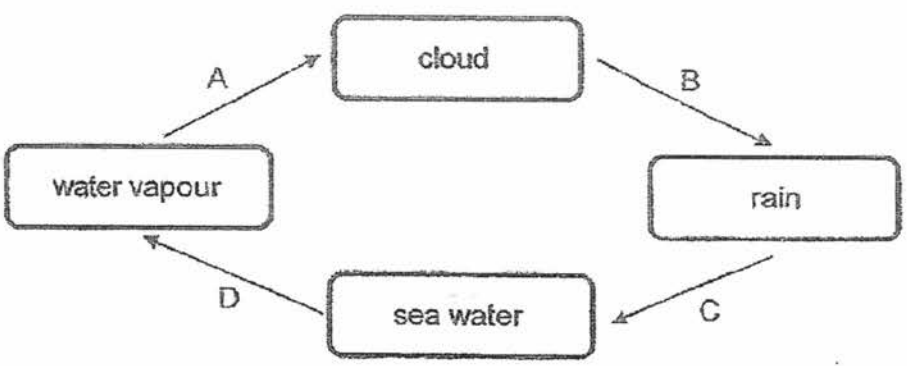
23. Four similar cups W, X, Y and Z were each filled with 50 ml of water at different temperatures and placed in the same room at 30°C as shown below.



Which cups would have water droplets forming on their outer surfaces after some time?

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

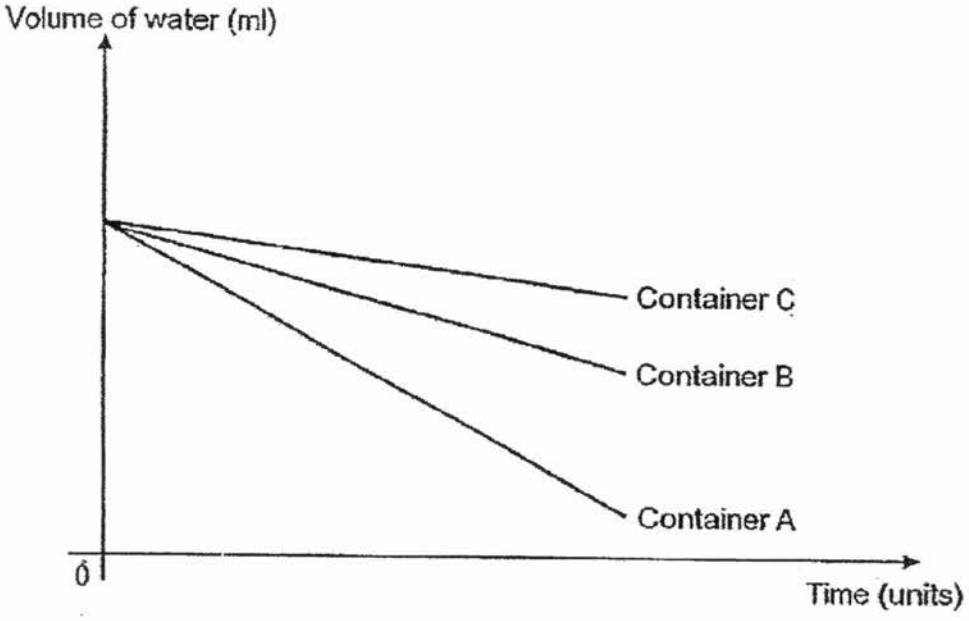
24. The diagram shows the water cycle.



Which of the following letters A, B, C or D represents a change in the state of matter?

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

25. Three different containers A, B and C of different sizes are used to find out how the exposed surface area of the water affects the rate of evaporation. Equal amounts of water were poured into each of the containers and placed at the same location. The graph below shows the volume of water in each container over time.



Which of the following best represents the size of the exposed surface area of the water in the three different containers?

	Exposed surface area of water		
	A (cm^2)	B (cm^2)	C (cm^2)
(1)	80	50	25
(2)	80	25	50
(3)	25	50	80
(4)	25	80	50

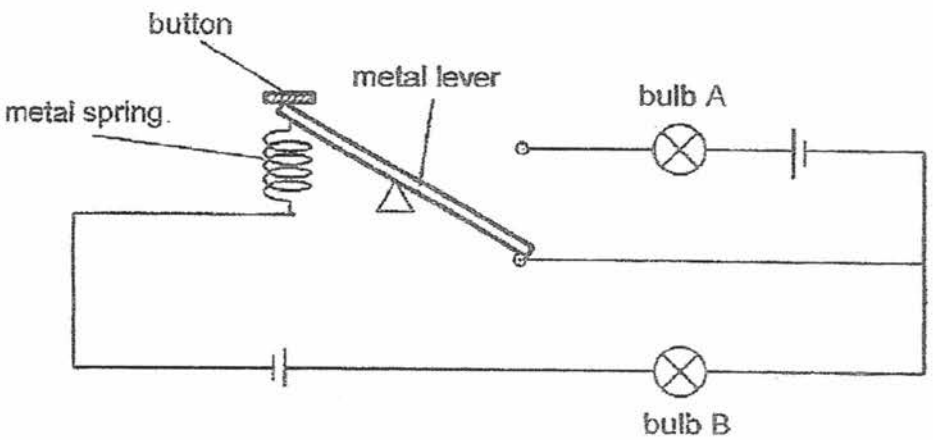
26. Study the table below.

Substance	State of substance at		
	20 °C	40 °C	60 °C
A	solid	solid	solid
B	solid	solid	liquid
C	solid	liquid	liquid

Which of the following is definitely true?

(1) The boiling point of substance C is 40 °C.
(2) The melting point of substance B is 60 °C.
(3) Substance C has the lowest freezing point.
(4) Substance B has a lower boiling point than Substance A.

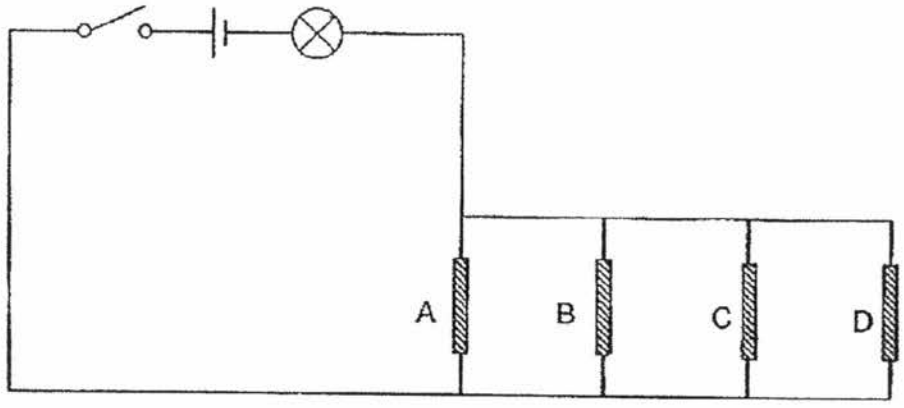
27. Study the circuit below. The bulbs and batteries used are identical. When the circuit is closed, bulb A remained unlit while bulb B is lit with a brightness of 10 units.



If the button is pressed and held down, what would happen to bulbs A and B?

	bulb A	bulb B
(1)	as bright as 10 units	unlit
(2)	brighter than 10 units	unlit
(3)	as bright as 10 units	as bright as 10 units
(4)	brighter than 10 units	as bright as 10 units

28. The circuit shown below was set up to investigate whether four rods A, B, C and D were electrical conductors or insulators.



The table below shows what happened when the switch was closed and certain rod(s) was/were removed.

Rod(s) removed from circuit	Did the bulb light up?
B	yes
C and D	yes
A, B and D	no
B, C and D	no

Which one of the following conclusions about the rods A, B, C and D is correct?

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

End of Booklet A

Name : _____ ( )

Class : Primary 5_____

Primary 5

Semestral Assessment 2

SCIENCE

BOOKLET B

27 October 2017

Booklet A	56
Booklet B	44
Total	100

Total Time for Booklets A and B: 1 hour 45 minutes

13 questions
44 marks

Do not open this booklet until you are told to do so.
Follow all instructions carefully.
Answer all questions.

This paper consists of 18 printed pages.

_____

Parent's Signature/Date

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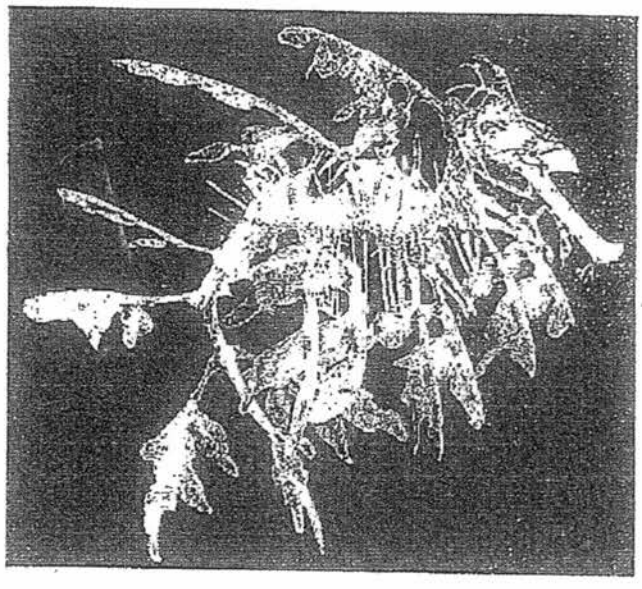
Section B (44 marks)
For questions 29 to 41, write your answers in this booklet.

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

29. The picture below shows an organism M. It lives in warm water and breathes through its gills. It feeds on plankton (tiny organisms that live in water), small crabs and shrimps. Organism M moves through the water using its tiny fins.



Organism M

(a) Based on the information given, which animal group could organism M belong to? [1]

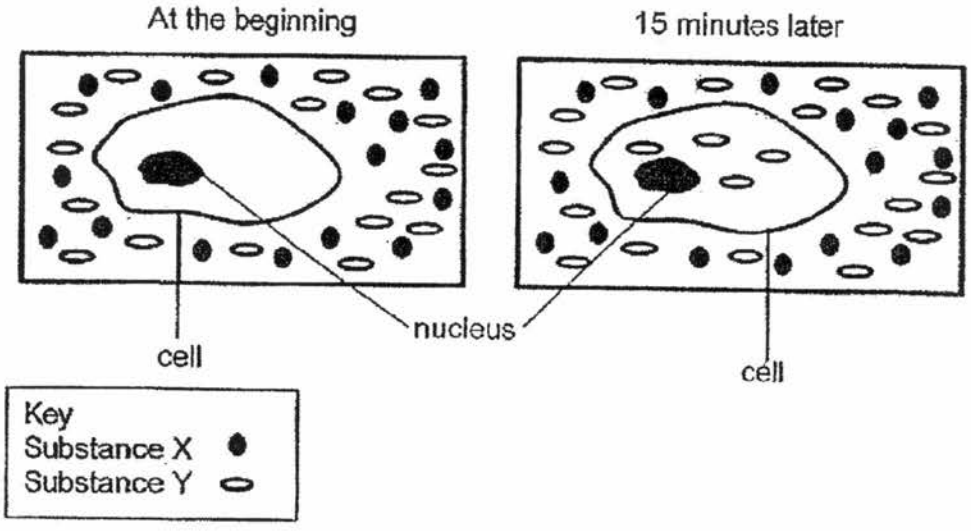
_____

(b) Give two reasons for the animal group that you had identified in (a). [2]

Reason 1: _____

Reason 2: _____

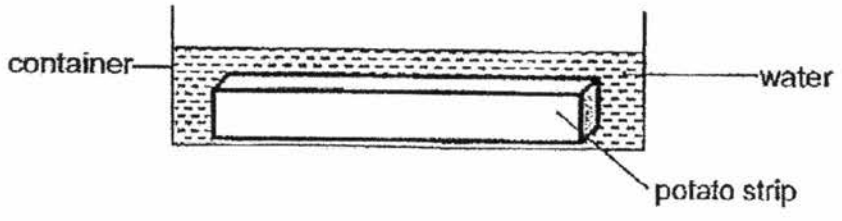
30. The diagram below shows what happens before and after a cell is placed in a container filled with substances X and Y.



(a) What has happened to the cell 15 minutes after it is placed with substance X and Y? [1]

(b) Which part of the cell is responsible for this change? Give a reason for your answer. [1]

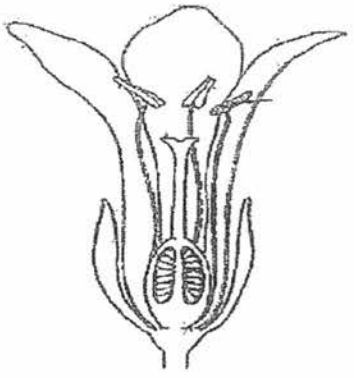
A strip of raw potato (without the skin) was placed in a container of water as shown below.



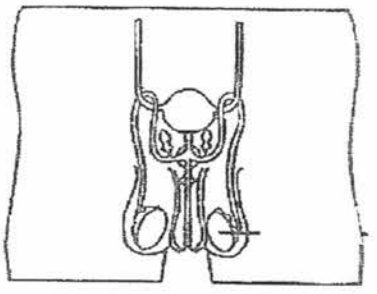
After 30 minutes, Steven observed that the potato strip had increased in size.

(c) Explain why the potato strip had increased in size. [1]

31. Study the diagram below.



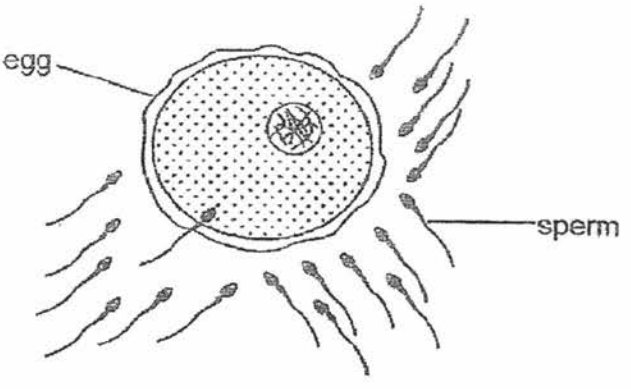
flowering plant reproductive system



male (human) reproductive system

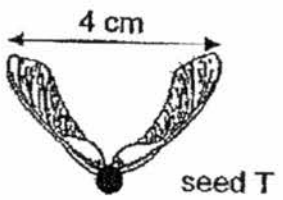
(a) In the diagram above, mark 'X' to show where the male reproductive cells can be produced in both systems. [1]

(b) Study the diagram below.

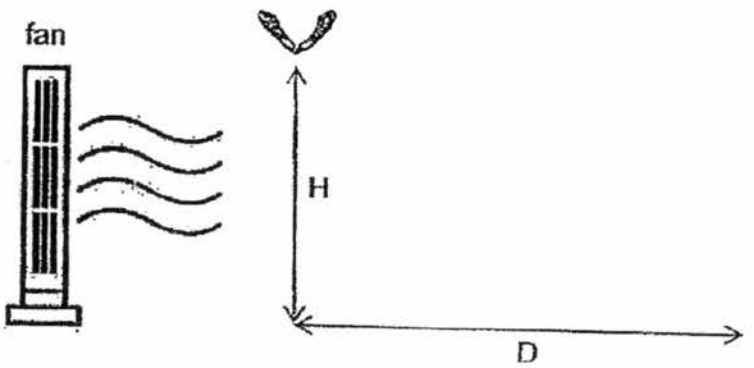


Describe what happens when the sperm enters the egg. [1]

32. Melinda conducted an experiment to find out how the height at which seed T is dropped affects the distance it travels. Seed T has a 4 cm wing as shown.



She dropped seed T from height (H) in front of a fan as shown. She measured the distance (D) travelled by seed T.



Seed T was dropped from different heights and Melinda's readings are recorded in the table below.

H (cm)	120	100	80	60
D (cm)	50	44	31	15

(a) Based on Melinda's results, what is the relationship between the height that the seed is dropped and the distance the seed travels? [1]

_____

_____

(b) Melinda used the same seed throughout the experiment. Give **one** reason how using the same seed helps to make the experiment a fair test. [1]

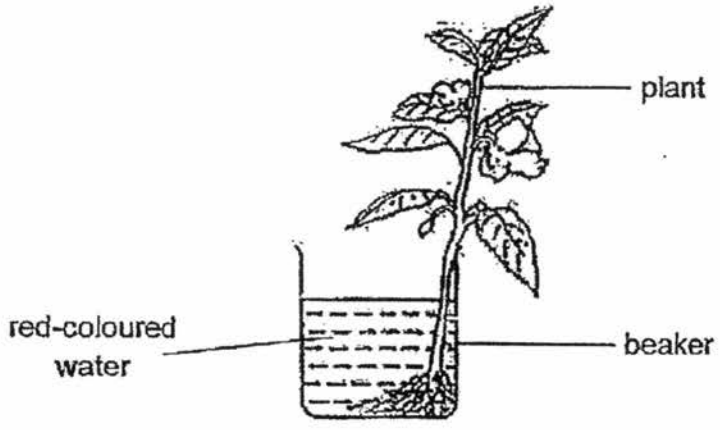
_____

_____

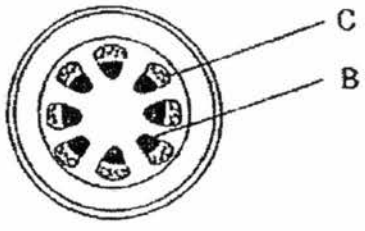
(c) Based on Melinda's results, what is an advantage of the seed growing on a tall tree? [1]

(d) Melinda also wanted to find out if the size of the wing on seed T affects the distance it travels. Suggest two variables that she has to keep constant when conducting this experiment. [1]

33. A plant was placed in a beaker filled with red-coloured water as shown below.



After a few days, the leaves of the plant turned red. A cross-section of the stem is shown below.



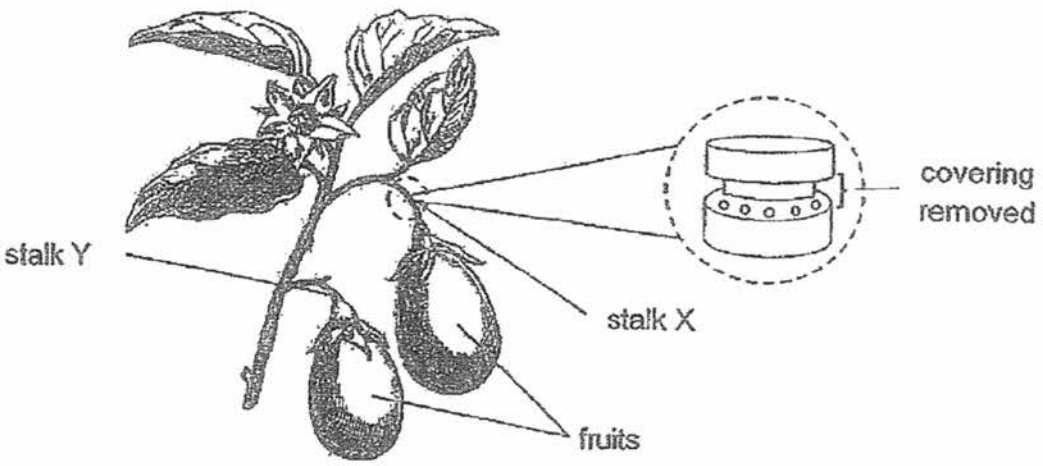
cross-section of the stem

(a) Terrence observed that tube B turned red but not tube C. Explain why. [1]

_____

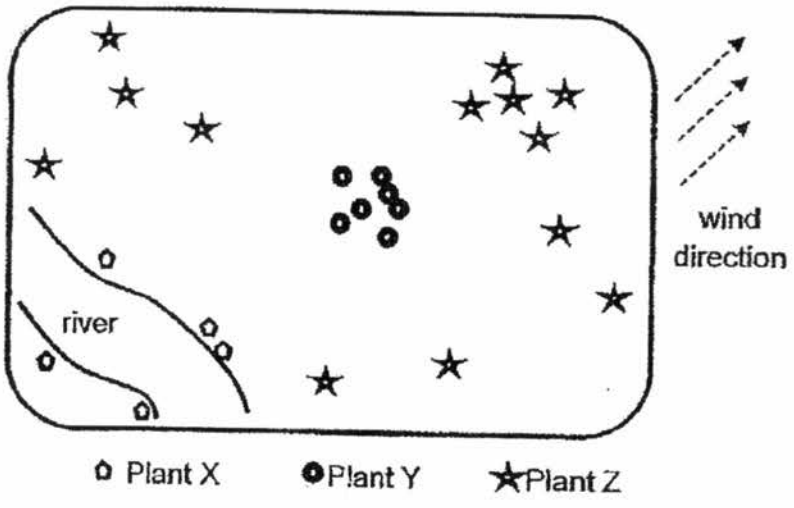
_____

(b) Two fruits of similar size were found growing on a plant. A farmer removed a part of the covering on stalk X as shown below.



After a few weeks, the farmer noticed that the fruit on stalk Y grew bigger than the fruit on stalk X. Explain why. [2]

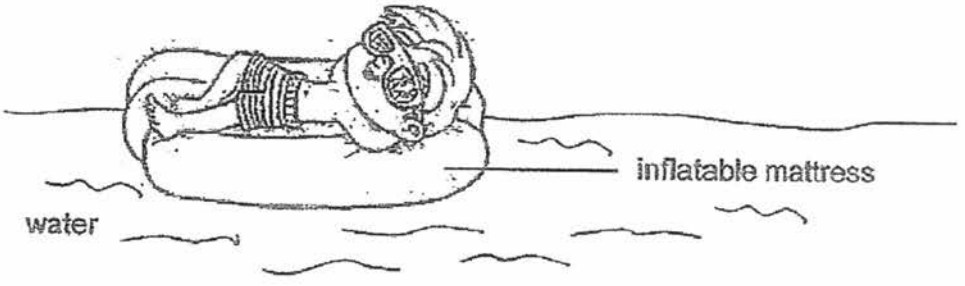
34. The diagram below shows how seeds of Plant X, Y and Z are dispersed.



(a) Based on the physical characteristics of the two fruits, which one is likely to be the fruit of plant Z. Put a tick (✓) in the appropriate box below. [1]

(b) Explain your choice in (a). [1]

35. The diagram below shows a boy lying on an inflatable mattress that is floating on water.



(a) Air can still be pumped into the inflatable mattress even when it is fully inflated. State a property of air that allow this to take place. [1]

_____

(b) Will the mass of the inflatable mattress increase, decrease or remain the same after more air is pumped into it? Give a reason for your answer. [1]

_____

_____

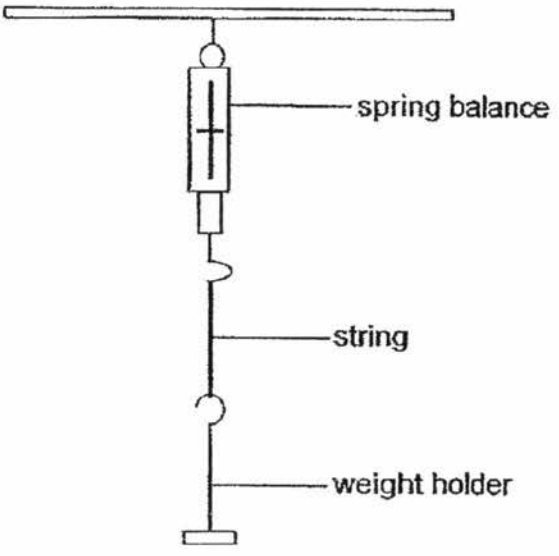
(c) When the inflatable mattress is left in the hot sun for a few hours, it became firmer. Explain why. [1]

_____

_____

_____

36. A weight holder of 10 g is tied on a string which is attached to a spring balance as shown below.



In this experiment, the strings used are made of different materials R and S. An increase of 10 g of weights are placed on the weight holder each time until the string broke. The results are recorded in the table below.

Material	Reading on the spring balance when the string broke (g)
R	1000
S	90

(a) State the property of material that is tested in this experiment. [1]

_____

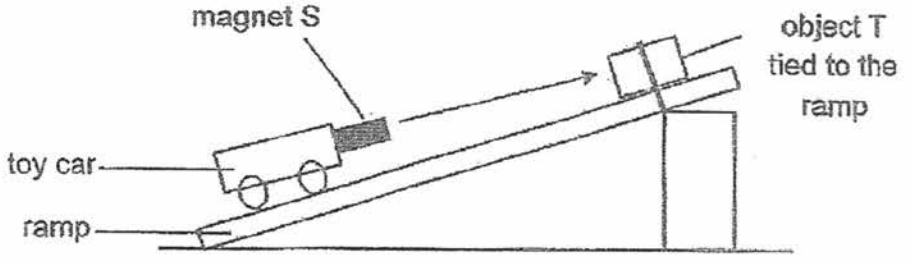
(b) Based on the results, which material R or S is more suitable to be used to make thick wire ropes used for cable car?
Explain your answer. [2]

_____

_____

_____

37. Bella attached magnet S to a toy car and placed the toy car on a ramp. She observed that the toy car moved towards object T as shown by the direction of the arrow below.

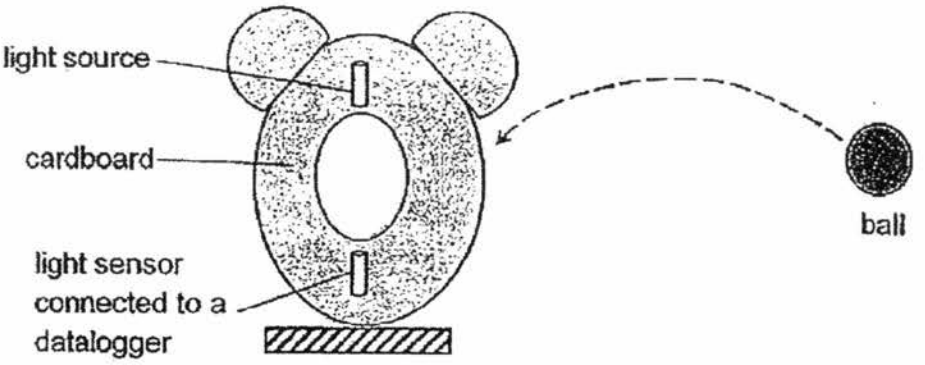


(a) Based on her observation, Bella <u>cannot</u> conclude that object T is a magnet. Explain why. [1]

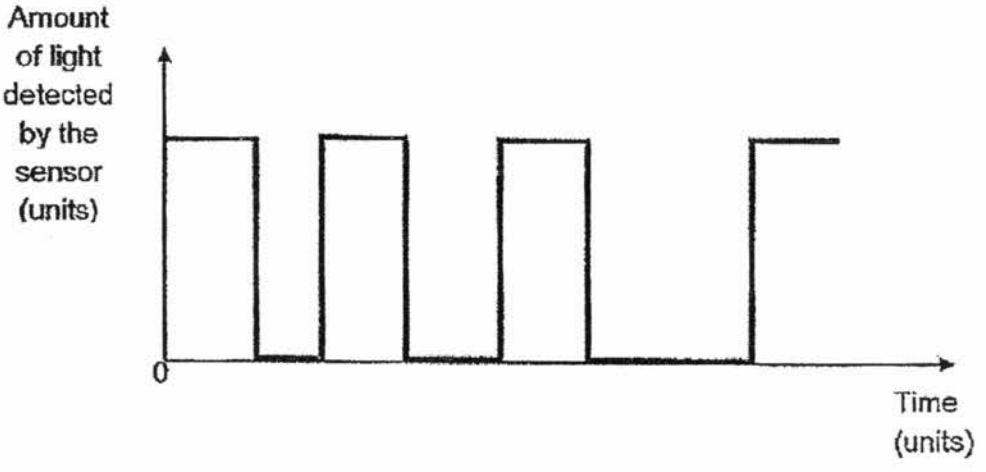
(b) Using the same set-up shown above, what should Bella do to conclude whether object T is a magnet or not? [2]

(c) Bella then replaced magnet S with a bigger magnet and carried out a similar experiment. She predicted that the toy car would move towards object T at a faster speed as a bigger magnet would have a stronger magnetic strength. Do you agree? Give a reason for your answer. [1]

38. A light source and a light sensor connected to a data logger was attached to a cardboard as shown below.



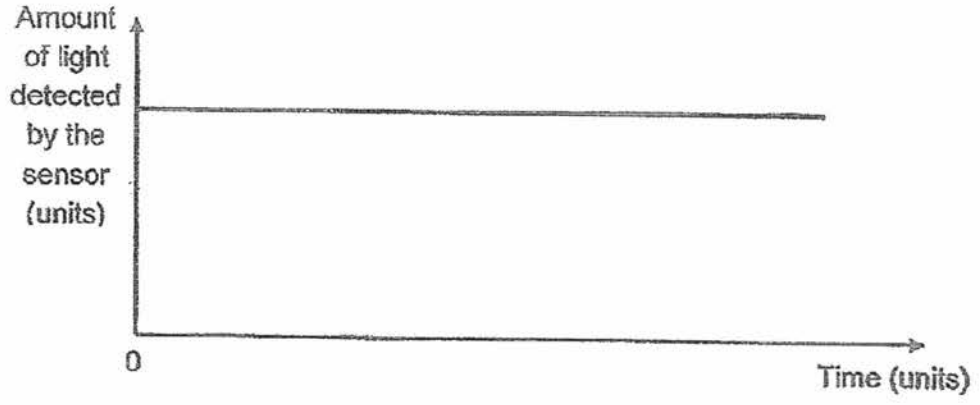
Both the light source and light sensor were used to count the number of balls going through a hole on the cardboard. A few identical balls were thrown one at a time. The results were recorded as shown below.



(a) Based on the results above, how many balls went through the hole? Explain how the number of balls going through the hole could be counted using the set-up. [2]

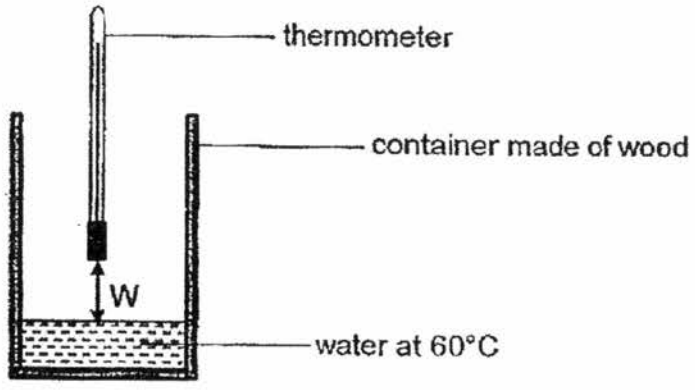
(b) Based on the above results, did all the balls go through the hole at the same speed? Explain your answer. [1]

(c) The experiment was repeated with a set of identical balls made of a different material. The results were recorded in the graph below.



Based on the above results, what can you conclude about the property of the material the balls are made of? [1]

39. Juliana filled a container made of wood with water at 60°C. The temperature of water remained at 60°C throughout the experiment.
She measured the temperature of the air at various distance, W, from the water surface.



Her results are shown below.

Distance W (cm)	2	4	6	8	10
Temperature of air (°C)	42	36	32	29	27

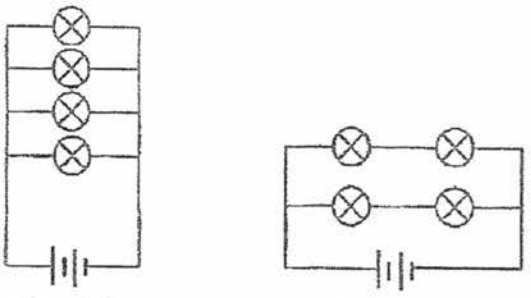
(a) Explain how using a container made of wood helped to make the experiment more reliable. [1]

(b) Based on the above results, what is the relationship between the temperature of the air and distance W? [1]

(c) Give a reason why the experiment had to be conducted over a short period of time. [1]

(d) Juliana repeated her experiment with a container made of metal. Will the temperature of air be higher, lower or the same at 32°C when distance W is at 6 cm? Explain your answer. [2]

40. In the circuits P and Q shown below, all the bulbs are lit.

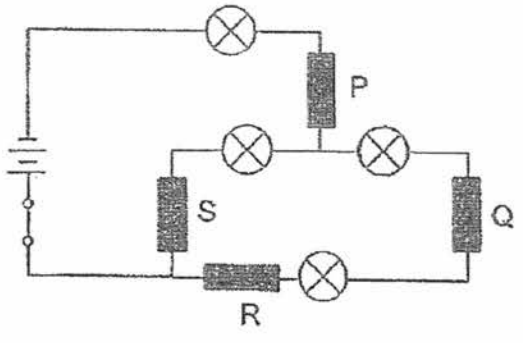


Circuit P Circuit Q

(a) In the table below, write down the number of bulbs that would remain lit when one of the bulbs in each circuit is blown. [2]

	Circuit P	Circuit Q
Number of bulbs remaining lit		

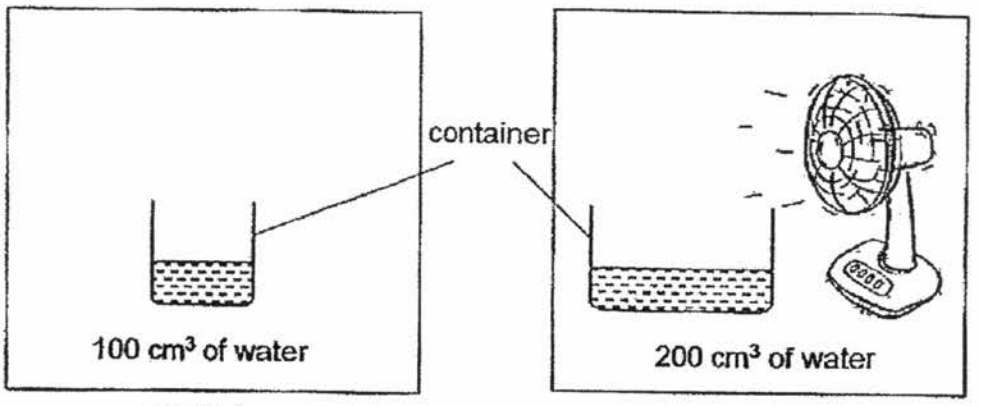
Four rods P, Q, R and S were connected in the electrical circuit as shown below. One of the rods is an insulator of electricity.



(b) When the switch was closed, only 3 bulbs lit up. Which rod P, Q, R or S is an insulator of electricity? [1]

_____

41. An experiment was set up to find out how wind affects the rate of evaporation of water. The experiment was set up as shown below.



set-up A set-up B

(a) Give a reason why this experiment is not a fair one. [1]

_____

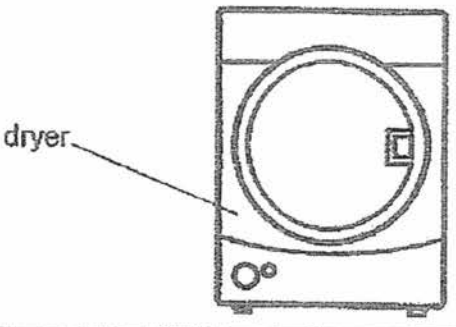
_____

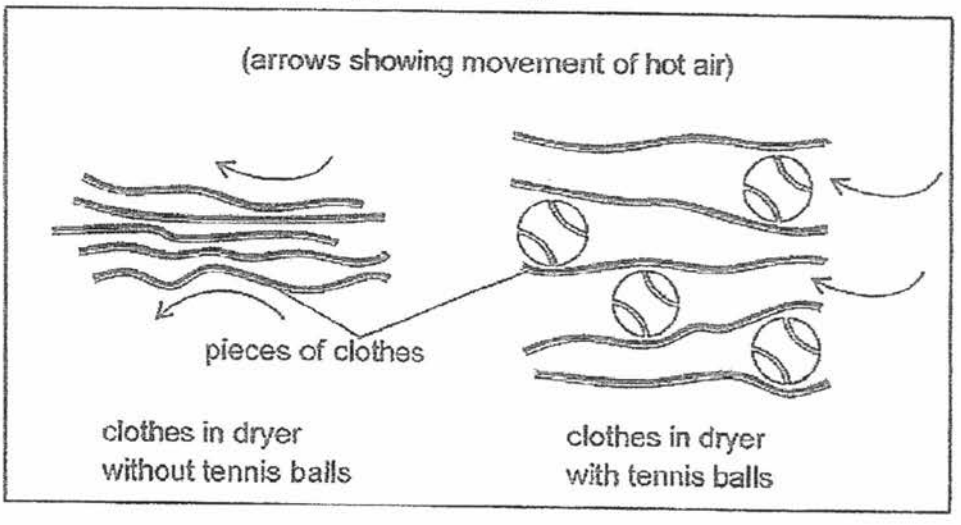
(b) If the experiment was conducted fairly, what should be measured in order to make a conclusion of the experiment? [1]

_____

_____

(c) A clothes dryer is a machine use to tumble dry wet clothes using hot air. Mandela added tennis balls in between her wet clothes in the dryer to shorten the drying time.





(i) Explain how having tennis balls between the clothes will help to shorten the drying time of the wet clothes in the clothes dryer. [2]

(ii) There is a fan built in the clothes dryer that blows hot air at the wet clothes. Mandela is able to adjust the fan speed of the clothes dryer. How will increasing the fan speed affect the time taken for the clothes to dry completely? [1]

End of Booklet B

EXAM PAPER 2017 (P5)

SCHOOL : CHIJ

SUBJECT :SCIENCE

TERM : SA2

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

29)a)Fish group

b)1)It breathes through its gills.

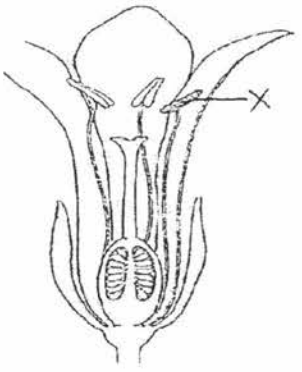
2)It has fins.

30)a)Substance Y managed to go into the cell but substance X did not.

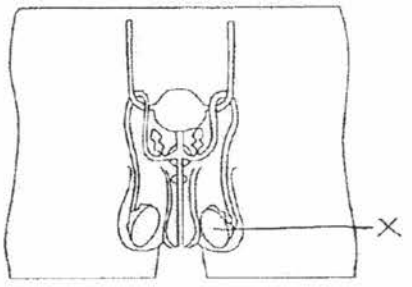
b)Cell membrane. It allows substance Y to enter the cell but not substance X.

c)The water in the container managed to go into the potato strip and it expanded.

31)a)



flowering plant reproductive system



male (human) reproductive system

b)The nucleus of the sperm will fuse with the nucleus of the egg and fertilization will occur.

32)a)The higher the seed is dropped, the longer the seed travels.

b)So that mass of seed is constant.

c)The seed will be carried far away from the tall tree so that it does not have to compete for sunlight, water , food and space with the tall tree.

d)The height that the seed is dropped and the speed of the fan.

33)a)Tube B is the water-carrying tube and it transports the red-coloured water to all parts of the plant.

b)The fruit on stalk X was not able to get food from the leaves as the farmer removed the food-carrying tubes on stalk X while the fruit on stalk Y could get food to grow bigger.

34)a)

√	

b)Plant Z is randomly scattered. Fruit Z has hook like structured which will hook onto the fur of animals and drop off when the animals move to another location.

35)a)Air can be compressed.

b)The mass will increase. Air is matter and matter has mass.

c)Air in the inflatable mattress gained heat from the sun and expanded so it would occupy more space. Since the size of the inflatable mattress was still the same, the air inside would be compressed and made the mattress firmer.

36)a)The strength of the material.

b)R as it could hold more weight than S before it broke so it is able to hold the weight of the passengers in the cable car.

37)a)Object T can be a magnetic material as magnet S is attracted by object T.

b)Turn the other end of object T to face magnet S and pushed the toy car down the ramp then object T is a magnet.

c)No, I do not agree. The magnetic strength of a magnet does not depend on its size.

38)a)3 balls. When a ball moves through the hole,it blocks the light as it is opaque.

b)No. The graph shows that the balls blocked by the light for different length of time thus they did not travel at the same speed.

c)The balls are transparent.

39)a)Wood is a poor conductor of heat so the water will not lose heat to the surrounding easily.

b)The longer the distance W, the lower the temperature of the air.

c)The temperature of water will drop below 60℃ and the results will not be reliable.

d)The temperature of air will be lower than 32℃ as metal is a better conductor of heat that allows air above the water to lose heat to the surrounding at a faster rate.

40)a)3 . 2

b)Rod S.

41)a)The exposed surface area of the water is different and only one variable can be changed.

b)The amount of water left in both set-ups.

c)i)The tennis balls causes the clothes to have gaps in between so there a larger surface in contact with the hot air and water can evaporate faster.

ii)The clothes will dry faster.