Name : _____ ( )

Class : Primary 5 _____

CHIJ ST NICHOLAS GIRLS' SCHOOL

Primary 5

End-of-Year Assessment

SCIENCE

BOOKLET A

24 October 2019

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

28 questions
56 marks

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

This paper consists of 16 printed pages.

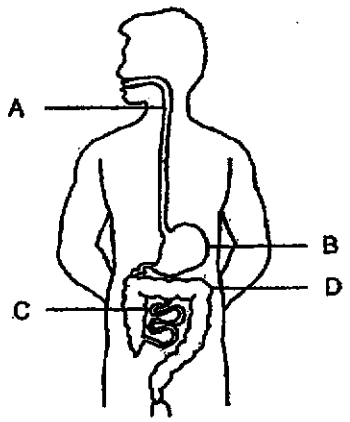
Section A (28 x 2 marks = 56 marks)
For each question from 1 to 28, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet provided.

1. Which statements are true for all insects?

   A They have wings.
   B They have feelers.
   C They have three body parts.
   D They have three pairs of legs.

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

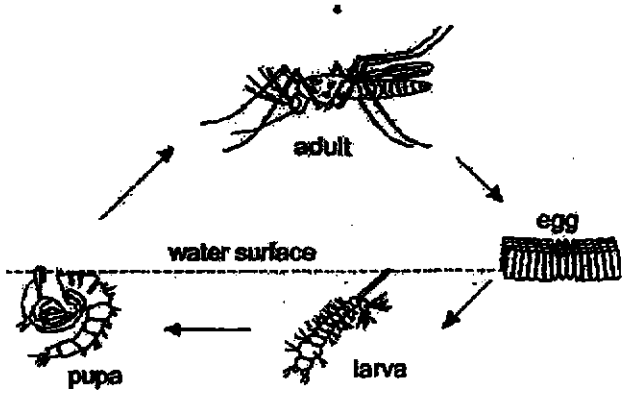
2. The diagram below shows the human digestive system.



Which of the following parts correctly matches its function?

	Part of digestive system	Function
(1)	A	mixes food with digestive juices
(2)	B	partially breaks down food
(3)	C	absorbs water from undigested food
(4)	D	absorbs digested food into the bloodstream

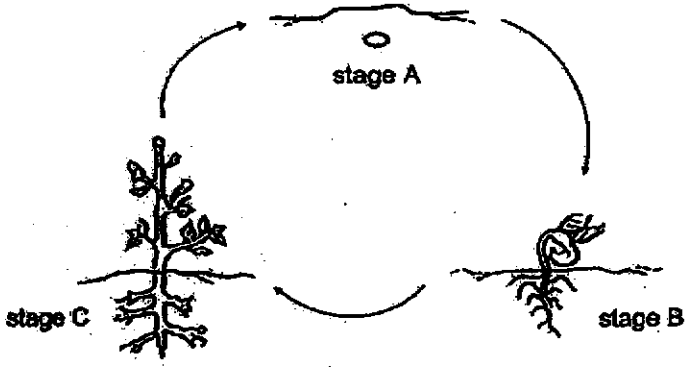
3. The diagram below shows the life cycle of a mosquito.



Dengue fever is a virus transmitted from mosquitoes to humans and can cause death if not prevented. Which of the following is most effective in preventing the outbreak of dengue fever?

(1) Use insect repellent.
(2) Add oil to stagnant water.
(3) Place mosquito nets around the sleeping area.
(4) Avoid areas where there are cases of dengue outbreaks.

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



Which of the following about the life cycle of this plant is false ?

(1) The life cycle of this plant has three stages.
(2) Every seed of this plant has the same life cycle.
(3) Sunlight is needed at every stage of this plant's life cycle.
(4) The life cycle of this plant ensure the continuity of its kind.

5. Four different cells were observed under a microscope. The observations were recorded in the table below.

Cell	Cell Parts			
	Cell Wall	Cell Membrane	Nucleus	Chloroplast
E	✓	✓	✓	✓
F	✓	✓	✓	
G		✓	✓	
H		✓		

Which of the following statements are correct?

A Cell H cannot reproduce.
B Cell G is the only animal cell.
C Cells E and F are plant cells.
D Cells E and F come from leaves.

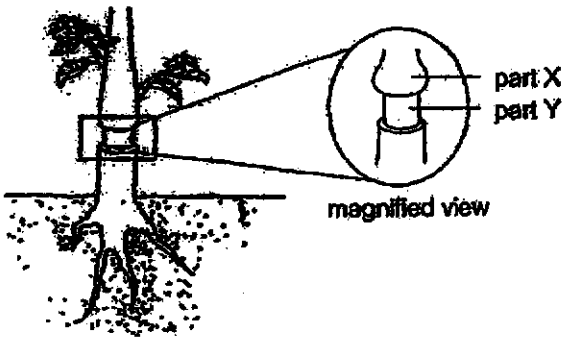
(1) A and C only
(2) B and D only
(3) A, C and D only
(4) B, C and D only

6. Which of the following characteristics can be passed on from parents to their offspring?

A Ability to sing
B Type of eyelid
C Type of earlobe
D Ability to roll tongue

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

7. Imran removed an outer ring of a stem from a plant as shown below. He left the plant under sunlight and gave it equal amounts of water daily. After a few days, he observed some swelling at part X of the stem as shown in the diagram below.



Based on the observation, which of the following statement(s) is/are false?

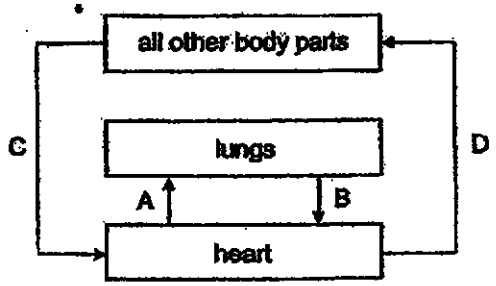
A Water was accumulated at part X.
B Food-carrying tubes were removed from part Y.
C Food can be transported to the parts below part Y.
D Water cannot be transported to all parts of the plant.

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

8. Which of the following correctly shows the path of carbon dioxide before a person breathes out through the nose?

(1) windpipe → air sacs in lungs → blood vessels
(2) blood vessels → windpipe → air sacs in lungs
(3) air sacs in lungs → blood vessels → windpipe
(4) blood vessels → air sacs in lungs → windpipe

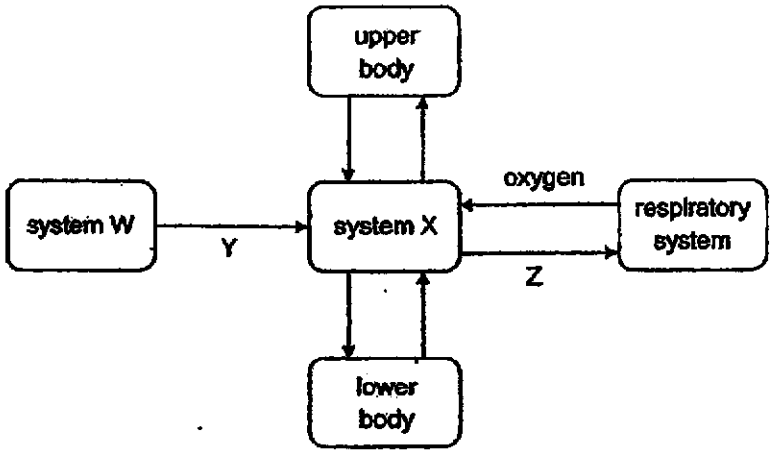
9. The diagram below shows the direction of blood flow in some parts of the human body.



Which of the following correctly describes the amount of carbon dioxide in the blood at A, B, C and D?

	High amount of carbon dioxide	Low amount of carbon dioxide
(1)	A and B	C and D
(2)	A and C	B and D
(3)	B and C	A and D
(4)	B and D	A and C

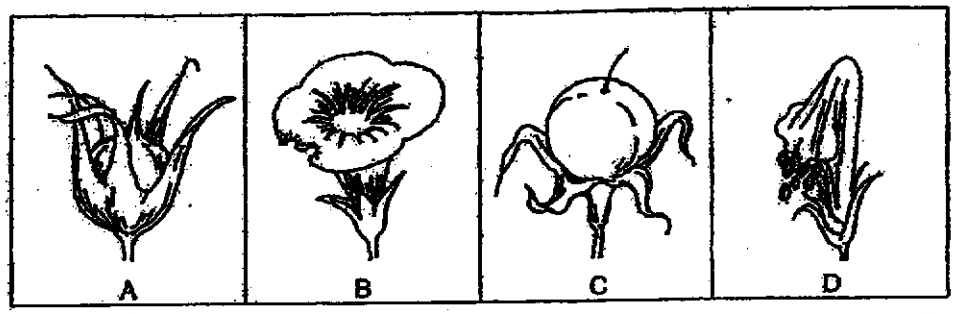
10. The diagram below shows how the different systems in the human body work together.



What are substance Y, gas Z and systems W and X?

	System W	System X	Y	Z
(1)	circulatory	digestive	digested food	nitrogen
(2)	digestive	circulatory	digested food	carbon dioxide
(3)	digestive	muscular	water	carbon dioxide
(4)	muscular	digestive	water	nitrogen

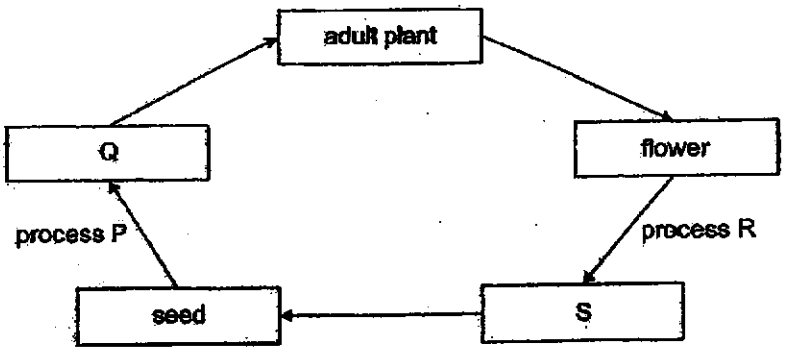
11. The diagram below shows the different stages of how a flower develops into a fruit.



Which of the following shows the correct order of the development?

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

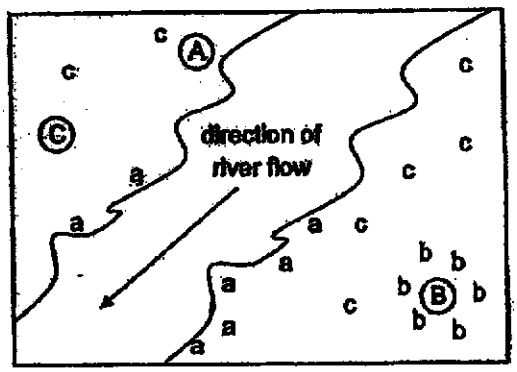
12. Study the diagram below.



Which of the following is correct?

	Process P	Q	Process R	S
(1)	pollination	fruit	fertilisation	seedling
(2)	fertilisation	seedling	germination	fruit
(3)	germination	seedling	fertilisation	fruit
(4)	germination	fruit	pollination	seedling

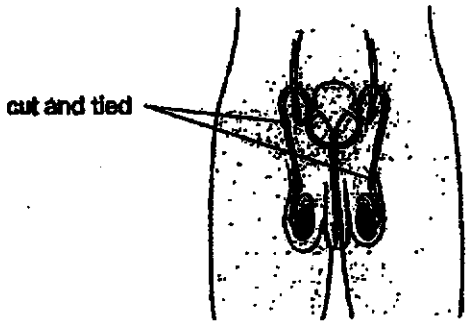
13. The diagram below shows where plants A, B and C are located and the distribution of their dispersed seeds.



Which of the following matches the distribution of fruit / seed of plants A, B and C shown above?

	Fruit / Seed of		
	A	B	C
(1)	fibrous husk	wing-like structure	hard and dry pod
(2)	fibrous husk	hard and dry pod	wing-like structure
(3)	hard and dry pod	fibrous husk	wing-like structure
(4)	wing-like structure	hard and dry pod	fibrous husk

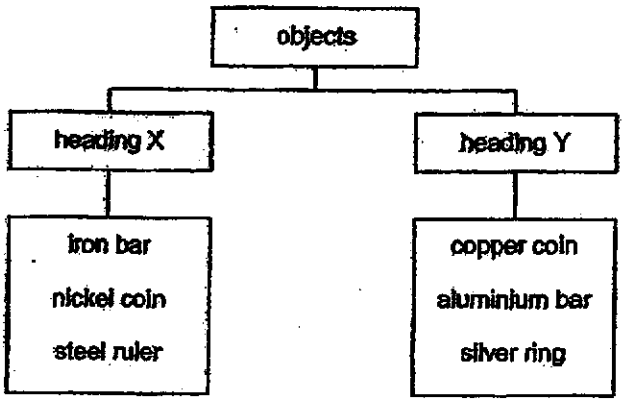
14. Vasectomy is a surgical procedure where the tubes in the male reproductive system are cut and tied as shown in the diagram. As a result, the adult male is not able to reproduce.



Which of the following best explains why the adult male is unable to reproduce after a vasectomy?

(1) All of the sperms have died.
(2) Sperms can no longer be produced by the testes.
(3) Sperms cannot travel from the testes to the penis.
(4) The egg cannot travel from the penis to the testes.

15. The classification chart below shows how some objects are grouped into two groups X and Y.



Which of the following is correct?

	Heading X	Heading Y
(1)	flexible	not flexible
(2)	made from soft materials	made from hard materials
(3)	conductor of electricity	not a conductor of electricity
(4)	can be attracted to magnet	cannot be attracted to magnet

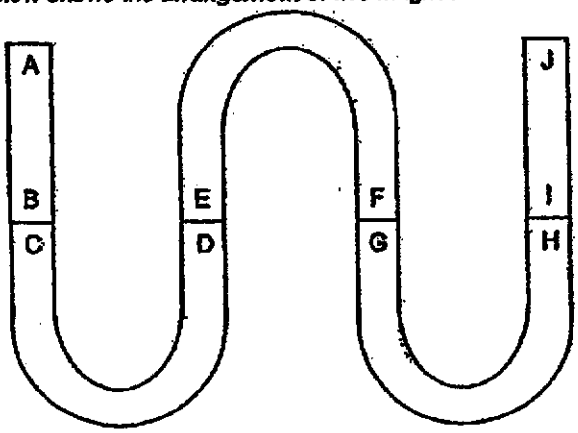
16. Study the table below.

	Object S	Object T
Definite shape		✓
Definite volume	✓	✓

What could objects S and T most likely be?

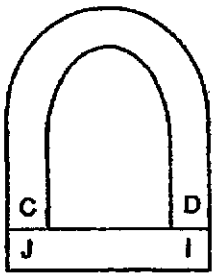
	Object S	Object T
(1)	oil	ruler
(2)	glass	plastic bag
(3)	oxygen	book
(4)	paint	carbon dioxide

17. The diagram below shows the arrangement of five magnets.

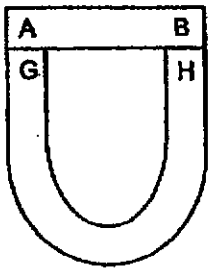


Which of the following arrangements is possible?

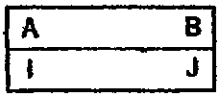
(1)



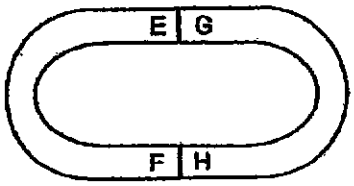
(2)



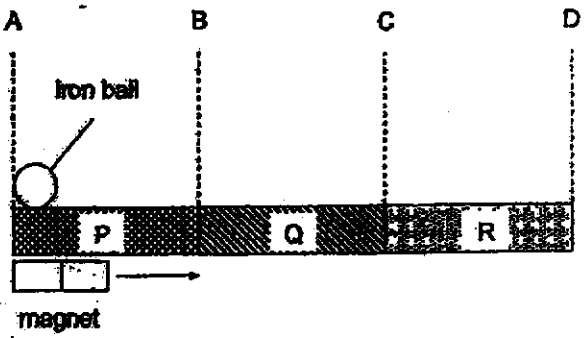
(3)



(4)



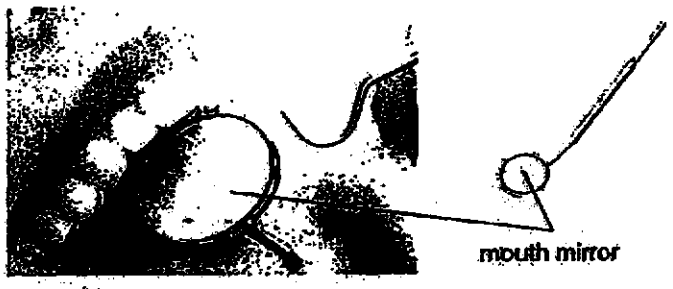
18. Kumar placed an iron ball on a horizontal board made of three different materials P, Q and R. The ends of these materials were glued together as shown below. He then tried to use a bar magnet to move the iron ball forward from point A to D. However, the iron ball came to a stop at point C.



What could materials P, Q and R most likely be?

	P	Q	R
(1)	ceramic	cobalt	nickel
(2)	cobalt	aluminium	rubber
(3)	nickel	cobalt	ceramic
(4)	aluminium	rubber	nickel

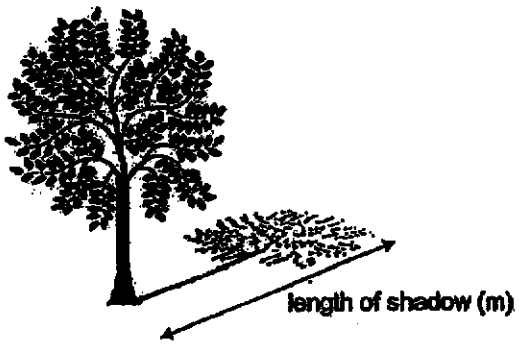
19. The school dental nurse uses a tool called the mouth mirror to help her examine the teeth in the inner mouth of the students.



Which of the following best explains how the dental nurse is able to see the teeth in the inner mouth of the students?

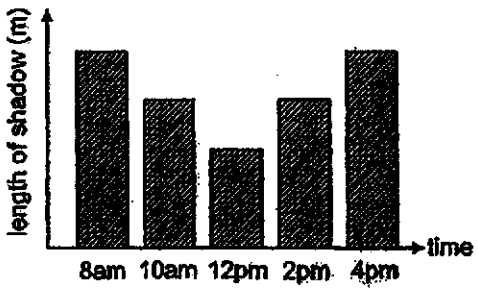
(1) The mouth mirror absorbs light from the teeth.
(2) The mouth mirror allows light from the teeth to pass through.
(3) The mouth mirror shines light onto the teeth for the dental nurse to see.
(4) The mouth mirror reflects light from the teeth for the dental nurse to see.

20. Karen measured the length of the shadow of a tree as shown below.

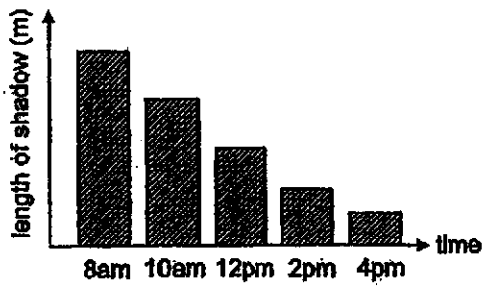


She recorded the length of the shadow of the tree at different times of the day in a graph. Which of the following correctly shows her graph?

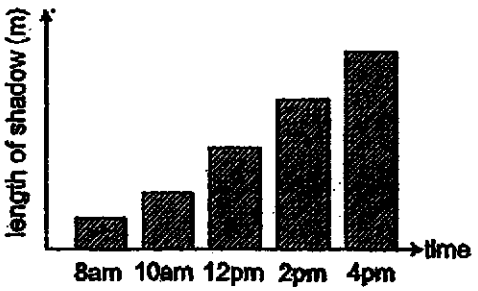
(1)



(2)

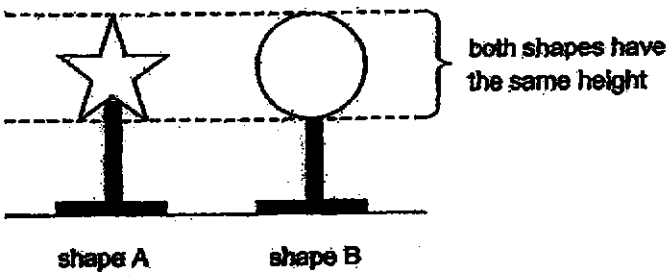


(3)

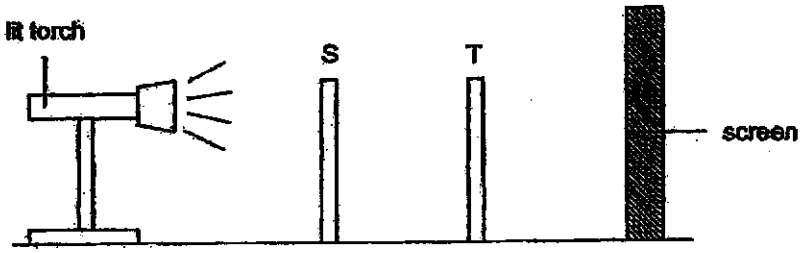


(4)

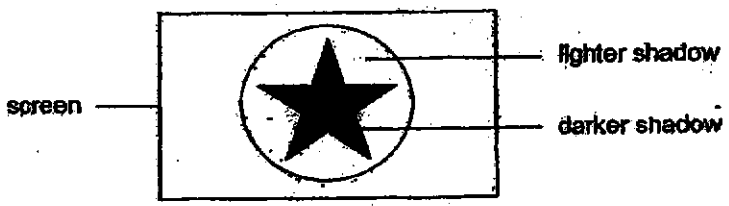
21. Two different materials were used to make shapes A and B as shown below.



The shapes were then arranged at position S and T between a lit torch and a screen.



The following shadows were observed on the screen.



Based on the shadows on the screen, what materials could shapes A and B be made of?

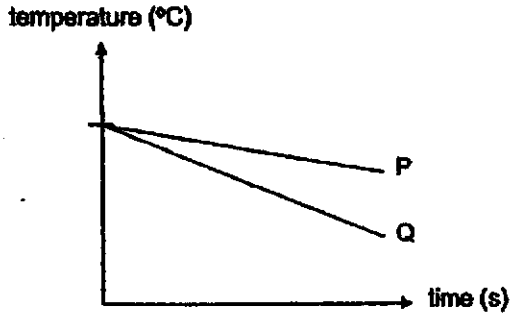
	Shape A	Shape B
(1)	solid wood	solid wood
(2)	solid wood	frosted glass
(3)	frosted glass	solid wood
(4)	frosted glass	frosted glass

22. Which of the following methods will enable a glass of chocolate drink to be cooled within the shortest time possible?

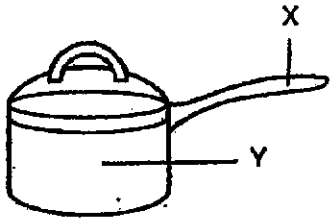
A Cover the glass with a metal lid.
B Replace the glass with a metal cup.
C Wrap a dry towel around the glass.
D Stir the chocolate drink with a wooden spoon.

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

23. The graph below shows the changes in temperature of materials P and Q when they are cooled over a period of time.



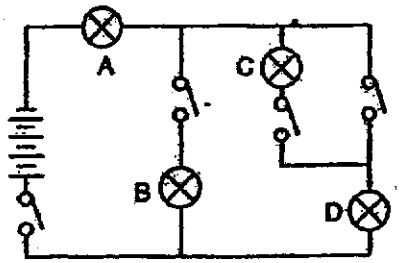
Based on the graph, which of the material(s) P and/or Q is/are suitable for making part X and Y of the cooking pot shown below?



cooking pot

	Part X	Part Y
(1)	P	P
(2)	P	Q
(3)	Q	P
(4)	Q	Q

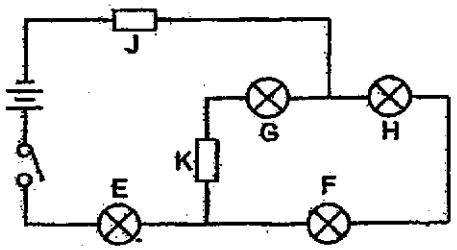
24. Study the circuit given below.



Based on the above circuit, what is the least number of switch(es) that must be closed in order to ensure that bulbs A and C light up?

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

25. Sally set up a circuit with four identical bulbs E, F, G and H. She also connected two different materials J and K to the circuit as shown below.



When the switch was closed, she noticed that only bulbs E, F and H lit up. What could materials J and K be?

	Material J	Material K
(1)	copper	silver
(2)	copper	glass
(3)	glass	silver
(4)	paper	paper

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

Substance	Melting Point (°C)	Boiling Point (°C)
A	63	267
B	15	84
C	90	300
D	5	30

Which of the following substances A, B, C and D can be stored in a netted basket as shown below at room temperature?

netted basket

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

27. Ann set up four experiments P, Q, R and S by pouring water into containers made of the same material. The table below shows the different conditions at the start of each experiment.

	Experiments			
	P	Q	R	S
Temperature of room (°C)	35	35	20	20
Exposed surface area of water (cm^2)	120	50	50	120
Presence of wind	yes	yes	no	yes
Volume of water (ml)	500	600	500	500

Which set-up will have the least amount of water left at the end of the day?

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

28. Which of the following actions help in water conservation?

A Collect rainwater to water the plants.
B Take cold showers instead of hot ones.
C Pour away stagnant water found in containers.
D Use water from washing clothes to flush the toilet.

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

END OF BOOKLET A

Name : _____ ( )

Class : Primary 5 _____

CHIJ ST NICHOLAS GIRLS' SCHOOL

Primary 5

End- of -Year Assessment

SCIENCE

BOOKLET B

24 October 2019

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

13 questions
44 marks

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

This booklet consists of 15 printed pages.

Booklet A	56
Booklet B	44
Total	100

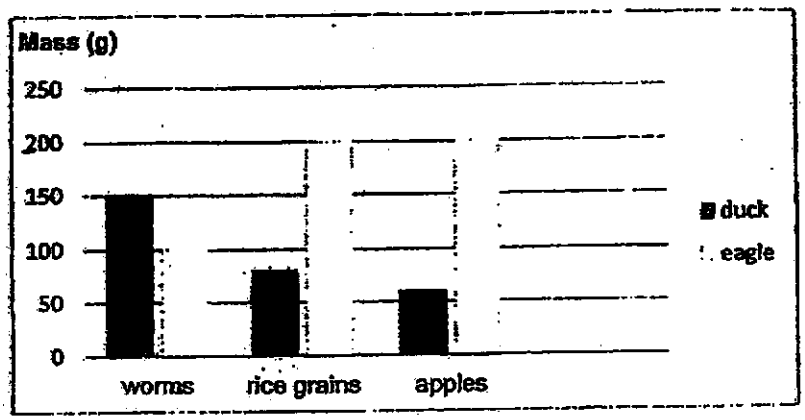
_____

Parent's Signature/Date

Section B (44 marks)
For questions 29 to 41, write your answers in this booklet. The number of marks available is shown in the brackets at the end of each question or part question.

29. Janice wants to investigate the diets of a duck and an eagle. She keeps a duck and an eagle in two identical cages P and Q respectively. She feeds each of them with 200 g of worms, 200 g of rice grains, 200 g of apples and 500 ml of water.

The graph below shows the mass of worms, rice grains and apples the next day.

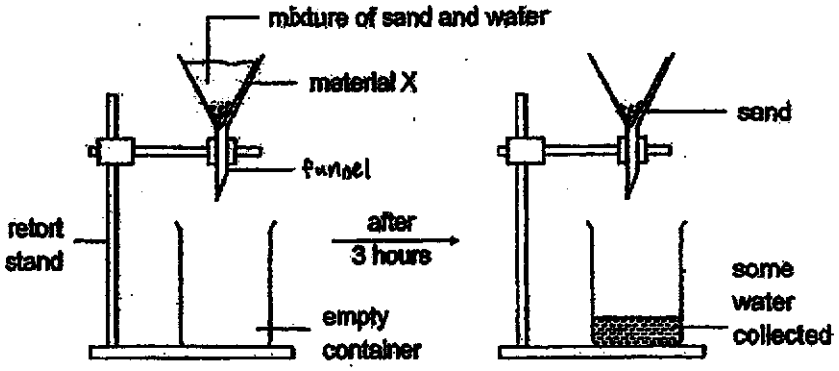


(a) Explain whether Janice's experiment is fair for comparison. [1]

(b) Based on the experiment, what does the eagle feed on? Explain your answer. [1]

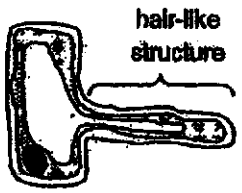
(c) Do the duck and the eagle belong to the same animal group? Explain your answer. [1]

30. John conducted an experiment with the set-up shown below. A mixture of sand and water was poured over material X that was placed inside a funnel. After 3 hours, he noticed that only water was collected in the container.

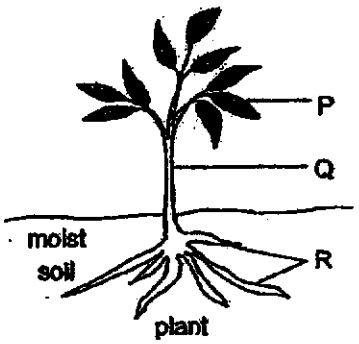


(a) What is the function of material X in the above set-up? [1]

(b) State the part of a cell that has the same function as material X. [1]



cell E

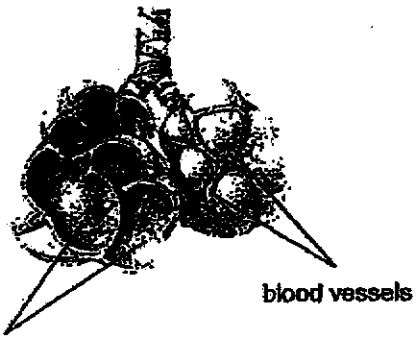


plant

(c) From which plant parts P, Q or R, was cell E taken from? Explain your answer. [1]

31. (a) State the function of the human respiratory system. [1]

The diagram below shows the magnified view of the air sacs found in the human lungs.



(b) Medical reports state that smokers have smaller air sacs as compared to non-smokers. As a result, their breathing rates are always higher than non-smokers when doing the same set of prolonged strenuous exercise. Explain why. [2]

32. The table below shows the characteristics of flowers and their pollination methods.

Characteristics of flower	Agents of Pollination		
	Bat	Bee	Wind
Colour	dull-coloured	brightly-coloured	dull-coloured
Scent	strong, fruity	mild, pleasant	none
Blooom Time	night	day	anytime
Nectar	present	present	none

(a) List any two characteristics of a flower that is pollinated by wind. [1]

_____

_____

(b) Based on the table above, can bats pollinate the flowers pollinated by bees? Explain your answer. [1]

_____

_____

Plant Q produces male and female flowers on different branches. The diagram below shows a male flower of plant Q.

male flower of plant Q

(c) Candy says that plant Q cannot reproduce as the flowers cannot be pollinated. Do you agree with Candy? Explain your answer. [2]

_____

_____

33. The diagram below shows some seeds and/or fruits.

P Q R

(a) Explain how seed Q is dispersed. [1]

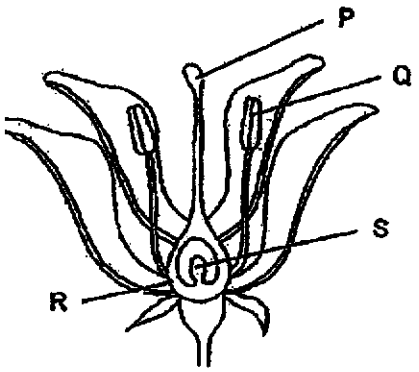
The table below shows the effect of wind speed on the distance travelled by fruit P and R.

Wind Speed (km/h)	Distance travelled by seed/fruit (m)	
	P	R
5	50	0
10	100	0
15	150	0

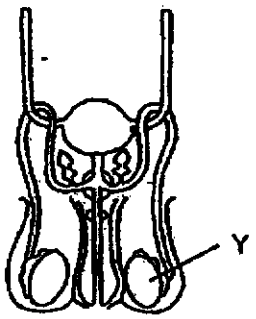
(b) What is the relationship between the wind speed and the distance travelled by fruit P. [1]

(c) Based on your answer in (b), explain how this relationship is an advantage for fruit P. [1]

34. The diagram below shows a plant and a human male reproductive system.



plant reproductive system



human male reproductive system

(a) Name the part of the human female reproductive system that has the same function as part R. [1]

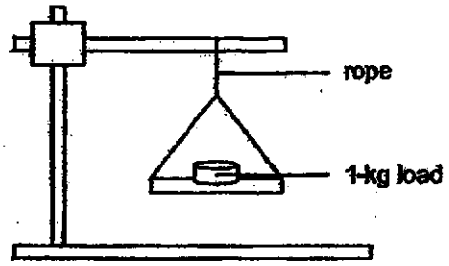
_____

(b) Explain why having two of part Y of the human male reproductive system is an advantage for reproduction process. [1]

_____

_____

35. Calvin placed loads of 1-kg in set-up A shown below. He recorded the maximum number of 1-kg loads added that caused the rope to break. He repeated the experiment with set-ups B and C using ropes of the same material but of different thickness. The table below shows his results.



set-up A

Set-up	Thickness of rope (units)	Maximum number of 1-kg loads added
A	1	3
B	2	6
C	3	10

(a) What was Calvin's aim of the experiment? [1]

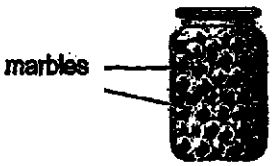
_____

_____

(b) Tick (✓) the variable(s) that must be kept the same for this experiment to be fair. [1]

Variable	To be kept the same
Length of rope	
Material of rope	
Thickness of rope	
Number of 1-kg loads	

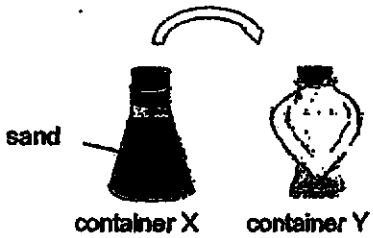
36. Perry filled a jar to its brim with identical marbles as shown below.



He concluded that the volume of the marbles is the same as the volume of the jar.

(a) Do you agree with Perry? Explain your answer. [2]

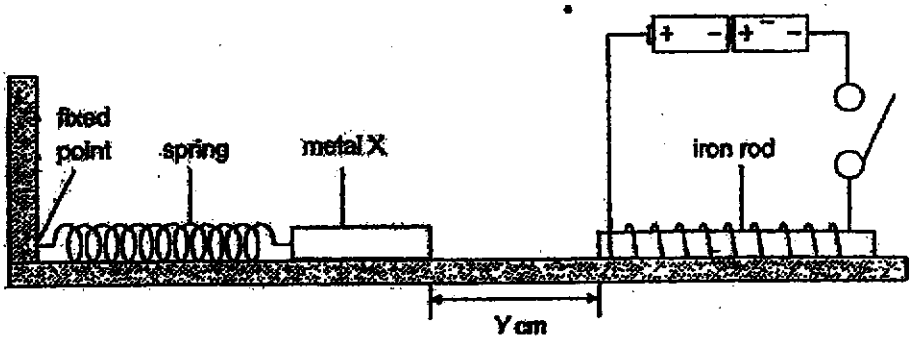
Perry then prepared two containers X and Y as shown below. He poured all the sand from container X to container Y.



He observed that the sand took the shape of container Y as well.

(b) Therefore, Perry concluded that sand has no definite shape. Do you agree with Perry? Explain your answer. [1]

37. Halim conducted an experiment as shown below.



When the switch was closed, distance *Y* increased.

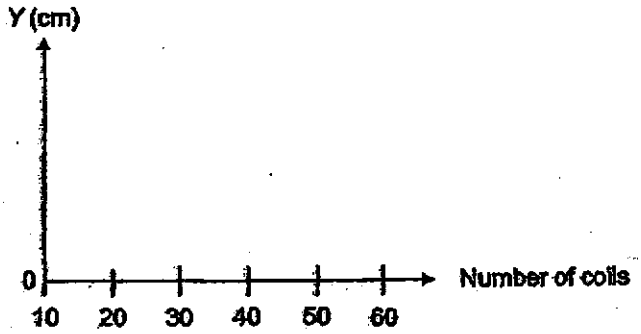
(a) Based on the above observation, what can be concluded about metal X? Explain your answer. [2]

_____

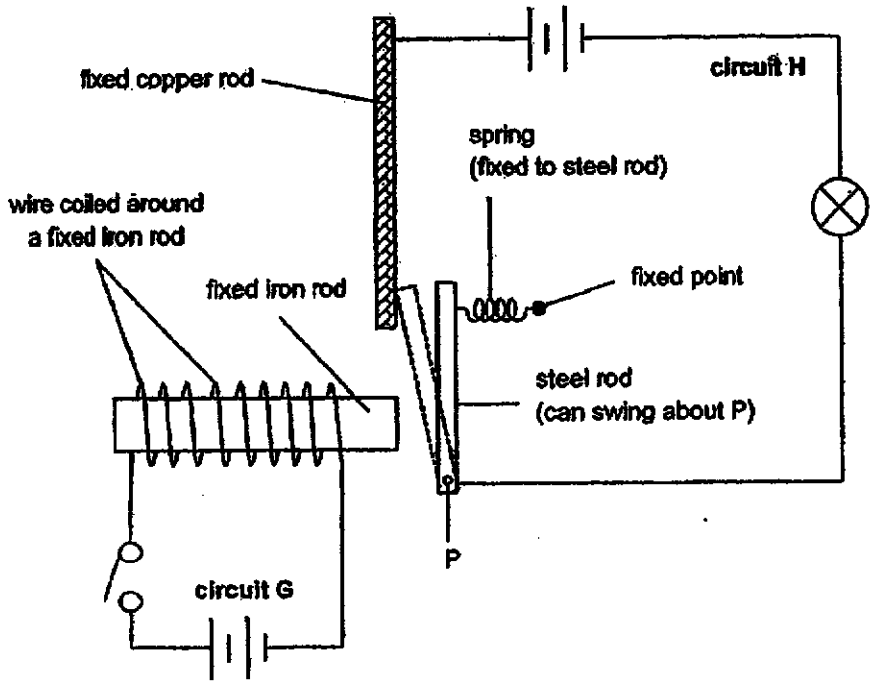
_____

He then increased the number of coils of wire around the iron rod and repeated the experiment.

(b) On the graph below, draw one straight line to show the relationship between the number of coils and distance *Y*. [1]



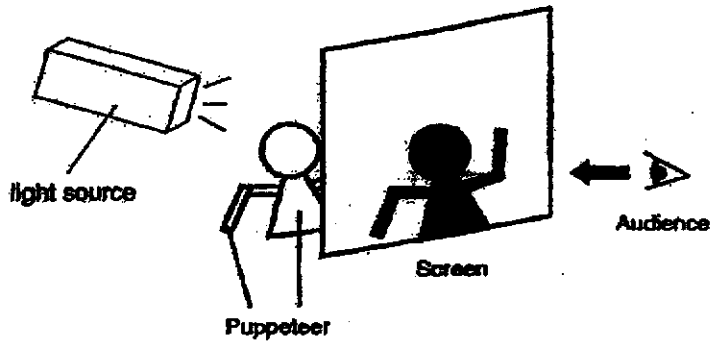
Halim then sets up a system made up of two circuits G and H. Before the switch is closed, the steel rod is not touching the copper rod. The bulb in circuit H is not connected to circuit G.



When the switch in circuit G is closed, the bulb in circuit H lights up.

(c) Explain how did the bulb light up. [2]

38. Wayang Kulit is a very popular Indonesian puppet show involving shadows. The audience watch these shows at night. The diagram below shows how the shadow of a puppet is created on the screen for the audience to watch.



(a) Give one example of a light source that can be used in Wayang Kulit. [1]

_____

(b) Without using a bigger puppet, how do the puppeteer make the shadow appear bigger to the audience? [1]

_____

_____

_____

(c) Explain how the shadow of the puppet is formed on the screen for the audience to watch the show. [2]

_____

_____

_____

39. Three similar rods made of metals X, Y and Z were heated for 30 minutes. The lengths of each rod before and after the heating are recorded in the table below.

Metal rod	Length before heating (mm)	Length after heating (mm)
X	100	105
Y	100	114
Z	100	108

(a) Based on the results above, state one effect of heating on the metal rods? [1]

_____

The metal rods were then left to cool. The time taken for each rod to reach room temperature is shown in the table below.

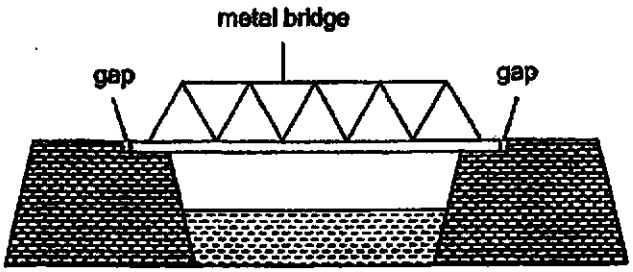
Metal rod	Time taken to reach room temperature (s)
X	150
Y	50
Z	80

(b) Based on the table above, what is the relationship between the heat conductivity of metals and the length of the metal rods after heating? [1]

_____

_____

A metal bridge has gaps at its ends as shown below.

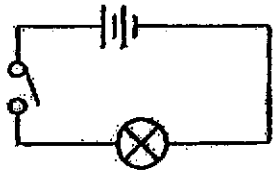


(c) What would happen to the size of the gaps on a sunny day? Explain your answer. [2]

_____

_____

40. Jonathan set up circuit A as shown below. All electrical components are in good working condition.



circuit A

When the switch was closed, the bulb lit up. He measured the brightness of the bulb using a light sensor. He then added another battery in series and measured the brightness of the bulb again. He repeated the experiment using different number of batteries in series and recorded the results in the table below.

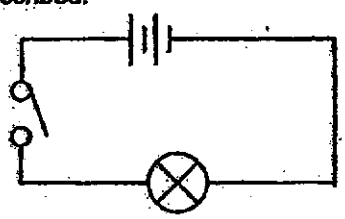
Number of batteries in Series	Brightness of bulb (units)
1	500
2	900
3	X
4	1800
5	0
6	0

(a) State a possible reading for the brightness of the bulb when three batteries connected in series were used. [1]

(b) Give a possible reason for the reading when more than 4 batteries in series were connected to the circuit. [1]

Jonathan wants to add another bulb to circuit A such that both bulbs have equal brightness.

(c) Using only circuit symbols, complete the circuit given below to show that it will work as described. [1]



41. The table below shows the weather conditions on four different days.

Day	Weather	Presence of wind	Humidity level
1	cloudy	yes	high
2	sunny	yes	low
3	sunny	no	high
4	cloudy	no	low

(a) Muthu thinks that the presence of wind speeds up the rate of evaporation of water. Do you agree with him? Explain your answer. [1]

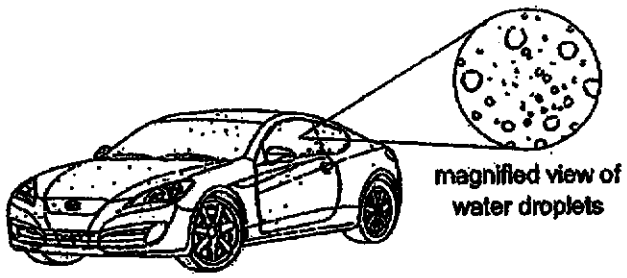
_____

_____

(b) On which day would a wet towel hung out in the open dry the fastest? [1]

_____

Every morning around 7 a.m., Muthu observes that his car is covered with tiny water droplets although it did not rain the night before.



Muthu's car

(c) (i) Explain how the tiny water droplets were formed on Muthu's car. [2]

_____

_____

_____

(ii) Muthu's friend, Samy, also drives to work at 7 a.m. daily. Give a possible reason why his car was not covered with tiny water droplets like Muthu's. [1]

_____

END OF PAPER

SCHOOL : CHIJ ST PRIMARY SCHOOL
LEVEL : PRIMARY 5
SUBJECT : SCIENCE
TERM : 2019 SA2

BOOKLET A

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

BOOKLET B

Q29. a) Yes, it is fair. There is only one changed variable, which is the type of animal.
b) The Eagle feeds on worms. Only the number of worms decreased.
c) Yes. Both have feathers, a beak and they lay eggs.

Q30. a) To allow only water to pass through.
b) Cell membrane.
c) Part R. The hair-like structures of cell E allows it to absorb more water from the surrounding soil.

Q31. a) To allow human body to exchange gases with the surrounding air.
b) The smaller air sacs in the smokers' lungs in smaller surface area for for gaseous exchange while doing the same set or prolonged strenuous exercise, the smokers have to breath faster to take in more oxygen and remove more carbon dioxide.

Q32. a) The flower is dull-coloured, has no scent, it can bloom anytime and it does not produce any nectar.
b) Bats only come out at night and flowers pollinated by bees bloom only in the day.
c) No, I disagree. Pollinators with pollens from male flower will also visit the female flowers at plant Q where pollen grains on the body of pollinators can stick to the stigma of the female flower to pollinate it.

Q33. a) Seed Q is dispersed by wind. It has feathery-like structure.
b) The greater the wind speed, the further the distance travelled by fruit P.
c) Fruit P can travel further away form the parent plant to avoid competition between the parent plant and fruit P for sunlight, space, water and nutients.

Q34. a) Womb.

b) When one of Y, which is the testis is not functioning, the other testis can still produce sperms to go to the female reproductive system to fuse with the egg for fertilisation to occur.

Q35. a) To find out if the thickness of a rope affect its strength.

b)

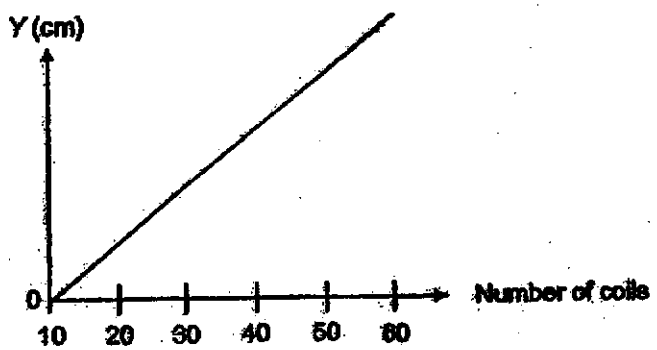
Variable	To be kept the same
Length of rope	✓
Material of rope	✓
Thickness of rope	
Number of 1kg loads	

Q36. a) No. There are air spaces between the marbles, the volume of the jar has to be more than the volume of the marbles.

b) No. Each grain of sand is a solid and all solids have a definite shape.

Q37. a) X is a magnet. When the circuits closed and electronic current flow through to magnetise the iron rod and become an electromagnet. The like poles of both the electromagnet to and metal X are facing each other hence they repel, increasing distance Y.

b)



c) When the switch of circuit G is closed, iron rod becomes an electromagnet and attracted the steel rod. It will touch the fixed copper rod. As cooper and steel are both conductors of electricity, hence circuit it is closed and the bulb can light up.

Q38. a) Lit torch.

b) Move the puppeteer closer to the light source.

c) It is when light from the light source travels in a straight line on an opaque object which is the puppeteer and it would block the light to form a shadow showed on the screen for people to watch the show.

Q39. a) By heating them, they will gain heat from the heat source to expand.

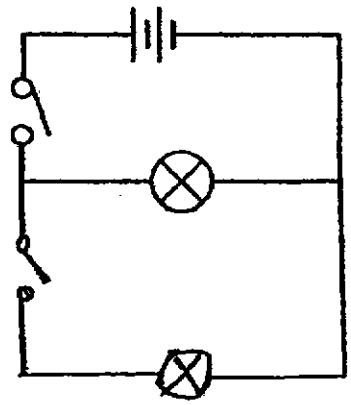
b) The greater the heat conductivity of metals, the longer the length of the metal rod after heating.

c) The gaps become smaller. The metal bridge gain heat from the warmer surroundings expands. Hence more space is occupied.

Q40. a) 1000

b) The bulb might have fused causing the circuit to be opened and electricity cannot flow through, resulting in a reading of 0.

c)



Q41. a) Yes. Wind will speed up the rate of evaporation as it will allow the water to gain heat faster to evaporate faster from the warmer surrounding air.

b) Day 2.

c) (i) Water from the ground gained heat from the warmer surroundings and evaporated. Thus, the warmer water vapour came in contact with Muthu's cooler car and lose heat to it and condense to form water droplets.

(ii) It was covered with a cloth.