CATHOLIC HIGH SCHOOL

END-OF-YEAR EXAMINATION (2019)

PRIMARY FOUR

SCIENCE

BOOKLET A

Name: _____ ( )

Class: Primary 4 - _____

Date: 31 October 2019

28 questions

56 marks

Total Time for Booklets A and B: 1 hour 30 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.

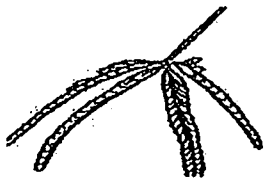
This booklet consists of 18 printed pages, excluding the cover page.

Booklet A (28 × 2 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 your answer on the Optical Answer Sheet. (56 marks)

1 A mimosa plant closes its leaves quickly when touched.

Before someone touched it



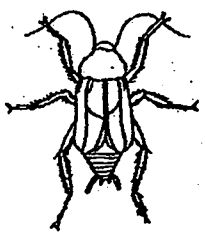
After someone touched it

This shows that the mimosa plant is a living thing because it can _____.

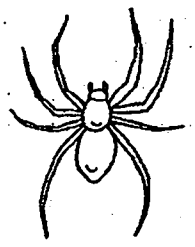
(1) grow
(2) breathe
(3) respond
(4) reproduce

2 Which one of the animals shown below is **not** an insect?

(1)



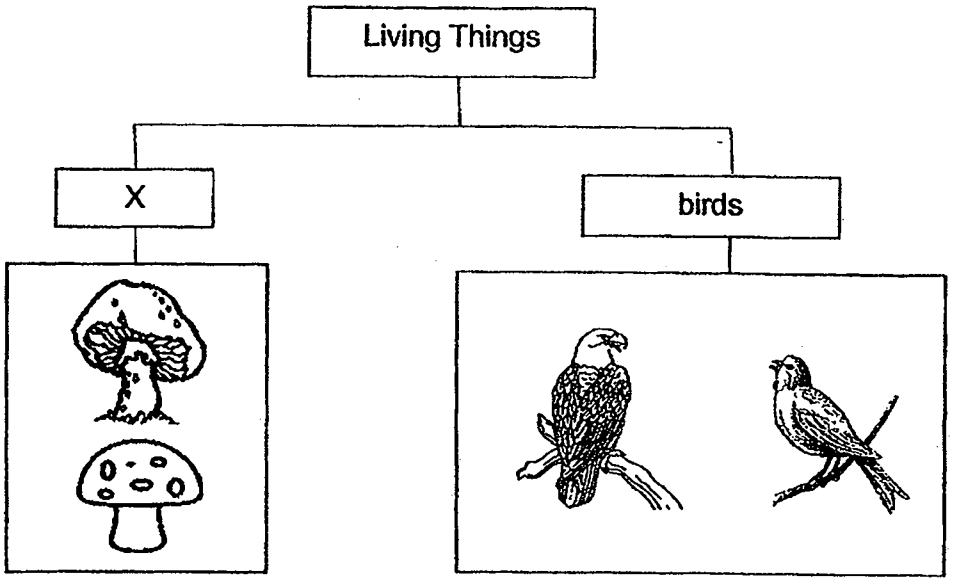
(2)



(3)

(4)

3 The chart below shows how some living things can be grouped.



Which one of the following is the most suitable heading for group X?

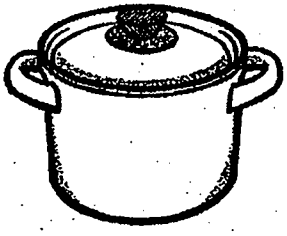
(1) fern
(2) fungi
(3) insects
(4) bacteria

4 Which one of the following objects can be bent easily without breaking?

(1)

a plastic fork

(2)



a metal pot

(3)

a rubber glove

(4)

a wooden ruler

5 In which part of the digestive system is food absorbed into the bloodstream?

(1) gullet
(2) stomach
(3) large intestine
(4) small intestine

6 Which one of the following can be attracted by a magnet?

(1) steel ball
(2) plastic ball
(3) rubber ball
(4) aluminium ball

7 Samuel made the following observations on the life cycle of an animal.

- There are four stages in the life cycle.
- The young does not look like the adult.

Which animal was Samuel observing?

(1) frog
(2) chicken
(3) butterfly
(4) cockroach

8 Which one of the following is a source of light?

(1)

the moon

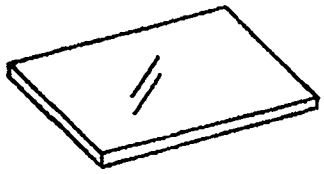
(2)

a mirror

(3)

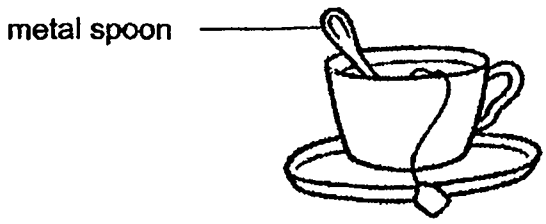
a candle

(4)



a sheet of glass

9 Calista places a metal spoon in a cup of hot coffee.



a cup of hot coffee

The spoon becomes hot after a while.
Which one of the following explains this?

(1) The cup loses heat to the hot coffee.

(2) The spoon loses heat to the hot coffee.

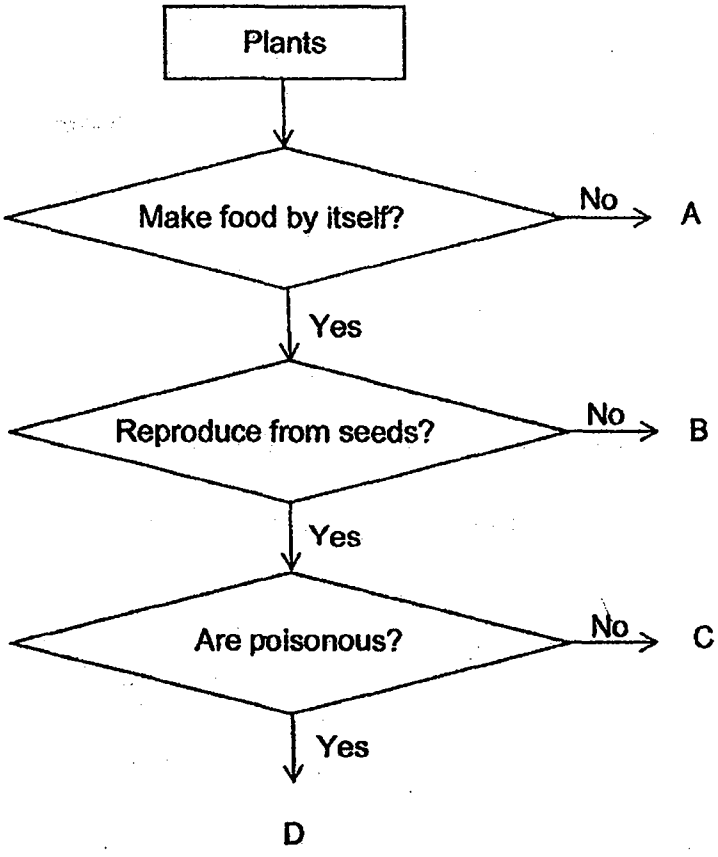
(3) The spoon gains heat from the hot coffee.

(4) The hot coffee gains heat from the spoon.

10 Which one of the following is the best conductor of heat?

(1) A metal plate
(2) A paper plate
(3) A plastic plate
(4) A wooden plate

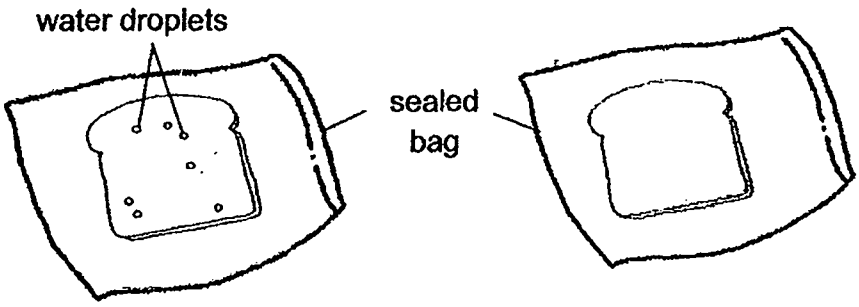
11 Study the chart below.



Which one of the following best represents the fern?

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

12 Khalid had two similar pieces of bread X and Y. He sprinkled a few drops of water on bread X and toasted bread Y. After bread Y had cooled down, he put bread X and bread Y into a sealed bag each. He left them on a table for a few days.



bread X
(sprinkled with a few drops of water)

bread Y
(toasted)

What would Khalid observe a few days later?

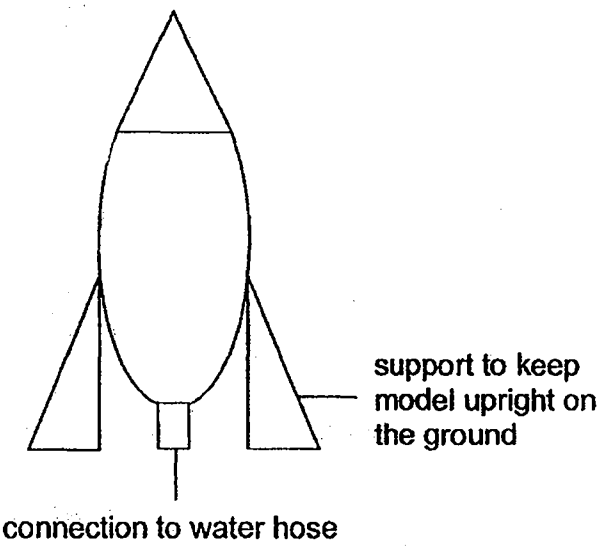
(1) Black patches were found on bread X but not on bread Y.

(2) Black patches were found on bread Y but not on bread X.

(3) There were no changes observed on both pieces of bread.

(4) There were more black patches on bread Y than on bread X.

13 Min Cher wanted to build a flying model as shown in the diagram below.



He wanted to conduct a test launch where the flying model would fly to a height of at least two metres when filled with water and its parts would still remain intact when it landed on the ground.

Which of the following properties must he consider while selecting the material to build the flying model?

A strength

B flexibility

C waterproof

D transparency

E ability to sink in / float on water

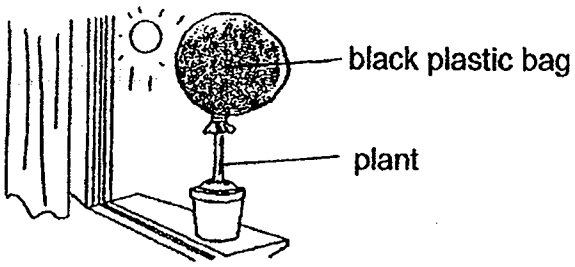
(1) A and C only

(2) B and E only

(3) A, C and D only

(4) B, C, D and E only

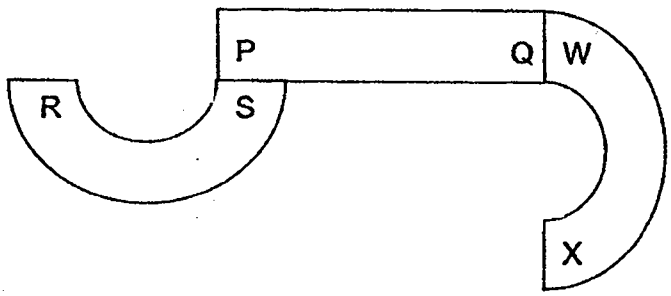
14 Alisha tied a black plastic bag around the top part of a plant. She placed it on the window ledge and watered it everyday.



After a few days, the plant died.
Which one of the following parts could not carry out its function and caused the plant to die?

(1) leaf
(2) root
(3) stem
(4) flower

15 The diagram shows three magnets.

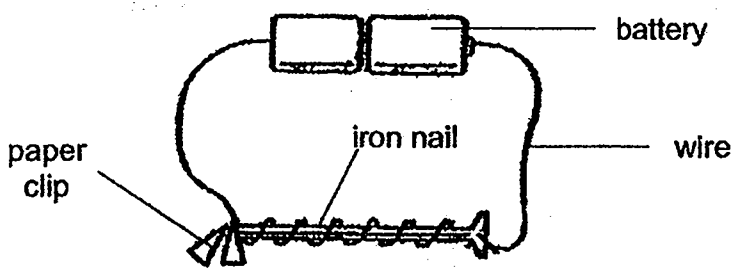


Based on the diagram above, which statement(s) about the poles of the magnets is/are incorrect?

A S and W are like poles.
B X will repel Q and be attracted to P.
C W will repel P and be attracted to S.

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

16 The diagram below shows an electromagnet.



What could be done to the electromagnet in order for it to attract more paper clips?

A Add one more battery to the set-up.

B Remove one battery from the set-up.

C Replace the iron nail with a copper rod.

D Increase the number of turns of wire around the iron nail by ten turns.

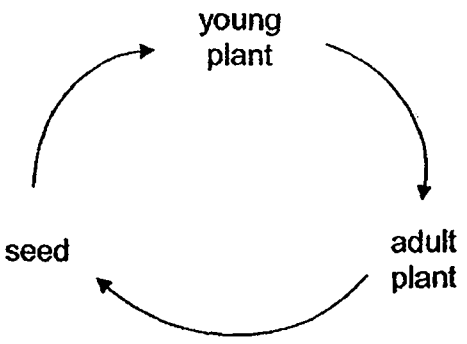
(1) A only

(2) A and D only

(3) B and C only

(4) B, C and D only

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



Which one of the following statements about the life cycle of the plant is incorrect?

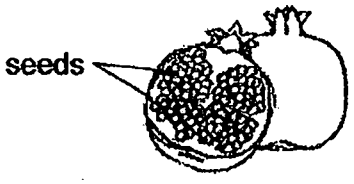
(1) It is the life cycle of a flowering plant.

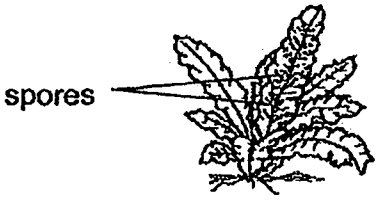
(2) The life cycle of the plant consists of three stages.

(3) The life cycle of the plant ensures the continuity of its kind.

(4) Sunlight is needed at every stage of the life cycle of the plant.

18 Four pupils made the following statements about the seeds of a fruit and the spores of a fern.





A Both grow into flowers.

B Both are flowering plants.

C Both grow into young plants.

D Both are part of the life cycle of plants.

Who made the correct statements?

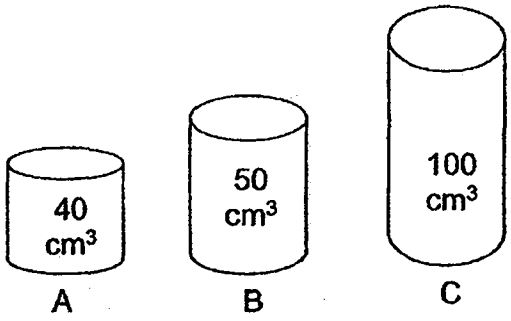
(1) A and B only

(2) A and C only

(3) B and D only

(4) C and D only

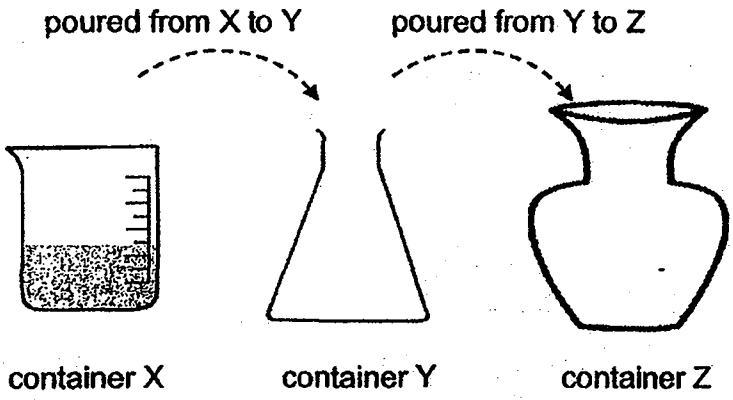
19 Joshua wants to transfer 40 cm^3 of gas X from a gas tank into another container.



Which container(s) can he use to hold gas X?

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

20 Study the diagram below. Container X has 400 ml of water.

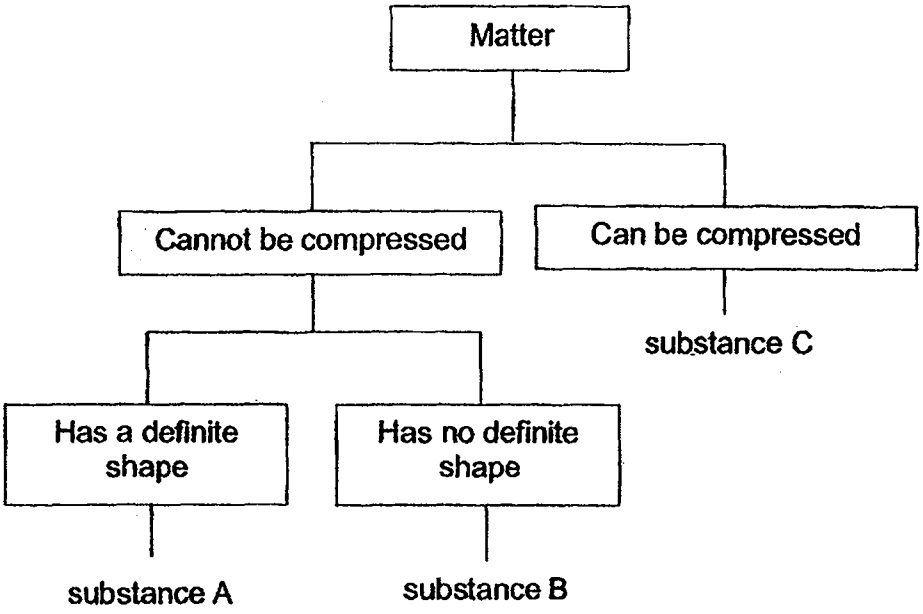


Which of the following will remain the same when all the water is poured from container X to container Y and then to container Z, with no loss of water?

A mass of water
B shape of water
C volume of water

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

21 Study the chart below.



A 1-litre glass bottle contains 800 cm^3 of substance C and 200 cm^3 of substance B.

If another 100 cm^3 of substance C is added to the bottle, what is the volume of substance C in the bottle now?

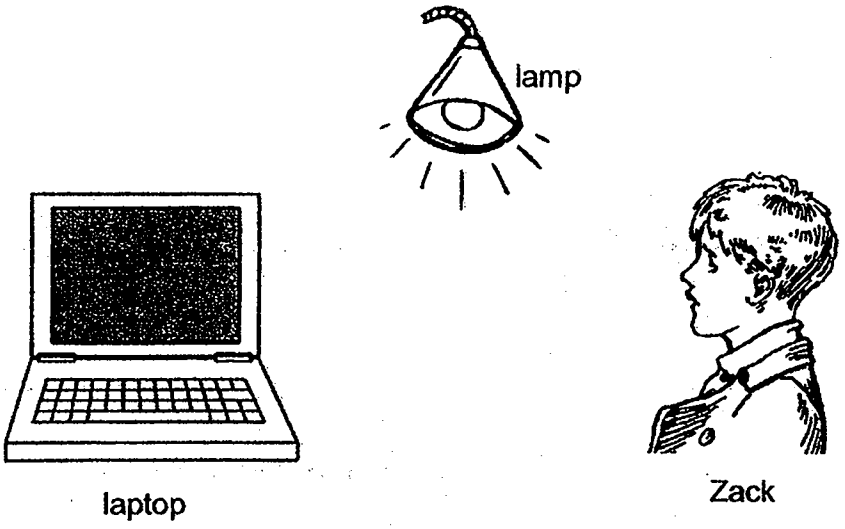
(1) 800 cm^3

(2) 900 cm^3

(3) 1000 cm^3

(4) 1100 cm^3

22 Study the diagram below. Zack can see the laptop in a lighted room.



Which one of the following shows correctly the path of light that makes it possible for Zack to see the laptop?

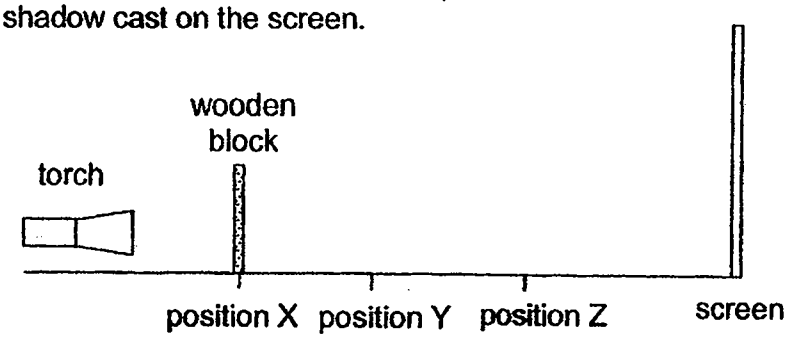
(1) From lamp to laptop to Zack's eyes

(2) From lamp to Zack's eyes to laptop

(3) From laptop to Zack's eyes to lamp

(4) From laptop to lamp to Zack's eyes

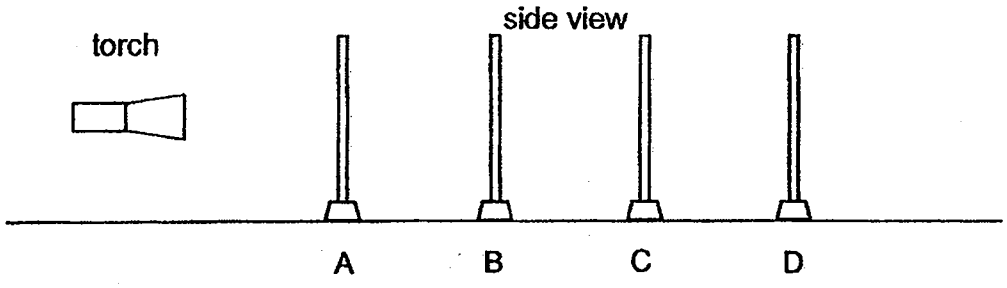
23 Paul placed a wooden block at positions X, Y and Z which were at different distances from the screen. At each position, he measured the length of the shadow cast on the screen.



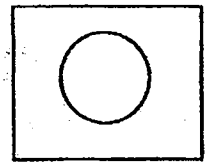
Which one of the following shows correctly the length of the shadows Paul had recorded for positions X, Y and Z?

	Length of shadow cast on screen (cm)		
	position X	position Y	position Z
(1)	16	18	20
(2)	18	16	20
(3)	18	18	18
(4)	20	18	16

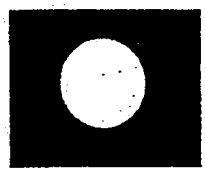
24 Micheala carried out the experiment as shown below in a dark room. She placed sheets A, B, C and D in a straight line.



A circle was cut out from sheet A as shown in the front view below.



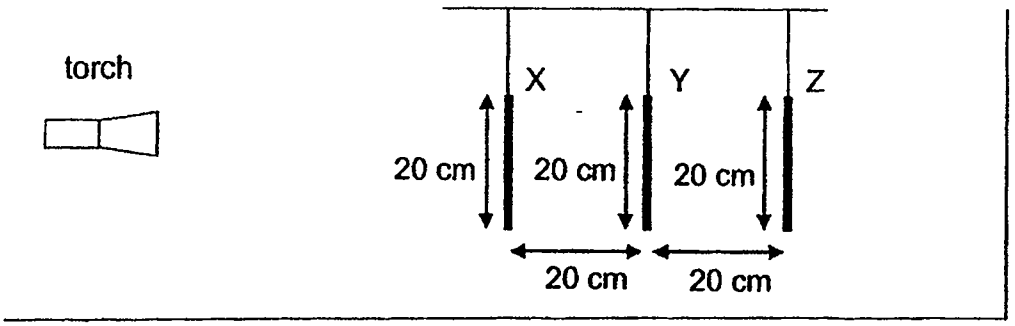
When the torch was switched on, a bright patch of light in the form of a circle was seen only on sheet C as shown below.



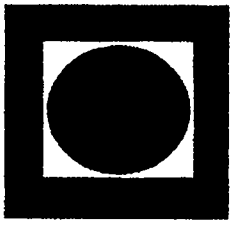
Which of the following correctly shows the ability of each sheet A, B, C and D to allow light to pass through?

	Allows most amount of light to pass through	Does not allow light to pass through	Not possible to tell
(1)	A	C	B and D
(2)	B	A and C	D
(3)	A and B	C	D
(4)	B and C	D	A

25 Three objects X, Y and Z, made of similar materials, are arranged in a straight line as shown below.



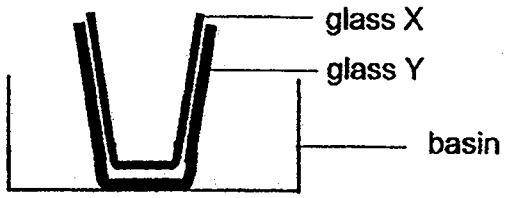
The diagram below shows the shadow formed on the screen.



Which one of the following shows the arrangement of the objects X, Y and Z?

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

26 Glasses X and Y are stuck together as shown below.



What can we do to separate the two glasses in the basin?

(1) Put cold water into the basin.

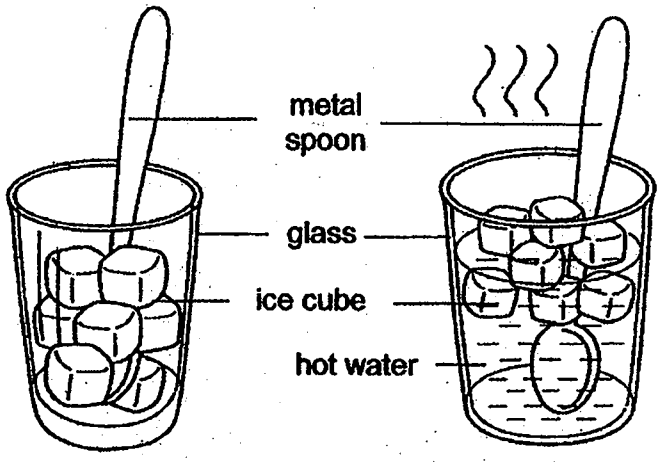
(2) Pour cold water into glass X and put ice in the basin.

(3) Pour cold water into glass X and pour hot water into the basin.

(4) Pour hot water into glass X and pour cold water into the basin.

27 Lucien placed a metal spoon and several ice cubes into a glass at the beginning of an experiment as shown below.

Then he added hot water into the glass.

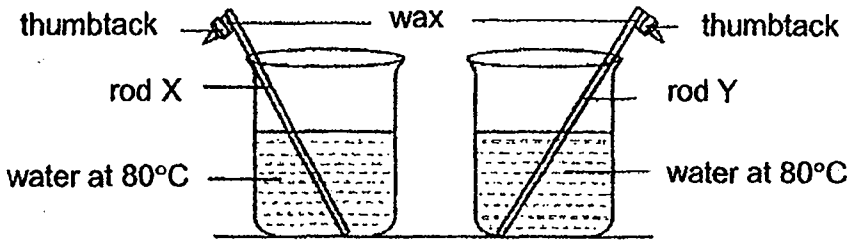


Before hot water was added After hot water was added

Which of the following is incorrect about the transfer of heat in the above set-up?

	Matter	Before hot water was added	After hot water was added
(1)	glass	lost heat	gained heat
(2)	ice cubes	gained heat	gained heat
(3)	metal spoon	lost heat	gained heat
(4)	surrounding air	lost heat	lost heat

28 Oliver wanted to investigate how well rod X and rod Y conduct heat. He used the same amount of wax to attach a thumbtack at the end of each rod. He placed rod X and rod Y into identical beakers of warm water at 80°C as shown in the diagram below. The same length of rod X and rod Y was placed in the warm water.



The time taken for each thumbtack to drop off the rods was recorded in the table below.

Rod	Time taken for the thumbtack to drop (min)
X	2
Y	6

Based on the results above, which statements are correct?

A Rod X gained heat faster than rod Y.

B Rod Y gained heat faster than rod X.

C Rod X is a better conductor of heat than rod Y.

D Rod Y is a better conductor of heat than rod X.

(1) A and C only

(2) A and D only

(3) B and C only

(4) B and D only

End of Booklet A

CATHOLIC HIGH SCHOOL

END-OF-YEAR EXAMINATION (2019)

PRIMARY FOUR

SCIENCE

BOOKLET B

Name: _____ ( )

Class: Primary 4 - _____

Date: 31 October 2019

Parent's Signature: _____

Booklet A	56
Booklet B	44
Total	100

13 questions

44 marks

Total Time for Booklets A and B: 1 hour 30 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.

This booklet consists of 14 printed pages, excluding the cover page.

Booklet B (44 marks)

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

29 The diagram shows a raincoat. It has water droplets on it.

Fill in the blanks using the correct words in the box.

repel	absorb	waterproof	magnetic

(a) The raincoat does not _____ water. [1]

(b) The raincoat is made of a _____ material. [1]

Ahmad conducted several tests on materials A, B and C. His results were recorded in the table below.

Property	A	B	C
Can bend	No	Yes	No
Breaks when dropped	Yes	No	No
Is waterproof	Yes	Yes	Yes

(c) Which one of the above materials A, B or C would he use to make a raincoat? Explain your answer. [2]

_____

_____

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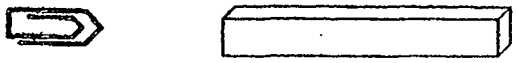
SCORE	/ 4

30 Raoul places a magnet near an iron paper clip.



iron paper clip magnet

(a) The iron paper clip moves towards the magnet. The magnet exerts a

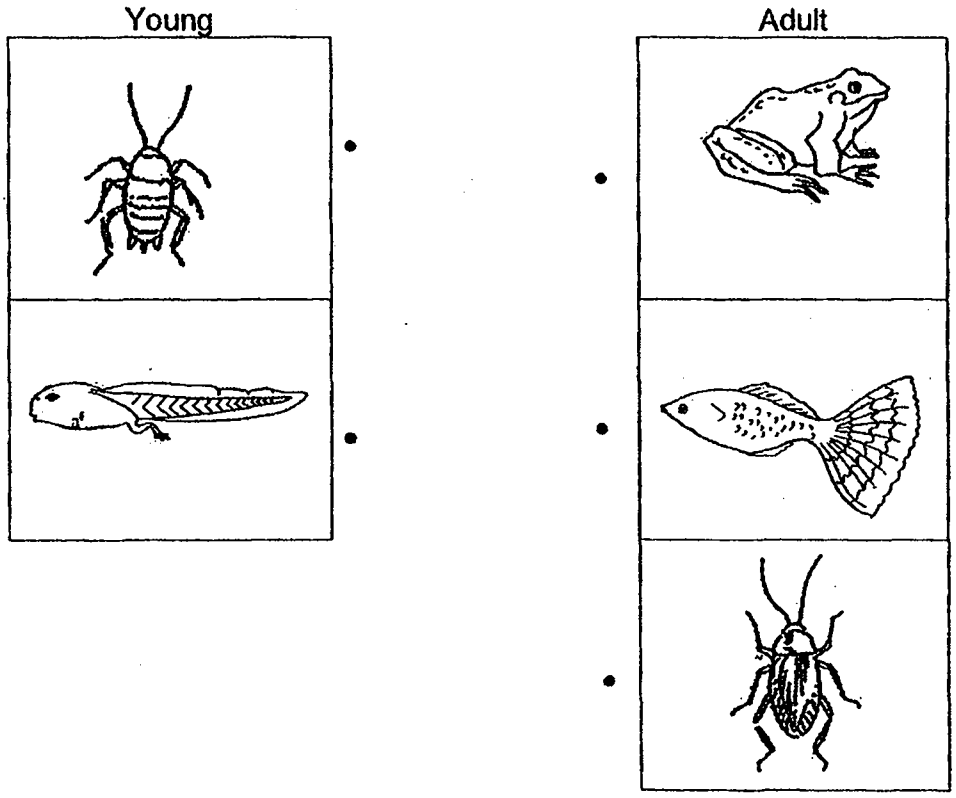
on the iron paper clip. [1]

(b) Choose the correct word from the box to answer the question below.

hard	magnetic	strong

Raoul's observation shows that iron is a _____ material. [1]

31 The diagram below shows the young and adult of some organisms.
Match the young to the correct adult. [2]



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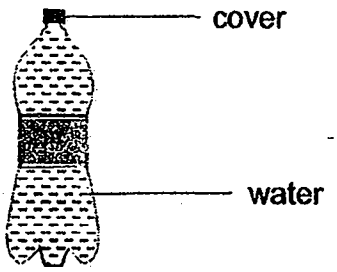
SCORE	/ 4

32 The diagram below shows a bottle filled with water.

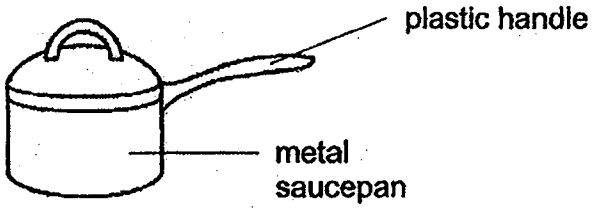


Fill in the blanks with "solid", "liquid" or "gas".

(a) The cover is a _____ . [1]

(b) Water is a _____ . [1]

33 The diagram below shows a metal saucepan.



(a) The handle is made of plastic because it is a _____ conductor of heat. [1]

(b) The saucepan is made of metal because it is a _____ conductor of heat. [1]

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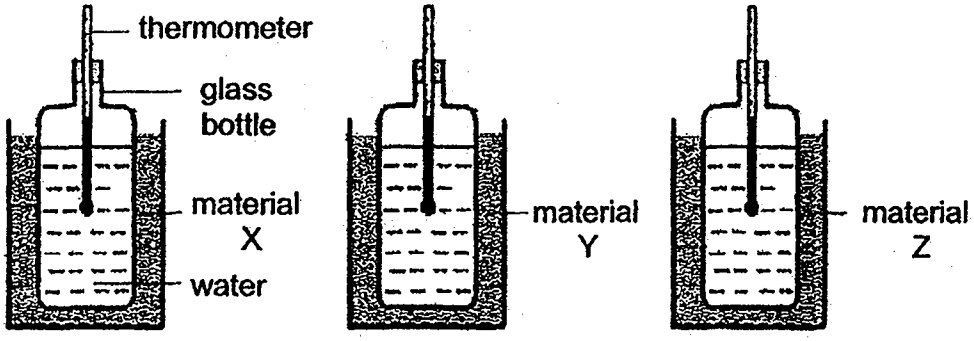
SCORE	/ 4

Continue from Question 33

Paul wanted to find out which material is the best conductor of heat. He filled three identical glass bottles with 200 ml of water at 80°C, and wrapped the glass bottle with a layer of material X, Y and Z respectively.



set-up A set-up B set-up C

He recorded the time taken for the temperature of water to fall to 60°C. His results were shown below.

Material	Time taken (min)
X	15
Y	30
Z	10

Paul wanted to bring hot food and cold drinks for a picnic. He wanted to keep the food hot and the cold drinks cold.

(c) Which materials X, Y and Z would be most suitable to make the containers? Write your answer in the boxes below. [1]

(i)	Material for container carrying hot food	
(ii)	Material for container carrying cold drinks	

(d) Explain your answer in (cii). [1]

_____

_____

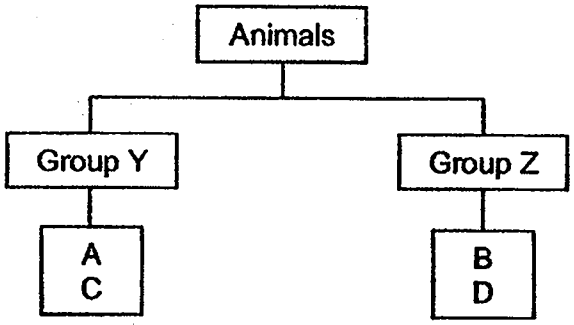
(Go on to the next page)

SCORE	2

34 The characteristics of four animals A, B, C and D are given in the table below.

Characteristics	Animal A	Animal B	Animal C	Animal D
Ability to fly	cannot fly	can fly	can fly	cannot fly
Outer covering	hair	feathers	hair	feathers
Number of legs	4	2	2	2
Number of wings	0	2	2	2

The animals are classified into two different groups Y and Z as shown in the diagram below.



(a) Which groups of animals are represented by Y and Z? [1]

Group Y : _____

Group Z : _____

(b) Give one difference between animal A and animal C. [1]

_____

_____

(Go on to the next page)

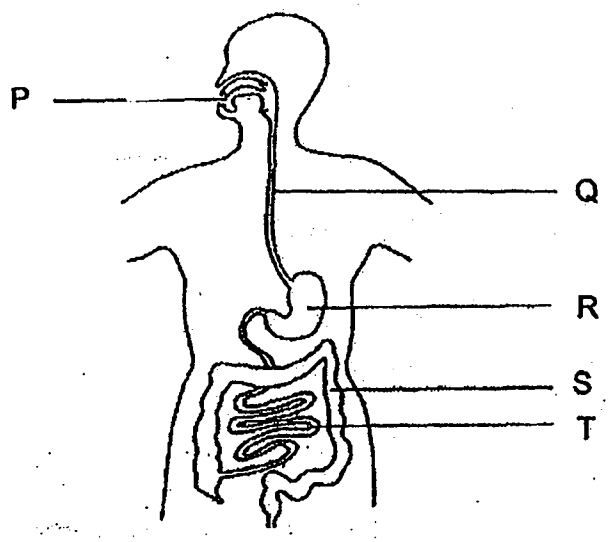
SCORE / 2

35 Amber wanted to find out if the size of biscuits would affect the rate of digestion. She put some biscuits into two containers of digestive juices and recorded the time taken for the biscuits to break down into simple substances.

(a) Indicate with a tick (✓) in the table below, the variables that Amber should keep the same or change. [2]

Variables	keep the same	change
size of biscuits		
type of biscuits		
amount of digestive juices		
duration of the experiment		

The diagram below shows parts of the human digestive system.



(b) Which part(s) of the human digestive system P, Q, R, S or T, as shown above, do/does digestion take place? [1]

_____

(c) State the function of the teeth inside P. [1]

_____

(Go on to the next page)

SCORE 4

36 Kingston was given an iron bar, a bar magnet and a bowl of iron filings as shown below. He tried to pick up the iron filings from a bowl using the iron bar. He realised the iron bar could not pick up any iron filings.

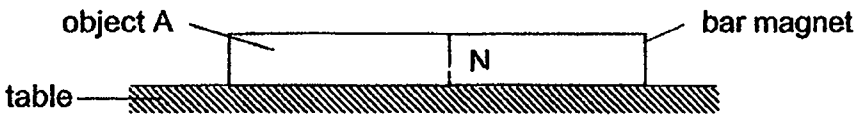
iron bar

bar magnet

a bowl of iron filings

(a) Explain how he could magnetise the iron bar using the bar magnet so that he could pick up the iron filings from the bowl. [2]

Kingston was given an object A. He put the bar magnet and object A near to each other. He observed that object A was attracted to the bar magnet as shown in the diagram below.



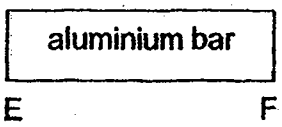
(b) Kingston concluded that object A was a magnet. Do you agree with him? Give a reason for your answer. [1]

(Go on to the next page)

SCORE / 3

Continue from Question 36

Kingston wanted to magnetise an aluminium bar EF using the north pole of a bar magnet as shown below. He stroked the aluminium bar with the bar magnet using the correct "Stroke" method thirty times in one direction.



(c) Give a reason why aluminium bar EF could not be magnetised. [1]

_____

_____

(Go on to the next page)

SCORE	/ 1

37 Ali planted some beans and observed the growth of the beans. He recorded the mass of the seed leaves in the tables shown below.

Table A				
Day	2	4	6	8
Average mass of the seed leaves (g)	5	7	10	11

Table B				
Day	2	4	6	8
Average mass of the seed leaves (g)	4	3	2	1

(a) State three necessary conditions for the beans to germinate. [1]

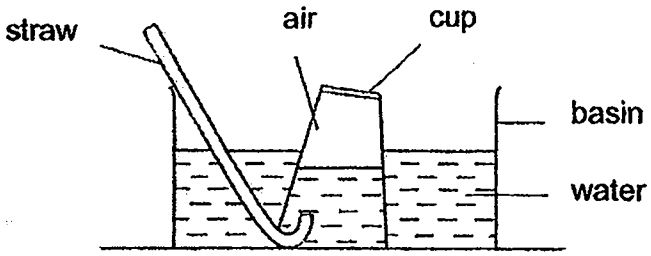
(b) Based on the results above, which Table A or B correctly shows the changes in the mass of the seed leaves? Explain your answer. [2]

(c) How did the seedling get its food for growth after Day 8? [1]

(Go on to the next page)

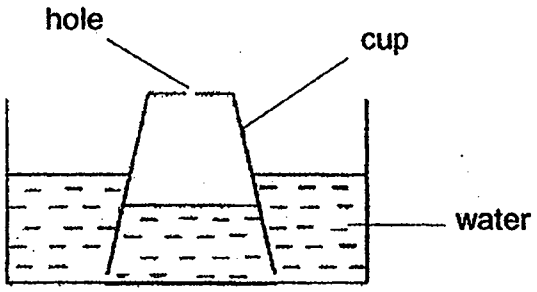
SCORE / 4

38 Ambrose set up an experiment as shown below. He used a straw to blow air into the inverted cup.



(a) He observed that the water level in the cup decreased once he started blowing air into the cup. Explain his observation. [2]

Ambrose conducted a second experiment as shown below. He removed the straw and made a hole on the top of the plastic cup.



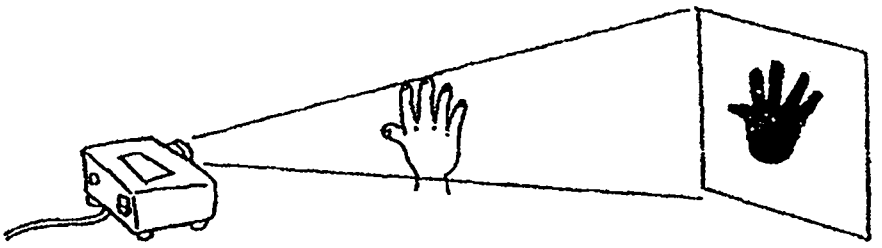
(b) What would happen to the water level in the cup after the hole was made? [1]

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

(Go on to the next page)

SCORE	/ 4

39 Geraldine placed her hand in front of the projector as shown in the set-up.



(a) How was the shadow of Geraldine's hand formed on the screen? [1]

(b) What is the relationship between the size of the shadow and the distance of her hand from the projector? [1]

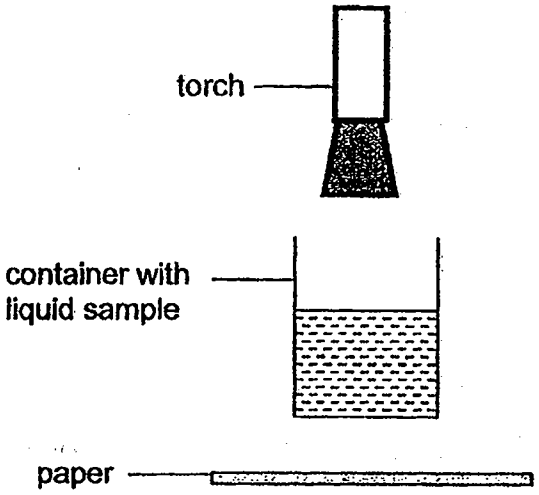
(c) Geraldine placed a tracing paper between the projector and the screen. Would there be a shadow formed? Explain your answer.

(d) Is shadow a matter? Why? [1]

(Go on to the next page)

SCORE	/ 4

40 Melvin collected three samples of liquids X, Y and Z from three different sources. He placed each liquid in a container. He shone a torch through each container of liquid and placed a sheet of paper below the container as shown in the diagram below.



Melvin observed how much light fell on the sheet of paper when each of the three liquid samples X, Y and Z was in the container. He recorded his observations in the table below.

Liquid Sample	Observation
X	Bright patch of light on paper
Y	Dim patch of light on paper
Z	No light on paper

(a) What is the aim of Melvin's experiment? [1]

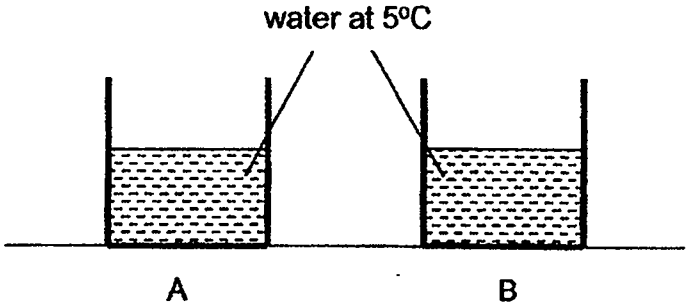
(b) Which liquid sample is the muddiest? Why? [2]

(c) State one variable that must be kept constant for the experiment to be a fair test. [1]

(Go on to the next page)

SCORE 4

41 Containers A and B, each made of a different material, were filled with the same amount of water at 5°C at the same time. Container A felt colder than B when touched.



Both containers were left in a classroom at 25°C. The temperature of water in the beaker was measured every five minutes.

The table below shows the temperature of water in container B over a period of 20 minutes.

Time (min)	0	5	10	15	20
Temperature of water in container B (°C)	5	8	10	14	18

(a) Would the temperature of water in container A at the 20th minute be more than, less than or equal to 18°C? [1]

_____

(b) Explain your answer in (a). [2]

_____

_____

_____

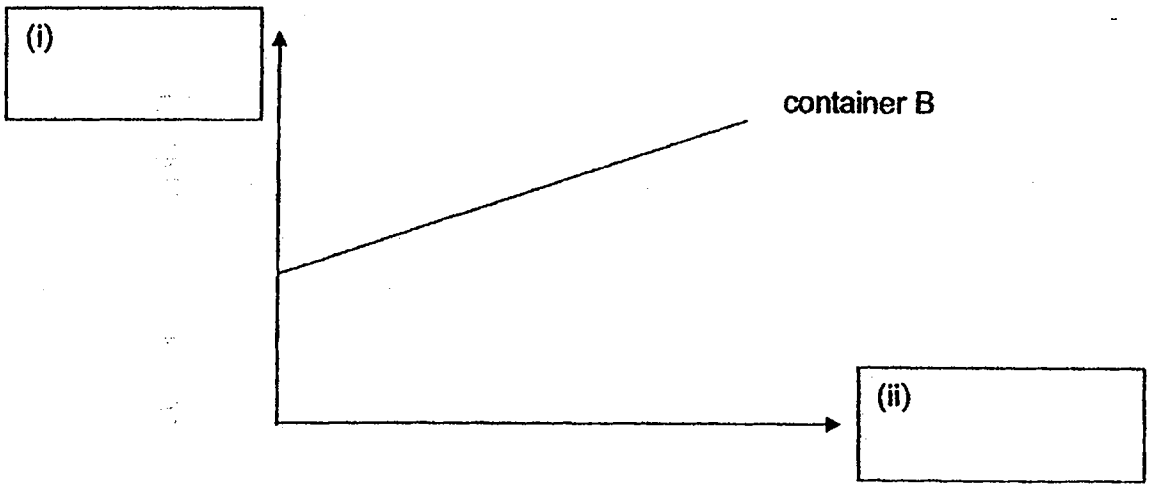
_____

(Go on to the next page)

SCORE	3

Continue from Question 41

The graph below shows the temperature changes of the water in container B over a period of time.



(c) Label (i) and (ii) clearly in the boxes provided. [1]

End of Booklet B

SCORE 1

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LEVEL : PRIMARY 4
SUBJECT : SCIENCE
TERM : 2019 SA2

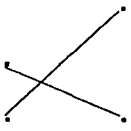
SECTION A

Q 1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
3	2	2	3	4	1	3	3	3	1

Q 11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
2	1	1	1	1	2	4	4	4	4

Q 21	Q22	Q23	Q24	Q25	Q26	Q27	Q28
1	1	4	2	2	3	4	1

SECTION B

Q29)	a)absorb b)waterproof c)Material B. It is waterproof, flexible and does not break when dropped.
Q30)	a)magnetic force b)magnetic
Q31)	

<table>
<tr><td>Q32)</td><td>a)solid
b)liquid</td></tr>
<tr><td>Q33)</td><td>a)poor
b)good
c)i)Y ii)Y
d)Material Y is the poorest conductor or heat as it took the longest time for the water to lose heat to the surrounding air.</td></tr>
<tr><td>Q34)</td><td>a)Group Y: Mammals
Group Z: Birds
b)Animal A cannot fly while animal C can fly.</td></tr>
<tr><td>Q35)</td><td>a)
<table>
<tr><td></td><td>√</td></tr>
<tr><td>√</td><td></td></tr>
<tr><td>√</td><td></td></tr>
<tr><td>√</td><td></td></tr>
</table>
b)P, R and T
c)The teeth breaks down the food into smaller pieces.</td></tr>
<tr><td>Q36)</td><td>a)Stroke the iron bar with one pole of the bar magnet in the same direction many time.
b)No. Object A could be a magnetic object.
c)It is because aluminium is not a magnetic material.</td></tr>
<tr><td>Q37)</td><td>a)Water, oxygen and warmth.
b)Table B. It is because the seed will use up all the food stored in the seed leaves, making the mass of the seed leaves decrease.
c)The seedling got its food from it true leaves to make its own food.</td></tr>
</table>

Q38)	a)When he blew air into the cup, air occupied space inside the cup and pushed the water out. b)The water level in the cup will increase. c)It is because air in the cup managed to escape through the hole, allowing the water to displace the air.
Q39)	a)Light from the projector was blocked by Geraldine's hand, causing a shadow to be formed. b)As the distance of her hand to the projector increases the size of the shadow decreases. c)Yes. The tracing paper will block same light. d)No. It is because shadow does not occupy space and does not have a definite volume and definite shape.
Q40)	a)To find out how much light fell on the sheet of paper. b)Liquid sample Z. It allows no light to pass through. c)The amount of liquid.
Q41)	a)More than b)Material A is a better conductor of heat in than container A will gain heat faster from material B. The water in the material and the surrounding than the water in container B. c)i)Temperature (℃) ii)Time (min)