METHODIST GIRLS' SCHOOL

Founded in 1887

END-OF-YEAR EXAMINATION 2020
PRIMARY 5
SCIENCE

BOOKLET A

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

INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.
Follow all instructions carefully.
Answer all questions.
Shade your answers in the Optical Answer Sheet (OAS) provided.

Name: _____ ( )

Class: Primary 5._____

Date : 27 October 2020

This booklet consists of 17 printed pages including this page.

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 on the Optical Answer Sheet (OAS).

[56 marks]

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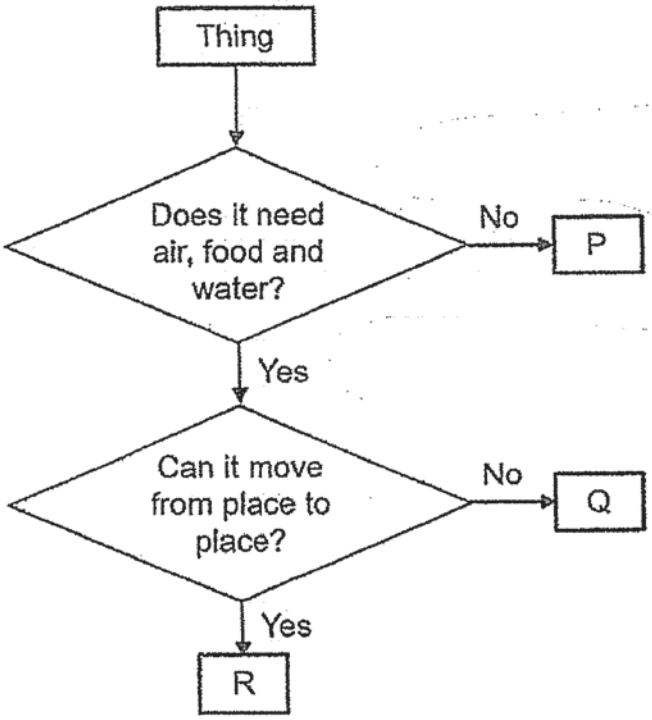
1 The flowchart below is used to identify three things, P, Q and R.



Which of the following are most likely to be P, Q and R?

	P	Q	R
(1)	bacteria	horse	moss
(2)	squirrel	television	mushroom
(3)	fire	moss	cat
(4)	mushroom	bacteria	rabbit

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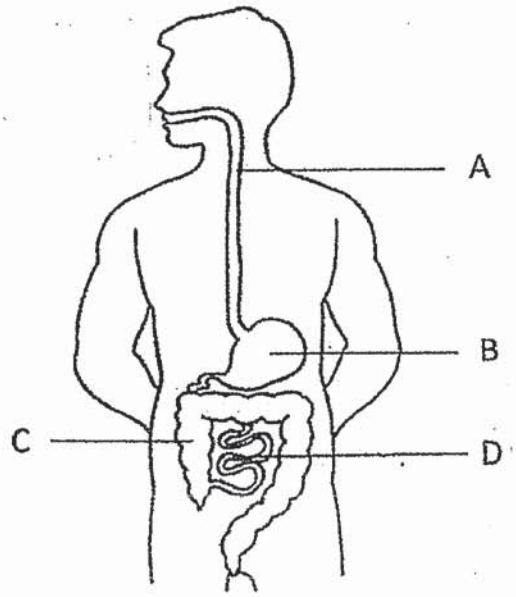
2 The diagram below shows the human digestive system with some parts labelled A, B, C and D.



Which parts produce digestive juices?

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

3 The young of insect X and insect Y are shown below.

Insect X

Insect Y

Which of the following statements are correct about the young of insects X and Y?

A Both will moult.
B Both look like the adults.
C Both do not have wings.
D Both will go through the pupa stage.

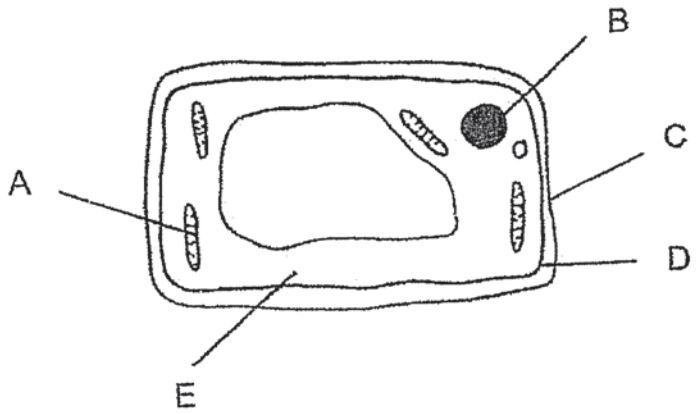
(1) A and B only
(2) A and C only
(3) B and C only
(4) C and D only

(Go on to the next page)

4 What is the similarity between sexual reproduction of flowering plants and humans?

(1) They involve fertilisation of the ovules.
(2) Pollination must take place before fertilisation.
(3) Reproductive cells are produced in the anthers.
(4) Fertilisation occurs at the female reproductive part.

5 The diagram below shows parts of a cell.



Which of the following is correct?

	Can only be found in plant cells	Can be found in both plant and animal cells	Allow certain substances to pass through the cell
(1)	B	A and E	C
(2)	B, C	A, D and E	C
(3)	A, C	B, D and E	D
(4)	A, C	C, D and E	D

6 Which part of the cell controls most of the activities?

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

(Go on to the next page)

7 Three types of plants P, Q and R were planted along the coast of an island as shown in Diagram 1. After a few years, more plants were found growing at different parts of the island as shown in Diagram 2.

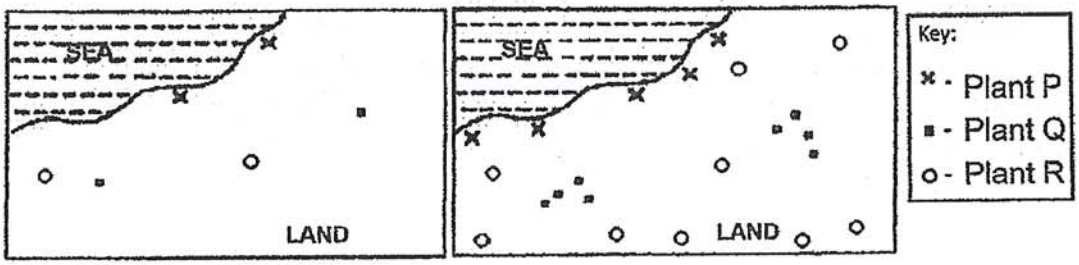
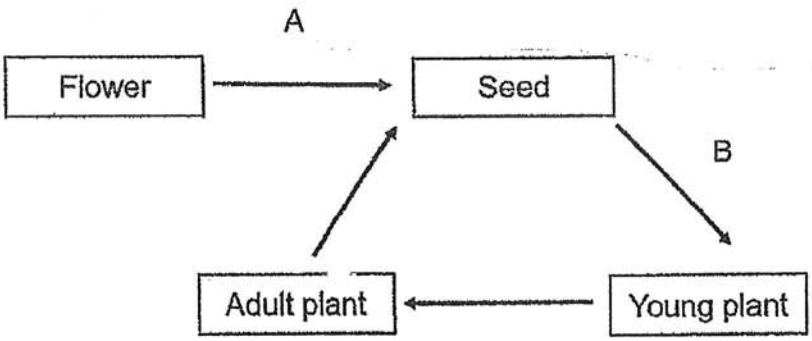


Diagram 1 Diagram 2

Which of the following best represent how the fruits and seeds of each type of plant are dispersed?

	Plant P	Plant Q	Plant R
(1)	By water	By splitting	By animals
(2)	By water	By animals	By splitting
(3)	By wind	By water	By animals
(4)	By splitting	By animals	By water

8 A flowering plant undergoes processes A and B as shown below.

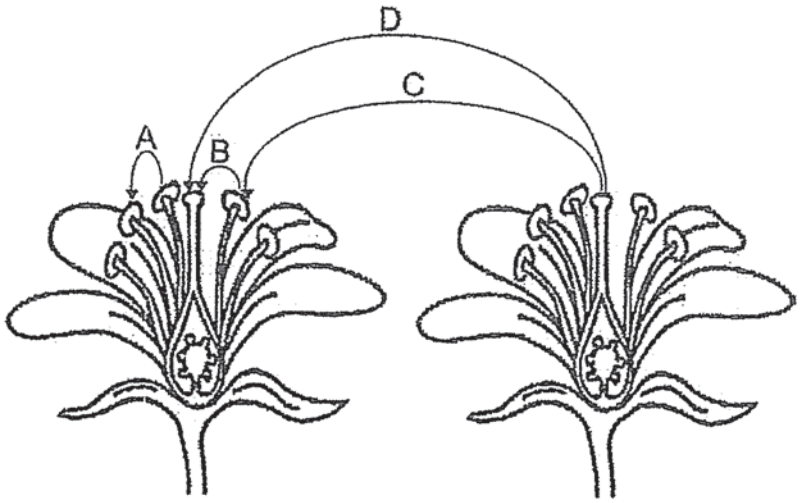


Which of the following correctly represent the processes A and B?

	A	B
(1)	Fertilisation	Germination
(2)	Dispersal	Fertilisation
(3)	Pollination	Fertilisation
(4)	Fertilisation	Pollination

(Go on to the next page)

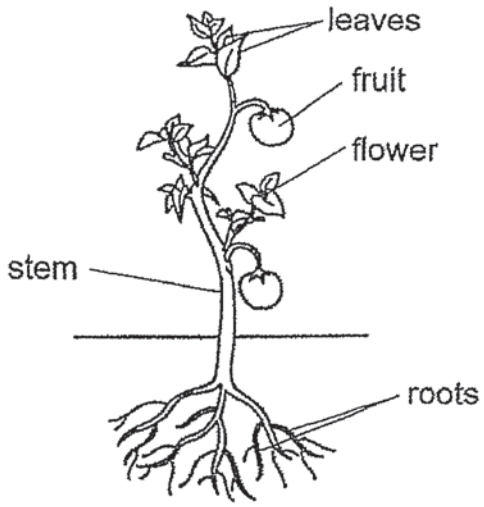
9 The diagram below shows two flowers of the same species.



Which arrow shows pollination?

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

10 The diagram below shows a plant.

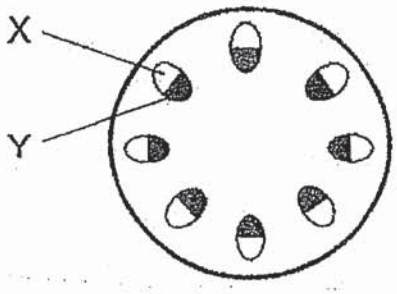


Which parts of the plant will food made by the leaves be transported to?

(1) Stem and root only
(2) Stem, fruit and root only
(3) Stem, fruit and flower only
(4) Stem, fruit, root and flower

(Go on to the next page)

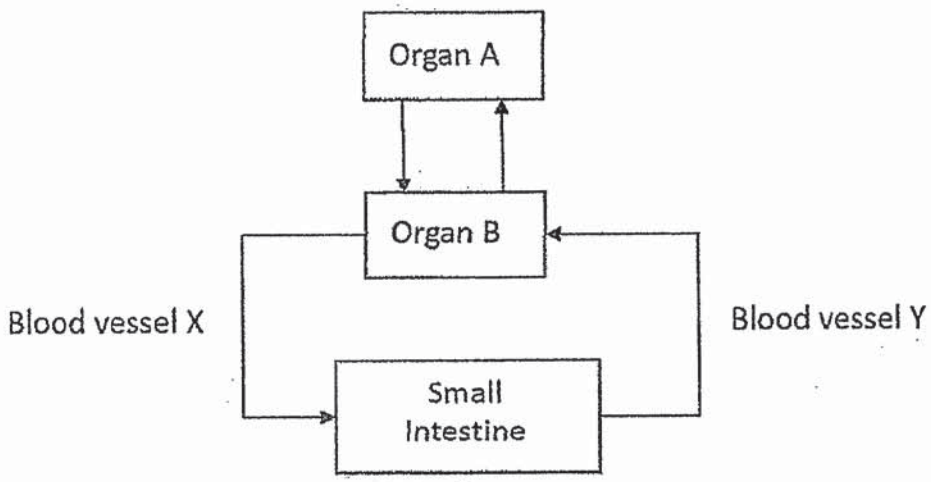
11 Umar removed the root of a plant and put it into a flask of red-coloured water for two days. After that, he cut the stem of the plant and observed the cross-section of the stem as shown below.



Umar observed that part Y turned red but not part X. Which of the following best explains his observation?

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

12 The chart below shows how substances are transported in the human body.



Which of the following is correct?

	Organ A	Organ B	Carbon dioxide at X compared to Y	Digested food at Y compared to X
(1)	Lungs	Heart	More	More
(2)	Lungs	Heart	Less	More
(3)	Heart	Lungs	More	Less
(4)	Heart	Lungs	Less	Less

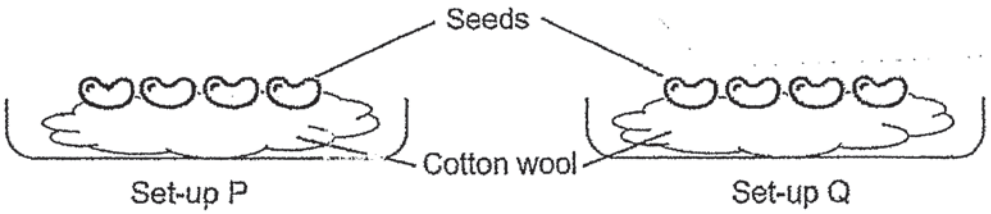
(Go on to the next page)

13 Which of the following statements about the human circulatory system are correct?

A Blood vessels carry blood rich in carbon dioxide from the lungs to the heart.
B Blood vessels carry blood rich in oxygen from the heart to the muscles.
C The heart is an organ that pumps blood containing substances to all parts of the body.
D The digestive system digests food and the digested food is absorbed by the blood and transported to all parts of the body.

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

14 Raju prepared two set-ups, P and Q, as shown in the diagram below. He only changed one variable in the experiment.

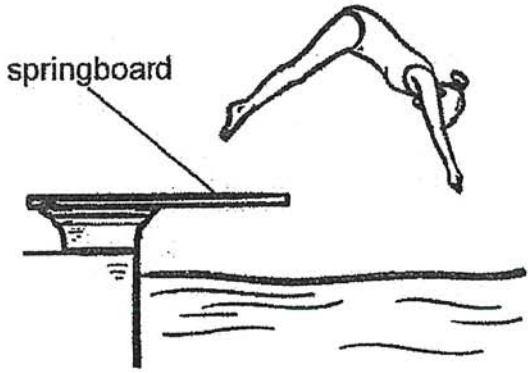


After 4 days, Raju noticed that all the seeds in both set-ups germinated. Which of the following is the changed variable?

(1) Presence of light
(2) Presence of water
(3) Presence of oxygen
(4) Presence of warmth

(Go on to the next page)

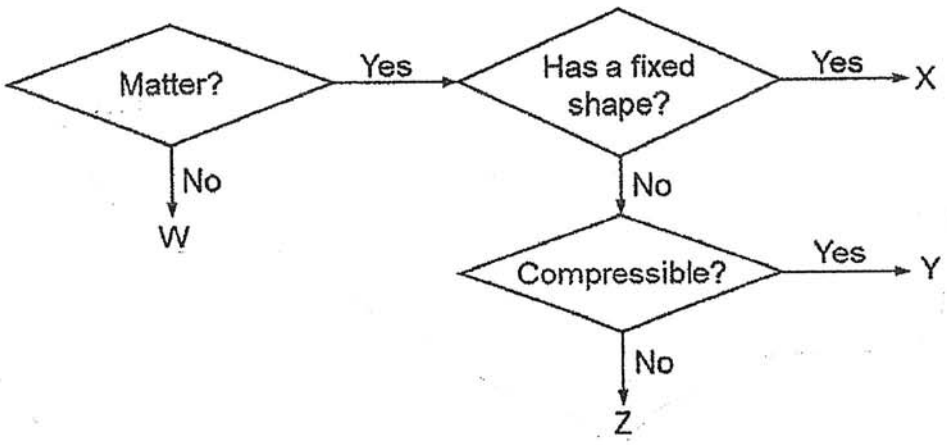
15 The diagram below shows a girl diving from a springboard at a swimming pool.



Which properties of material are important for making the springboard?

	Flexible	Strong	Waterproof
(1)	✓	✓	
(2)		✓	✓
(3)	✓		✓
(4)	✓	✓	✓

16 Study the diagram below.

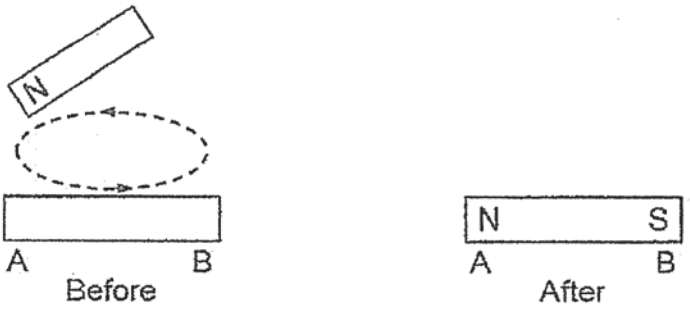


Which of the following correctly identify substances W, X, Y and Z?

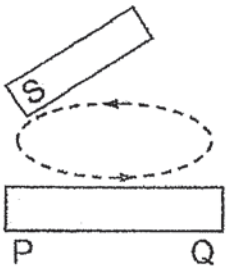
	W	X	Y	Z
(1)	heat	glass	sand	water vapour
(2)	light	nitrogen	paper	iron
(3)	air	wood	plastic	steel
(4)	shadow	stone	oxygen	water

(Go on to the next page)

17 The diagram below shows an iron bar AB that is magnetised using the stroking method.

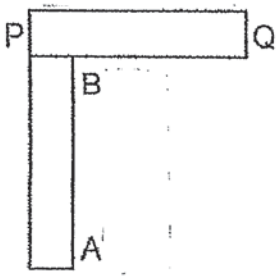


Another iron bar, PQ, was magnetised using the same magnet.

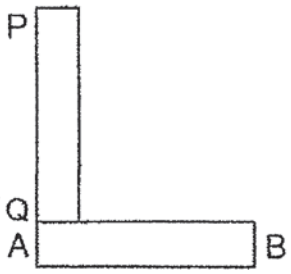


Which one of the following diagrams shows a possible arrangement of iron bars AB and PQ after they were magnetised?

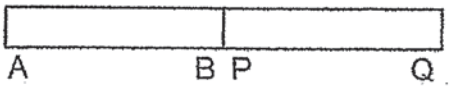
(1)



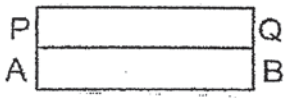
(2)



(3)



(4)



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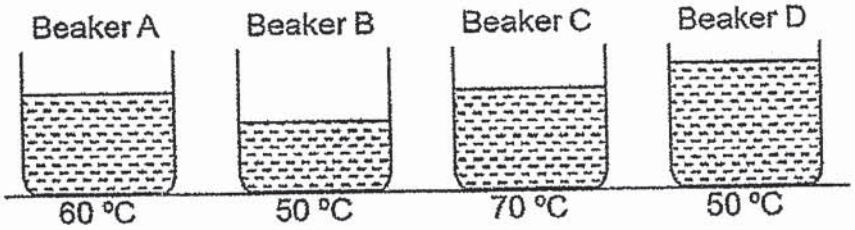
18 The diagram below shows a plastic ball before and after it has been dented. There was no hole on the ball.

Which of the following correctly represent the volume and mass of air in the plastic ball before and after it has been dented?

	Before		After	
	Volume of ball (cm^3)	Mass of ball (g)	Volume of ball (cm^3)	Mass of ball (g)
(1)	155	97	140	97
(2)	155	97	140	93
(3)	155	97	155	97
(4)	155	97	155	93

19 Josiah wanted to investigate how the amount of heat in water is affected by its volume. Four identical beakers, A, B, C and D, were filled with different volume of water and heated to different temperatures.

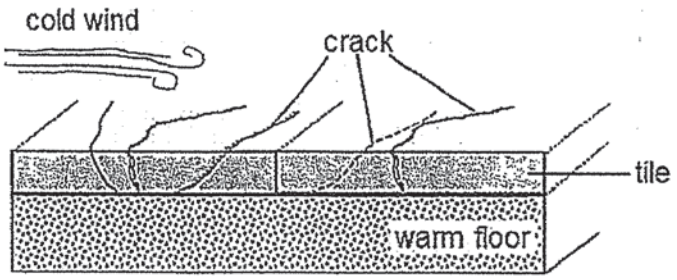


Which beakers should he choose to conduct the experiment?

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

(Go on to the next page)

20 When air becomes very cold suddenly, cracks appeared on the pavement.



Which of the following explain how the change in temperature caused the pavement to crack?

A The cold wind caused the top of tile to expand.
B The cold wind caused the top of tile to contract.
C The warm floor caused the bottom of tile to expand.
D The warm floor caused the bottom of tile to contract.

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

21 Vasu shone a torch on a vase and the shadow was cast onto the screen.

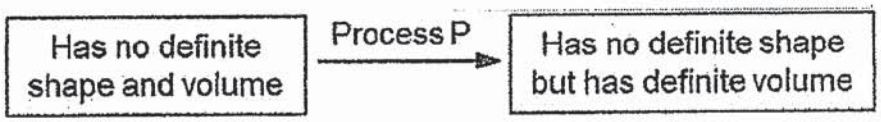
If Vasu wanted to make the shadow of the vase bigger, he should _____.

A move the torch nearer to the vase
B move the screen nearer to the vase
C move the torch further away from the vase
D move the screen further away from the vase

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

(Go on to the next page)

22 The diagram below shows the change in state of water.



What is process P?

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

23 The table below shows the melting points and boiling points of four substances, J, K, L and M.

Substance	Melting point (°C)	Boiling Point (°C)
J	0	100
K	10	85
L	25	110
M	50	180

At which temperature would all the substances be in the same state?

(1) 0 °C
(2) 30 °C
(3) 80 °C
(4) 160 °C

(Go on to the next page)

24 Yasmin placed four containers, P, Q, R and S, filled with 250 ml of water in the school field. She measured the amount of water left in each container at the end of the day and recorded the results in the following table.

Container	Amount of water left at the end of the day (ml)
P	150
Q	175
R	190
S	175

Which of the following statements are correct?

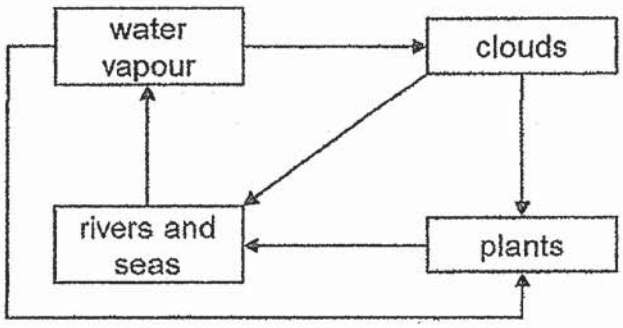
A Container P has the lowest rate of evaporation.
B More water is evaporated from container S than R.
C Container R has the largest exposed surface area of water.
D The rate of evaporation of water in container Q and S is the same.

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

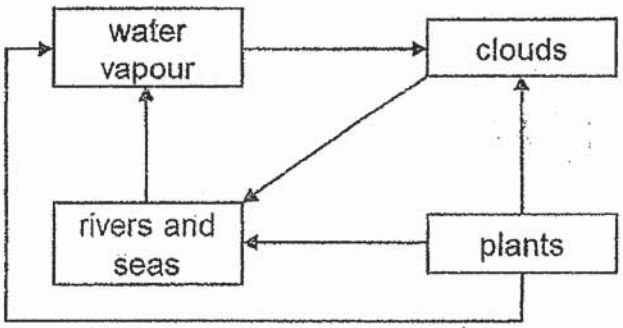
(Go on to the next page)

25 Which one of the following diagrams shows how plants play a part in the water cycle?

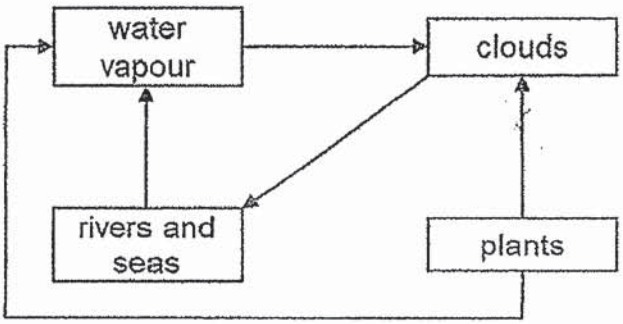
(1)



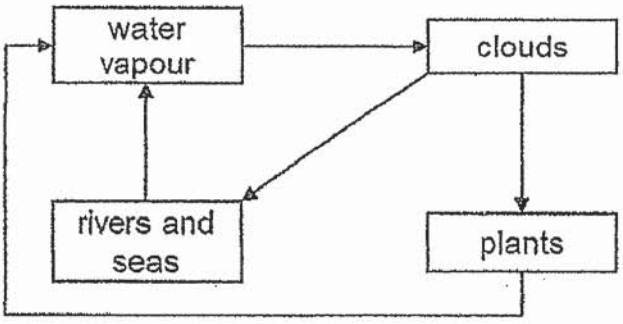
(2)



(3)



(4)



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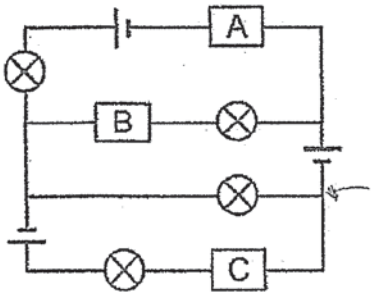
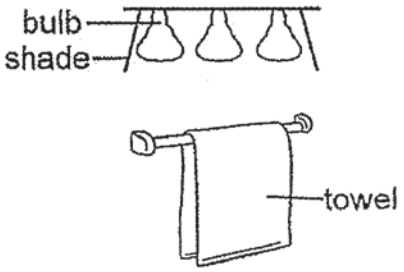
26 Three materials, A, B and C, are connected in an electric circuit and only two bulbs lit up.



Which of the following best represent materials A, B and C?

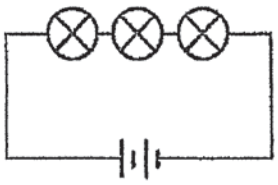
	A	B	C
(1)	iron	copper	wood
(2)	plastic	iron	copper
(3)	wood	plastic	copper
(4)	copper	wood	iron

27 The diagram below shows three identical light bulbs of a lamp in the bathroom.

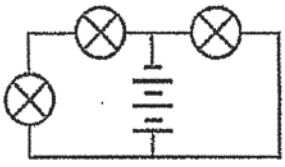


Which one of the following circuits should be used for the lamp so that the towel will dry in the shortest time?

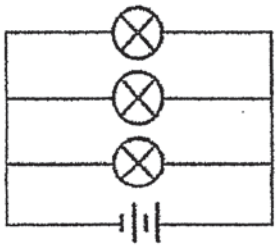
(1)



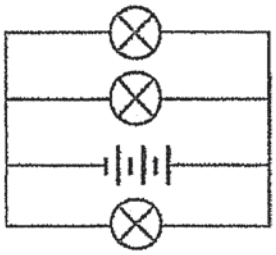
(2)



(3)



(4)



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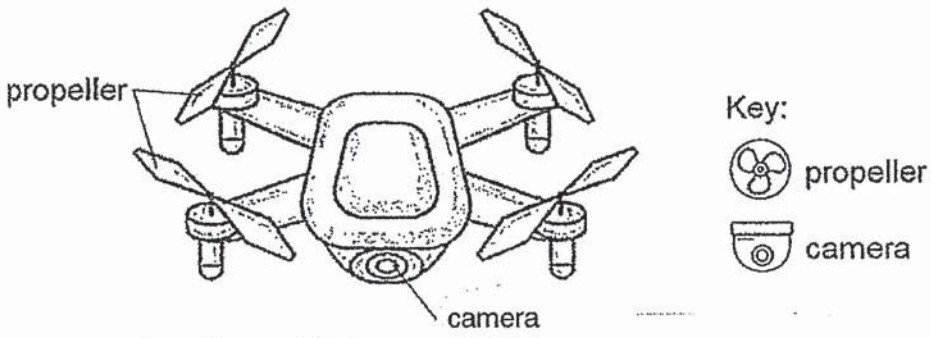
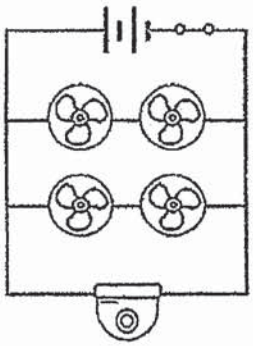
28 The diagram below shows a drone. When the switch is closed, the camera and propellers are turned on.



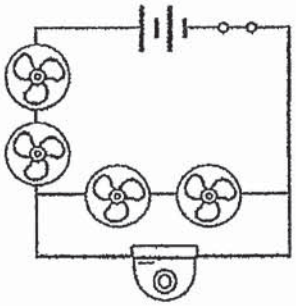
When a propeller stopped working, only the camera continue to work.

Which one of the following electrical circuit diagrams shows the connection of the camera and the propellers?

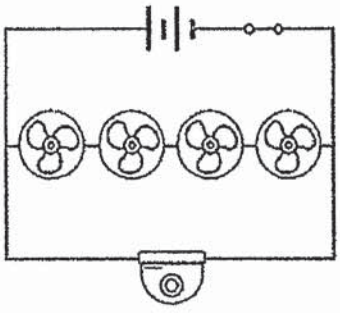
(1)



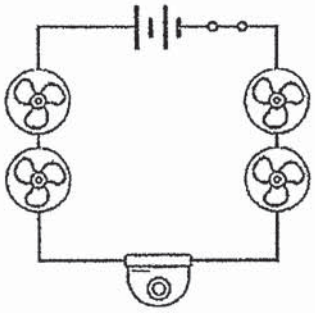
(2)



(3)



(4)



End of Booklet A

METHODIST GIRLS' SCHOOL

Founded in 1887

END-OF-YEAR EXAMINATION 2020
PRIMARY 5
SCIENCE

BOOKLET B

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

INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.
Follow all instructions carefully.
Answer all questions.
Write your answers in this booklet.

Name: _____ ( )

Class: Primary 5._____

Date : 27 October 2020

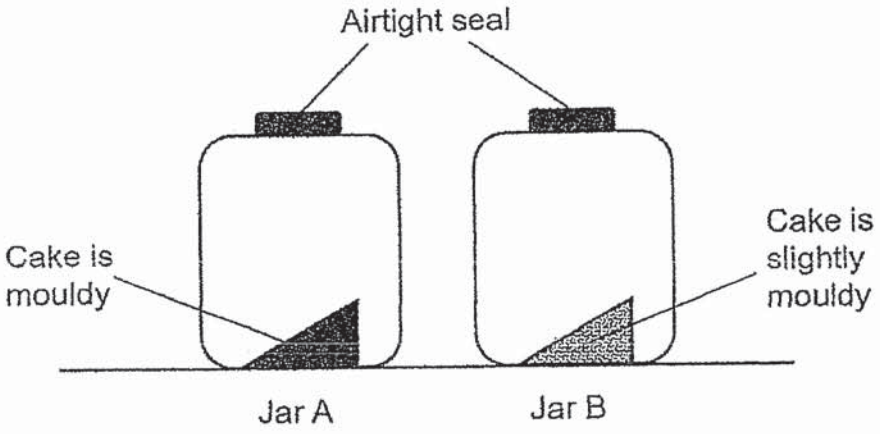
Booklet A	56
Booklet B	44
Total	100
Parent's Signature	

This booklet consists of 17 printed pages including this page.

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

[44 marks]

29 Hannah put two pieces of cakes into two identical jars, A and B and added a few drops of water to the cake in jar A. She ensured that the jars were airtight sealed so that no air could enter the jars. The diagram below shows the results of her experiment after three days.



(a) Which group of living thing does mould belong to? [1]

(b) Why does Hannah have to use airtight jars to ensure that the experiment is a fair test? Explain your answer. [1]

(c) Hannah repeated her experiment by using a third piece of cake she heated in an oven. She observed that the cake did not turn mouldy after three days. Give a reason for Hannah's observation. [1]

3

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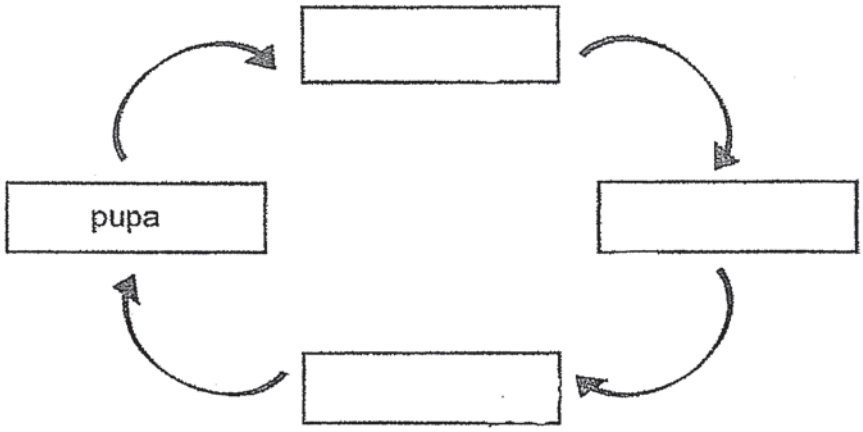
30 Aaliyah studied the life cycle of an insect P.

(a) Complete the life cycle of insect P by writing down the stages in the correct order. [1]



(b) Can insect P be a cockroach? Explain your answer. [1]

_____

_____

2

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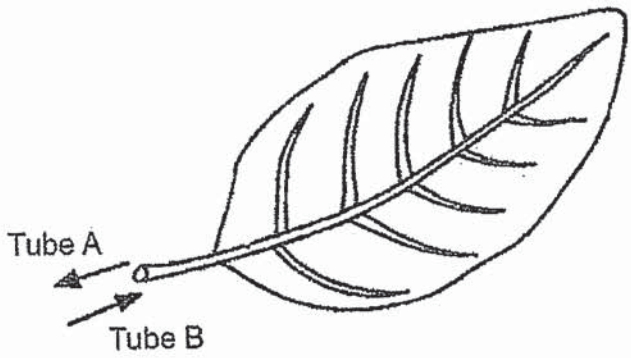
31 The diagram below shows a leaf from a plant.

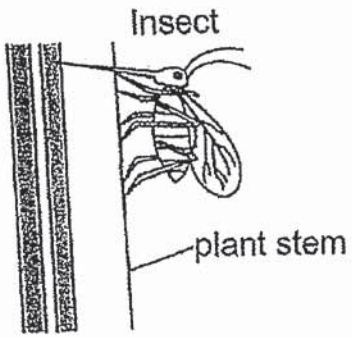


(a) Substances are transported in tubes A and B. Name the tubes. [1]

A: _____

B: _____

An insect is feeding on the sap of the plant as shown below.



(b) Explain why the growth of the plant roots can be affected when the insect feeds on the sap. [2]

_____

_____

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3

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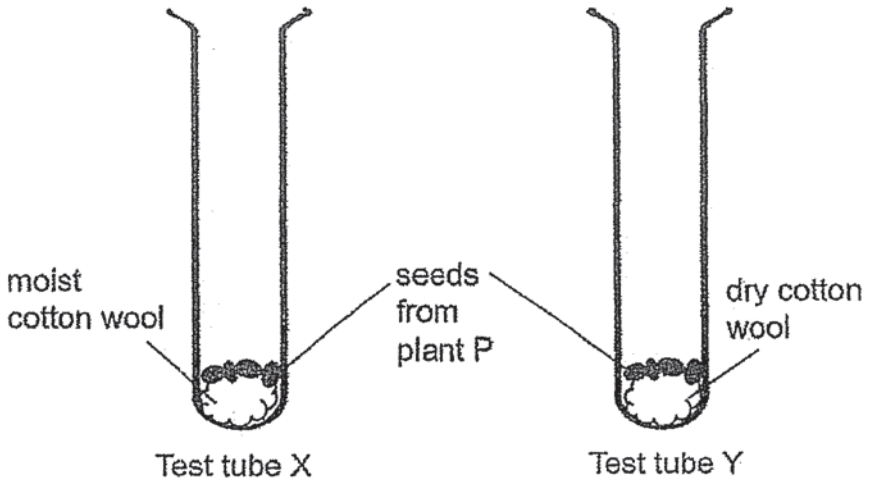
32 Bala carried out an experiment to investigate seed germination of plant P as shown in the diagram below.



(a) During the experiment, the cotton wool in test tube X was kept moist, while the cotton wool in test tube Y was kept dry.

(i) Bala decided to put the test tubes on a table near the windows. Explain why the location is suitable for Bala's experiment. [1]

(ii) In which test tube, X or Y, would the seeds germinate? Explain your answer. [1]

2

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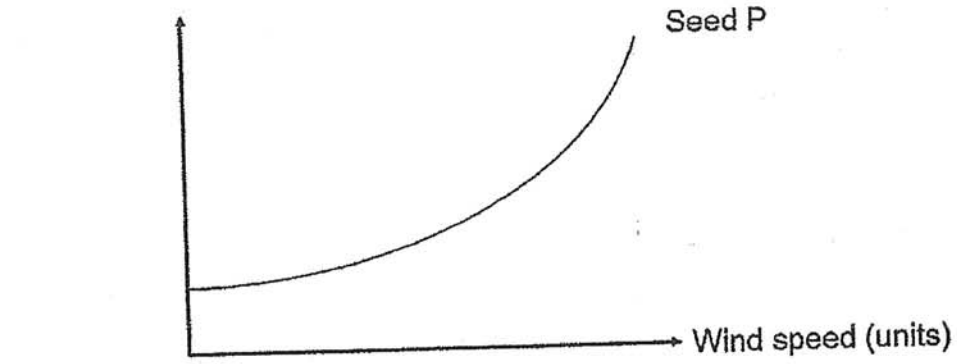
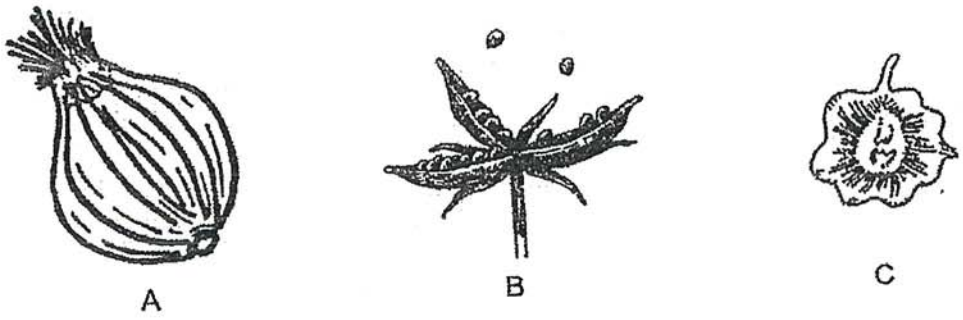
Bala then plotted the graph below to show how wind speed can affect the distance travelled by the seed P.





(b) Based on the graph above, which fruit A, B or C, does seed P belong to? Explain your answer. [1]

(c) Seed dispersal is one of the many processes involved in plant reproduction. Explain why seed dispersal is important. [2]

3

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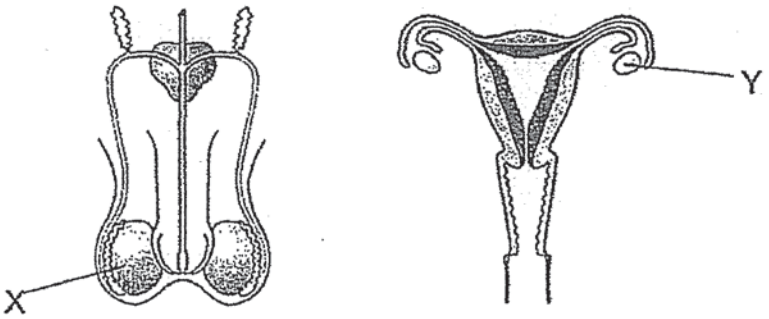
33 The diagram below shows the male and female reproductive systems in humans.



(a) Name organ X and organ Y. [1]

Organ X: _____

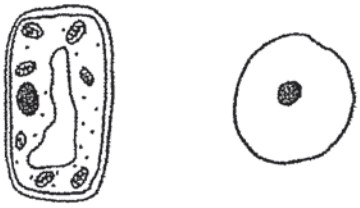
Organ Y: _____

(b) Which part of a flower has the same function as part X? Explain your answer. [1]

_____

_____

(c) The diagram below shows two cells.



Cell X Cell Y

(i) Which of the cells, X or Y, is taken from the cheek of a human? Give a reason for your answer. [1]

_____

_____

(ii) Which plant part is cell X taken from? Explain your answer. [1]

_____

_____

4

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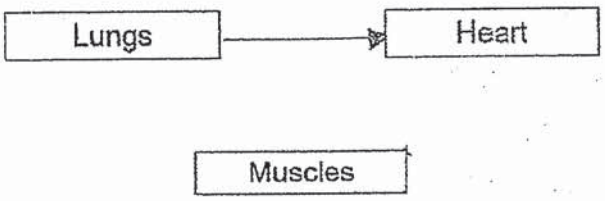
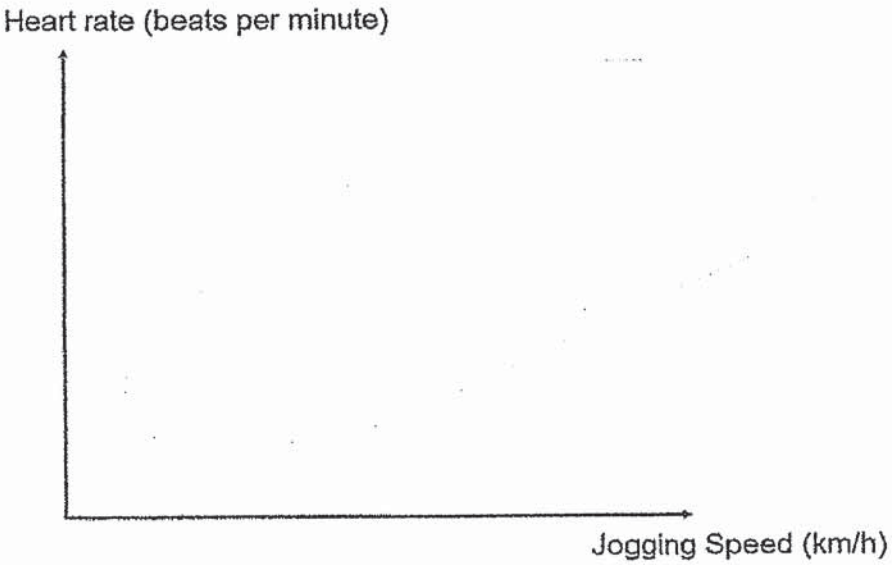
34 Ali wants to find out how his average heart rate changes when he runs.

(a) Three organs of the body are shown below. Draw two arrows (⟶) in the diagram below to show how blood rich in oxygen is transported through the organs. [1]



(b) The graph below shows how Ali's heart rate changes as he jogs.



(i) What is the relationship between Ali's jogging speed and his heart rate? [1]

(ii) Explain your answer in (b)(i). [1]

3

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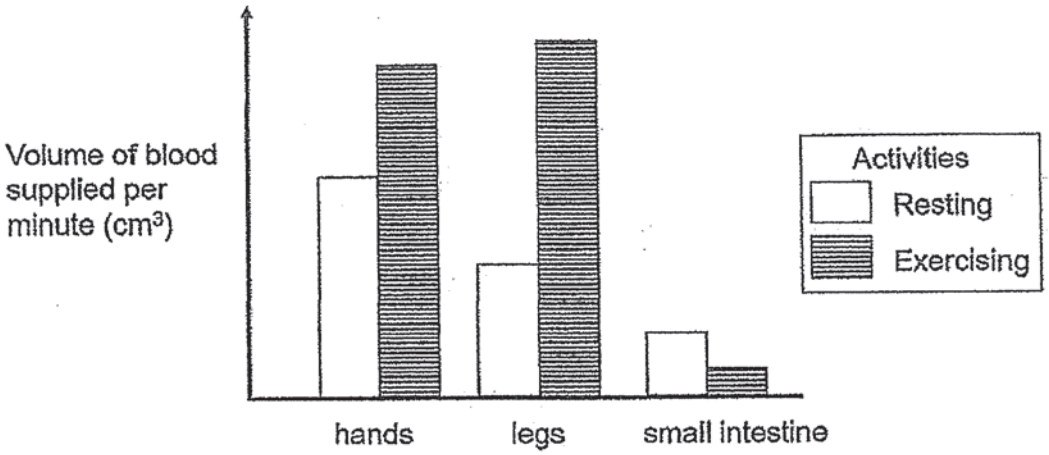
Ali carried out an experiment to measure the volume of blood supplied per minute to different parts of the human body during two activities: resting and exercising.



(c) Based on the graph above, explain how exercising after having a meal will affect the absorption of food in the small intestine. [2]

2

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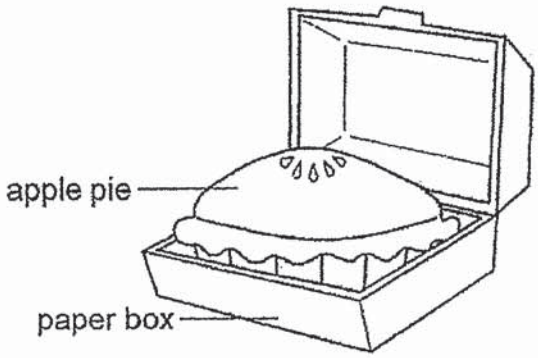
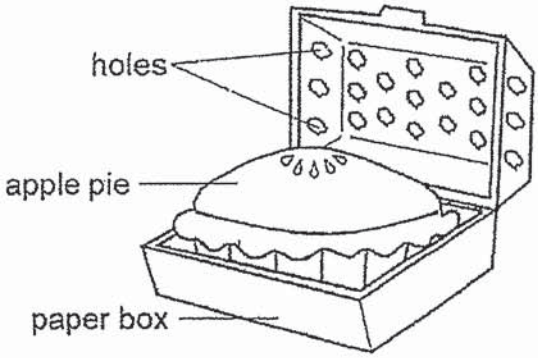
35 Felix baked an apple pie and brought it to a party in a paper box as shown below.



When she opened the paper box, she found that the inner surface of the cover and the apple pie were wet.

(a) Explain why the apple pie became wet. [2]

Felix put another apple pie into a similar paper box. The paper box and apple pie were not damp.



(b) Give an explanation for Felix's observation. [1]

3

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36 Mr Murthu is famous for making 'teh tarik', or 'pulled tea'. He transferred hot tea from one container into another at a certain distance for five times and created a cup of tea with foam as shown below.

His son, Anaisha, carried out an experiment to find out if the distance between the containers, *d*, affects the final temperature of the 'pulled' tea. The results are as shown in the table below.

Distance, *d* (cm)	50	60	70	80	90
Final temperature of the 'pulled tea' (°C)	98	91	88	85	80

(a) Based on the results, state the relationship between distance *d* and the final temperature of the 'pulled' tea. [1]

_____

_____

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

_____

_____

2

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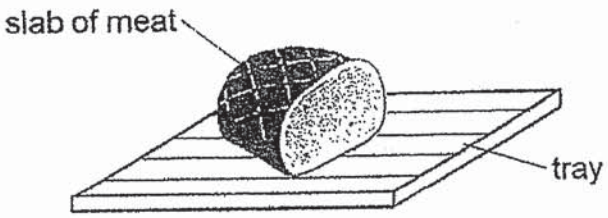
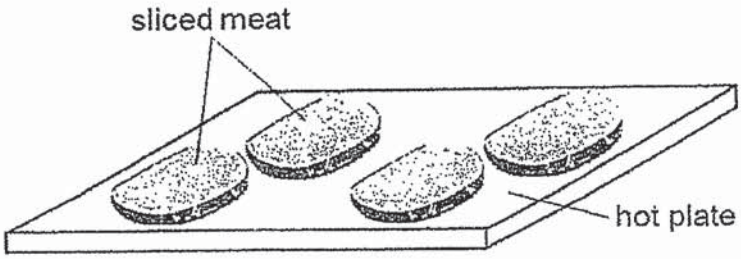
37 Alisha took a slab of frozen meat from the freezer and thawed it on a tray as shown in the diagram below. Thawing is a process by which a frozen substance becomes soft as a result of warming up.



(a) Which tray, plastic or metal, should be used so that the slab of frozen meat can be thawed in a shorter time? Explain your answer. [1]

After the meat was thawed, Alisha cut the slab of meat into four thin slices and cooked them on a hot plate as shown in the diagram below.



(b) Would the sliced meat cook faster or slower than the whole slab of meat on the hot plate? Explain your answer. [2]

3

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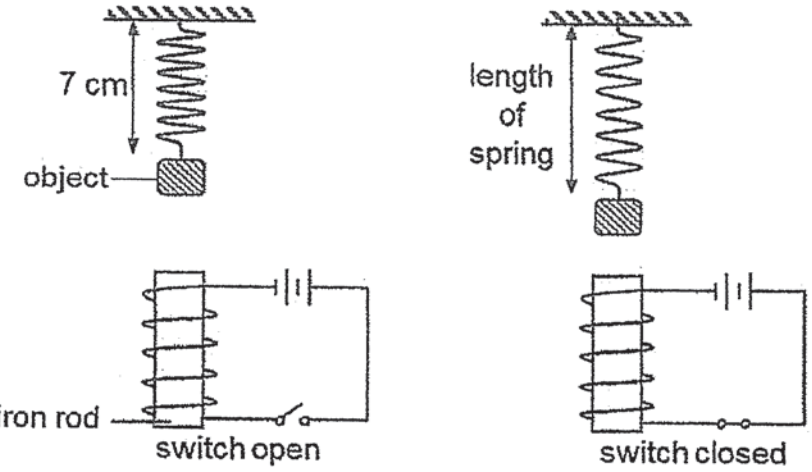
38 Mark carried out an experiment with the set-up as shown below. Three objects A, B and C, made of different materials of the same mass, were attached to a spring.



He measured the length of the spring before and after the switch was closed and recorded the results in the table below.

Object	Length of spring when the switch was open (cm)	Length of spring after the switch was closed (cm)
A	7	7
B	7	10
C	7	5

(a) Based on the results, which object, A, B or C, is definitely a magnet? Explain your answer. [2]

Mark repeated the experiment by increasing the number of coils of wire around the iron rod and attached object B to the spring.

(b) What would Mark observe about object B? Explain your answer. [2]

4

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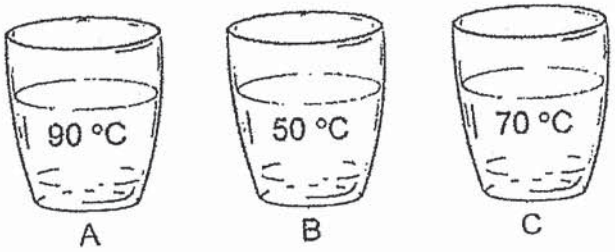
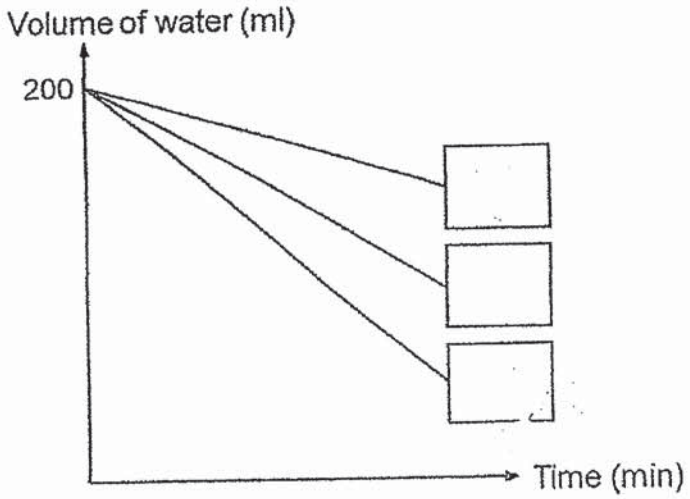
39 Johan poured 200 ml of water of different temperatures into three identical containers, A, B and C, and placed them in an open field on a sunny day.



Johan measured the temperature of the water and plotted the graph as shown below.

(a) Label the lines in the graph by writing the letters (**A** and **B**) in the correct boxes according to the amount of water that would be left after 60 minutes. [1]



(b) Explain how temperature affects the amount of water left in cup A. [1]

_____

_____

2

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(c) State a difference between evaporation and boiling of water. [1]

Johan went for a swim. When he came out from the water, his body was wet and he felt cold. As he walked past a rotating fan, he felt even colder.

(d) Explain why Johan felt even colder when he walked past the fan. [1]

2

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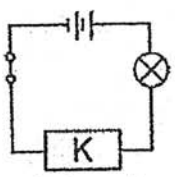
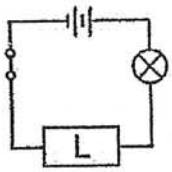
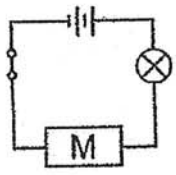
40 Mr Tan prepared three set-ups using identical batteries, wire and bulbs. Objects K, L and M are connected in the circuits as shown. The results of the experiment is as shown in the table.



Set-up 1



Set-up 2

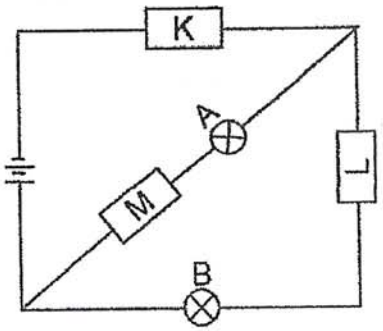


Set-up 3

Set-Up	Bulb lit up
1	Yes
2	No
3	Yes

(a) From the results, which object is most likely to be an electrical insulator. Give a reason. [1]

Mr Tan connected objects K, L and M in another circuit as shown below.



(b) Will bulbs A and B light up? Explain your answer. [2]

3

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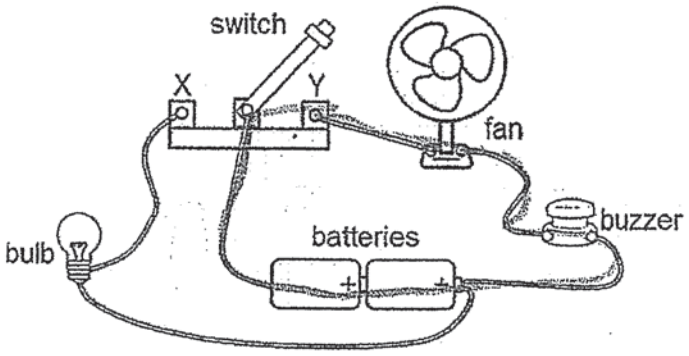
41 Kelly sets up an electric circuit as shown below. The switch can be closed at either point X or Y.



(a) What will Kelly observe when she closes the switch at point Y? [1]

(b) Refer to the diagram below. Complete the circuit diagram for the above circuit when the switch is closed at point X. Label points X and Y clearly. [2]

Legend:
F fan
B buzzer

3

End of Booklet B

ANSWER KEY

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

BOOKLET A

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

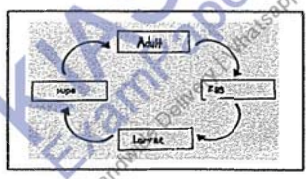
BOOKLET B

Q29 a) Fungi

b) To ensure the amount of air in both jars A and B is the same so that the only changed variable is the presence of water.

c) The cake had no moisture so mould could not grow on it as mould needs water to grow. Hence , the cake that was heated did not grow mould.

Q30 a)



b) No. Cockroach has a 3-stage life cycle whereas insect P has a 4-stage life cycle. Hence , insect P cannot be a cockroach.

Q31 a) A : Food - carrying tube
B : Water – carrying tube

b) The roots would not be able to receive the food made by the leaves as the insect was sapping on the food , so the roots unable to absorb water.

Q32 a) i. To ensure there is warmth.

ii. Test tube X. The conditions needed for seeds to germinate is warmth , oxygen and water which test tube X has. Hence , test tube X seeds would germinate.

b) Fruit C. As the windspeed increases , the distance travelled by seed P increases. Fruit C is Wing like structure and light , easily carried by the wind. Therefore , seed P is belong to fruit C.

c) To reduce overcrowding and less competition for space , water , sunlight and mineral salts.

Q33 a) Organ X : Testis

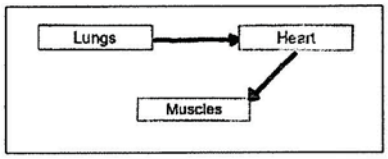
Organ Y : Ovary

b) Anther. The anther and part X produced the male sex cell.

c) i. Cell Y. Cell X comes from the plant as the cell has a cell wall and chloroplasts , unlike , cell Y where it does not have those parts. Therefore , cell Y is taken from the cheek of a human.

ii. Leaf . Cell X has chloroplasts which has chlorophyll to trap sunlight for photosynthesis.

Q34 a)



b) i. As Ali jogging speed increases , his heart rate increases.

ii. When he jogged faster , blood carrying oxygen and digested food had to be pumped faster to his muscles to provide him with more energy.

c) When exercising, more blood is pumped to the legs and hands while less blood is pumped to the small intestines. This will decrease the amount of digested food absorbed by the small intestine.

Q35 a) The water gains heat from the apple pie and becomes water vapour, The warm water vapour comes into contact with the cooler inner surface of the paper box , lost heat and condense to form water droplets before falling back into the apple pie.

b) The warm water vapour in the paper box was able to escape through the holes of the box and less condensation occurred.

Q36 a) As distance D increases , the final temperature of the "pulled" tea decreases.

b) When distance D increases , the exposed surface area of the tea in contact with the surrounding increases , allowing the tea to lose heat faster to the surrounding air.

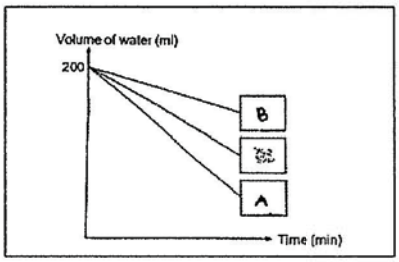
Q37 a) Metal. Metal is a better conductor of heat than plastic and can warm the meat faster as heat travels from a cold place to a warm place.

b) The sliced meat would cook faster than the whole slab of meat on the hot plate. The exposed surface area of the sliced meat than the whole slab of meat larger. Therefore , heat can travel faster and cook the sliced meat faster.

Q38 a) C. Object C like poles and the electromagnet are facing each other and they repelled , causing the length of the spring to decreases.

b) The electromagnet become stronger so it attracted object B mate causing it to move closer to the electromagnet.

Q39 a)



b) The higher the temperature of water , the higher its rate of evaporation.

c) Evaporation can take place at any temperature while boiling can only take place at 100 °c.

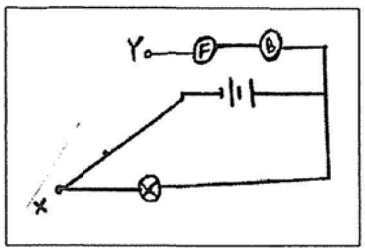
d) The water droplets gained heat from Johan's body and evaporated. The wind from the fan blew Johan and increased the rate of evaporation.

Q40 a) When electrical current flows through. L does not allow electricity to flow through the circuit so the bulb does not light up.

b) Only bulb A will light up. Object K and M are electrical conductors , electric current flows through bulb A so bulb A lights up.

Q41 a) The fan and buzzer will be switch on while the bulb will not be lit up.

b)



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2ND .