

Name : _____ ()

Class : Primary 5 _____

CHIJ ST NICHOLAS GIRLS' SCHOOL



Primary 5

Semestral Assessment 2

SCIENCE

BOOKLET A

25 October 2018

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.**

This paper consists of 18 printed pages.

Section A (28 x 2 marks = 56 marks)

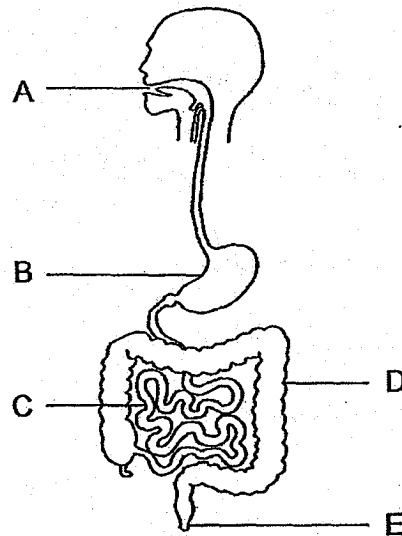
For each question from 1 to 28, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet provided.

1. Which of the following characteristics could be used to tell the difference between mammals and insects? -

- A number of legs
- B presence of wings
- C number of body parts
- D colour of outer covering

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

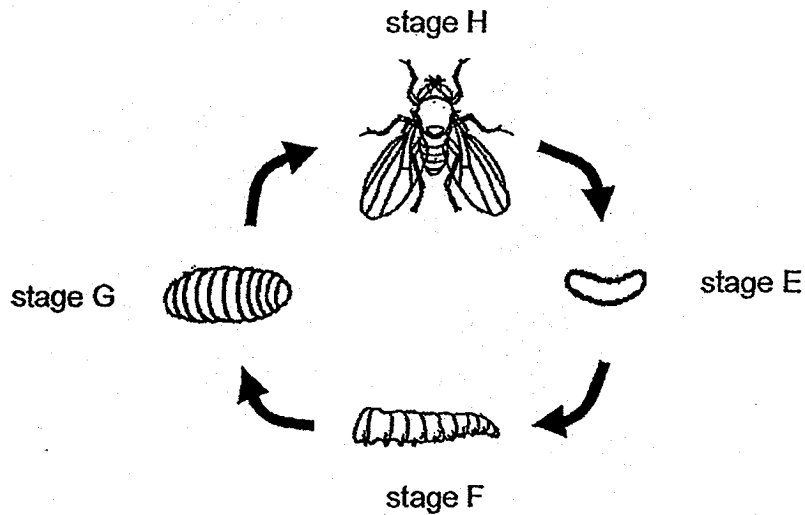
2. The diagram below shows the human digestive system.



Based on the diagram above, which one of the following is correct?

	Organ where digestion begins	Organ where digestion is completed
(1)	A	E
(2)	A	C
(3)	B	C
(4)	B	D

3. The diagram below shows the stages in the life cycle of a housefly.

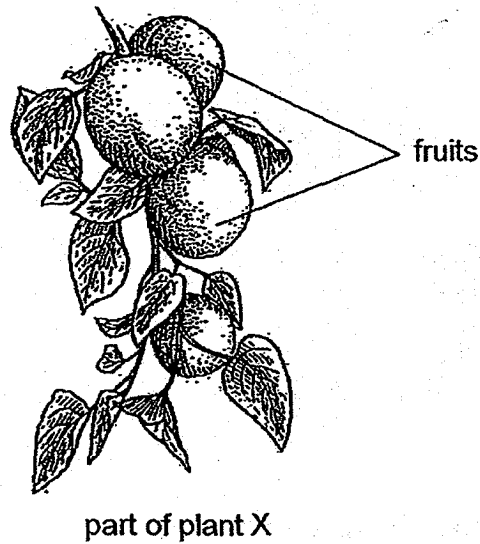


Which of the following statements are correct?

- A It moults at stage E.
- B It is a larva at stage F.
- C It does not need air at stage G.
- D It is able to reproduce and fly at stage H.

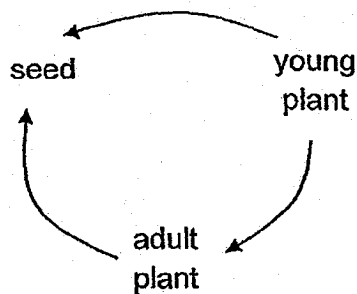
- (1) A and C only
- (2) B and D only
- (3) A, B and C only
- (4) B, C and D only

4. The diagram below shows part of plant X.

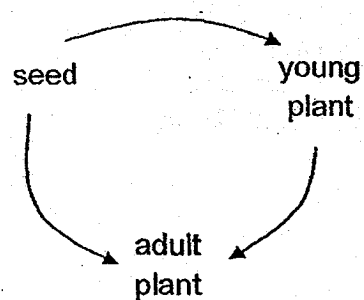


Which one of the following correctly shows the stages in the life cycle of plant X?

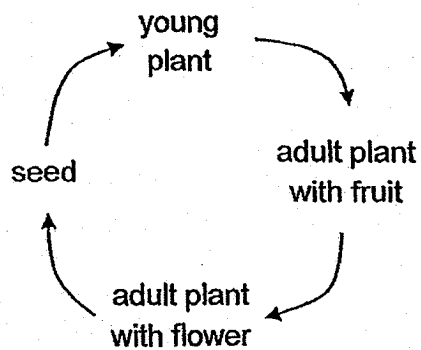
(1)



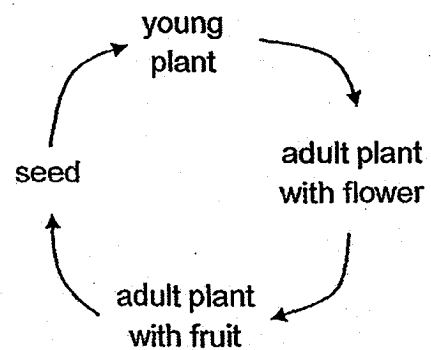
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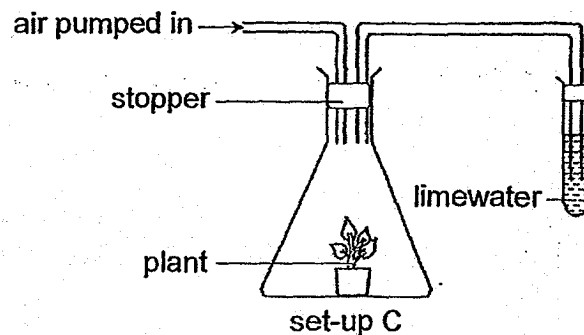
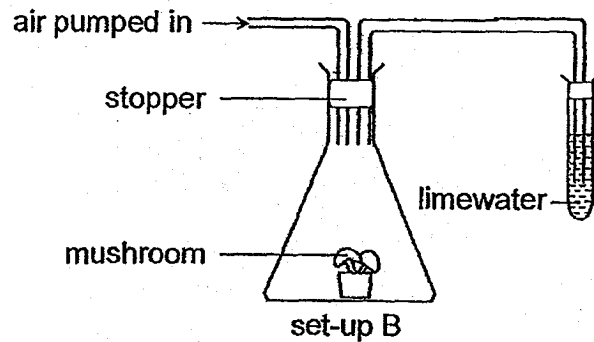
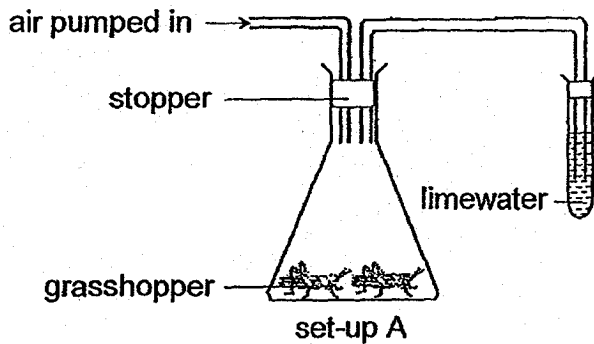
(3)



(4)



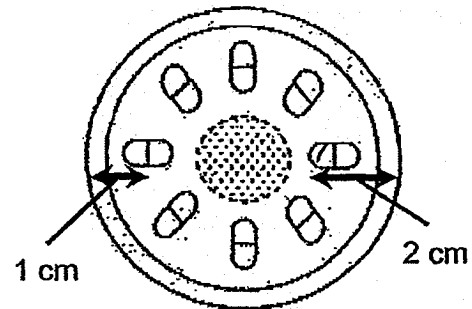
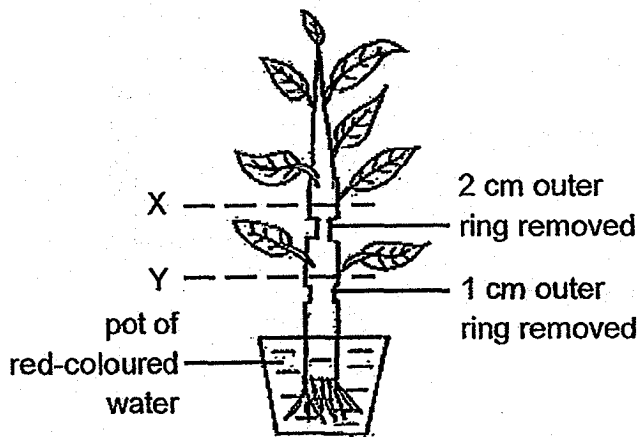
5. Yao Ming placed different organisms in each set-up shown below and added limewater to each test tube. Limewater changes from clear to chalky when in contact with carbon dioxide. The three set-ups were placed beside the window from 12 noon to 4 pm.



Which one of the following show the correct observation of limewater in the three set-ups at the end of the experiment?

	Set-up		
	A	B	C
(1)	chalky	chalky	no change
(2)	chalky	no change	no change
(3)	no change	chalky	chalky
(4)	no change	no change	chalky

6. Ismail made a 1-cm and 2-cm cut to the stem of a plant and placed it in a pot of red-coloured water as shown below.

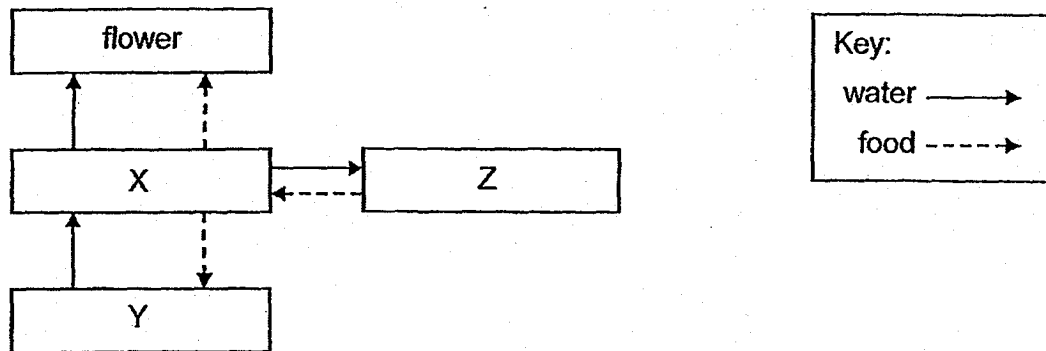


cross-section view of the stem

Which one of the following shows his observation after 1 day?

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

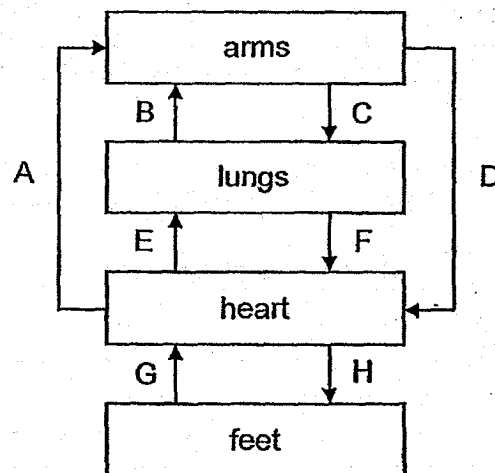
7. Study the plant transport system below.



Which one of the following is correctly represented by X, Y and Z?

	X	Y	Z
(1)	leaves	stem	roots
(2)	stem	leaves	roots
(3)	roots	stem	leaves
(4)	stem	roots	leaves

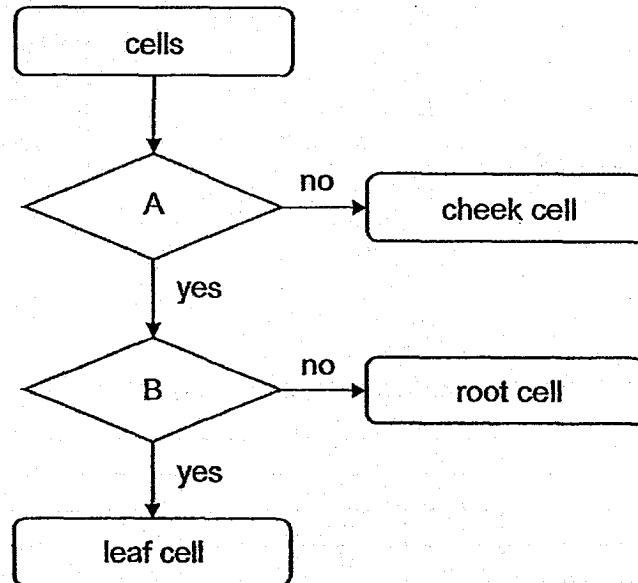
8. The diagram below shows the blood flow in some parts of the human body.



Which two arrows are not drawn correctly?

- (1) A and D
- (2) B and C
- (3) E and F
- (4) G and H

9. Study the chart below.



Which one of the following correctly represents A and B?

	A	B
(1)	Does the cell have chloroplasts?	Does the cell have a cell wall?
(2)	Does the cell have a cell wall?	Does the cell have chloroplasts?
(3)	Does the cell have a cell wall?	Does the cell have a nucleus?
(4)	Does the cell have a nucleus?	Does the cell have chloroplasts?

10. Prakash recorded the cell parts present in cell samples A, B, C and D taken from plants and animals. A tick (✓) indicates that the cell part is present.

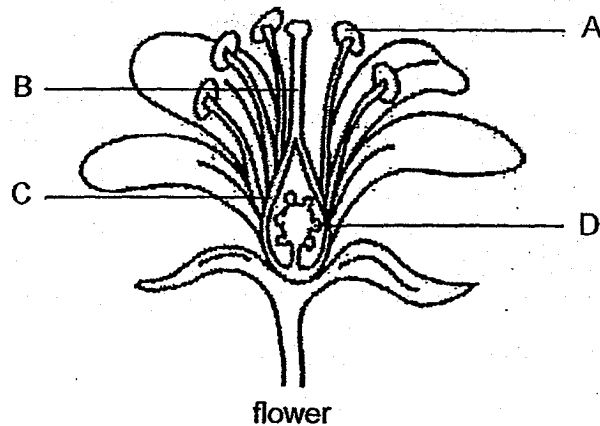
	Cell Sample			
Cell Part	A	B	C	D
nucleus	✓	✓	✓	
cell wall	✓		✓	
cytoplasm	✓	✓		✓
chloroplasts			✓	
cell membrane	✓	✓		✓

His teacher told him that there is a mistake in his observation.

Which cell did he record wrongly?

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

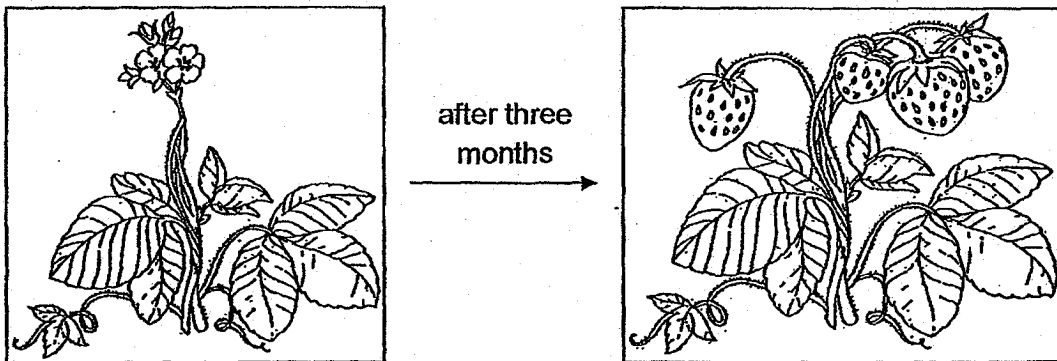
11. The diagram below shows the different parts of a flower.



Which one of the following correctly shows the development of the flower parts after fertilisation?

	Develops into the seeds	Develops into the fruit
(1)	A	B
(2)	B	A
(3)	C	D
(4)	D	C

12. The diagram below show the development of a plant after three months.



Based on the development shown above, which of the following processes would have taken place during the three months?

- A Pollination
- B Fertilisation
- C Seed dispersal
- D Seed germination

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

13. Shu En observed some flowers and recorded her observations in the table below. A tick (✓) shows that the flower has the characteristic.

Characteristics	Flowers			
	A	B	C	D
Has sweet-smelling nectar.	✓			✓
Has stigma hidden in the flower.	✓			
Has small and dull-coloured petals.		✓		
Has anthers that stick out of the flower.		✓	✓	

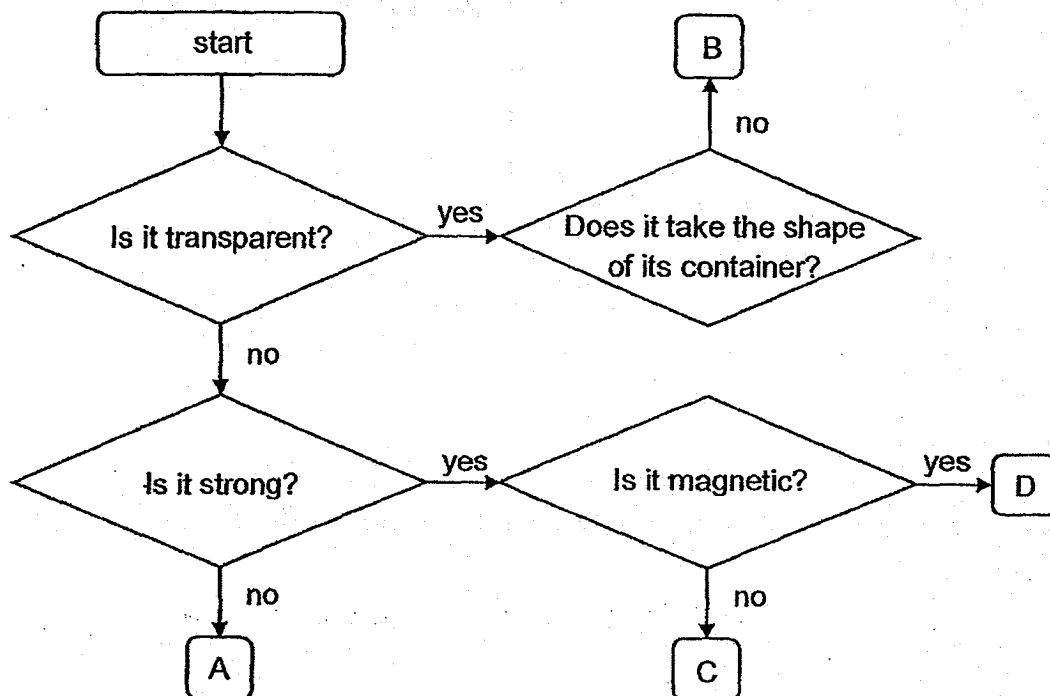
Which of these flowers are most likely insect-pollinated?

- (1) A and D only
 (2) B and C only
 (3) A, B and D only
 (4) B, C and D only
14. Which of the following characteristics can be passed on from parents to their offsprings?

- A Fingerprints
 B Hair colour
 C Eye colour
 D Ability to swim

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

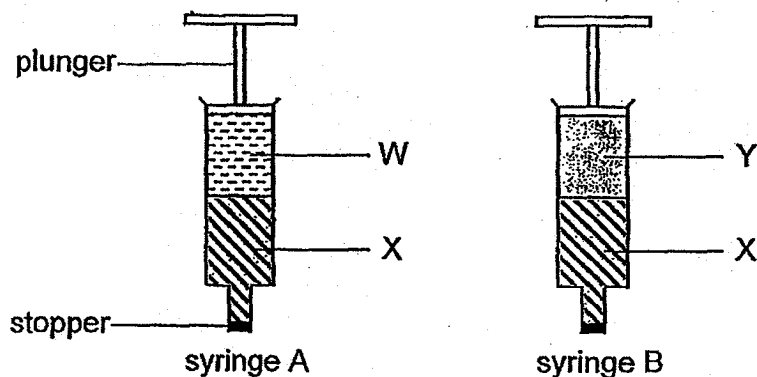
15. Study the chart below.



Which letter represents an iron nail?

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

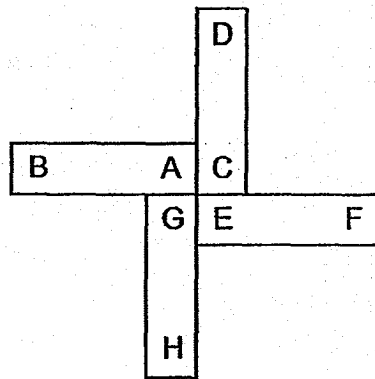
16. Two syringes containing some substances are shown below.



Which one of the following best explains why only the plunger in syringe B could be pushed down?

- (1) Only X can be compressed.
- (2) Only Y can be compressed.
- (3) W, X and Y have a definite shape.
- (4) W, X and Y have no definite volume.

17. The diagram below shows the arrangement of four identical bar magnets.

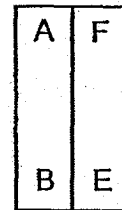


Based on the above, which one of the following arrangements is not possible?

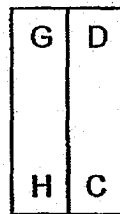
(1)



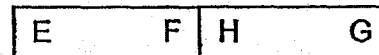
(2)



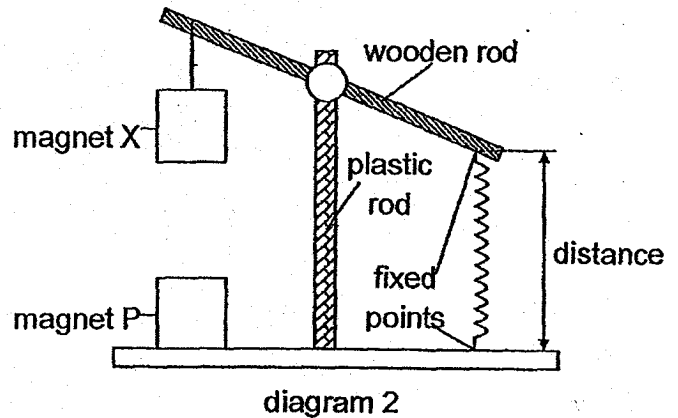
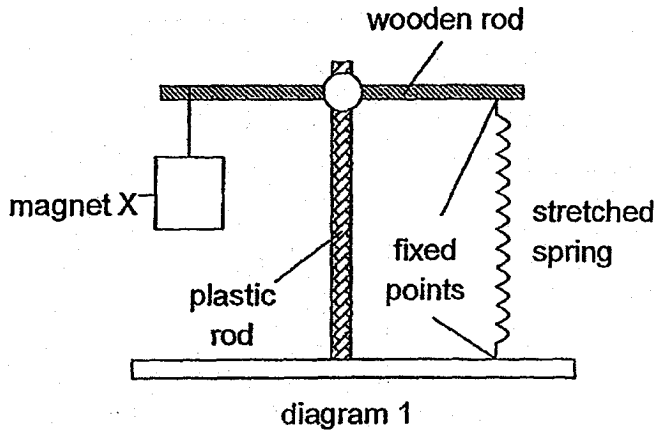
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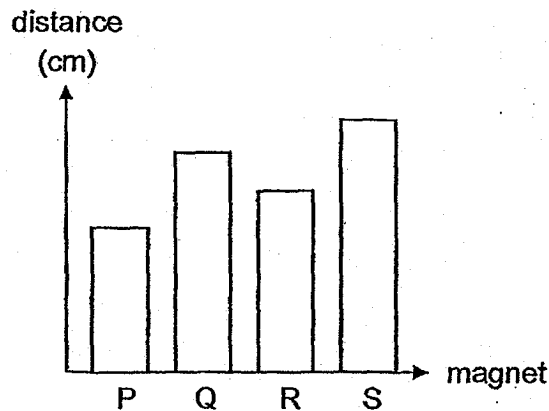
(4)



18. Study the experimental set-up below. At the start of the experiment, the wooden rod was horizontal when magnet X was fixed at one end of the rod as shown in diagram 1. Magnet P which is of identical shape and size was then placed directly below magnet X. The wooden rod was observed to tilt as shown in diagram 2.



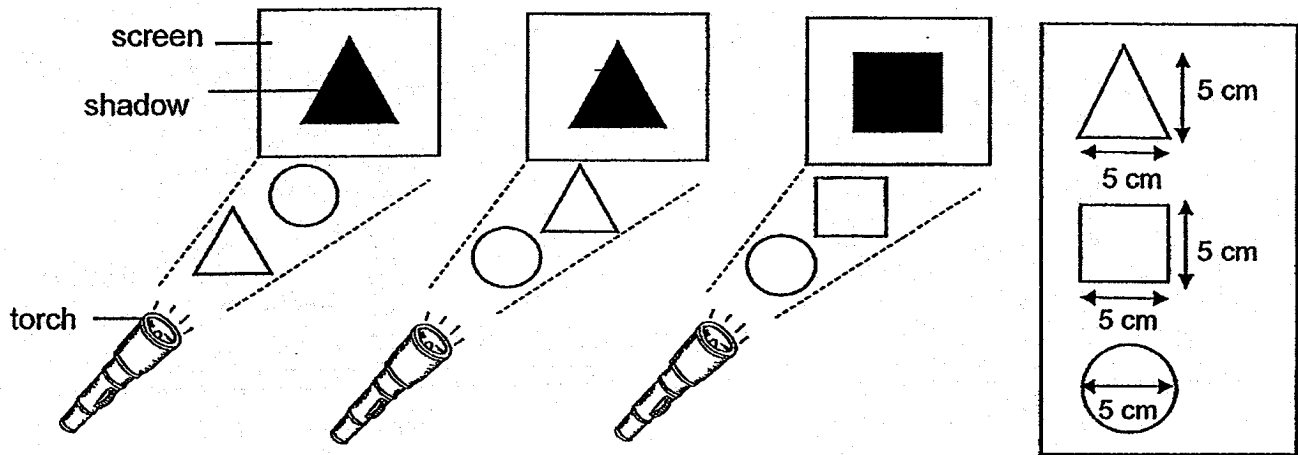
The experiment was repeated using other magnets Q, R and S, each of identical shape and size, to replace magnet P. The results are recorded in the graph below.



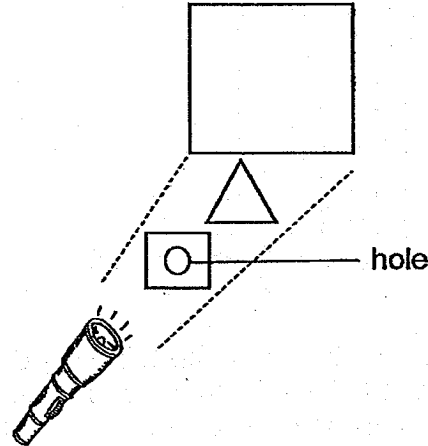
Based only on the results above, which one of the following correctly shows the arrangement of magnets P, Q, R and S from the magnet with the greatest magnetic strength to the magnet with weakest magnetic strength?

	Greatest magnetic strength		Weakest magnetic strength	
(1)	S	Q	R	P
(2)	S	R	Q	P
(3)	P	Q	R	S
(4)	P	R	Q	S

19. The diagram below shows the shadows on the screens when two different shapes of different materials are placed between the screens and the torches as shown.



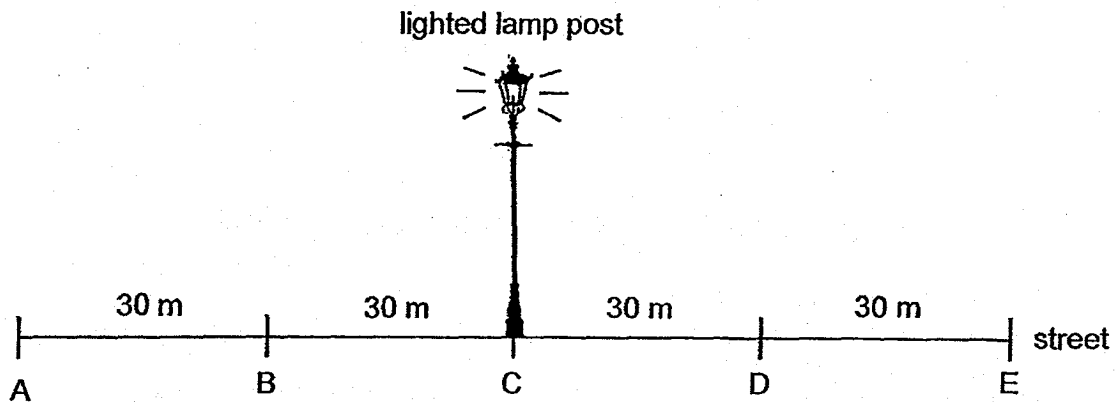
A hole is made on the square-shaped material and placed in the set-up as shown below.



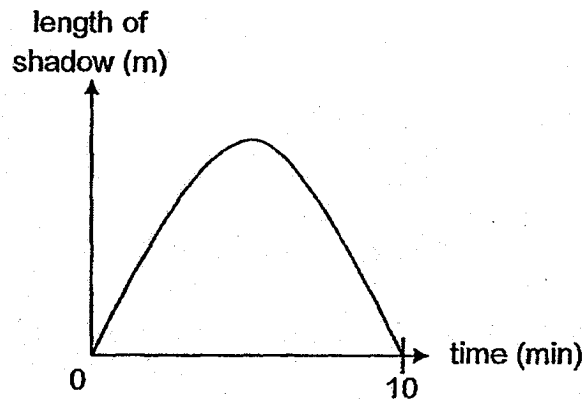
Which of the following shows the shadow on the screen?

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

20. Study the diagram below.



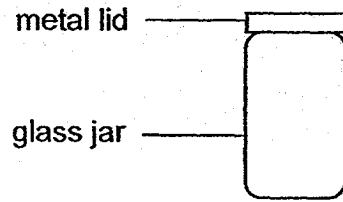
As Siti walked along the street at night, it was observed that the length of her shadow changed as shown in the graph below.



Based on this observation, which one of the following most likely shows the route taken by Siti as she walked along the street?

- (1) $A \rightarrow B \rightarrow C$
- (2) $B \rightarrow C \rightarrow B$
- (3) $C \rightarrow B \rightarrow C$
- (4) $C \rightarrow D \rightarrow E$

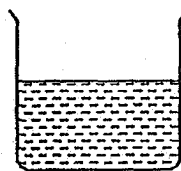
21. Zainab could not remove the metal lid from a glass jar.



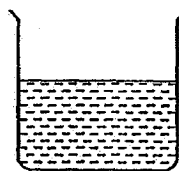
Which of the following would help her remove the metal lid most easily?

- (1) Place the metal lid in ice water.
- (2) Place the metal lid in hot water.
- (3) Place ice cubes on the metal lid only.
- (4) Place the glass jar in hot water and wrap the metal lid with a cold towel.

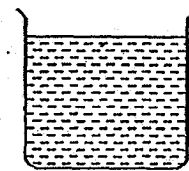
22. Three beakers containing some water are shown below.



beaker D
200 ml of water
at 70°C



beaker E
200 ml of water
at 50°C

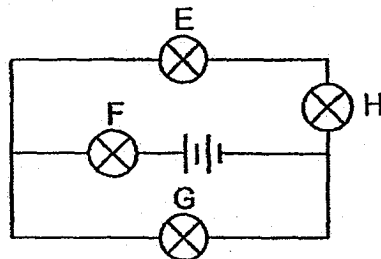


beaker F
400 ml of water
at 50°C

Which of the following statement is true about the water in the beakers?

- (1) Water in beaker F has more heat than E.
- (2) Water in beakers E and F have the same amount of heat.
- (3) Water in beaker D will reach room temperature the fastest.
- (4) Water in beakers D, E and F will reach room temperature at the same time.

23. Study the electrical circuit below.



When two of the bulbs fused, the other two bulbs remained lit. Which were the two bulbs that had fused?

- (1) E and F
- (2) E and H
- (3) G and F
- (4) G and H

24. Vimala wanted to find out which material of an object affects the brightness of the bulbs in a circuit. Which of the following variables must be kept the same in order for the experiment to be fair?

A Type of batteries used
 B Number of batteries used
 C Material of the object being tested
 D Number and arrangement of bulbs

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

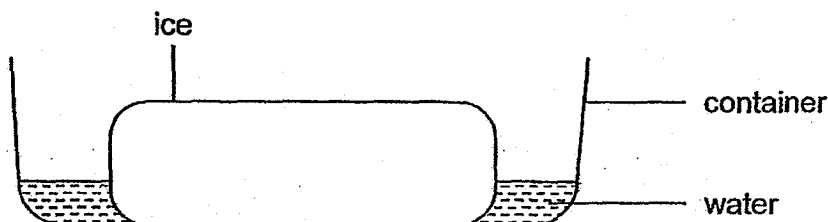
25. The table below shows the melting and boiling points of four substances A, B, C and D.

Substance	Melting Point ($^{\circ}\text{C}$)	Boiling Point ($^{\circ}\text{C}$)
A	63	267
B	15	84
C	90	300
D	5	30

Which of the following substances are in solid state at room temperature?

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

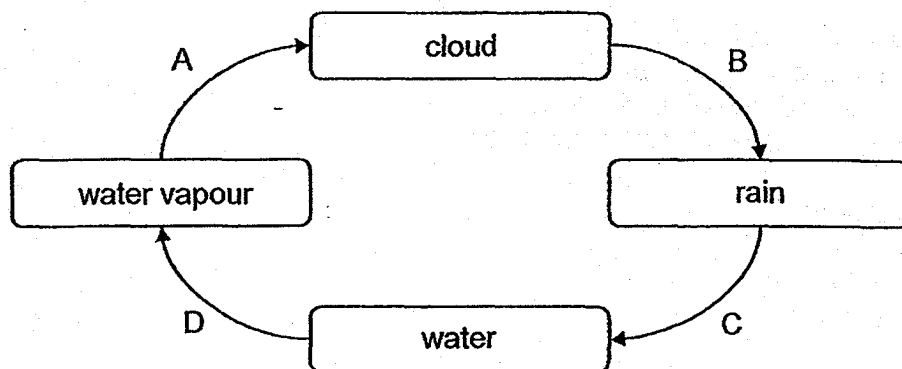
26. A block of ice was placed in a container and left near the window. After a while, the ice started to melt as shown below.



Which one of the following statements is true?

- (1) The ice loses heat to the surrounding air.
 (2) The temperature of the block of ice is 0°C .
 (3) The temperature of the block of ice increases.
 (4) Water in the container gained heat from the ice.

27. The diagram shows the water cycle.



Which one of the following is correct?

	Heat Gain	Heat Loss
(1)	A	C
(2)	A	B
(3)	D	B
(4)	D	A

28. Which one of the following helps to reduce water usage?

- (1) Taking a long bath.
- (2) Washing dishes under a running tap.
- (3) Using water from a hose to wash the car.
- (4) Turning off the tap while brushing your teeth.

Name : _____ ()

Class : Primary 5 _____

CHIJ ST NICHOLAS GIRLS' SCHOOL



Primary 5

Semestral Assessment 2

SCIENCE

BOOKLET B

25 October 2018

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.

Booklet A	56
Booklet B	44
Total	100

This booklet consists of 16 printed pages.

Parent's Signature/Date

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. Organism Z lives both on land and in water. It needs to live near a water body to keep its skin moist.

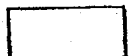


Organism Z

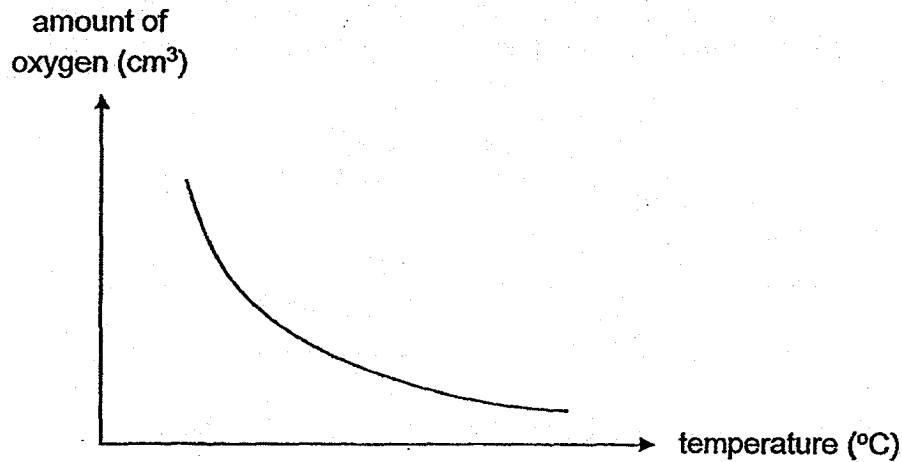
- (a) Which group of animal would organism Z be classified as? [1]

- (b) The young of organism Z can only live in water and takes in dissolved oxygen. Which organ allows it to do so? [1]

- (c) Organism Z can lay up to 400 eggs at one go. What is one advantage of doing so? [1]



30. Ban Pin conducted an experiment to find out how the amount of oxygen changes in his fish tank at different temperatures. His results are shown in the graph below.



- (a) Based on the graph above, state the relationship between temperature and amount of oxygen. [1]

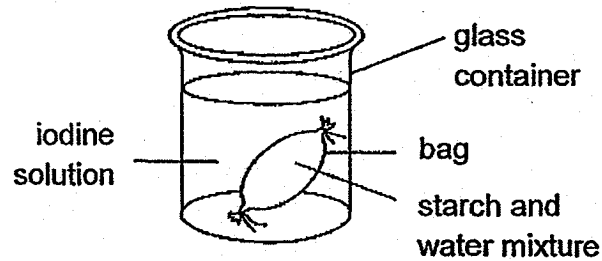
Ban Pin then observed that the breathing rate of the fish increased when the temperature of the water in the fish tank increased.

- (b) Using the results above, explain this observation. [1]

His friend suggested that adding some plants into the tank and placing the tank by the window would help the fish survive better.

- (c) How does the suggestion affect the amount of oxygen in the tank? Give a reason for your answer. [1]

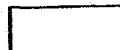
31. A bag filled with starch and water mixture was lowered into a glass container filled with some iodine solution. Iodine solution changes from yellowish brown to dark blue in the presence of starch. Six hours later, the mixture in the bag turned dark blue. However, the iodine solution in the glass container remained unchanged.



- (a) What could have caused the mixture in the bag to turn dark blue? [1]

- (b) Why did the colour of iodine solution in the glass container remain unchanged? [1]

- (c) Which cell part has the same function as the bag? [1]



32. Ganesh collected three different types of inedible seeds X, Y and Z. He wanted to find out how easily seeds X, Y and Z are dispersed by animals. He placed 20 seeds of each type into an uncovered box and covered this box with a furry towel.

Next, he shook the covered box for 30 seconds. He then removed the towel and recorded the number of each type of seed stuck onto the towel. The table below shows the results of this experiment.

Type of seed	Number of seeds	
	Remained in the box	Stuck onto the towel
X	20	0
Y	3	17
Z	15	5

- (a) Based on the results shown, what is the relationship between the number of seeds stuck on the towel and how easily the seeds are dispersed by animals?

[1]

- (b) What conclusion can you draw from the experiment?

[1]

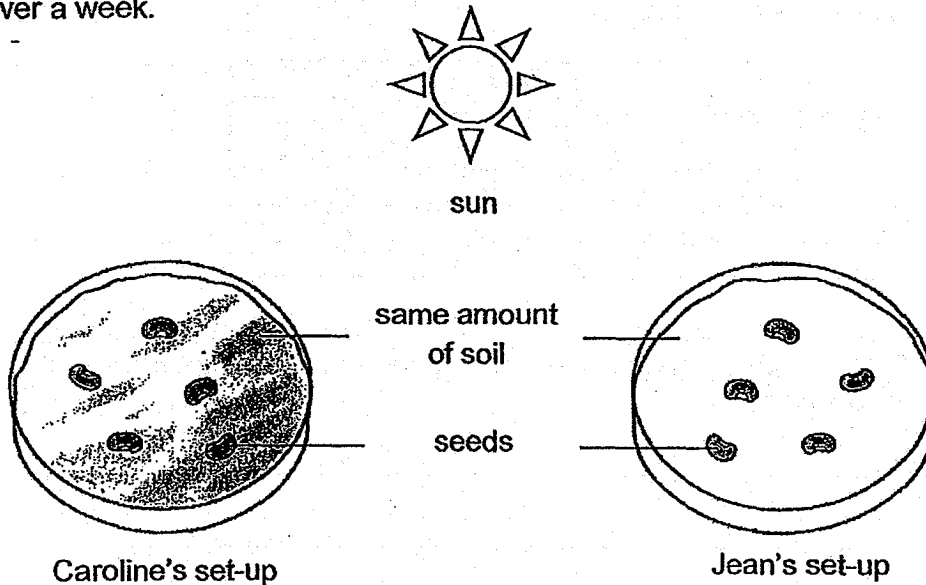
- (c) State one characteristic or structure that can be found on seeds X and Y. [1]

On seed X: _____

On seed Y: _____

33. Caroline and Jean wanted to investigate the conditions necessary for seeds to germinate. They carried out the experiment with the set-ups shown.

Both the set-ups were placed near a window. Caroline added a little amount of water to her set-up every day. Both Caroline and Jean then observed their seeds for over a week.



- (a) What is a likely aim for the experiment? [1]

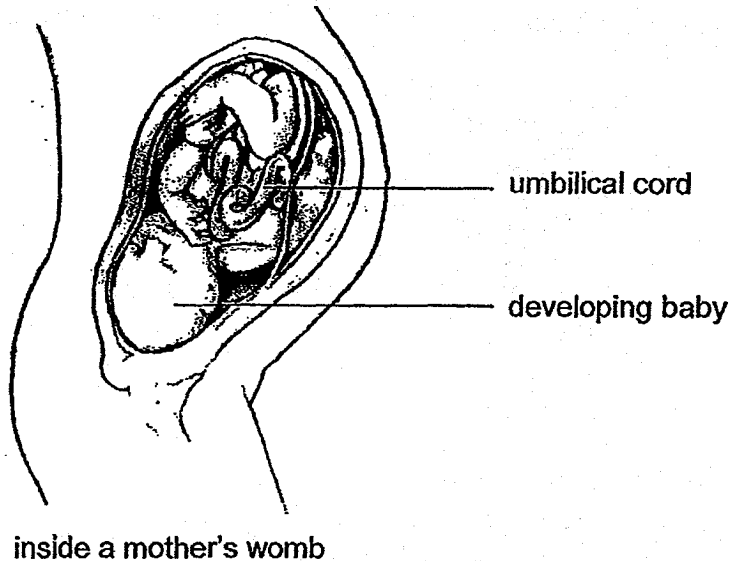
- (b) In whose set-up would the seeds be more likely to germinate? Explain your answer. [1]

- (c) Caroline and Jean wanted to modify their experiment to find out whether light is needed for seeds to germinate. State one change that they each have to make in the experiment to achieve their aim. [2]

Caroline's set-up: _____

Jean's set-up: _____

34. The diagram below shows a developing baby inside a mother's womb.

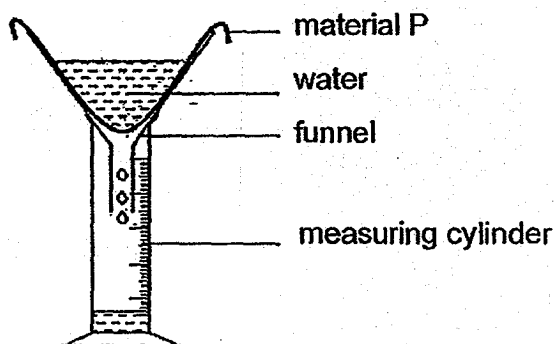


State whether each of the following statements is 'True' or 'False'.

[2]

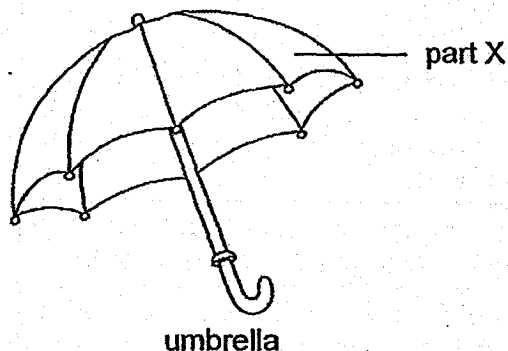
Statement		Write either 'True' or 'False'
(a)	Millions of sperms are needed to fertilise one egg cell.	
(b)	As the baby develops inside the mother's womb, it does not require air or water.	
(c)	The developing baby obtains its nutrients from the mother's blood which flows through the umbilical cord.	
(d)	After fertilisation, the fertilised egg will attached itself to the wall of the womb and then divides to form more cells.	

35. A thin layer of material P was lined on a funnel. Water was poured into the funnel and left to stand for 2 minutes. The volume of water collected in the measuring cylinder was recorded. The experiment was repeated with materials Q and R.



The table below shows the results recorded.

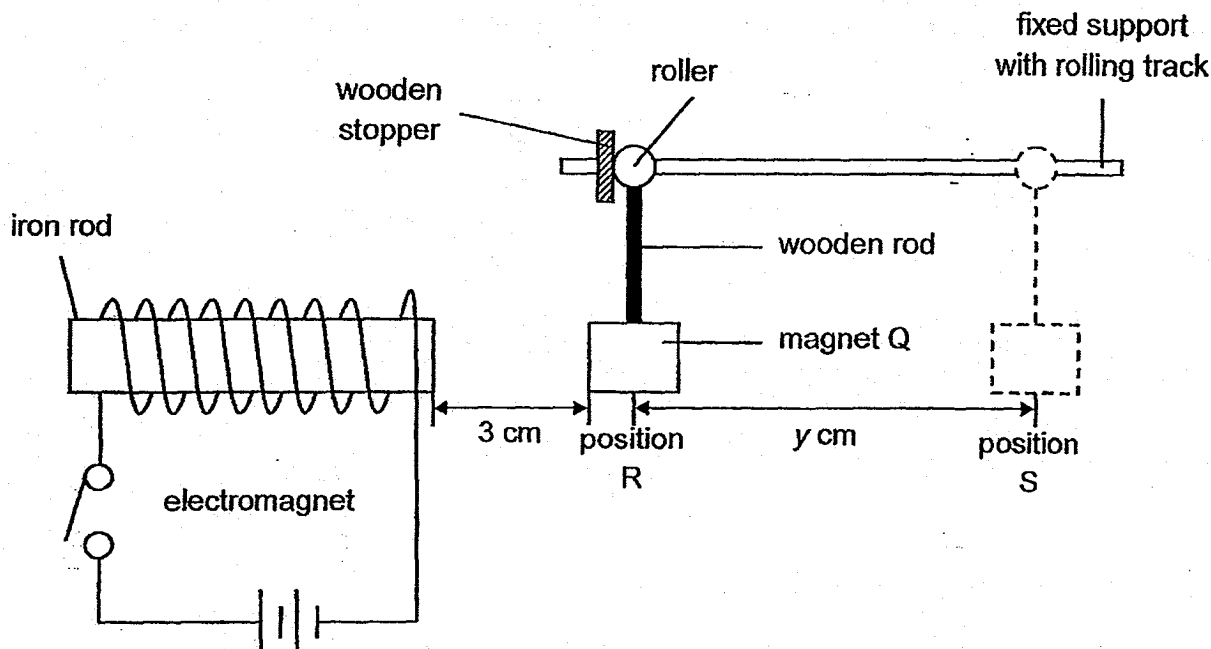
Material	Volume of water collected (ml)
P	50
Q	0
R	80



Based on the results, which material should be chosen to make part X of an umbrella? Explain your answer.

[2]

36. Study the diagram below. When the switch in the circuit was closed, magnet Q was observed to have moved a distance of y cm from position R to position S.



- (a) Explain the above

[2]

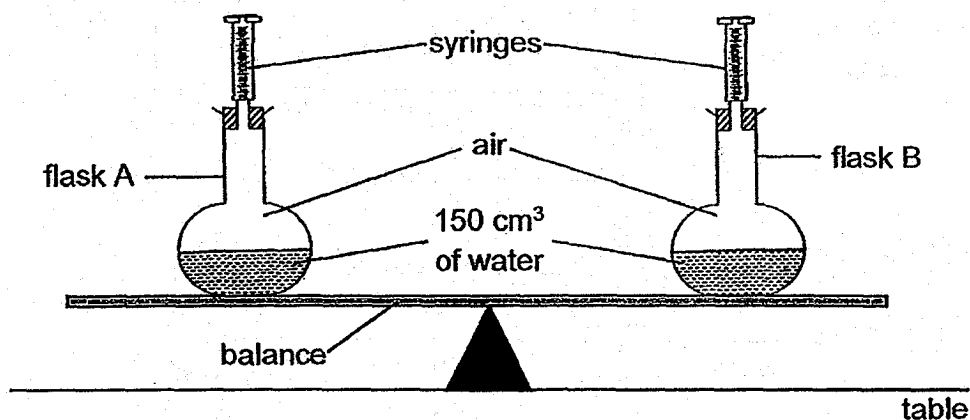
- (b) Suggest one change to be made to the circuit above such that distance y can be increased.

[1]

- (c) The experiment was repeated three times before the average distance moved by magnet Q was calculated and recorded. Give a reason for this.

[1]

37. Two similar flasks A and B were placed on a balance as shown below. Each flask has a capacity of 300 cm^3 and was filled with 150 cm^3 of water. The syringe attached to each flask allows air to be pumped in and removed.

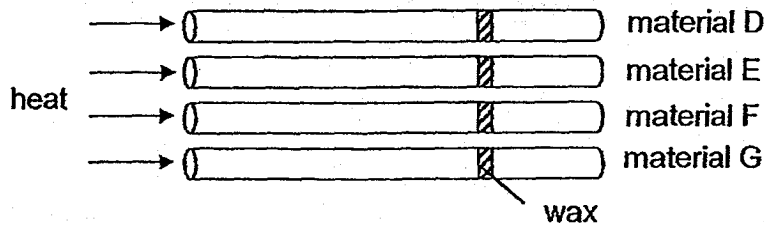


50 cm^3 of air was then removed from flask A only.

- (a) What will be observed about the balance? Explain your answer. [2]

- (b) What is the volume of air in flask A? [1]

38. Four rods of similar size D, E, F and G were marked with the same amount of wax at the same position and heated as shown below.

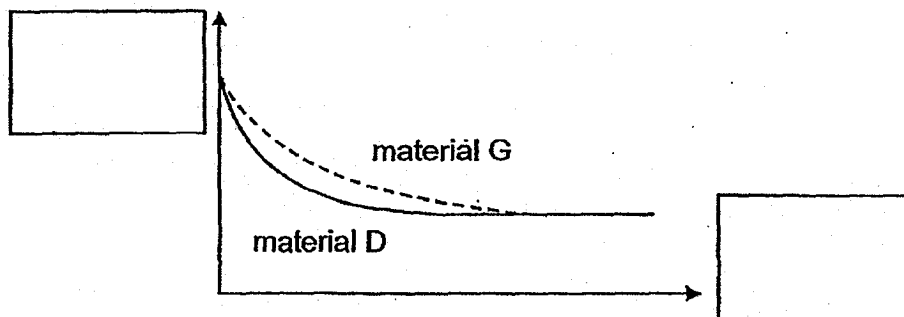


Only two rods were made of the same material. The table below shows the results of the experiment.

Material	Time taken for wax to melt completely (min)
D	5
E	10
F	10
G	38

- (a) Based on the above results, which two rods were made of the same material? Explain your answer. [2]

Equal volume of boiling water was poured into two containers made from materials D and G. The water was allowed to cool. The graph below shows the changes in the temperature of water in the two containers over a period of time.



- (b) Label axes in the graph with 'Time (min)' or 'Temperature of Water ($^{\circ}\text{C}$)'. Write your answers in the boxes above. [1]
- (c) Which material D or G is more suitable to be made into a container for keeping food warm? Explain your answer. [1]

39. An experiment was conducted in a dark room using the set-up below. Steven wanted to find out if the type of material affects the amount of light reflected as shown below.



He conducted the same experiment using other materials B, C and D and recorded the average amount of light detected in the table below.

Material	Average amount of light detected (units)
A	33
B	100
C	64
D	85

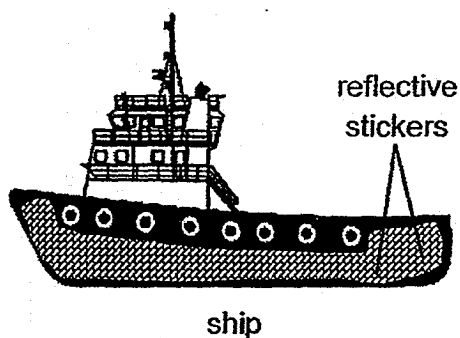
- (a) Explain why it was necessary for the experiment to be conducted in a dark room. [1]

- (b) State two **other** changes to be made to the experiment such that the light sensor can detect more light reflected by the materials. [2]

Change 1: _____

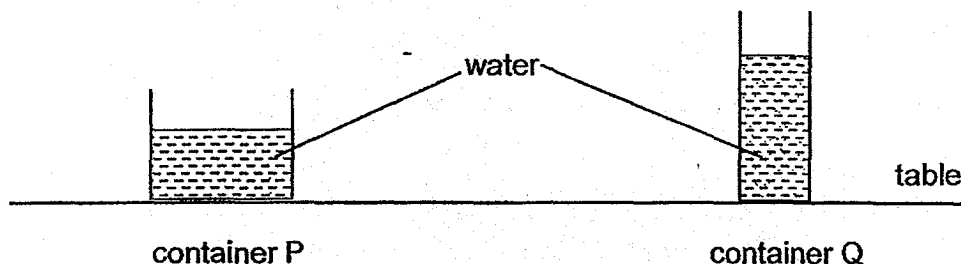
Change 2: _____

- (c) The diagram below shows the side of a ship.



Based only on the results in the table, which material is suitable for making the reflective stickers for ships travelling at night? Explain your answer. [2]

40. Faizal wanted to find out if the exposed surface area of water affects the rate of evaporation. He placed two containers P and Q, each filled with 200 ml of water in his room for 6 hours.



The results of his experiment were recorded in the table below.

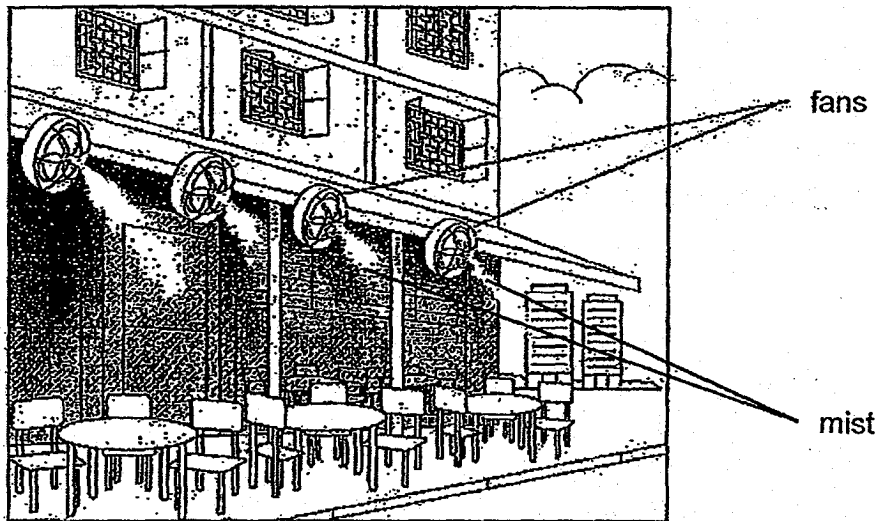
Container	Volume of water left in the container (ml)
P	100
Q	150

- (a) Based on the above experiment, explain why the volume of water left in container P was less than that in container Q. [1]

- (b) Give a reason why placing both containers in the same room help to make the experiment a fair one. [1]

- (c) Faizal then repeated the experiment with the two containers placed under a fan. Will the amount of water left in the containers be less than, equal to or more than the results in the table above? [1]

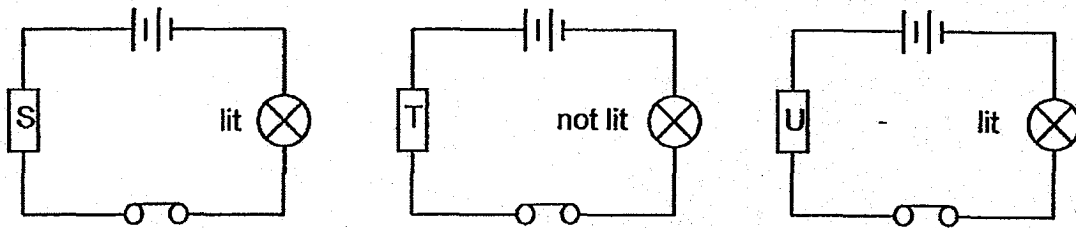
At some hawker centres, water mist systems are used to cool the surrounding air on a hot day. Tiny water droplets are produced in the form of mist. Fans are added to the water mist systems as shown below.



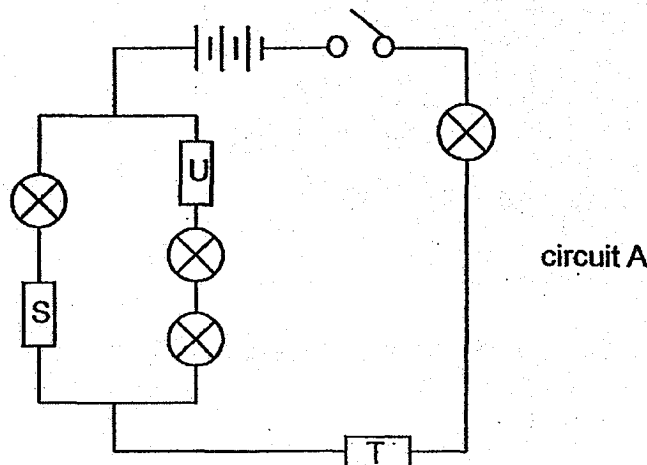
- (d) Explain how adding the fans would help the water mist systems to cool the surrounding air more effectively.

[2]

41. The diagram below shows what happens when different materials S, T and U are each connected in a separate circuit.



The three materials are then connected in circuit A as shown below.



- (a) How many bulbs will light up when the switch is closed? Give a reason for your answer.

[1]

Replacement items, each made of a different material were brought in to replace S, T and U in circuit A as shown in the box below.

Replacement items: iron nail, plastic cup, bar magnet

- (b) In the table below, match each replacement item to S, T and U so that the **greatest** number of bulbs will light up in circuit A.

[2]

Material	S	T	U
Replacement item			

END OF PAPER

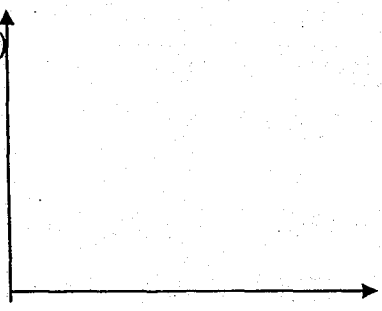
SCHOOL : CHIJ PRIMARY SCHOOL
LEVEL : PRIMARY 5
SUBJECT : SCIENCE
TERM : 2018 SA2

SECTION A

Q 1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
1	2	2	4	1	3	4	2	2	3
Q 11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
4	1	1	2	4	2	1	4	2	3
Q 21	Q22	Q23	Q24	Q25	Q26	Q27	Q28		
2	1	2	3	2	2	4	4		

SECTION B

Q29)	a)Amphibian b)Gills. c)It increases the chance of the eggs hatching and develop into adults.
Q30)	a)As the temperature increases, the amount of oxygen decreases. Or)As the temperature decreases, the amount of oxygen increases. b)There is less dissolved oxygen in the water so the fish have to breathe faster/move to take in more oxygen. c)The amount of oxygen in the tank increases as the plants produce oxygen when making/ during photosynthesis.
Q31)	a)The iodine solution entered the bag. b)Starch could not go out of the bag. c)Cell membrane.
Q32)	a)The greater number of seeds stack on the towel, the easier it is for the type of seed to be dispersed by animals.

	b)Seeds of Y can be easily dispersed by animals. c)X : Smooth texture/no hooks/no stiff hairs Y : has hooks/ has stiff hair
Q33)	a)To find out if water is needed for seeds to germinate. b)Caroline set-up. The seeds in that container has enough water from the daily watering ,warmer from the sun and oxygen from the surrounding air to enable the seeds to germinate. c)Caroline's set-up : Place it somewhere dark. Jean's set-up : Add the same amount of water as Caroline's to the seeds.
Q34)	a)False b)False c)True d)True
Q35)	The volume of water collected is the least, which shows that it is water proof hence it should be made into a umbrella to keep its user dry.
Q36)	a)When the switch was closed, a closed circuit was formed and electricity could flow through which caused the iron to be magnetized . Since the like poles of both the electromagnet and Q were facing each their directly they repelled. b)Increase the number of batteries (connected in series). c)To ensure that the result of the experiments are reliable.
Q37)	a)The balance will tilt towards B. Air was removed so there is lesser air in A hence it will have a lighter mass. b)150cm³
Q38)	a)E and F. The time taken for the wax to melt completely on both rods was the same which shows that both rods transferred heat from the heat source to the wax at the same rate. b)Temperature of water (°C)  Time (min)

	c)G it took a longer time for the wax to melt completely which shows that it is a poorer conductor of heat. Hence it will transfer heat from food to the surrounding slower.
Q39)	a)To ensure that any light detected by the light sensor comes only from the light reflected off the material and not from any other light sources. b)Change 1: Move the tested material closer to the lit torch. Change 2: Use a larger torch with greater light intensity. c). B. It reflected the most amount of light so at night, other ships can see it easily and would not crash into the ship.
Q40)	a)P has a greater exposed surface area of the water so the rate of water evaporation is smaller. b)To ensure that the surrounding temperature remains constant. c)Less than. d)The fans blow the water vapour in the air further away, reducing the amount of water vapour in the surrounding air. Hence more water droplets will be evaporated faster and more heat will be lost from the surroundings.
Q41)	a)No bulbs will light up as T is an electrical insulator and does not allow electricity to pass. b) S T U plastic cup iron nail bar magnet

