Anglo-Chinese School
(Primary)
A Methodist Institution
(Founded 1886)

SEMESTRAL ASSESSMENT TWO 2020
SCIENCE
PRIMARY FIVE
BOOKLET A

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

Date: 28 October 2020 **Total time for Booklets A and B: 1 h 45 min**

Additional Materials: Optical Answer Sheet (OAS)

INSTRUCTIONS TO CANDIDATES

1. Write your name, index number and class in the spaces provided.
2. Do not turn over this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all the questions.
5. Shade your answer on the Optical Answer Sheet (OAS) provided.

This question paper consists of 23 printed pages including this cover page.

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

(56 marks)

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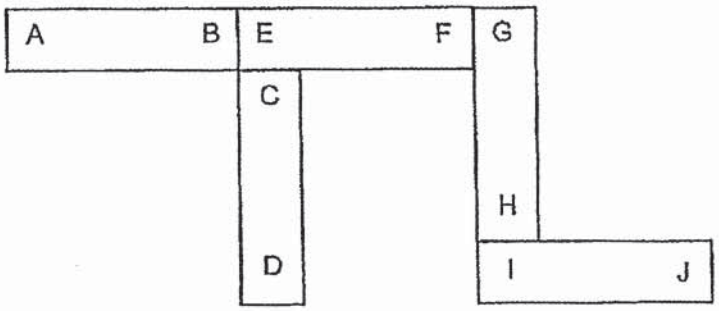
1 James describes an organism to Lucy.

- It needs oxygen.
- It makes its own food.
- It reproduces by spores.
- It gives out carbon dioxide.

Which of the following is the organism most likely to be?

(1) Fern
(2) Grass
(3) Bacteria
(4) Mushroom

2 Five bar magnets with their ends marked A to J can be arranged as shown.



Which pair of poles will likely attract each other?

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

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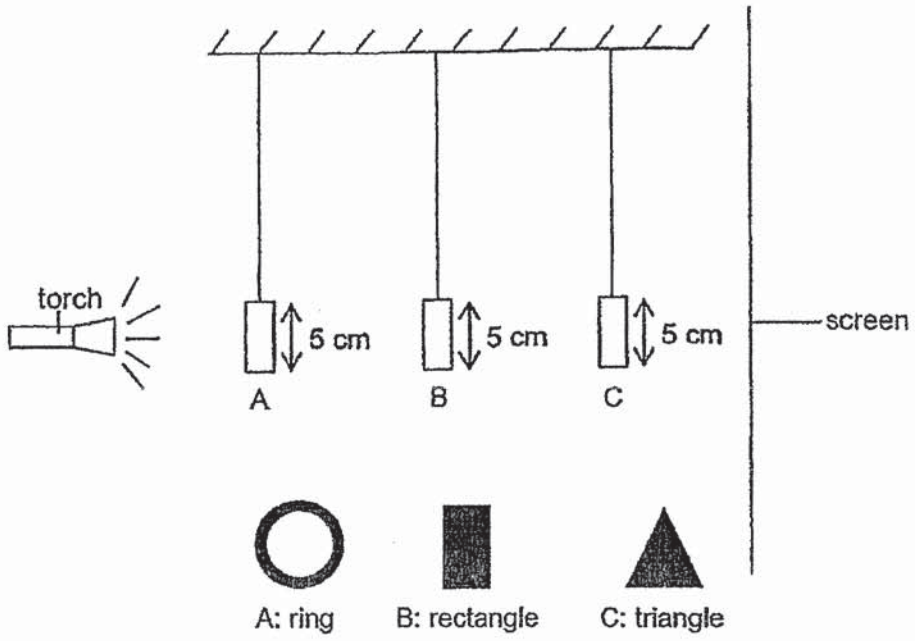
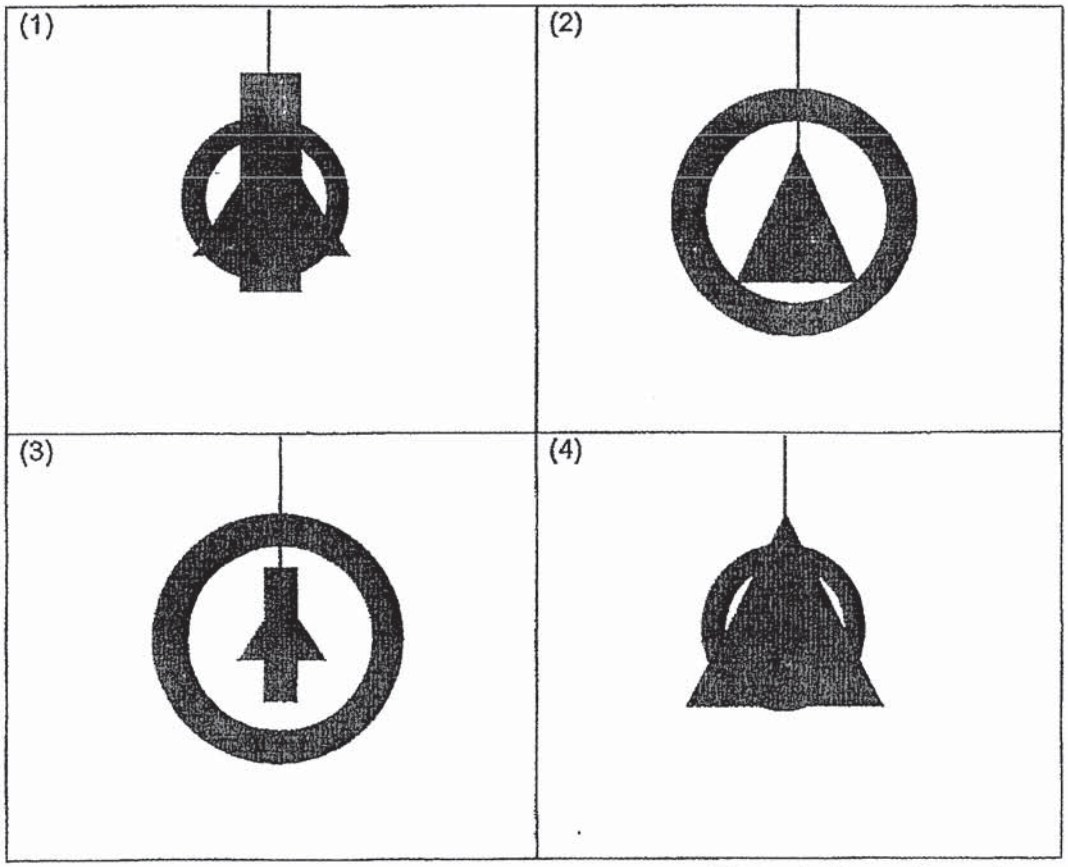
3 The set-up shows light shining on three shapes, A, B and C, made of wood. They are hung from the ceiling and placed at different distances from the torch.



Which of the diagrams shows the shadow that was seen on the screen?



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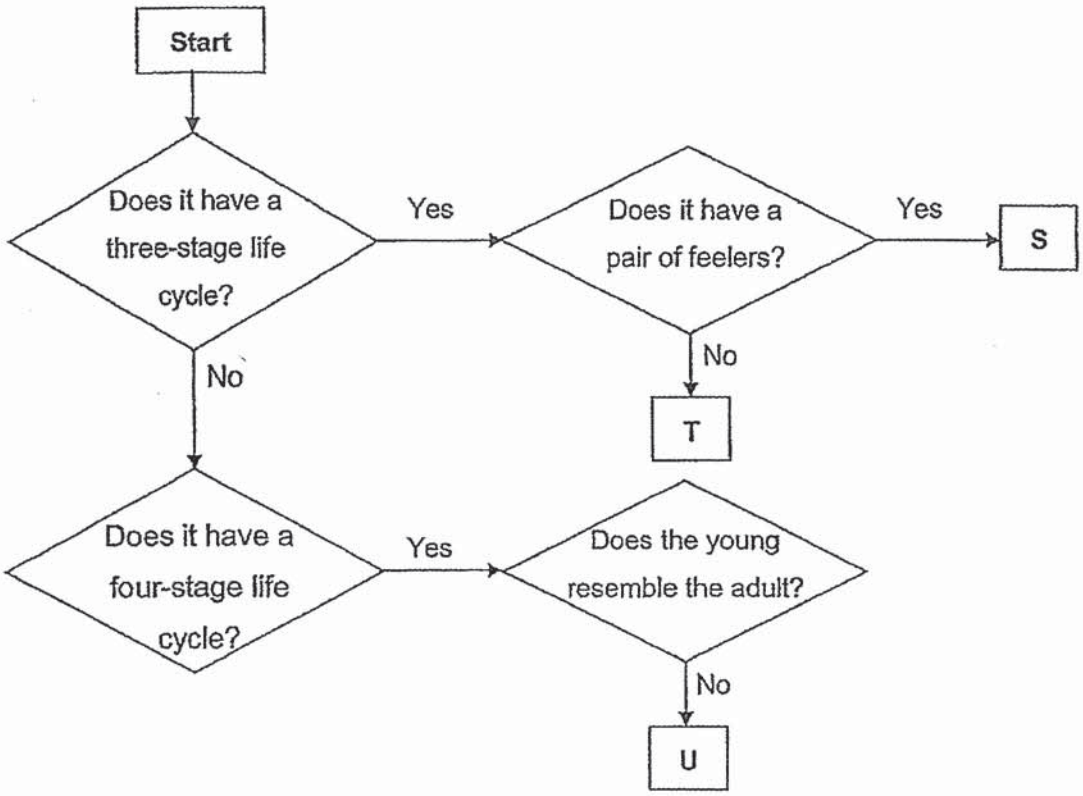
4 Study the flow chart carefully.



Which of the following animals can be represented by S, T and U?

	S	T	U
(1)	cockroach	chicken	mosquito
(2)	chicken	cockroach	mealworm
(3)	grasshopper	rabbit	frog
(4)	mosquito	cockroach	rabbit

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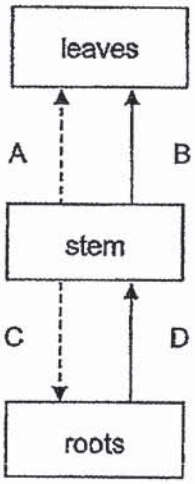
5 Study the diagram carefully.



Key:

→ Direction of **water** being transported.

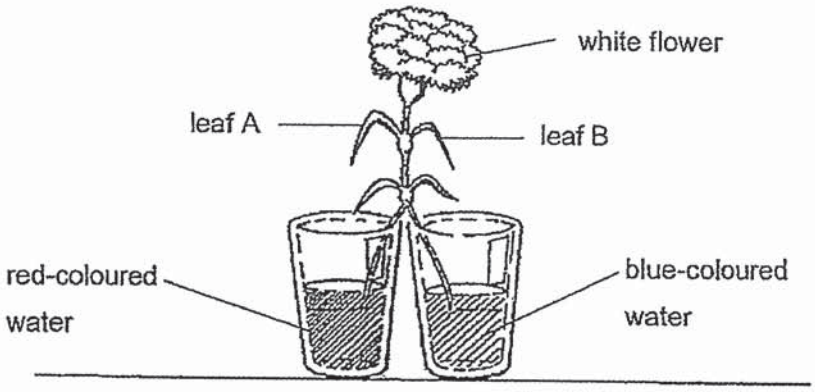
⇢ Direction of **food** being transported.

Which arrow wrongly shows the direction of the substance being transported in a plant?

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

(Go on to the next page)

6 William set up an experiment using a plant with white flower as shown in the diagram. He split the stem of the plant into halves and put one half in red-coloured water while the other half in blue-coloured water.

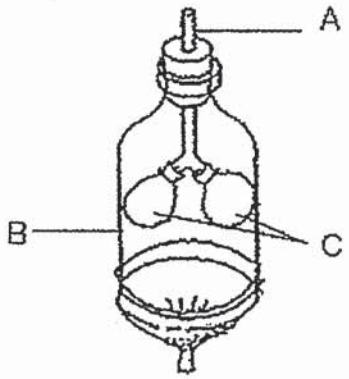


After some time, William observed that leaf A, leaf B and the white flower were stained. Which of the following most likely shows how the parts of the plant were stained?

	Leaf A	Leaf B	White flower
(1)	half-stained red and half-stained blue	half-stained red and half-stained blue	stained purple
(2)	stained blue	stained red	half-stained red and half-stained blue
(3)	stained red	stained blue	stained purple
(4)	stained red	stained blue	half-stained red and half-stained blue

(Go on to the next page)

7 Look at the diagram of a model of the human respiratory system.



What do parts A, B and C represent in the human respiratory system?

	A	B	C
(1)	chest	windpipe	lungs
(2)	lungs	windpipe	chest
(3)	windpipe	chest	lungs
(4)	windpipe	lungs	chest

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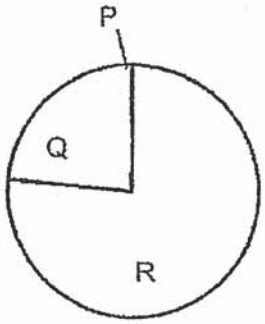
8 The pie chart shows the composition of air.



Match parts P, Q and R to the correct gases in air.

	P	Q	R
(1)	nitrogen	oxygen	carbon dioxide
(2)	oxygen	nitrogen	carbon dioxide, water vapour and other gases
(3)	carbon dioxide and water vapour	nitrogen	oxygen
(4)	carbon dioxide, water vapour and other gases	oxygen	nitrogen

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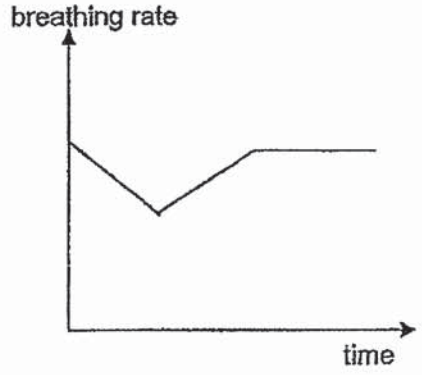
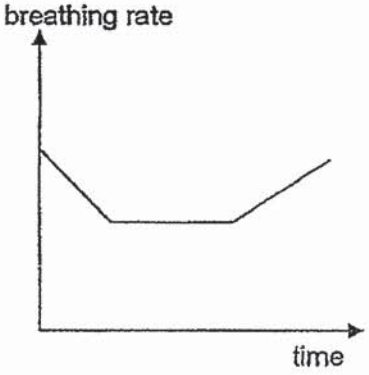
9 Which of the following graphs shows the breathing rate of a boy over a period of time when he rested at the beginning, then sprinted for a short distance and finally rested again?

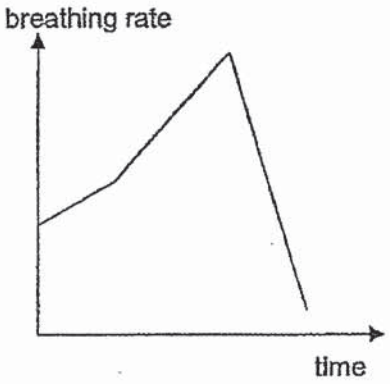
(1)



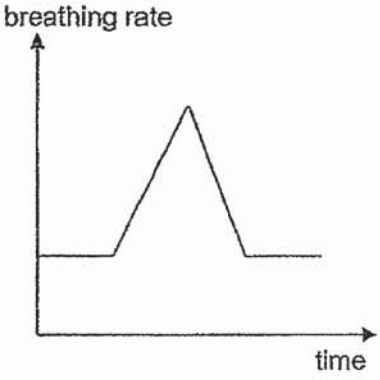
(2)



(3)



(4)



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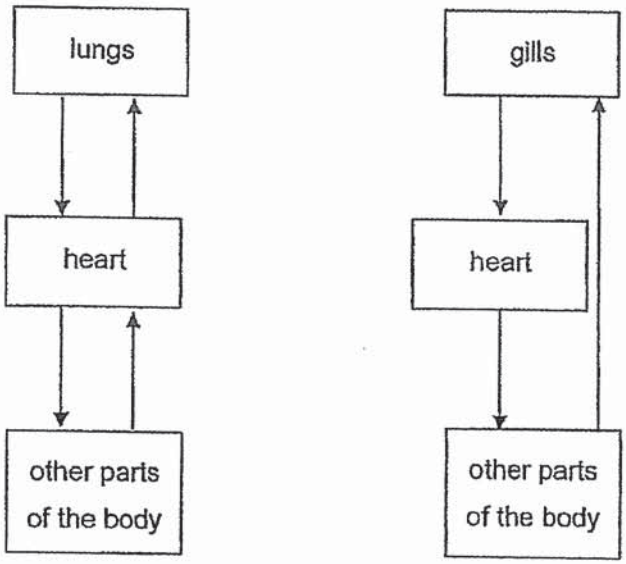
10 In the diagrams shown, the arrows represent the flow of blood in two different systems.



Which of the following statements is most likely true about the systems?

(1) The lungs and gills pump blood to the other parts of the body.
(2) The lungs receive blood rich in carbon dioxide from the heart.
(3) The gills receive blood rich in oxygen from the other parts of the body.
(4) Both hearts receive blood rich in oxygen from the other parts of the body.

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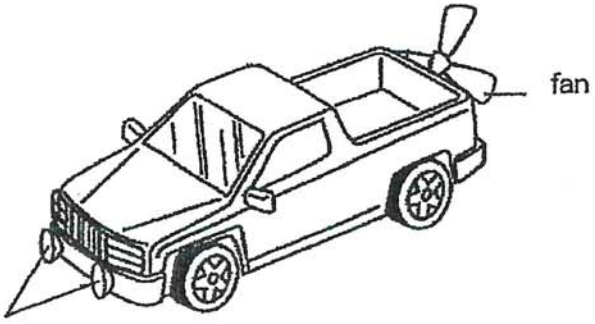
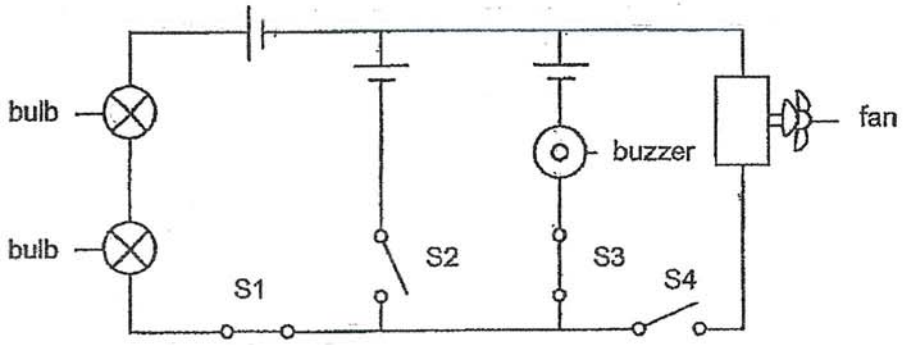
11 Peter has a toy car as shown in the diagram. There are two bulbs, four switches, a fan and a buzzer fixed to the toy car. All the components are in working condition.



The circuit shows the arrangement of the components in the toy car.



If Peter closes switches S1 and S3 and opens switches S2 and S4, which of the following will he observe?

	Bulbs	Buzzer	Fan
(1)	light up	makes sounds	does not spin
(2)	light up	does not make sound	spin
(3)	light up	makes sounds	spin
(4)	do not light up	makes sounds	does not spin

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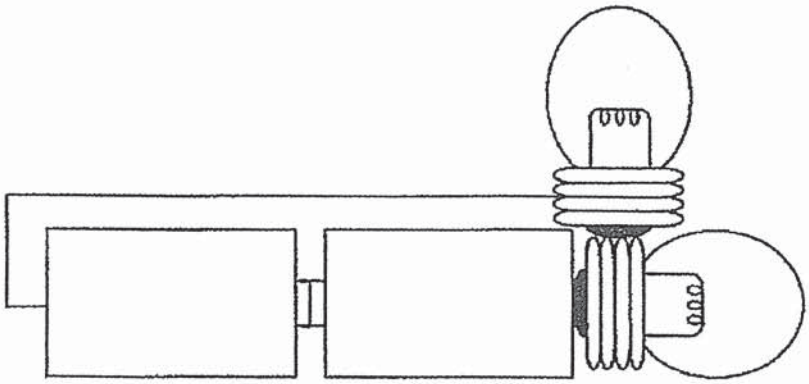
12 Study the diagram carefully.



The batteries and light bulbs in the circuit shown are in working condition. However, the light bulbs did not light up.

Which of the following statements is a possible explanation for the above observation?

(1) The bulbs were arranged wrongly.

(2) The batteries were arranged wrongly.

(3) There was no switch to close the circuit.

(4) The number of wires used was not enough.

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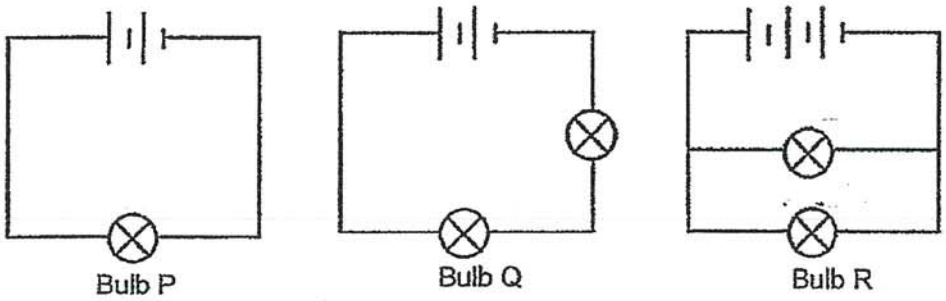
13 The diagram shows three circuits with different arrangements of identical batteries and identical bulbs. The batteries and bulbs are in working condition.



Which of the following shows the correct order of the brightness of the bulbs, starting with the brightest bulb?

(1) P, Q, R
(2) P, R, Q
(3) Q, R, P
(4) R, P, Q

14 Which of the following are ways to conserve electricity?

A Switch to energy-saving light bulbs.
B Ensure the tap is turned off when brushing teeth.
C Turn off electrical appliances when not in use.
D Use the air conditioner instead of the fan on a cool day.

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

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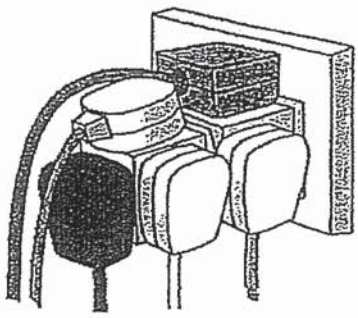
15 The picture shows many plugs inserted into a main socket.



Which of the following best explains why we should not have too many plugs inserted into a main socket?

(1) The circuit may overload and may result in a fire.
(2) The plugs will drop off easily from the main socket.
(3) There may not be enough electricity for the rest of the house.
(4) The appliances will not work well as they will have to share electricity.

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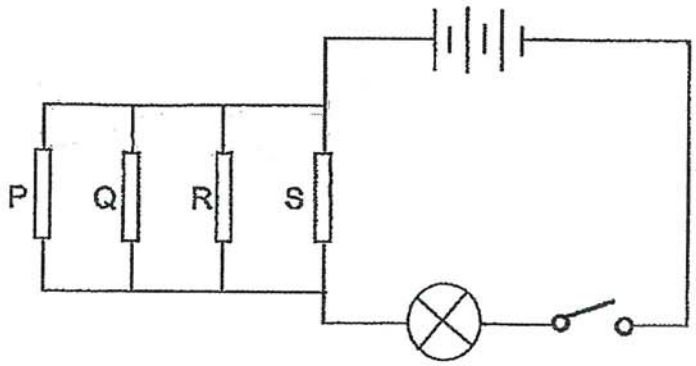
16 Tom wanted to investigate whether four rods, P, Q, R and S, were electrical conductors or insulators. He set up the circuit as shown.



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

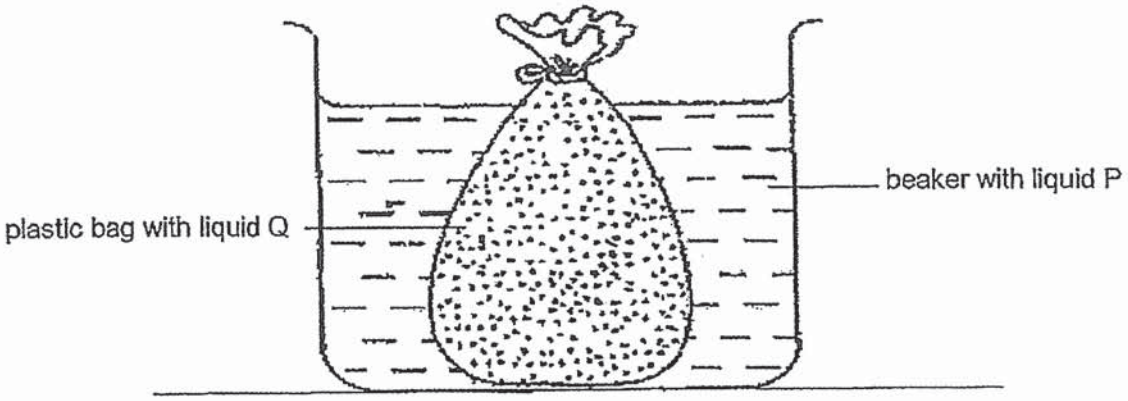
Rod(s) removed from the circuit	Did the bulb light up?
P	Yes
Q and R	Yes
P and Q	No
P, R and S	Yes

Which of the following correctly represents the four rods P, Q, R and S?

	P	Q	R	S
(1)	conductor	insulator	conductor	insulator
(2)	insulator	insulator	conductor	conductor
(3)	conductor	conductor	insulator	insulator
(4)	insulator	conductor	insulator	conductor

(Go on to the next page)

17 Alvin prepared a set-up as shown in the diagram.



He placed a tightly sealed plastic bag containing liquid Q into a beaker containing liquid P.

After 5 minutes, he observed that some liquid P was found in the plastic bag.

Based on his observation, which part of the plant cell has a similar function as the plastic bag shown above?

(1) cell wall
(2) cytoplasm
(3) chloroplast
(4) cell membrane

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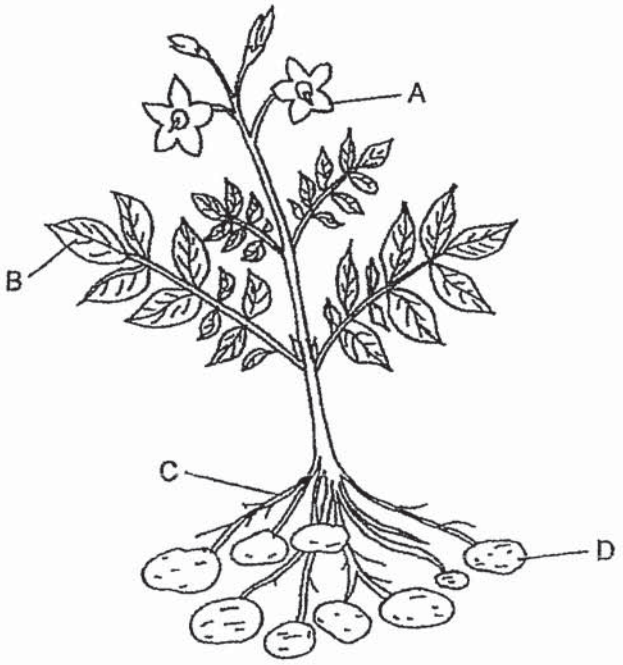
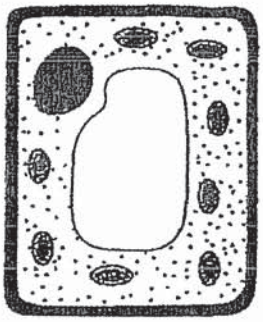
18 The diagram shows different parts of a plant.



The diagram below shows a cell taken from one part of the plant above.



Which part of the plant is the cell **most** likely taken from?

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

(Go on to the next page)

19 Four students observed three cells, A, B and C, and recorded their observations in the table shown.

Cell Structure	Cell A	Cell B	Cell C
Cell wall	Absent	Present	Present
Cytoplasm	Present	Present	Present
Chloroplast	Absent	Absent	Present
Cell membrane	Present	Present	Present

They then made the following conclusions based on the information above.

Student	Conclusion made
Kaelan	Cell A can reproduce but Cells B and C cannot.
Shavin	Cell C can make food but Cells A and B cannot.
Calvin	Cells A and B are irregular in shape but Cell C is not.
Eu Jin	Cells B and C are plant cells but Cell A is an animal cell.

Which of the students made correct conclusions?

(1) Kaelan and Shavin only

(2) Calvin and Eu Jin only

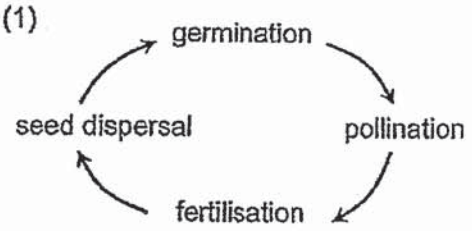
(3) Shavin and Eu Jin only

(4) Kaelan, Calvin and Shavin only

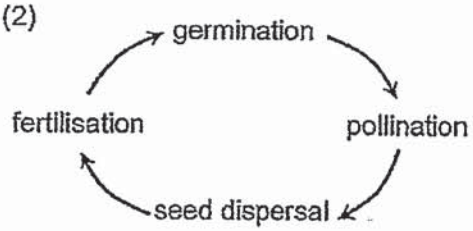
(Go on to the next page)

20 Which of the following shows the correct sequence of processes in the reproduction of a flowering plant?

(1)



(2)



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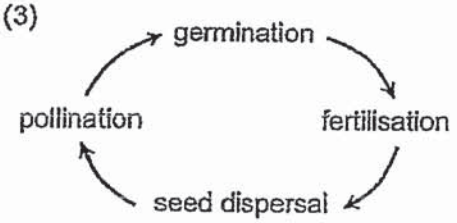

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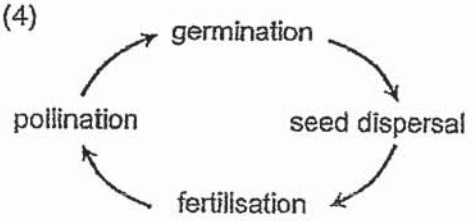
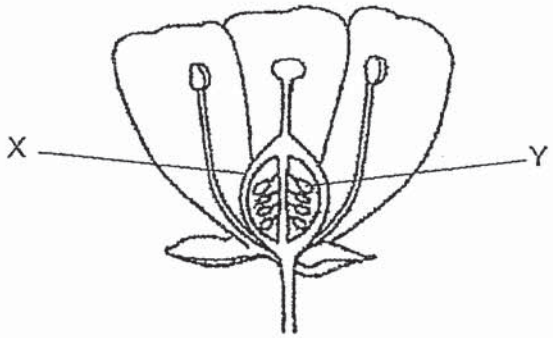


21 Study the diagram of a flower carefully.

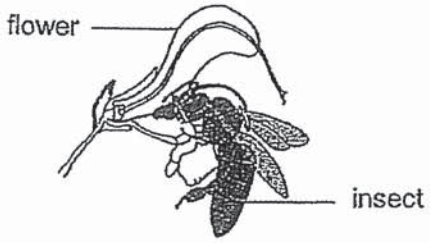


What would parts X and Y become after fertilisation?

	X	Y
(1)	ovary	ovule
(2)	fruit	ovule
(3)	fruit	seed
(4)	ovary	seed leaf

(Go on to the next page)

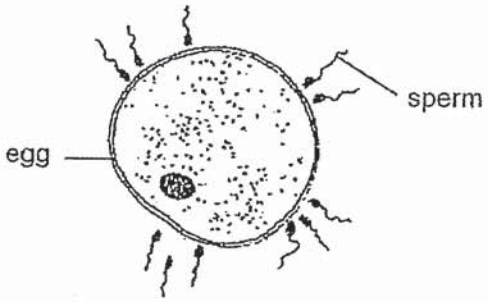
22 The diagram shows an insect visiting a flower.



Which of the statements is most likely true about the flower?

(1) It has no pollen.
(2) It has a strong scent.
(3) Its stigma is not sticky.
(4) Its petals are dull in colour.

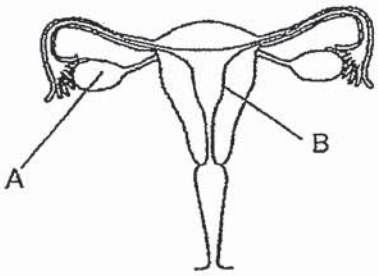
23 Study the diagram carefully.

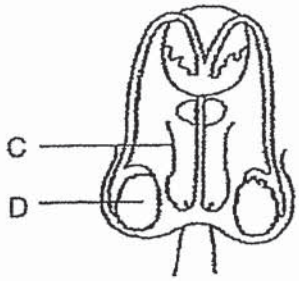


Which of the statements about fertilisation in humans is correct?

(1) Only one sperm fuses with the egg.
(2) The egg has a cell wall that protects it.
(3) Only the egg contains genetic information.
(4) The egg will allow all the sperms to fuse with it.

24 Study the diagrams carefully.





At which part does cell division take place after the egg is fertilised?

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

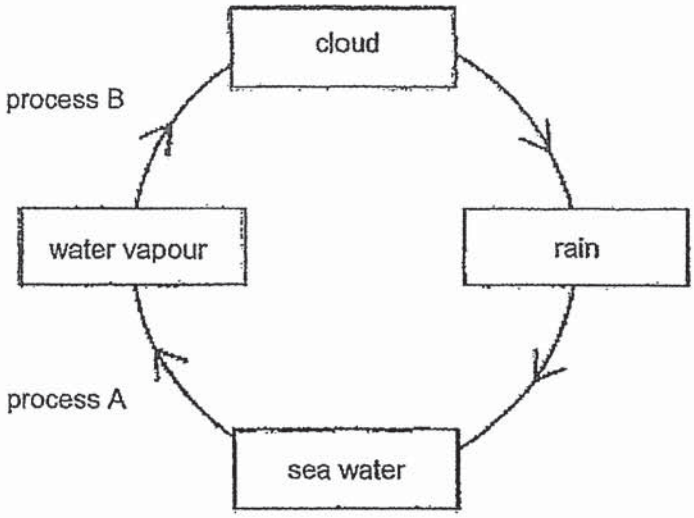
25 Which of the following will not change as a person grows from a child into an adult?

A: Height
B: Fingerprint
C: Colour of the eyes
D: Ability to roll the tongue

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

(Go on to the next page)

26 The diagram represents the water cycle.



Which of the following correctly states whether heat is gained or lost during processes A and B?

	process A	process B
(1)	Heat is lost.	Heat is gained.
(2)	Heat is gained.	Heat is lost.
(3)	Heat is lost.	Heat is lost.
(4)	Heat is gained.	Heat is gained.

27 Which of the following activities helps us to conserve water?

(1) Not repairing a leaking pipe.

(2) Soak in a bath tub instead of taking a quick shower.

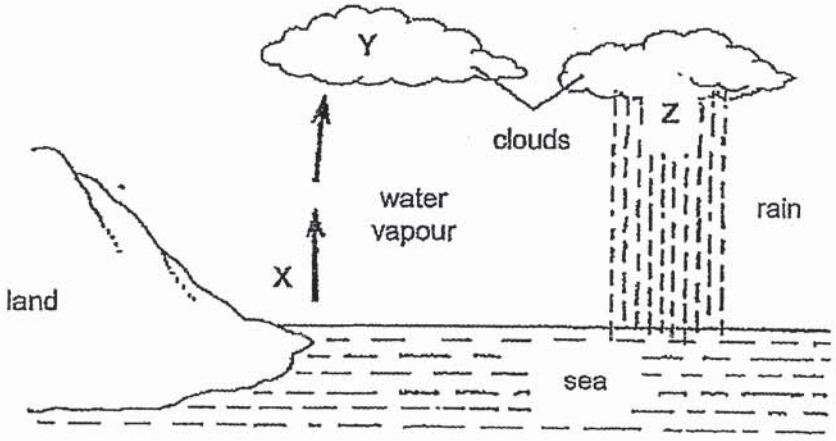
(3) Use the water from washing rice grains to water plants.

(4) Let the water run from the tap while brushing our teeth.

(Go on to the next page)

28 The diagram represents the water cycle.

X, Y and Z are certain processes that must occur to ensure the continuity of the water cycle.



Which of the following statements about the water cycle is correct?

(1) X takes place during the day only.

(2) Z takes place when water droplets condense.

(3) Y takes place when water vapour evaporates.

(4) Z returns water in the liquid state back to earth.

End of Booklet A

Please go on to Booklet B

Anglo-Chinese School
(Primary)

A Methodist Institution
(Founded 1886)

SEMESTRAL ASSESSMENT TWO 2020
SCIENCE
PRIMARY FIVE
BOOKLET B

Name: _____ ( ) Class: Primary 5 ___

Date: 28 October 2020 Total time for Booklets A and B: 1 h 45 min

_____
Parent's/Guardian's signature

INSTRUCTIONS TO CANDIDATES

1. Write your name, index number and class in the spaces provided.
2. Do not turn over this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Write your answers in this booklet.

BOOKLET	MAX MARKS	MARKS OBTAINED
A	56	
B	44	
Total	**100**	

This question paper consists of 14 printed pages including this cover page.

For questions **29** to **41**, write your answers in the spaces provided in this booklet.
The number of marks available is shown in brackets [ ] at the end of each question or part question.

(44 marks)

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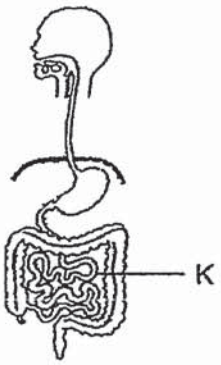
29 The diagram shows the human digestive system.

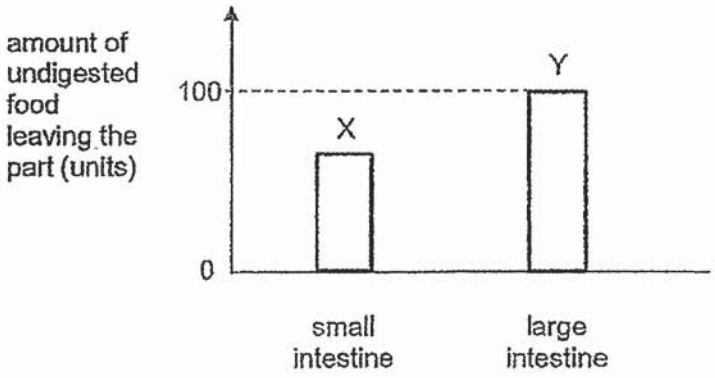


(a) What happens to the food after it is broken down into simpler substances in part K? [1]

_____

_____

(b) To study the function of the small intestine and large intestine, Ronald plotted bar graphs X and Y to show the amount of undigested food leaving each of the two parts.



He plotted graph Y wrongly. Should bar graph Y be the '**same as**' or '**lower than**' bar graph X? Explain your answer. [1]

_____

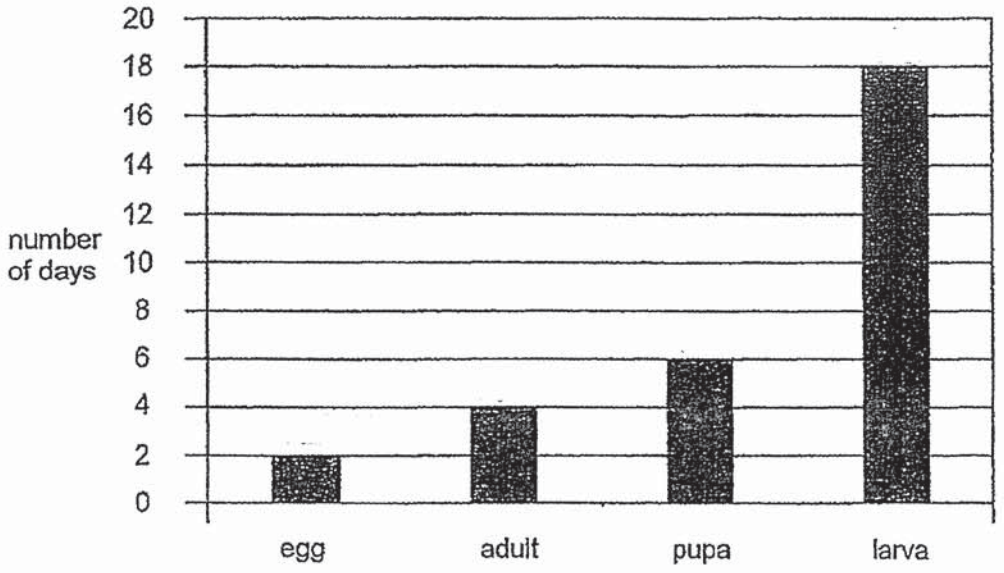
_____

_____

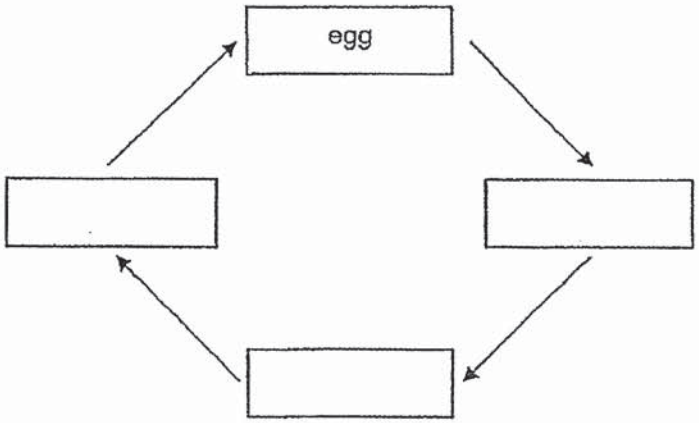
(Go on to the next page)

Score	/2

30 Jim studied the life cycle of insect X. He recorded the number of days for each stage of its life cycle in the graph as shown. However, Jim did not present the stages of the life cycle in the correct order.



(a) Write down the stages of the life cycle of insect X in the correct order. [1]



(b) Based on Jim's results, how many days does it take for insect X to become an adult after the egg has hatched? [1]

(Go on to the next page)

Score / 2

31 (a) Draw a line to complete each statement about the amount of gases we exhale and inhale. [1]

When we exhale, the amount of nitrogen is	●	● less than what we inhale.
When we exhale, the amount of oxygen is	●	● more than what we inhale.
When we exhale, the amount of carbon dioxide is	●	● the same as what we inhale.

(b) Describe the path that oxygen from the surrounding air takes to enter the blood in our body. [2]

_____

_____

_____

(c) State the part where the exchange of gases takes place in: [1]

humans : _____

leaves : _____

(Go on to the next page)

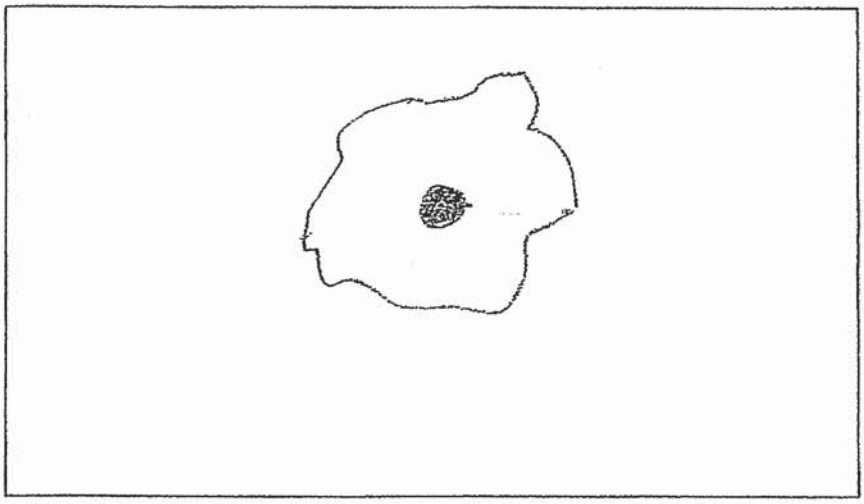
Score 4

32 Max observed a human cheek cell under a microscope.

(a) Using a pencil, draw a cell that he would have observed in the box provided below. In your drawing, label two cell parts, P and Q. [2]

P: a jelly-like substance where cell activities take place

Q: a cell part which controls all activities



Max then observed a single-celled microorganism Y found in pond water under a microscope. Microorganism Y has some parts that trap sunlight to make food during the day.

microorganism Y 

(b) State one similarity and one difference between the human cheek cell and microorganism Y. [2]

Similarity:

_____

_____

Difference:

_____

_____

(Go on to the next page)

Score	/4

33 (a) State why living things reproduce. [1]

(b) Observe the diagrams carefully.

Ali | Ali's father | Ali's mother

Explain why the shape of Ali's thumb looks similar to his father's thumb but not his mother's. [1]

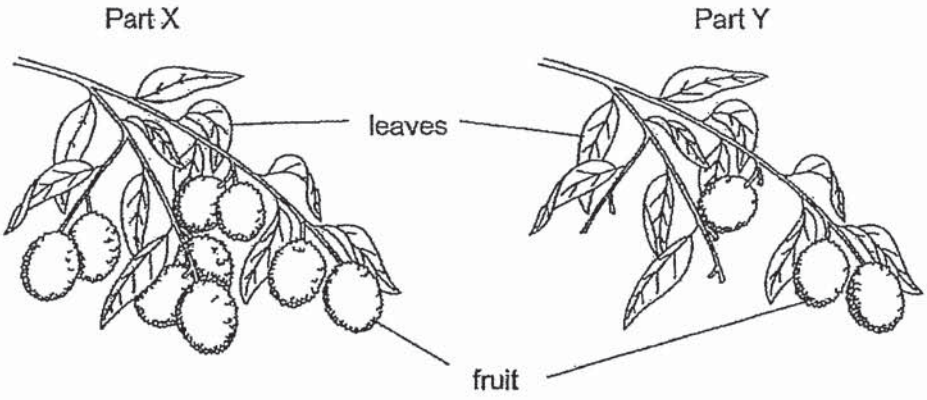
(c) Which reproductive part in both humans and female flowering plants has a similar function? Explain. [2]

(d) Explain why male human reproductive cells are produced in large numbers each time during sexual reproduction. [1]

(Go on to the next page)

Score / 5

34 Louis carried out an experiment on two parts, X and Y, of two similar plants. He removed some fruits from part Y but not part X as shown. Both parts have the same number of leaves and were grown in the same location with the same conditions.



(a) Explain how the remaining fruits on part Y grew bigger than those on part X after some time. [2]

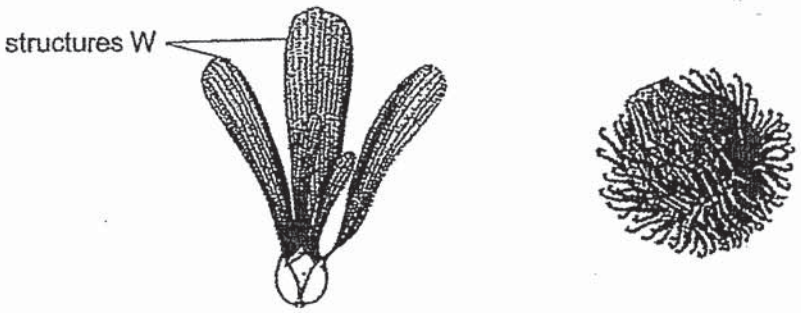
(b) Why did Louis choose plants from the same location for a fair test? [1]

(c) Describe the function of the water-carrying tubes in plants. [1]

(Go on to the next page)

Score 4

35 The diagrams show two fruits, A and B, with different methods of dispersal.



A B

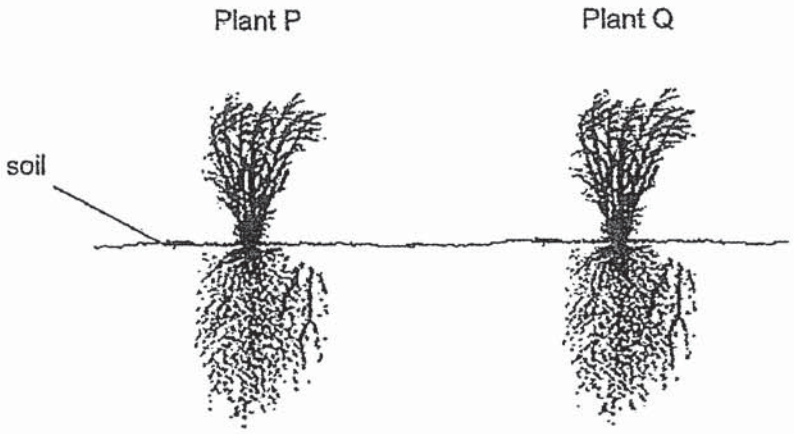
(a) Based on the diagrams, which fruit, A or B, is more likely to be dispersed by animals? Explain your answer. [2]

(b) Structures W of fruit A were completely removed. How would this affect the distance travelled by fruit A from its parent plant during its dispersal? [1]

(Go on to the next page)

Score / 3

The diagram shows two similar plants growing side by side in a farm.



(c) **(i)** State two substances that both plants P and Q need from the soil to survive. [1]

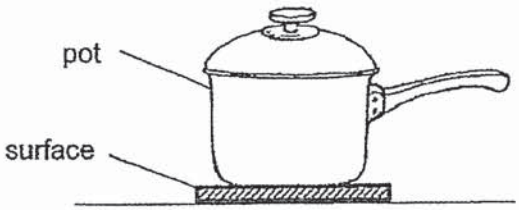
_____ and _____

(ii) Explain the advantage of growing the two plants with a space in between them. [1]

_____

_____

36 Alice cooked some soup in a pot and wanted to keep it as hot as possible.



Should she place the pot on a metal or wooden surface? Explain your answer. [2]

_____

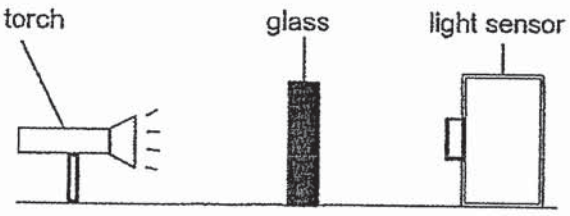
_____

_____

(Go on to the next page

Score	/4

37 Robert wanted to find out which glass, A, B, C or D, is most suitable to be used for his room window to prevent as much light as possible from entering. He placed a piece of glass in front of a torch and shone a light through it as shown. He conducted the experiment in a dark room.



The amount of light that passed through the glass was measured and recorded in the table below. He repeated his experiment with different types of glasses but of identical size with the same torch and light sensor.

Glass	Amount of light that passed through (units)
A	2000
B	1600
C	1200
D	1450

(a) Based only on the results, what is a conclusion that Robert can make? [1]

_____

_____

(b) Suggest another variable to be kept constant. [1]

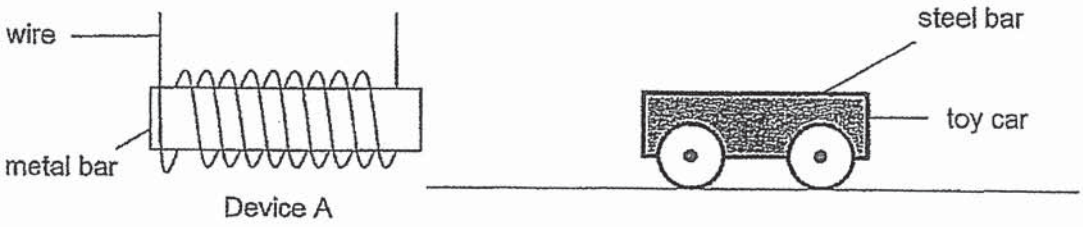
_____

_____

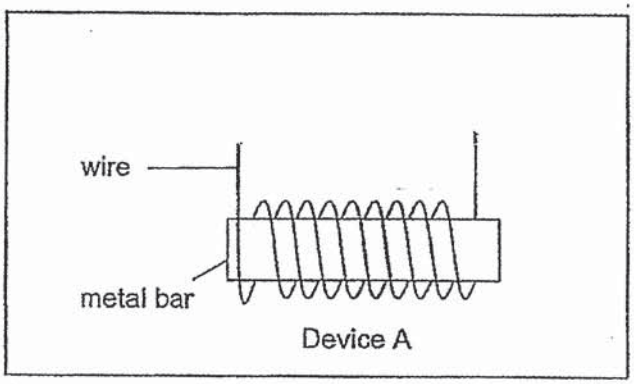
(Go on to the next page)

Score 2

38 Device A is used to move the toy car which has a steel bar on it.



(a) Using a pencil and ruler, draw electrical components to close the circuit in Device A below so that the toy car can move towards it. Use electrical symbols in your drawing. [1]



(b) What could be done to Device A so that the toy car can move faster? [1]

_____

_____

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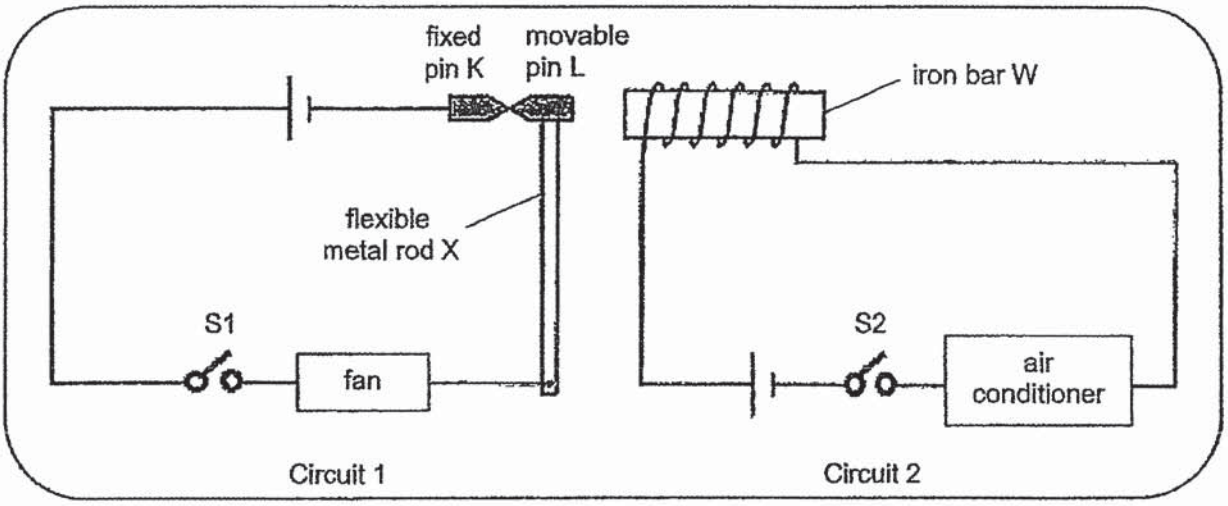
39 Roy designed an electrical system for a fan and an air conditioner as shown. The system prevents both the fan and air conditioner from being turned on at the same time.



Iron bar W is placed inside a coil of wire. K and L are two iron pins in contact with each other. Pin K is fixed. Pin L is attached to a metal rod X which can move sideways.
Roy closed switch S1 to turn the fan on. Next, he closed switch S2 which turned the air conditioner on.

(a) Explain why Pin L would move towards iron bar W when switch S2 was closed. [1]

(b) Give a reason why the fan would turn off when switch S2 was closed. [1]

(c) Explain why Roy's electrical system would not work if Pin L was changed to copper. [2]

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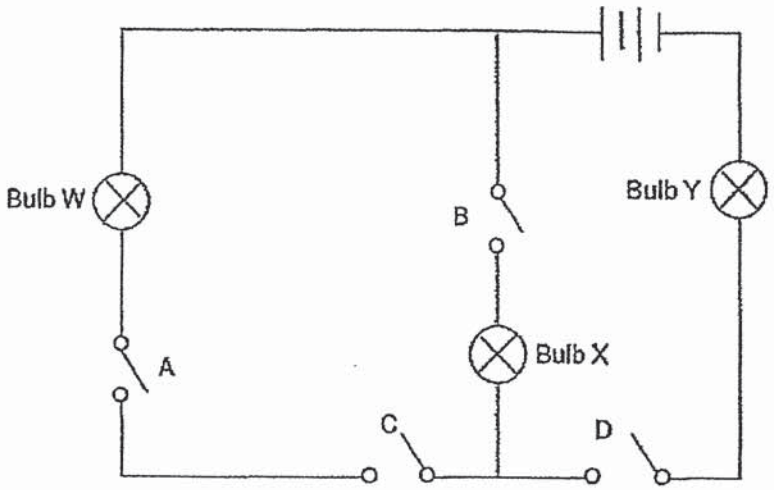
Score / 4

40 The diagram represents an electrical circuit with four switches, A, B, C and D.



(a) Which two switches must be closed for two bulbs to light up at the same time? [1]

Switches _____ and _____

(b) When all the switches are closed and Bulb X fuses, explain why Bulb Y can still light up. [1]

_____

_____

(c) State which two bulbs are arranged in parallel. [1]

Bulbs _____ and _____

(d) State one advantage of arranging bulbs in parallel. [1]

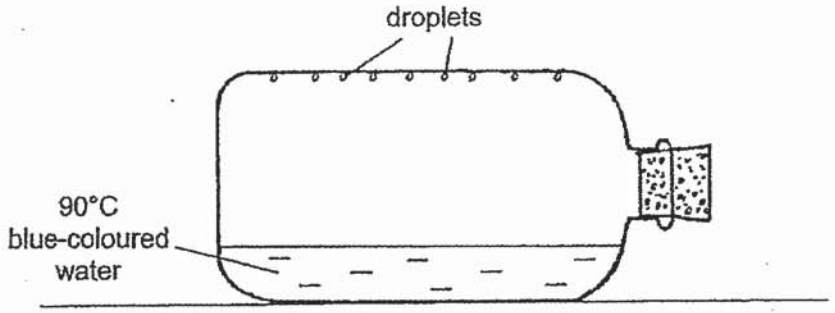
_____

_____

(Go on to the next page)

Score	/4

41 The diagram shows a tightly sealed glass container with some 90°C blue-coloured water in it.



(a) Name the two processes that caused the droplets to form. [1]

_____ and _____

(b) What is the colour of the droplets formed? [1]

_____

(c) What would most likely happen to the amount of droplets if 50°C blue-coloured water was used instead? Explain your answer. [2]

_____

_____

_____

End of Booklet B/ End of Paper

Please check your answers

Score	/ 4

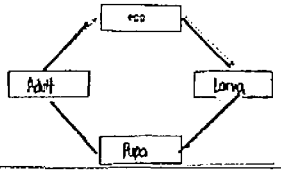
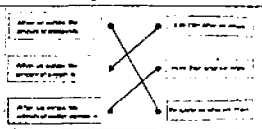
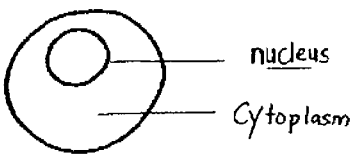
ANSWER KEY

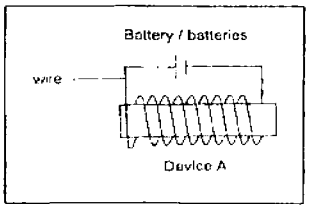
YEAR : 2020
LEVEL : PRIMARY 5
SCHOOL : ACS
SUBJECT : SCIENCE
TERM : SA2

BOOKLET A

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

BOOKLET B

Q29 a)	The digested food is absorbed into the bloodstream.
Q29 b)	The bar graph should be the same as X. The large intestine does not absorb undigested food.
Q30 a)	
Q30 b)	24 days
Q31 a)	
Q31 b)	When a person inhale air, air enters the nose and windpipe into the lungs. This is where gaseous exchange takes place and oxygen is absorbed into the blood.
Q31 c)	Humans : air sacs Leaves : stomata
Q32 a)	

Q32 b)	Similarity : Both the cheek cell and microorganism Y have a nucleus. Difference : Microorganism Y has tail but the cheek cell does not.
Q33 a)	To ensure the surivival of their species.
Q33 b)	The shape of the thumb is pass from Ali's father to him.
Q33 c)	The part is ovary.The ovary produces the plant or female reproductive cell.
Q33 d)	To increase the chances of fertilisation.
Q34 a)	Part Y fruits grew bigger because the fruits got a lot of food and water because the food and water did not have to be distrubeted among a lot of fruit unlike in part X where there is many more fruits.
Q34 b)	To ensure that the plants receive the same amount of water.
Q34 c)	The water-carrying tubes transport water and minerals from the roots to leaves of the plant.
Q35 a)	Fruit B. It has hook's so when animals pass by the fruit can stick to the animal's outer covering.
Q35 b)	The distance travelled would be shorter.
Q35 c)	i. Nutrients and minerals ii. They do not need to compete for water and minerals.
Q36	Wooden surface as wood is a poor conductor of heat. Therefore it will conducts heat slower from the hot pot.
Q37 a)	Glass C allow the least light to pass through.
Q37 b)	Keep the distance between the glass and the torch the same.
Q38 a)	Connect a battery to the circuit with wires without any gaps. 
Q38 b)	Add more coils of wire to the metal bar.
Q39 a)	When Switch S2 is closed, circuit 2 forms a closed. Iron bar W would become an magnet and attract Pin L.
Q39 b)	When Switch S2 was closed , pin L would move towards W. It creates a gap between Pin K and Pin L. Circuit 1 become an open circuit hence the fan was turned off.

Q39 c)	Copper is a non-magnetic material. When Switch S1 and S2 are closed, Circuit 2 is a closed circuit but Pin L is non attract to W because copper is a non-magnetic material, so the circuit 1 with the fan would still be closed. Therefore , both the fan and air-conditional will be turned on at the same time.
Q40 a)	Switch S1 and S2
Q40 b)	A closed circuit can still be formed where electricity can flow through bulb W and Y in the circuit.
Q40 c)	Bulb W and X
Q40 d)	When one bulb fuses, the other bulbs can still lightup.
Q41 a)	X , Z
Q41 b)	Colourless
Q41 c)	The amount of droplets would decrease Less water will turn into water vapour. Therefore , less water vapour will turn into tiny water droplets.

END