RED SWASTIKA SCHOOL

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SCIENCE
2019 SEMESTRAL EXAMINATION 1
PRIMARY 5

Name : _____ ( )

Class : Primary 5/ _____

Date : 15 May 2019

BOOKLET A

Total time for Booklets A & B: 1h 45 min

Booklet A: 28 questions (56 marks)

Note:

1. Do not open the booklet until you are told to do so.
2. Read carefully the instructions given at the beginning of each part of the booklet.
3. Do not waste time. If the question is too difficult for you, go on to the next question.
4. Check your answers thoroughly and make sure you attempt every question.
5. In this booklet, you should have the following:
   a. Page 1 to Page 20
   b. Questions 1 to 28

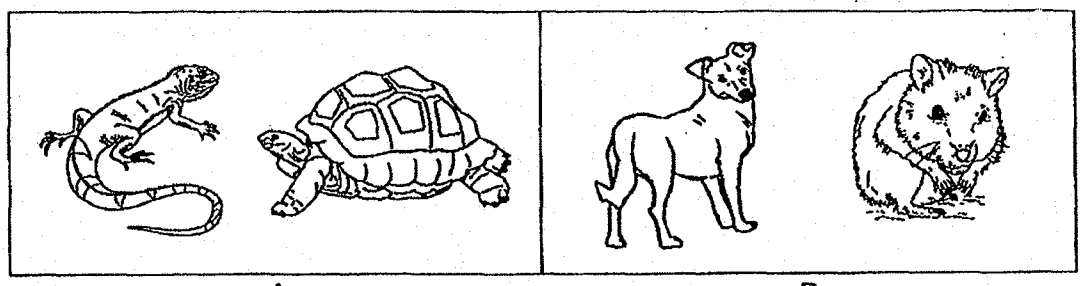
For Questions 1 to 28, choose the most suitable answer and shade its number in the OAS provided.

1. Which two of the following statements about living things are true?

A: Living things reproduce.
B: Living things can make their own food.
C: Living things only need air and water to survive.
D: Living things can respond to changes around them.

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

2. Study the two groups of organisms, A and B, below.

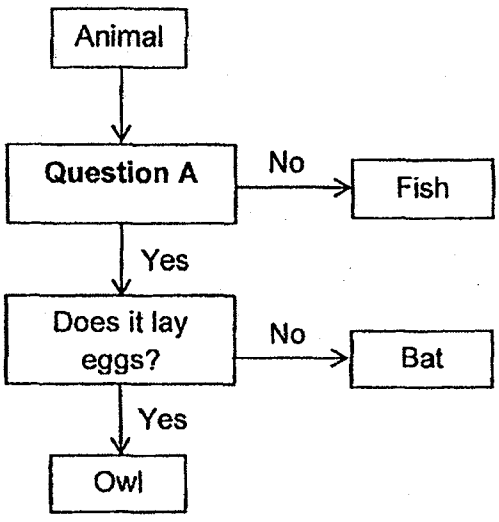


A B

Which of the following correctly describes the organisms in groups A and B?

	A		B	
	Covered with scales	**Lay eggs**	**Covered with fur**	**Give birth to young**
(1)	No	Yes	Yes	No
(2)	Yes	Yes	Yes	Yes
(3)	No	No	No	No
(4)	Yes	No	Yes	No

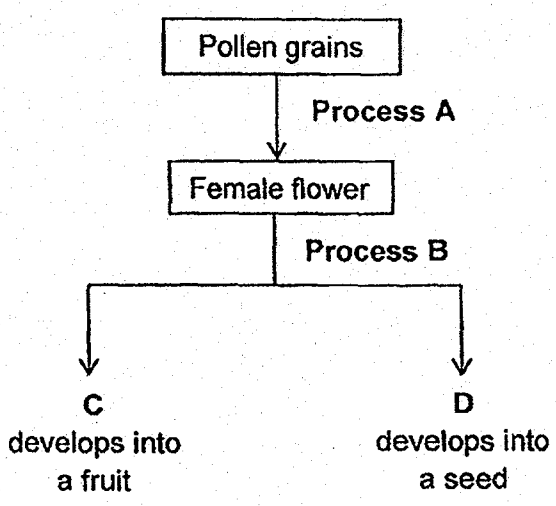
3. Study the flow chart below.



Which one of the following best represents Question A?

(1) Does it fly?
(2) Does it live in water?
(3) Does it have feathers?
(4) Does it have three body parts?

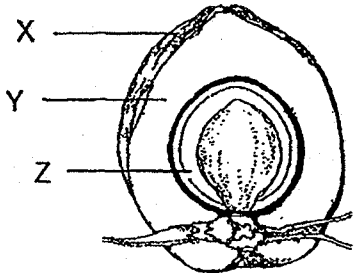
Study the diagram below.



Which one of the following correctly identifies Process A, Process B, C and D?

	Process A	Process B	C	D
(1)	fertilisation	pollination	ovary	ovule
(2)	pollination	fertilisation	ovary	ovule
(3)	fertilisation	pollination	ovule	ovary
(4)	pollination	fertilisation	ovule	ovary

5. The diagram below shows a fruit that is dispersed by water.

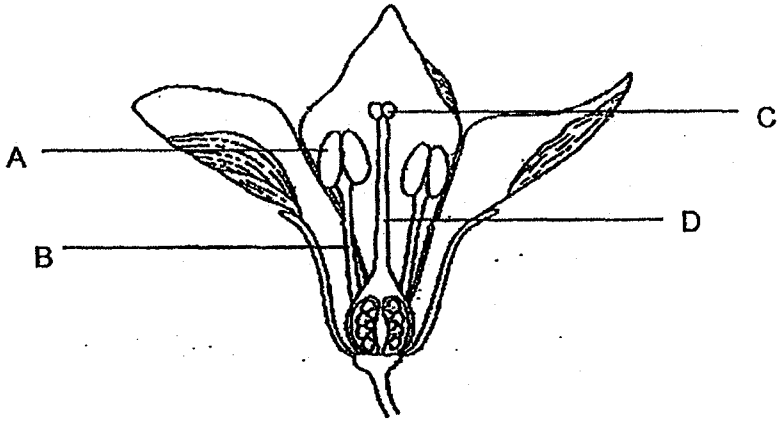


Which of the following statements correctly describe how the various parts help the fruit to be dispersed by water?

A: X does not allow water to pass through.
B: Y is a fibrous husk which has air spaces.
C: Z is thick and juicy.

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

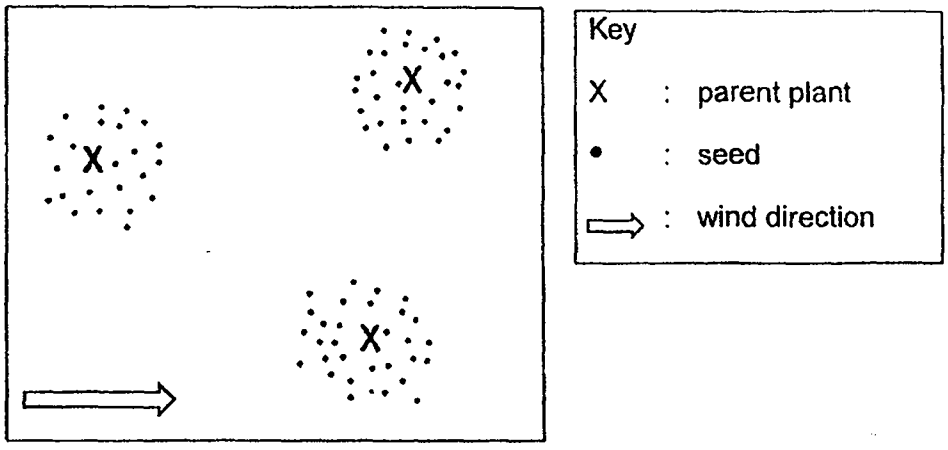
6. The diagram below shows a flower with male and female reproductive parts.



Which of the following correctly identifies part A, B, C and D?

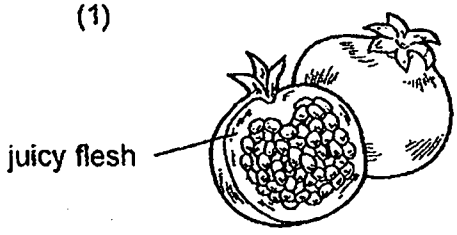
	A	B	C	D
(1)	stigma	anther	filament	style
(2)	filament	style	anther	stigma
(3)	anther	filament	stigma	style
(4)	style	anther	filament	stigma

7. Study the distribution of seeds by plant X.

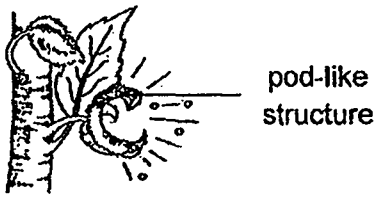


One of the following fruits is from plant X. Which one is it?

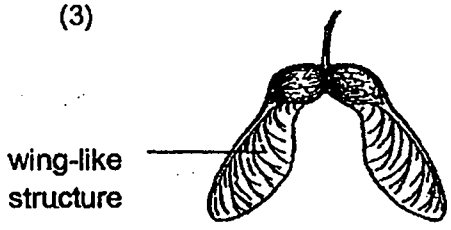
(1)



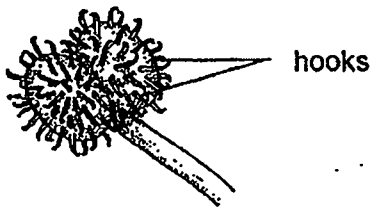
(2)



(3)



(4)

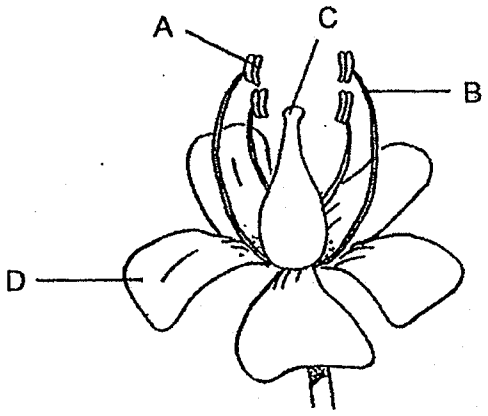


8. Which two of the following characteristics will help identify flowers which are pollinated by wind?

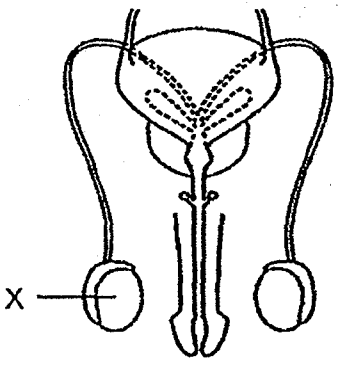
A: Nectar is present.
B: Stigmas are long and sticky.
C: Petals are brightly coloured.
D: Long filaments with anthers are hanging out of the flowers.

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

9. The diagrams below show the reproductive parts of a plant and a human respectively.



plant reproductive parts

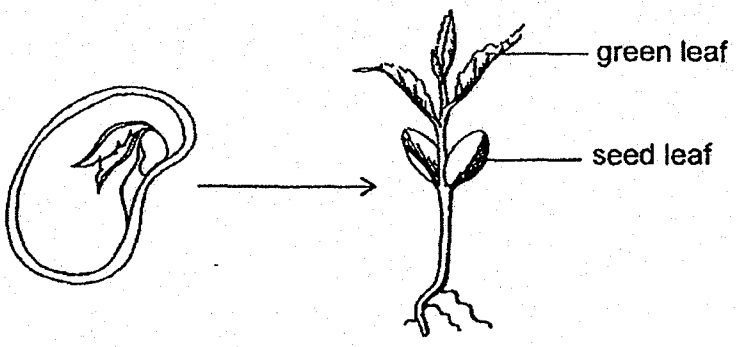


human reproductive parts

Which part of the flower shown has a similar function as part X?

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

10. The diagram below shows a seed that grew into a young plant.

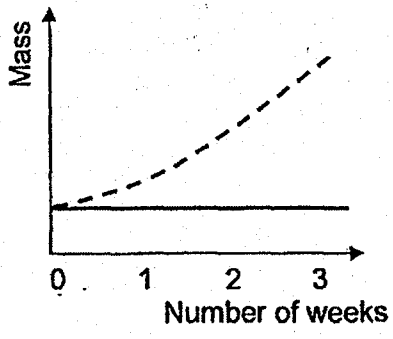


seed young plant

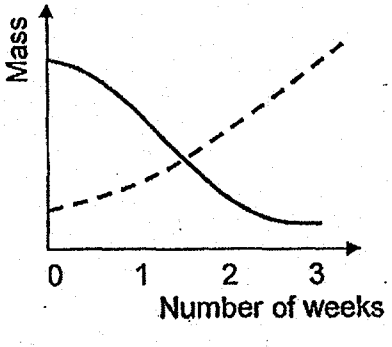
Which of the following graphs most likely shows the changes in the mass of the seed leaf and the green leaf of the seedling over a period of time?

Key: Seed leaf
Green leaf

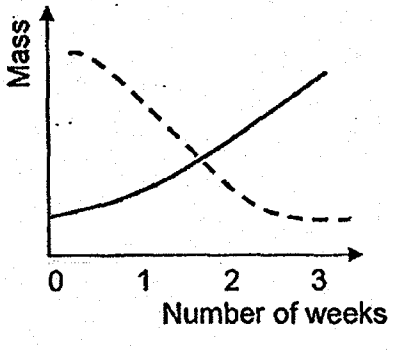
(1)



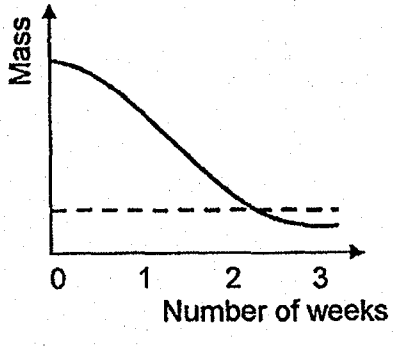
(2)



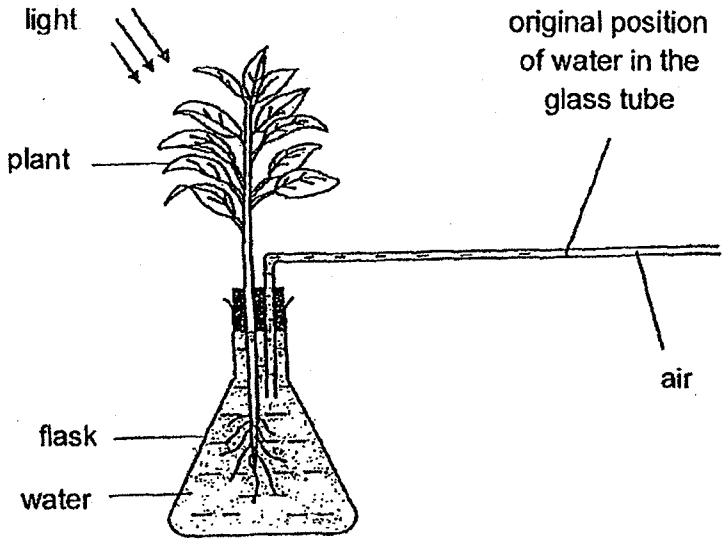
(3)



(4)



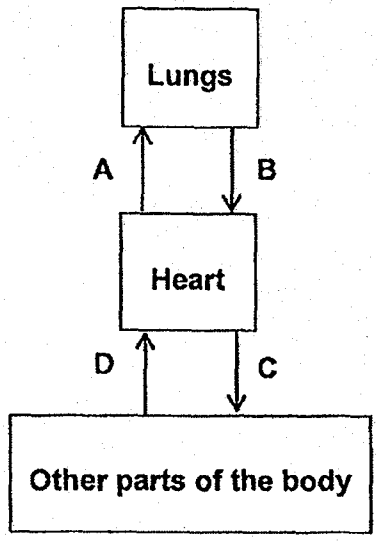
11. Sally placed the set-up below in a bright place.



After some time, the water in the glass tube moved. Which direction did the water move and what was the reason for the movement?

	Direction in which the water in the glass tube moved	Reason
(1)	←	Water is taken in by the plant.
(2)	←	Carbon dioxide is taken in by the plant.
(3)	→	Water is given out by the plant.
(4)	→	Oxygen is given out by the plant.

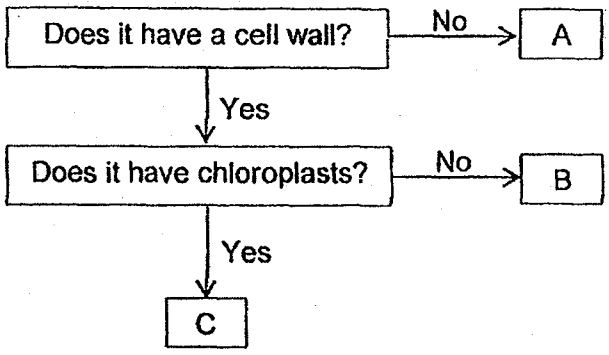
12. The diagram below shows how blood flows through our body.



Which one of the following statements is incorrect?

(1) The blood at A contains less oxygen than the blood at C.
(2) The blood at B contains more oxygen than the blood at D.
(3) The blood at A contains less carbon dioxide than the blood at B.
(4) The blood at D contains more carbon dioxide than the blood at C.

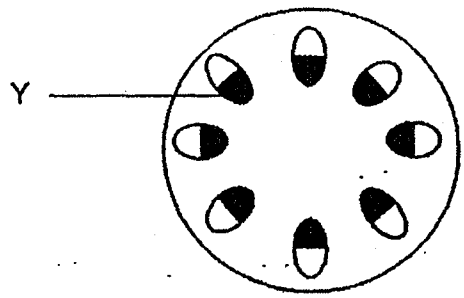
13. Study the flow chart below.



Which of the following best represents A, B, and C?

	A	B	C
(1)	skin cell	root cell	leaf cell
(2)	root cell	leaf cell	skin cell
(3)	leaf cell	skin cell	root cell
(4)	skin cell	leaf cell	root cell

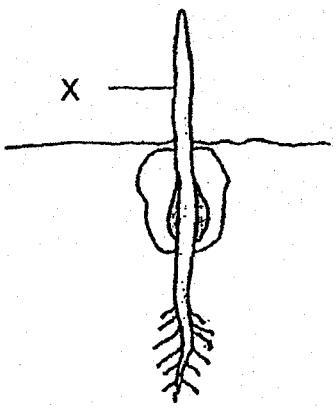
14. George placed a plant in a beaker of blue-coloured water. After two days, he cut the stem of the plant. The cross section of the stem is shown below.



Why did tube Y of the stem turn blue?

(1) It transports food from the roots to all parts of the plant.
(2) It transports water from the roots to all parts of the plant.
(3) It transports food from the leaves to all parts of the plant.
(4) It transports water from the leaves to all parts of the plant.

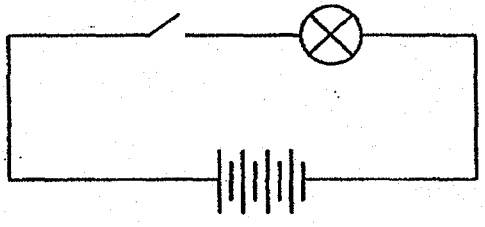
15. The diagram shows a seed growing into a young plant.



What is the direction in which food and water are being transported at X?

	Direction for transport of	
	food	**water**
(1)	downwards	upwards
(2)	downwards	downwards
(3)	upwards	downwards
(4)	upwards	upwards

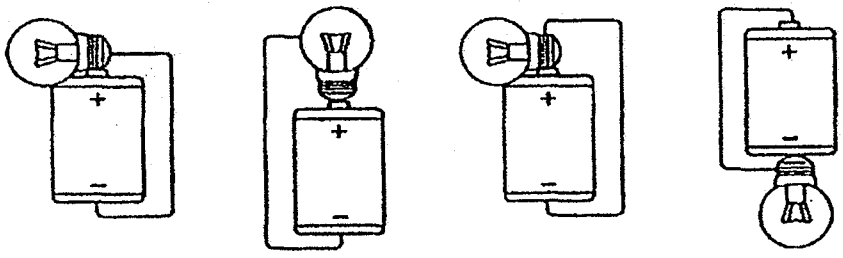
16. Emi set up a circuit as shown below.



When she closed the switch, the bulb fused. What could she do to prevent the bulb from fusing?

(1) Use fewer batteries
(2) Remove the switch from the circuit
(3) Change the direction of the batteries
(4) Add one more switch nearer to the batteries

17. Study the circuits below.

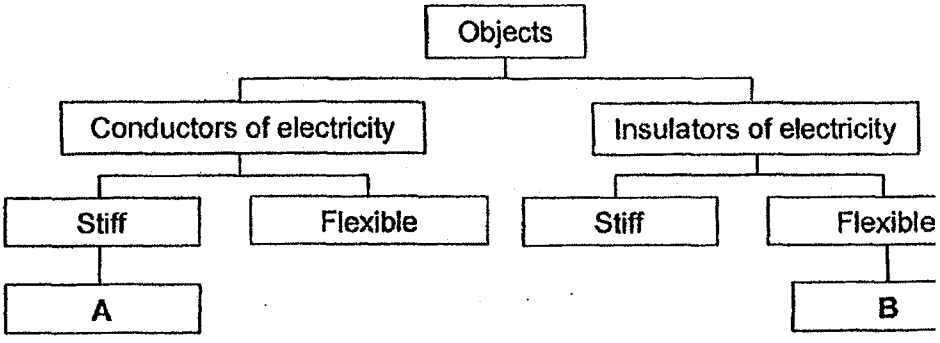


A B C D

In which of the circuits will the bulb light up?

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

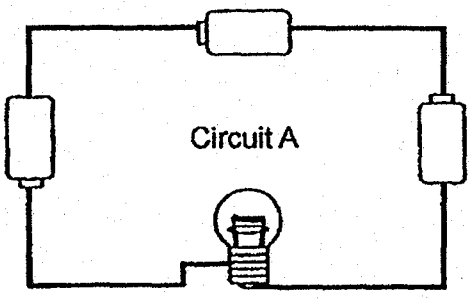
18. Study the classification chart below.

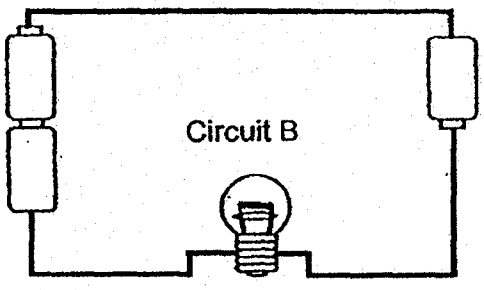


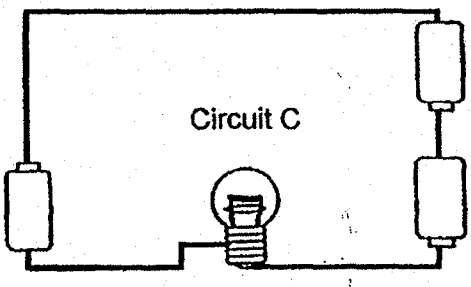
Which of the following correctly represents A and B?

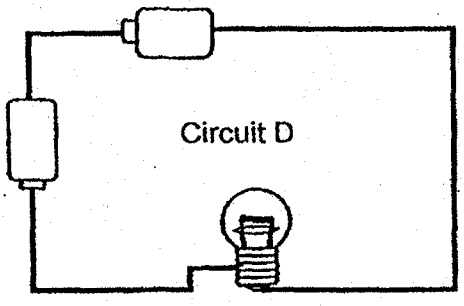
	A	B
(1)	copper wire	drinking straw
(2)	metal spoon	copper wire
(3)	wooden pole	copper wire
(4)	metal spoon	drinking straw

19. Yazid set up four electrical circuits, A, B, C and D, as shown in the diagrams below. All the bulbs, wires and batteries used were similar.





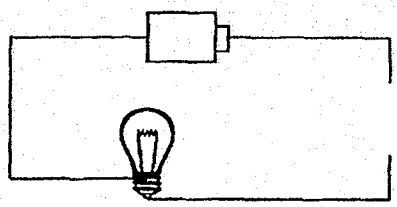




The bulbs in circuits _____ would be of equal brightness.

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

20. Ramesh made a circuit board with four metal clips and a circuit tester as shown below.



circuit tester

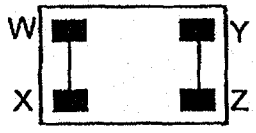
circuit board

He connected the circuit tester to two metal clips at a time and recorded whether the bulb lighted up in the table.

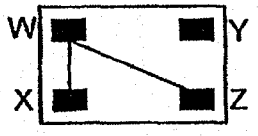
Metal clips connected	Did the bulb light up?
W and X	Yes
W and Y	No
W and Z	No
X and Y	No
X and Z	No
Y and Z	Yes

Based on the results, which circuit board did he connect his circuit tester to?

(1)

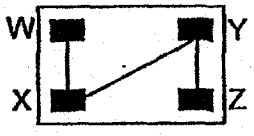


(2)



(3)

(4)



21. Diagram 1 below shows a ring magnet lowered onto a tray of steel pins. Diagram 2 shows the bottom view of the magnet.

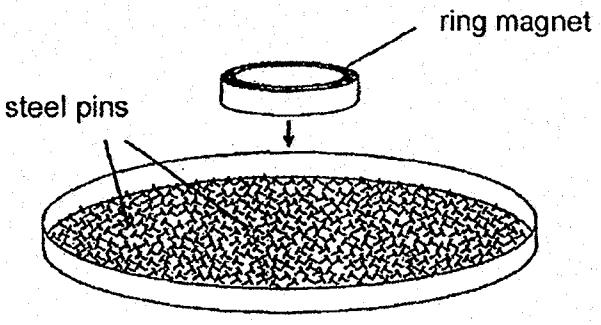


Diagram 1

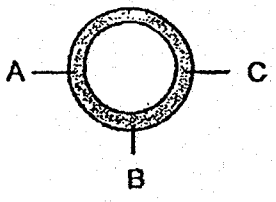
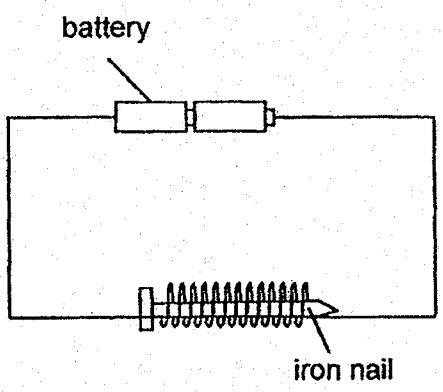


Diagram 2

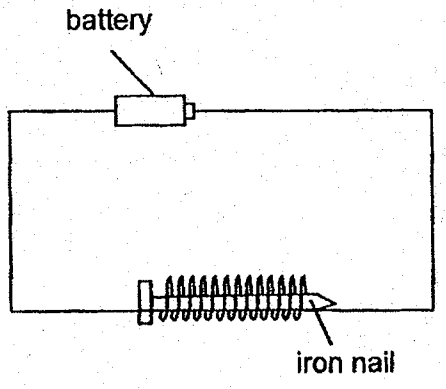
Which one of the following most likely shows the number of pins attracted to the bottom of the magnet at positions A, B and C?

	A	B	C
(1)	0	14	0
(2)	14	0	14
(3)	14	7	0
(4)	7	7	7

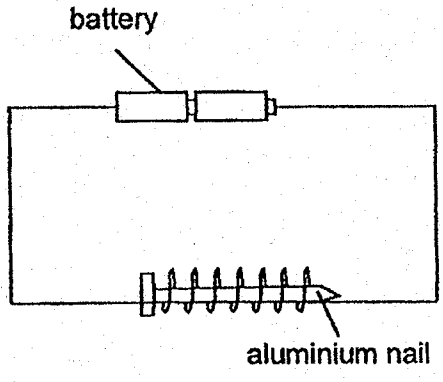
22. Germaine wanted to find out if the number of coils of wire around a nail affects the magnetic strength of the nail.



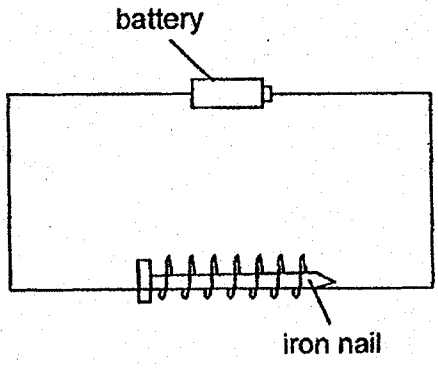
Set-up A



Set-up B



Set-up C

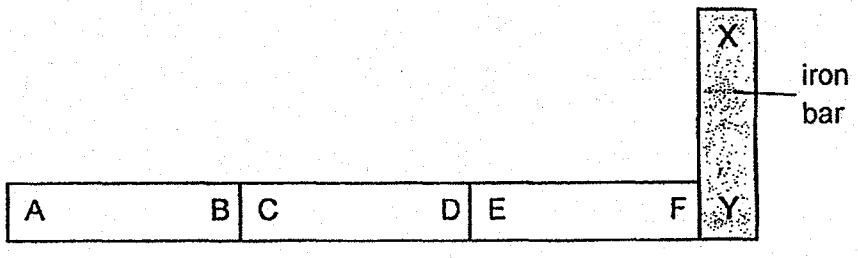


Set-up D

Which pair of set-ups should she use for her experiment?

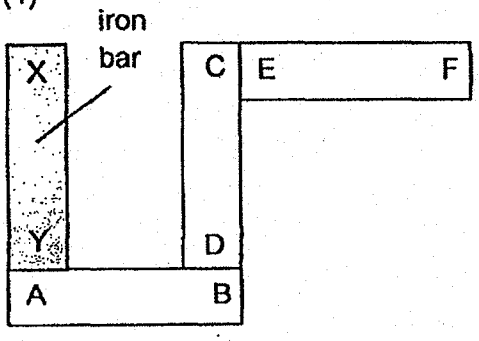
(1) A and B
(2) A and C
(3) B and D
(4) C and D

23. Meng Kuan set up three magnets AB, CD and EF and an iron bar XY as shown in the arrangement below.

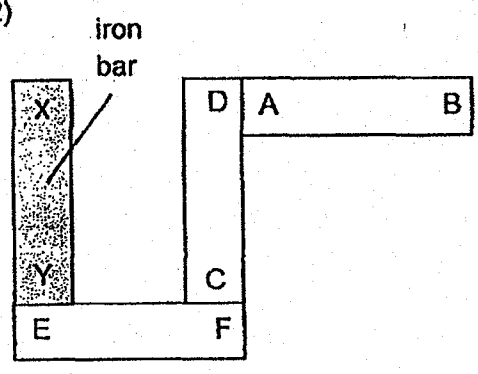


Which one of the following arrangements is possible?

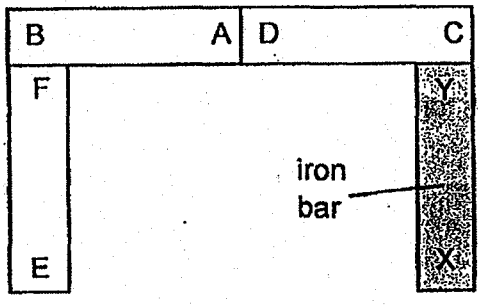
(1)



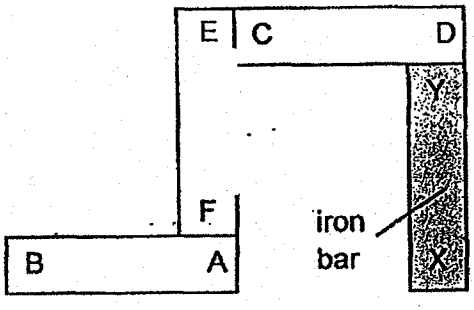
(2)



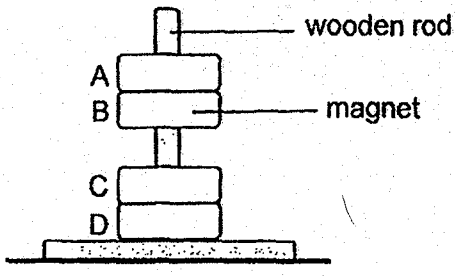
(3)



(4)



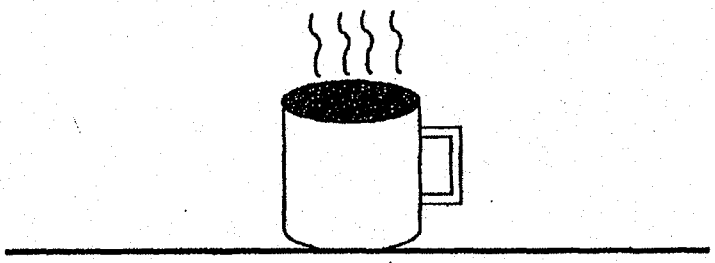
24. In the set-up below, A, B, C and D are four rings which pass through a smooth wooden rod. B is a magnet.



Which of the following is not possible?

	A	C	D
(1)	plastic	magnet	iron
(2)	iron	magnet	iron
(3)	plastic	magnet	magnet
(4)	plastic	iron	magnet

25. Huda placed a cup of hot water on a wooden table.



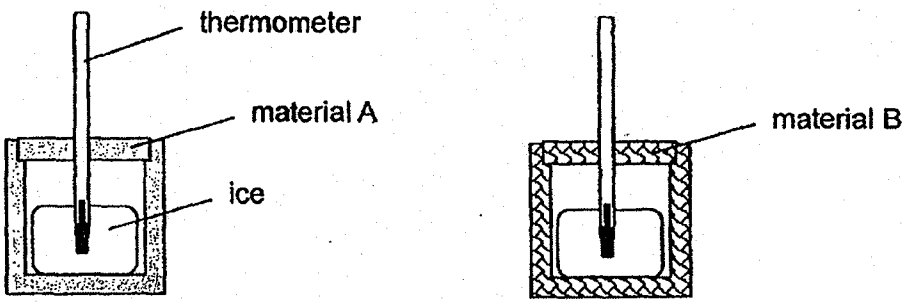
What could she do to cool down the water faster?

(1) Wrap the cup with a cloth
(2) Place the cup in a plastic bag
(3) Place a metal spoon in the cup
(4) Cover the top of the cup with a wooden lid

26. Substance R is a solid at 20°C and a gas at 250°C.
Which of the following is possible?

	Melting point of R (°C)	Boiling Point of R (°C)
(1)	10	200
(2)	10	300
(3)	30	200
(4)	30	300

27. The containers in set-ups A and B below are of the same size and thickness but made of different materials. The containers were filled with the same volume of ice and left on a table.



set-up A set-up B

The temperature reading on the thermometer was 0 °C at the start of the experiment and the temperature reading was recorded every five minutes in the table below

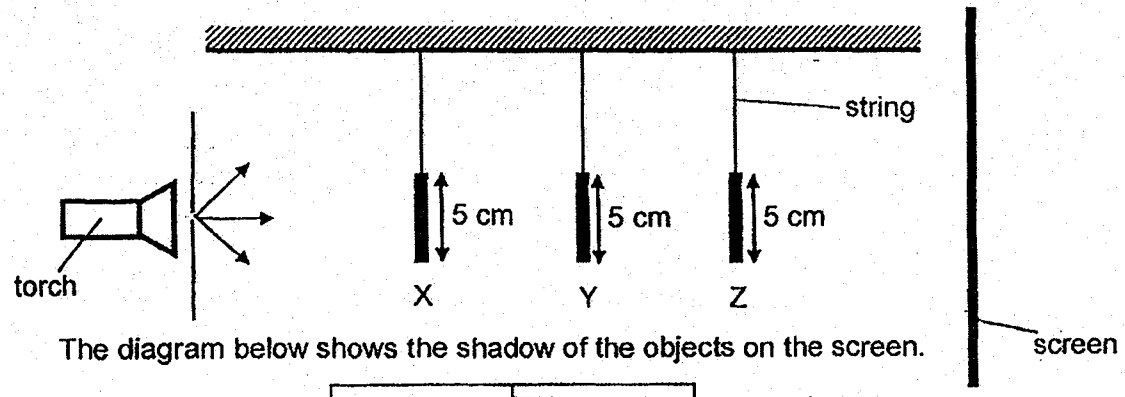
Timing (min)	5	10	15	20
Set-up A	0 °C	0 °C	4 °C	10 °C
Set-up B	0 °C	5 °C	13 °C	20 °C

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

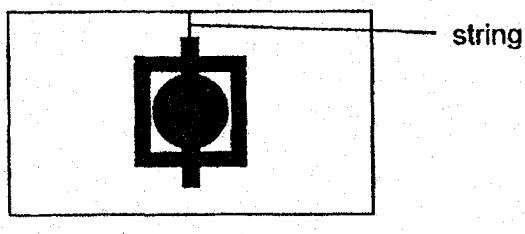
A Material A is a better conductor of heat than material B.
B Material B will gain heat faster than material A.
C Material B will lose heat slower than material A.

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

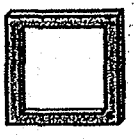
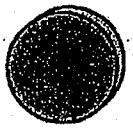
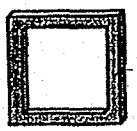
28. The set-up below shows light shining on three metal objects X, Y and Z. They are placed at different distances from the torch.



The diagram below shows the shadow of the objects on the screen.



What are objects X, Y and Z?

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

END OF BOOKLET A

RED SWASTIKA SCHOOL

SCIENCE
2019 SEMESTRAL EXAMINATION 1
PRIMARY 5

Name : _____ ( )

Class : Primary 5/ _____

Date : 15 May 2019

BOOKLET B

12 Questions
44 Marks

In this booklet, you should have the following:
a. Page 21 to Page 35
b. Questions 29 to 40

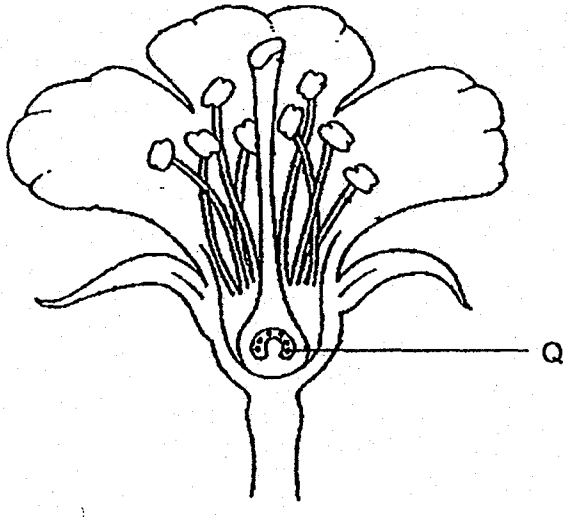
MARKS

	OBTAINED	POSSIBLE
BOOKLET A		56
BOOKLET B		44
TOTAL		100

Parent's Signature : _____

Answer all the questions in the spaces provided.

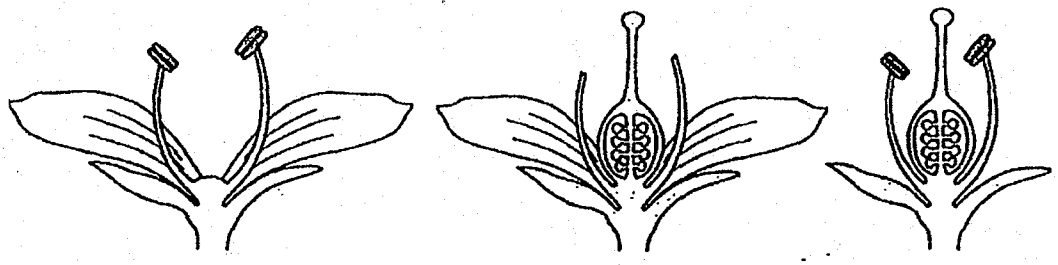
29. The diagram below shows a flower.



(a) Identify part Q. (1m)

_____

Parts of flowers X, Y and Z were removed as shown below.



Flower X Flower Y Flower Z

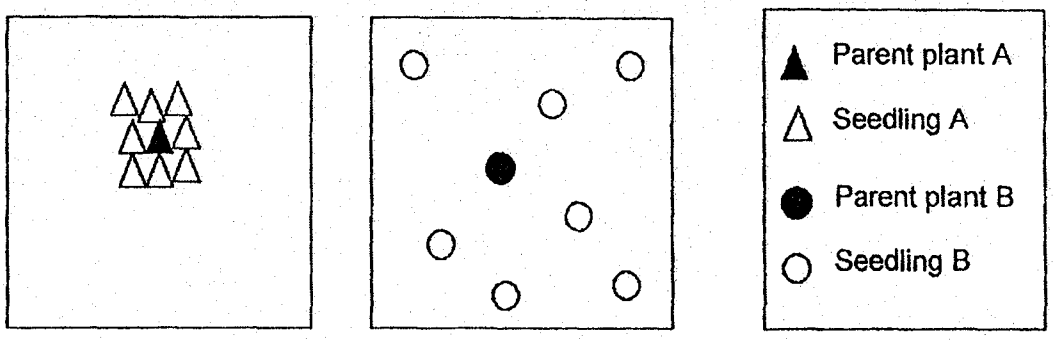
(b) Which of the flowers will not be able to develop into a fruit? Explain your answer. (2m)

_____

_____

3

30. The diagram below shows the location of the parent plants A and B and their seedlings.



(a) Which seedling, A or B, will grow better? Explain your answer. (2m)

Seedling _____

_____

_____

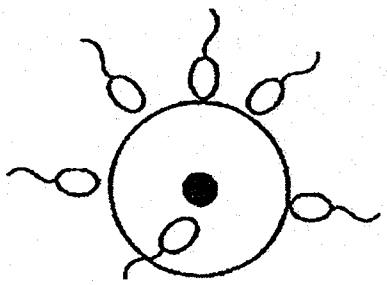
(b) The fruits of plant B are inedible and are dispersed by animals. State one characteristic of the fruit of plant B that helps it to disperse its seeds. (1m)

_____

_____

3

31. The diagram below shows a process that takes place in the human reproductive system.



(a) Describe the process shown above. (1m)

_____

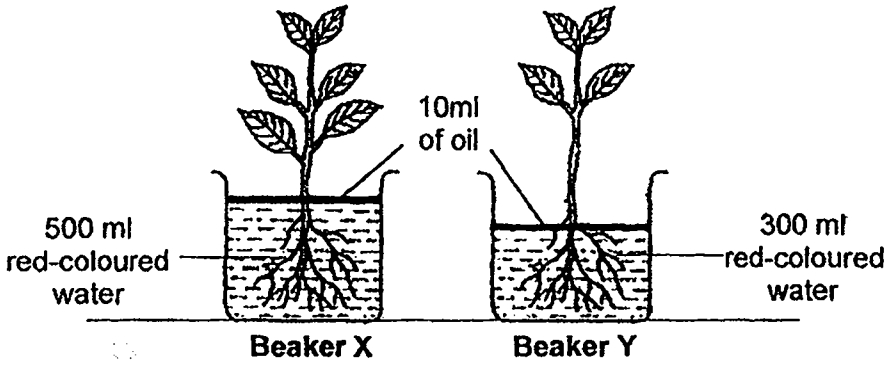
_____

(b) Jane wrote a statement in her journal about human reproduction. Her teacher told her that her statement was incorrect. What should her correct statement be? (1m)

Incorrect statement	Correct statement
The fertilised egg develops in the ovary.	_____ _____

2

32. Sean conducted an experiment to find out how the number of leaves affect the amount of water taken in by the plant.



(a) What change would Sean observe happening to the leaves of the plants in both beakers after a few days? Why? (1m)

_____

_____

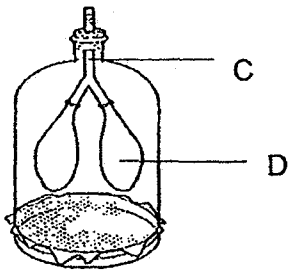
(b) Sean's experiment was not a fair test. Suggest one change to his set-up so that his experiment would be a fair test. (1m)

_____

_____

2

33. Caela made a model of the human respiratory system as shown below.

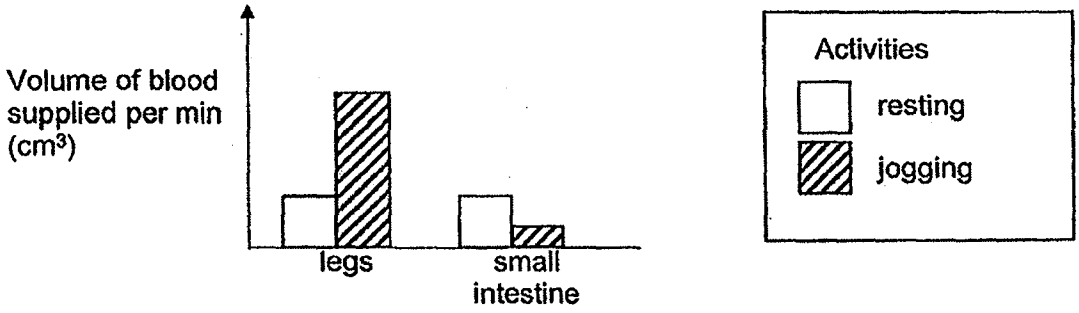


(a) Which organs of the human respiratory system do parts C and D represent? (1m)

C: _____

D: _____

Caela carried out an experiment to measure the volume of blood supplied per minute to different parts of the human body during two activities: resting and jogging. The graph below shows the volume of blood supplied to the legs and the small intestine during the two activities.



(b) Using the graph, explain how jogging after a meal affects the absorption of digested food in the small intestine. (2m)

_____

_____

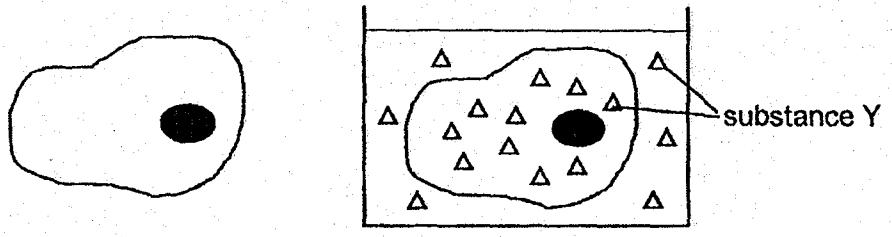
(c) Describe how oxygen in the lungs reaches the legs with the help of the circulatory system. (2m)

_____

_____

5

34. Siti observed some animal cells under a microscope before and after she placed the animal cells in a liquid containing substance Y. Siti recorded her observations of the cell as shown below.



Before **After**

(a) Identify the part of the cell that allows substance Y to enter. (1m)

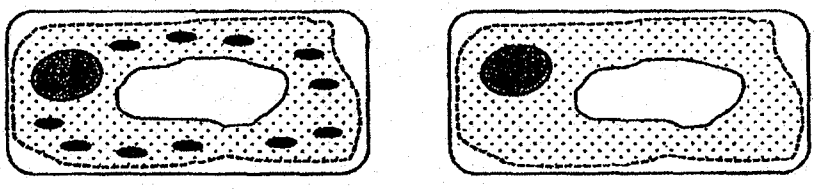
_____

(b) What is the function of the part of the cell mentioned in (a)? (1m)

_____

_____

Cell A and cell B as seen in the diagrams below are taken from a plant.



Cell A **Cell B**

(c) Explain how you can tell that they are taken from a plant. (1m)

_____

_____

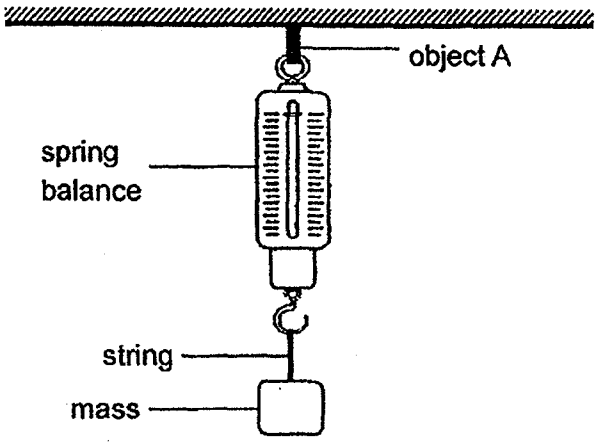
(d) Which part of the plant is cell A likely to be taken from?
Explain your answer. (2m)

_____

_____

5

35. Hui Min used the set-up shown below to investigate the property of a material.



In her experiment, she used strings made of different materials P, Q and R. She increased the mass until each string broke. Her results are recorded in the table below.

String	Reading on spring balance when the string broke (g)
P	200
Q	900
R	700

(a) Name the property of material that Hui Min was investigating. (1m)

_____

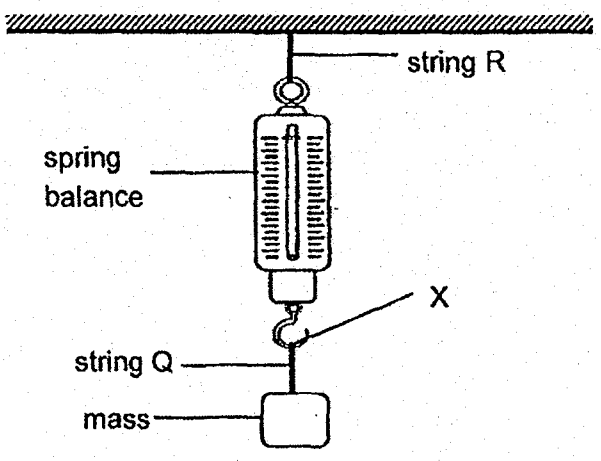
(b) Based on her results, which string, P or Q, is more suitable to be used to tie and fly a kite? Explain your answer. (1m)

_____

_____

2

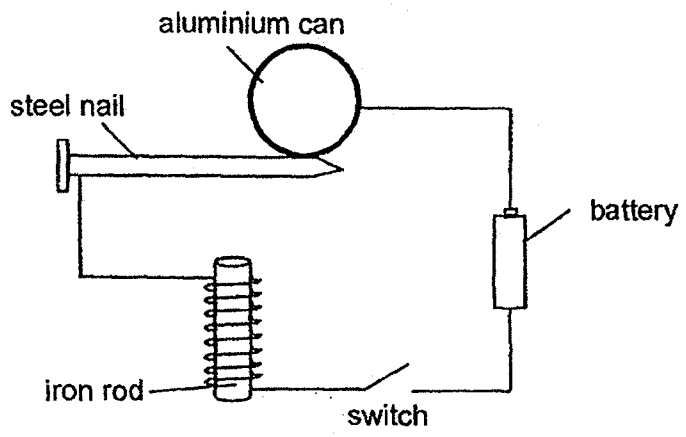
35. Hui Min replaced object A with string R. She used string Q at part X of the spring balance as shown in the diagram. The mass of the spring balance is 100g.



(c) She then hung a mass to string Q. Will she be able to obtain a reading on the spring balance if the mass hung was 700g? Why? (2m)

2

36. Siti conducted an experiment using the set-up as shown below.



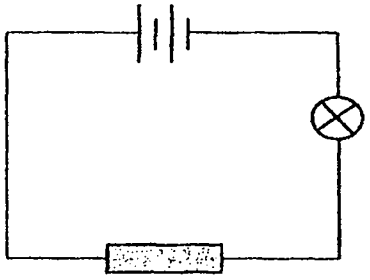
(a) Explain what will happen to the set-up when the switch is closed. (1m)

(b) Will the experiment still work when the aluminium can is changed into a plastic bottle? Explain why. (1m)

2

37. Eric set up a circuit tester as shown in diagram 1 to find out if object A is an electrical conductor.

Diagram 1



object A

The bulb in the circuit did not light up.
Eric believed that object A was <u>not</u> the cause of the bulb failing to light up.

(a) Using all or some of the components from the existing set-up only, design a circuit to test Eric's hypothesis. Draw your circuit diagram in the box below. Do not add new components. (1m)

(b) If the bulb in diagram 1 had lit up, suggest the material used for object A. Explain your answer. (2m)

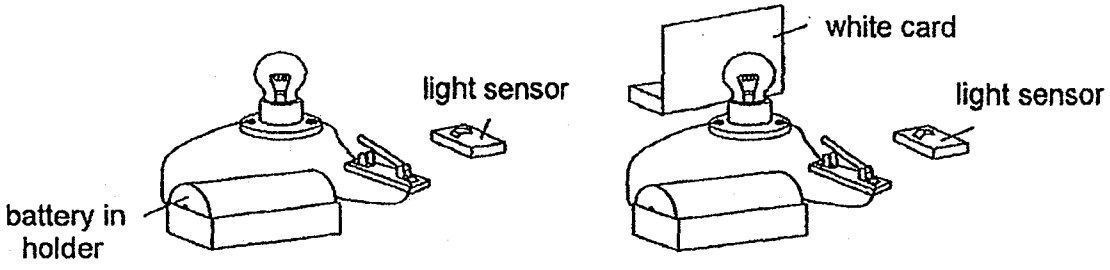
Material: _____

Explanation: _____

_____

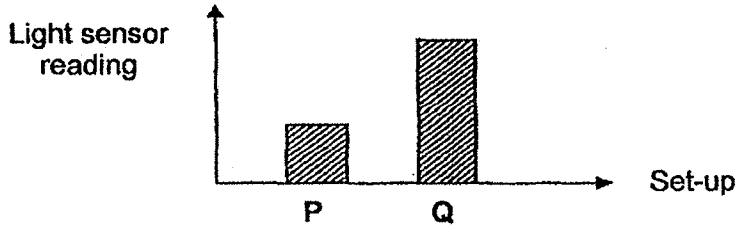
3

37. Eric then conducted an experiment using similar bulbs and batteries with the set-ups below in a dark room. The light sensor is used to measure the amount of brightness. In both set-ups, the light sensor was placed at an equal distance from the bulb.



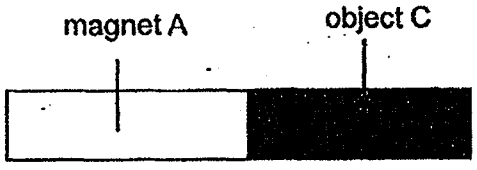
Set-up P **Set-up Q**

His results are shown in the graph below.



(c) Explain why the light sensor in set-up Q gave a higher reading. (1m)

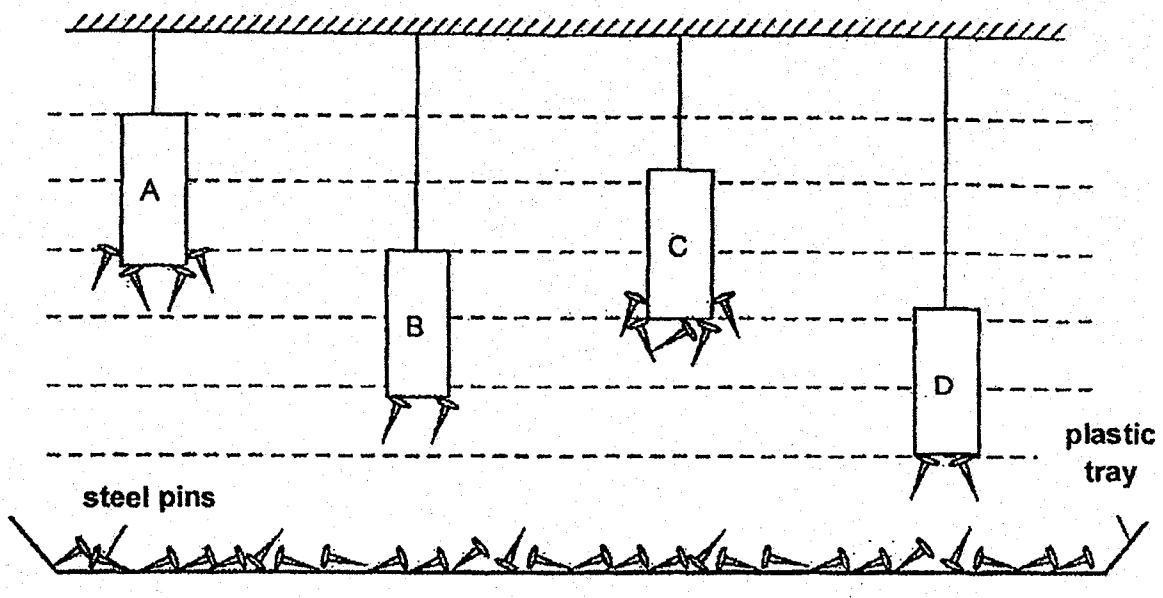
38. Mrs Lee observed that magnet A and object C were attracted as shown below.



(a) Suggest a reason why Mrs Lee cannot conclude whether object C is a magnet or not a magnet based on the observation. (1m)

2

38. Mrs Lee set up the experiment shown using magnets A, B, D and object C. The results are as shown below.



(b) Based on the diagram, what can Mrs Lee conclude about object C? (1m)

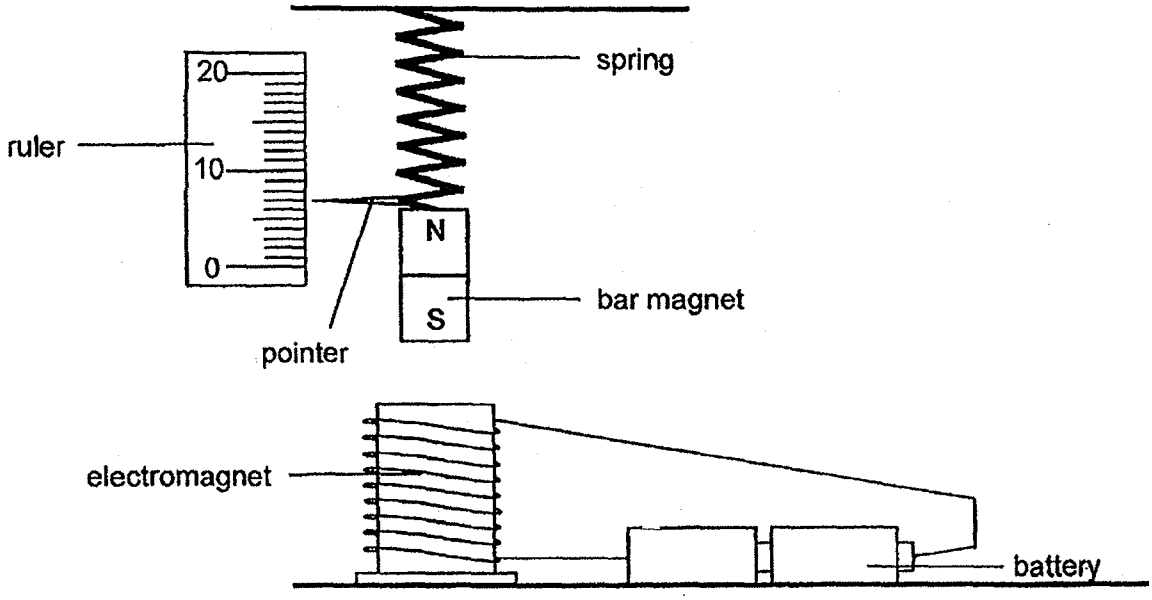
Using the same set-up as shown in the diagram, Mrs Lee replaced magnet A with another magnet X of the same size.

(c) Suggest a possible observation that could be made if magnet X was a magnet with a weaker magnetic strength than magnet A. (1m)

(d) How should Mrs Lee change the set-up for magnet B and magnet D to allow her to make an accurate comparison about the magnetic strength of the two magnets? (1m)

3

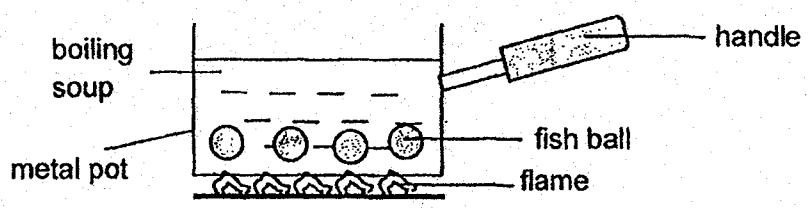
38. Mrs Lee set up another experiment as shown below. The bar magnet is repelled by the electromagnet. A pointer attached to the spring moves when the circuit is closed.



(e) She noticed that the pointer moved downwards when she used only one battery in the set-up. Explain why. (1m)

1

39. Dylan took some frozen fish balls from the freezer and placed them into a metal pot containing boiling soup.



After two minutes, he scooped out the fish balls. He measured the temperature of the fish balls and found out that the temperature is lower than the temperature of the soup.

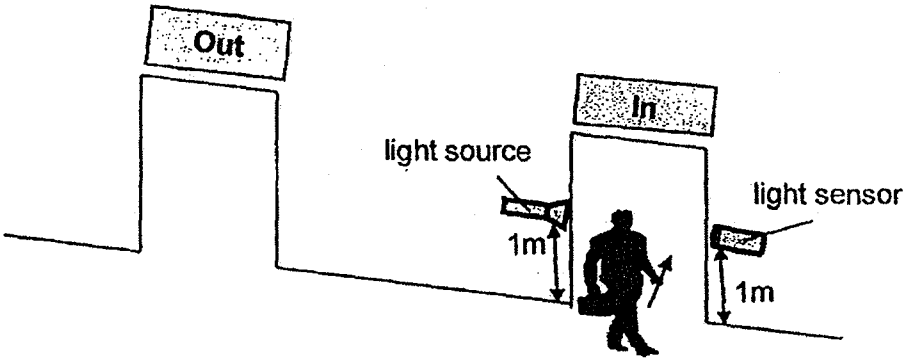
(a) What could Dylan do to ensure that the fish balls have the same temperature as the boiling soup? Explain your answer (2m)

(b) Dylan scooped out the cooked fish balls and left it in a bowl. What will happen to the temperature of the fish balls after one hour? Explain your answer. (1m)

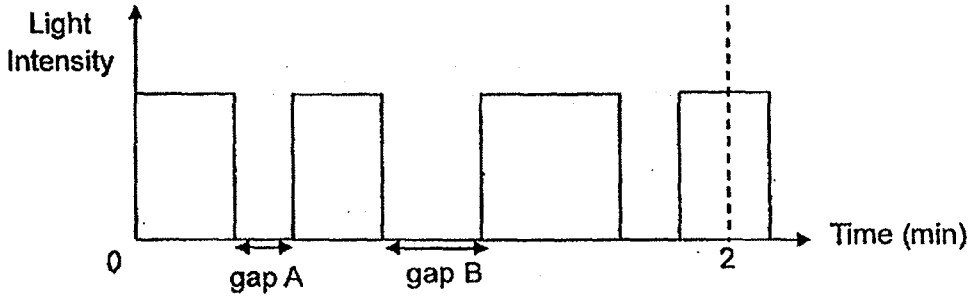
(c) Why does using a metal pot instead of a glass pot allow the soup to be boiled faster? (1m)

4

40. Mrs Kuan designed a system that makes use of a light sensor and a light source to count the number of people entering the room through a doorway.



She switched on the system and recorded the data of the light sensor in the graph below.



(a) Based on the graph, how many people have entered the room in the first two minutes? (1m)

_____

(b) Explain how you obtained the answer in (a). (2m)

_____

_____

(c) Suggest a possible reason to explain why gap A is shorter than gap B. (1m)

_____

(d) Mrs Kuan wanted to set up the same system in a kindergarten with students who are between the heights of 0.8 m to 1.1m. What must she change to the system so that it will work in the kindergarten? (1m)

_____

END OF BOOKLET B
PLEASE CHECK YOUR ANSWER

5

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RED SWASTIKA SCHOOL
P5 SCIENCE SA1 2019
Correction template

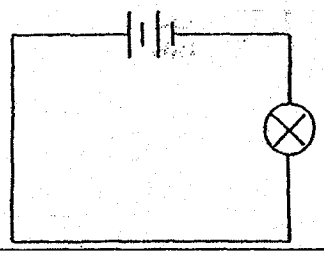
Section A: Multiple Choice Questions (MCQ)

1. (4)	6. (3)	11. (1)	16. (1)	21. (4)	26. (3)
2. (2)	7. (2)	12. (3)	17. (2)	22. (3)	27. (2)
3. (1)	8. (3)	13. (1)	18. (4)	23. (2)	28. (3)
4. (2)	9. (1)	14. (2)	19. (2)	24. (4)	
5. (1)	10. (2)	15. (4)	20. (1)	25. (3)	

Section B: Open-ended Questions

Qns.	Answer	Marks	Remarks
29(a)	**Key idea: Identifying parts of a flower** Ovule		
29(b)	**Key idea: Flower X has only the male reproductive parts, it does not have an ovule or an ovary.** Flower X. Flower X does not have the female reproductive parts. There are no ovule to develop into seeds. There is no ovary to develop into a fruit		
30(a)	**Key Concept: Plants disperse their seeds in order to reduce the effects of overcrowding.** Seedling B. The seedlings had been speed out away from the parent plant. They do not need to compete for light, space and water		
30(b)	**Key Concept: Seeds dispersed by animals may be sweet and juicy or have tiny hooks which cling on to the hair or clothing of animals and humans.** They have hooks (which clings onto the animals).		
31(a)	**Key idea: Fertilisation occurs when the sperm fuses with an egg.** The process shown above is fertilisation where male reproductive cell (sperm) fuses with the female reproductive cell (egg).		

31(b)	**Key skill: Identifying misconceptions** The fertilised egg develops in the __womb__		
32(a)	**Key idea: Plants take in water through the roots and the water is transported to all parts of the plant.** The leaves would turn red. The __roots__ take in the red-coloured water and the __water-carrying__ tube transports it to the leaves and other parts of the plant.		
32(b)	**Key ideal: There should only be one constant variable to ensure a fair test.** __Increase__ the amount of water in __Y__ to __500__ ml.		
33(a)	**Key idea: Identify parts of the human respiratory system** C: Windpipe D: Lungs		
33(b)	**Key idea: During exercise, more blood is pumped to the legs than to the small intestine hence the rate of absorption is affected.** During jogging, more blood goes to the __legs__ and less blood goes to the __small intestine__ . __less__ digested food is __absorbed__ by the blood in the small intestine.		
33(c)	Oxygen is __absorbed__ by the __blood__ in the lungs. The __blood__ (in the circulatory system) __transports__ the oxygen to the legs.		
34(a)	**Key skill: Identifying parts of a cell** Cell membrane.		
34(b)	**Key skill: Describing functions of a cell** Cell membrane controls the movement of __substances__ in and __out__ of the cell.		
34(c)	**Key idea: Only plant cells have a cell wall.** Both cells have a __cell wall__ and only __plant__ cells have a cell wall.		

34(d)	**Key idea: Chloroplasts can be found in the cells in the leaves as it contains chlorophyll which is needed to trap sunlight to make food.** Cell A is likely to be taken from the leaves. It has chloroplasts , which is usually found in the cells in the leaves as they contain chlorophyll needed to trap light to make food for the plant.		
35(a)	**Key concept: Strength of material** Strength		
(b)	**Key concept: Inference from data given and application of concept of strength** Q is more suitable as Q is stronger than P which allows it to withstand the strong wind without snapping.		
(c)	**Key concept: Inference from data given** No. R was weaker than Q. When a 700g mass is used, the total mass of the spring balance and the mass is 800g. String R will break before the spring balance can obtain a reading for string Q.		
36(a)	**Key concept: Magnetic material and electromagnet** Electric current will flow in the closed circuit. The iron rod will be magnetised and the steel nail will be attracted towards it.		
(b)	**Key concept: Electrical insulator and electrical conductor** No. As the plastic bottle is an electrical insulator and electric current will not flow through it. The iron rod will not be magnetised / not become an electromagnet.		
37(a)	**Key concept: Circuit Diagram & Electrical Insulators** 		

(b)	**Key concept: Metals conduct electricity and enable a closed circuit to be formed** Material: Metal Explanation: Metal allows electricity to __flow__ through to form a __closed__ circuit to light up the bulb.		
(c)	**Key concept: Reflection of light** Light is __reflected from__ the white card in set-up Q.		

38(a)	**Key concept: Repulsion is the true test of a magnet.** Object C is __attracted__ to magnet A. No __repulsion__ is observed between C and A to conclude that C is a magnet		
(b)	Object C is a __magnet__		
(c)	**Key concept: Magnetic strength of magnet** Magnet __X__ attracts __less__ pins than A.		
(d)	Hang magnet B and D from the same __height__		
(e)	**Key concept: Magnetic strength of electromagnet affected by number of batteries used.** When one battery is used, there is less electricity, the __magnetic__ strength of the electromagnet __decrease__. Hence, the bar magnet will __repel__ a __shorter__ distance away as compared to when two batteries were used.		
39(a)	**Key concept: Heat transfer – heat gain** Dylan could place the fish balls back into the soup for a __longer__ time. This will allow the fish balls to __gain__ heat __from__ the hot soup until they reach the same temperature.		
(b)	**Key concept: Heat transfer - heat loss** The temperature of the fish ball will decrease. The fish ball will __lose__ heat __to__ the surroundings (until it reaches room temperature).		
(c)	**Key concept: Heat conductivity of materials**		

	Metal is a better conductor of heat than glass and conducts heat more quickly to the soup.		

40(a)	**Key concept: Reading of graph and light intensity is 0 when its light path is blocked** Three people.		
(b)	**Key concept: Reading of graph and light intensity is 0 when its light path is blocked** When a person walked through the doorway, the person bluks the light from the light source from reaching the light sensor, resulting in the light intensity reading dropping to 0 unit. Next, we can count and know that there are three gaps where the light intensity is at 0 units.		
(c)	**Key concept: Reading of graph and light intensity relative to time taken.** The person who entered at gap A walked faster than the person who entered at gap B		
(d)	**Key concept: Reading of diagram and change in experiment** Shift both the light sensor and light source to a height of 0.8 m or lower.		