NANYANG PRIMARY SCHOOL

PRIMARY 4 SCIENCE

End-of-Year Examination
2020

BOOKLET A

Date: 28 October 2020

Duration: 1 h 45 min

Name : _____( )

Class: Primary 4 ( )

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Booklet A consists of 16 printed pages including this cover page.

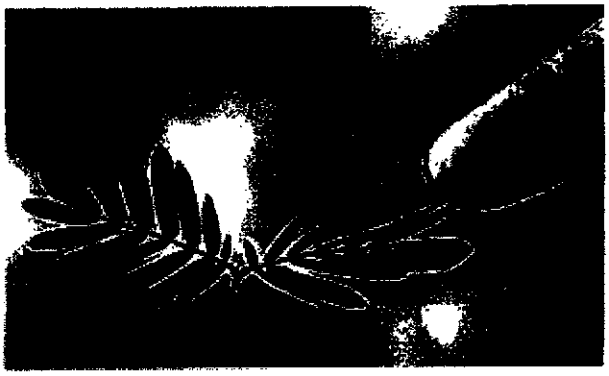
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Section A

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

1. A plant closes its leaves when touched.



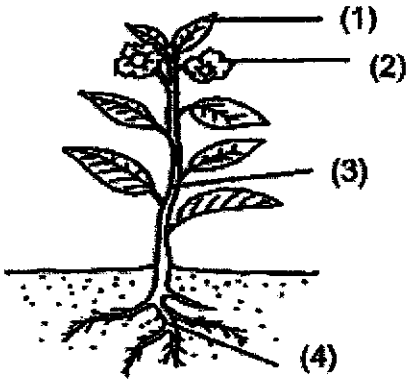
This shows that the plant is a living thing because it can _____.

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

2. Which one of the following statements is true for ALL mammals?

(1) They have tails.
(2) They live on land.
(3) They have wings.
(4) They have hair as outer covering.

3. The diagram shows a plant.
Which part, (1), (2), (3) or (4), obtains water for the plant?



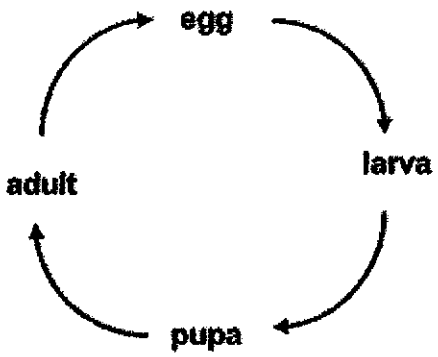
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4. Which one of the following shows the correct order when food moves through some parts of the digestive system?

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

5. The diagram below shows the life cycle of an animal.



Which animal is likely to have the life cycle as shown above?

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

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

(1) iron ball
(2) paper ball
(3) plastic ball
(4) wooden ball

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

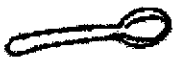
(1) metal ruler



(2) carpet



(3) metal spoon

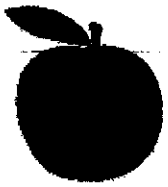


(4) glass window



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

(1)



an apple

(2)



a leaf

(3)



the moon

(4)



flame

9. Which one of the following is NOT a source of heat?

(1) The Sun
(2) A sweater
(3) A lighted bulb
(4) A candle flame

10. Which one of the following substances has a definite shape?

(1) oil
(2) door
(3) water
(4) oxygen

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11. The diagram below shows the life cycle of animal X.

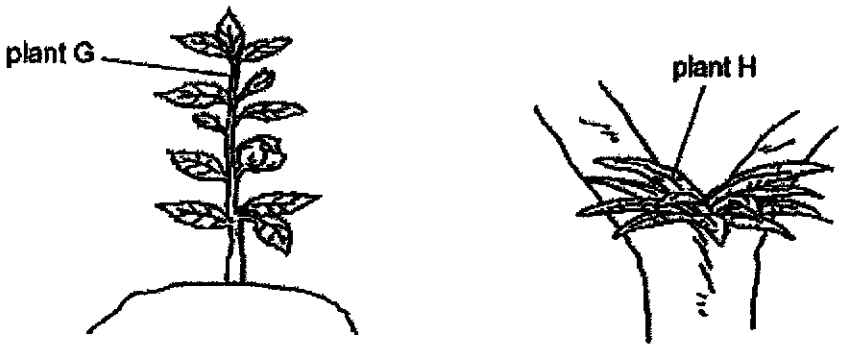


Which of the following characteristics of living things are shown in the life cycle of animal X in the diagram above?

A Living things can grow.
B Living things can reproduce.
C Living things need air, food and water.
D Living things respond to changes in the surroundings.

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

12. Anu saw two plants, G and H, in the school garden.



Which of the following statements about the two plants is/are correct?

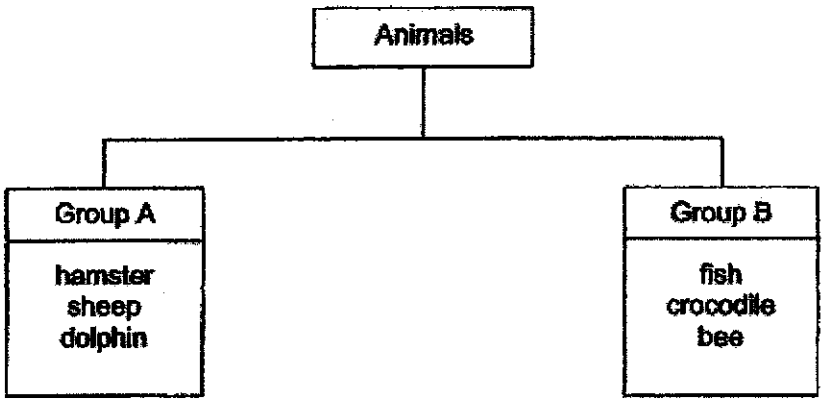
A Both plants have flowers.
B Only plant G can make food.
C Leaves of both plants can make food using sunlight.

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

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13. Study the classification chart below.



Which one of the following shows how the above animals have been grouped?

	Group A	Group B
(1)	Breathe through gills	Breathe through lungs
(2)	Body covering of hair	Body covering of scales
(3)	Give birth to young alive	Lay eggs
(4)	Live on land	Live in water

14. Which of the following are common characteristics of fern and fungi?

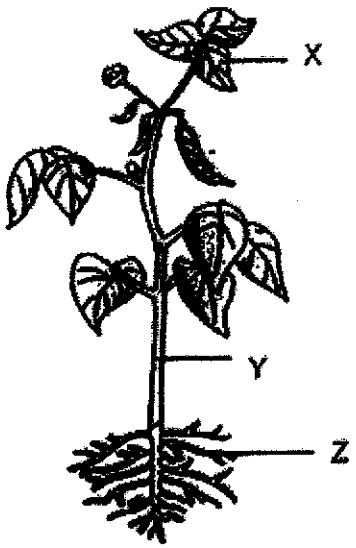
A They do not bear flowers.
B They make their own food.
C They reproduce by spores.
D They get food from living things they grow on.

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

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15. The diagram below shows parts, X, Y and Z, of a plant.



Which one of the following shows the correct functions of plant parts, X, Y and Z?

	X	Y	Z
(1)	Support the plant upright	Allow air to go in and out	Absorb water and mineral salts
(2)	Make food for plant	Holds up the leaves	Anchor plant firmly to ground
(3)	Allow air to go in and out	Bear flowers	Get air for plant
(4)	Make food for plant	Get sunlight for plant	Keep the plant upright

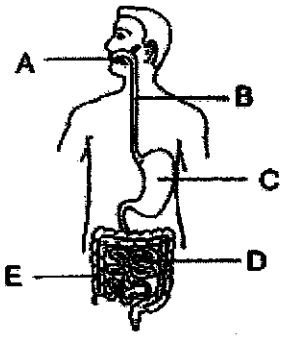
16. Which one of the following shows the incorrect function of the human systems?

	System	Functions
(1)	Skeletal System	Protect organs in the body.
(2)	Muscular System	Work together with skeletal system to bring about movement.
(3)	Circulatory System	Removes undigested food from the body.
(4)	Respiratory System	Takes in and removes air from the body.

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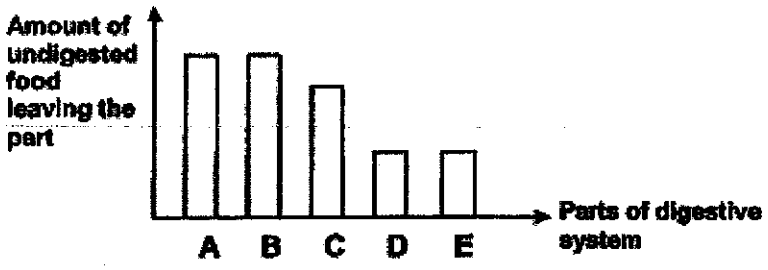
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17. The diagram below represents the digestive system.

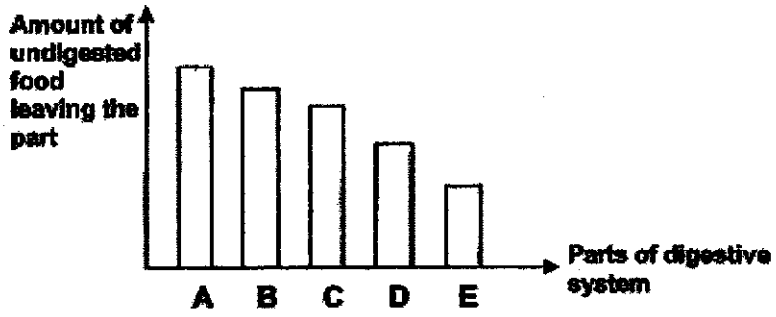


Which one of the following graphs shows the correct amount of **undigested** food leaving each part of the digestive system?

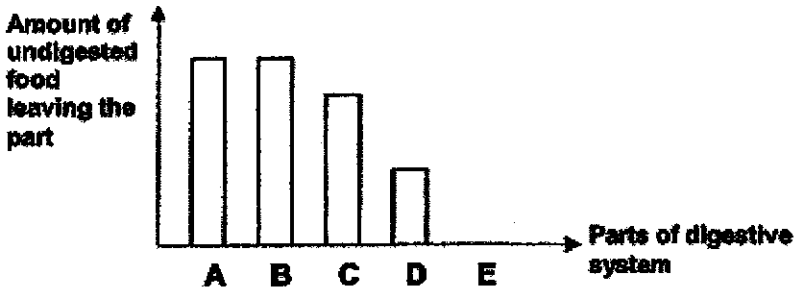
(1)



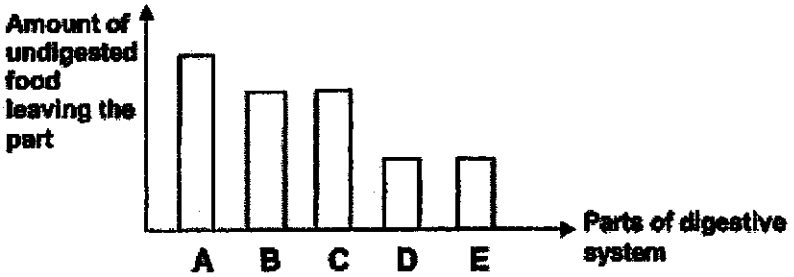
(2)



(3)



(4)

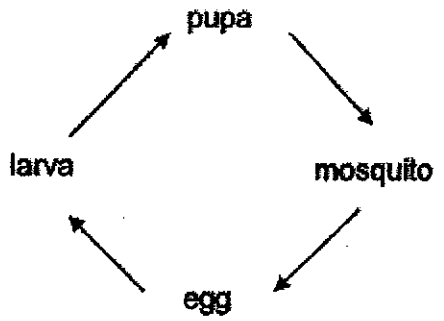


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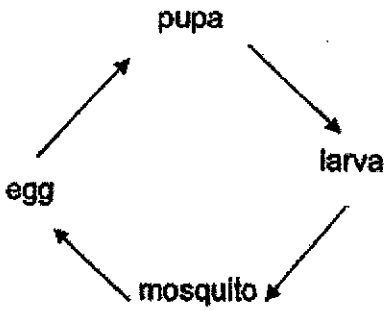
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18. Which of the following correctly represents the life cycle of a mosquito?

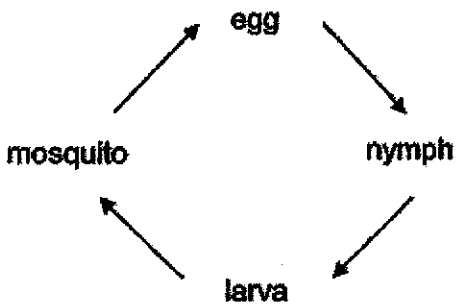
(1)



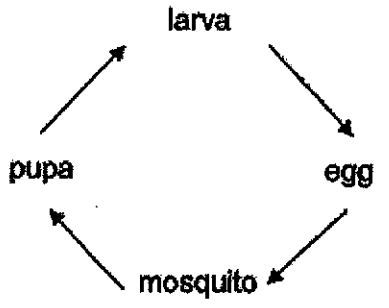
(2)



(3)



(4)



19. The table below shows the number of days animal Z spends at each stage of its life cycle.

Stage	Number of days
Eggs	5
Adult	30
Pupa	10
Larva	15

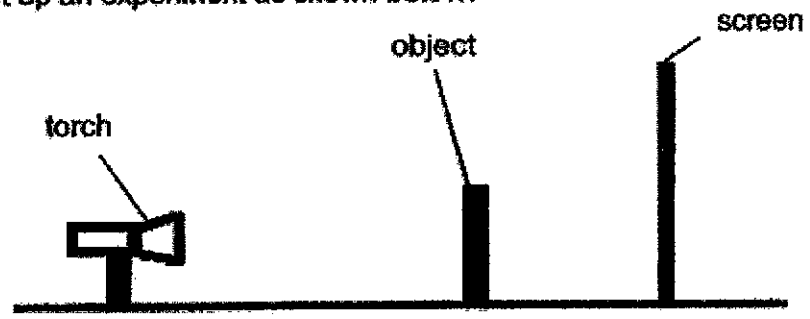
How many days does it take for animal Z to first turn into an adult after the eggs were hatched?

(1) 25
(2) 30
(3) 55
(4) 60

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20. Sarah set up an experiment as shown below.



Which of the following changes should she make in order to observe a larger shadow on the screen?

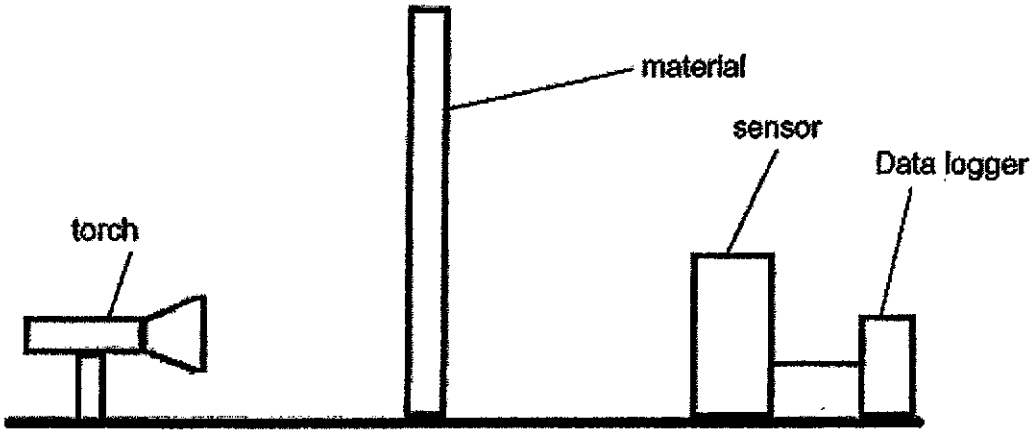
A Move the torch nearer to the object.
B Move the screen away from the object.
C Move the torch further away from the object.
D Move both the object and screen away from the torch by 5 cm.

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

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21. Jackson set up an experiment as shown below. The torch was switched on and the sensor recorded the amount of light that passed through the material.



He repeated the experiment using different materials and the results of his experiment are shown in the table below.

Material	Amount of light detected by sensor (units)
A	750
B	600
C	920
D	230

Which material should Jackson use for his room curtains if he wanted to sleep in a darker room during the day?

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

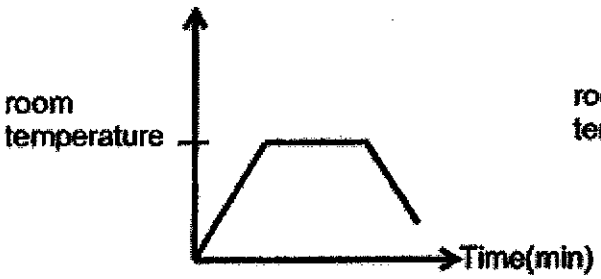
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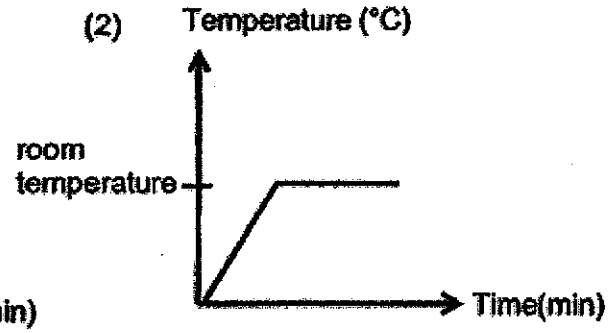
22. Jason heated a beaker of water until it reached 100 °C. The beaker of water was then immediately left on a table to cool to room temperature.

Which one of the following graphs correctly shows the changes in the temperature of the substances in the beaker?

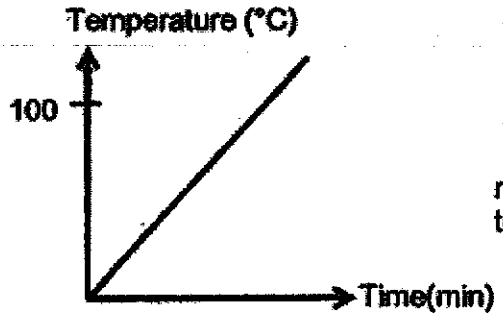
(1)



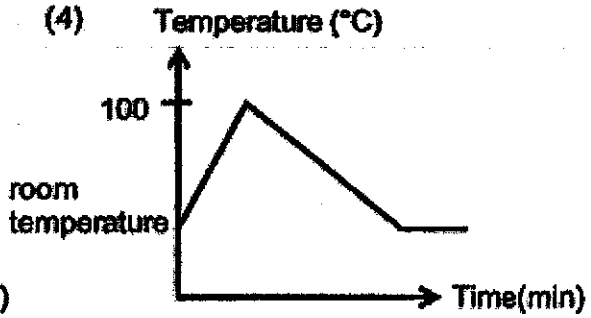
(2)



(3)



(4)



23. May was unable to separate two bowls that were stuck to each other.



Which of the following actions should May take to separate the two bowls?

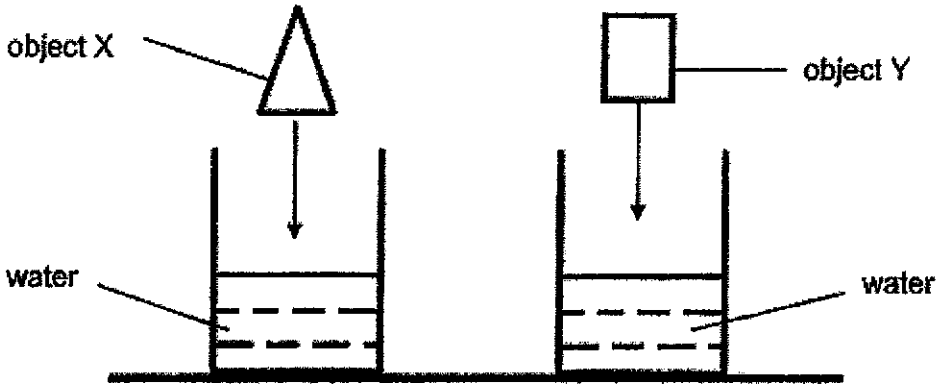
A Pour hot water into bowl A.
B Add some ice cubes into bowl A.
C Wrap a towel that is soaked in ice water around bowl B.
D Wrap a towel that is soaked in hot water around bowl B.

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

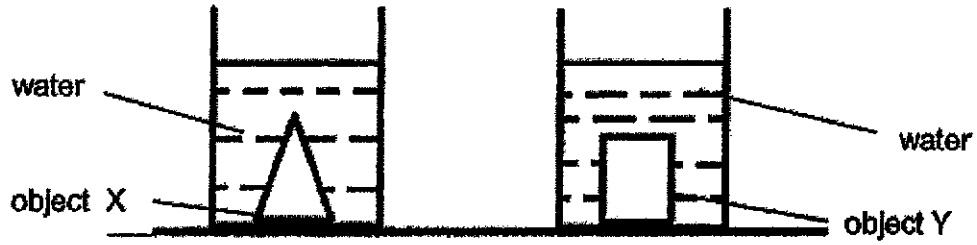
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24. The diagram below shows 2 different objects, X and Y, being placed into a beaker filled with the same amount of water.



After the objects were placed into the beakers of water, it was observed that the water level in both beakers were identical.



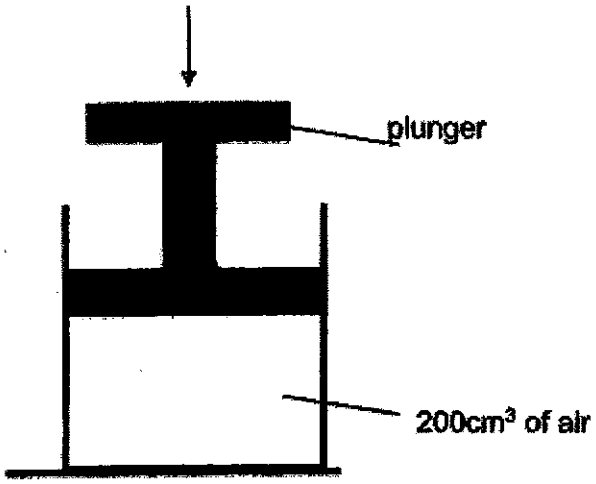
Based on the set-ups above, which one of the following conclusions about objects X and Y is correct?

(1) X and Y have the same mass.
(2) X and Y have the same weight.
(3) X and Y have the same volume.
(4) X and Y are made of the same material.

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25. Ashton pushed the plunger into an empty container as shown below.



What would happen to the mass and volume of air inside the container after Ashton pushed the plunger in?

	Mass of air	Volume of air
(1)	decreases	decreases
(2)	remains the same	remains the same
(3)	remains the same	decreases
(4)	decreases	remains the same

26. Si Ling listed the properties of 4 materials, J, K, L and M, in the table below.

Properties	Material J	Material K	Material L	Material M
Does it tear easily?	No	No	Yes	No
Is it waterproof?	Yes	Yes	Yes	No
Is it flexible?	No	Yes	Yes	Yes

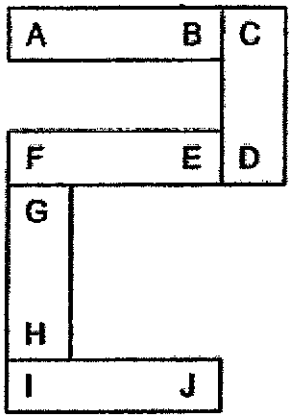
Which one of the materials is most suitable for making a swimming cap?

(1) Material J
(2) Material K
(3) Material L
(4) Material M

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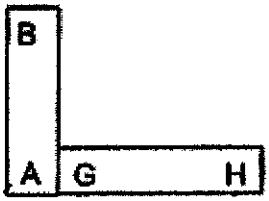
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27. Five bar magnets with their ends marked from A to J can be arranged as shown below without any replusion.

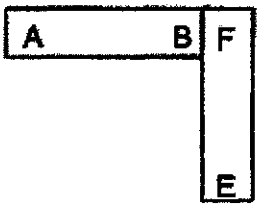


Which one of the following diagrams shows a possible arrangement of two of the above magnets?

(1)



(2)



(3)



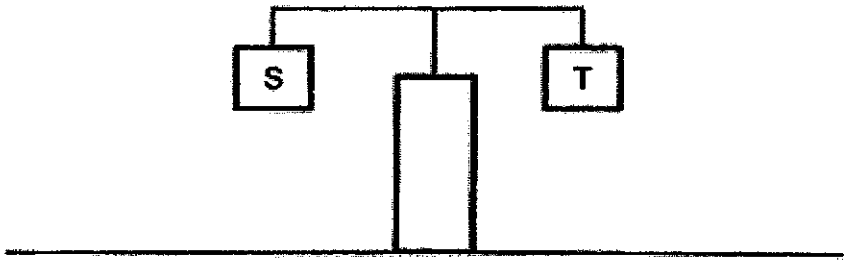
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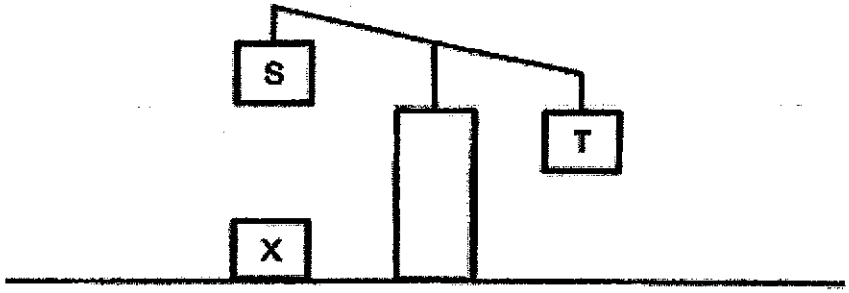
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28. The diagram below shows a beam balance with objects S and T hung at both ends. Both objects are of the same mass.



The diagram below shows what happens when an object, X, is placed below object S.



Based on the observations above, which one of the following best describes objects S and X?

	S	X
(1)	Magnet	Steel block
(2)	Magnet	Magnet
(3)	Plastic block	Magnet
(4)	Steel block	Plastic block

~ END OF BOOKLET A ~

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NANYANG PRIMARY SCHOOL

PRIMARY 4 SCIENCE

End-of-Year Examination
2020

BOOKLET B

Date: 28 October 2020

Duration: 1 h 45 min

Name : _____ **( )**

Class: Primary 4 ( )

Marks Scored:

Booklet A:		**56**
Booklet B:		**44**
Total :		**100**

Please sign and return the End-of-Year examination paper the next day. Any queries should be raised at the same time when returning the paper.

Parent's signature: .....

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FOLLOW ALL INSTRUCTIONS CAREFULLY.

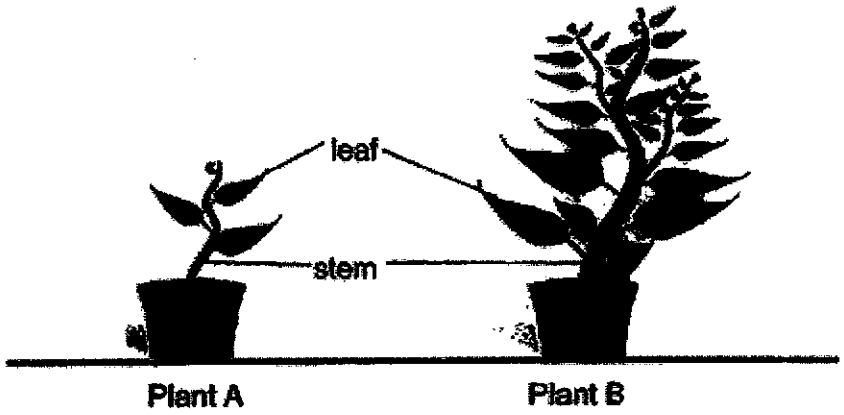
Booklet B consists of 13 printed pages including this cover page.

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Section B
Write your answers to questions 29 to 40 in the spaces provided.

29. The diagram below shows two plants.

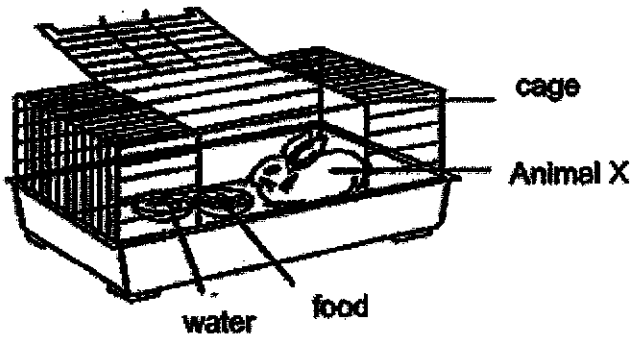


(a) What is one difference between the stem of plant A and the stem of plant B?

The stem of plant A is _____ than the stem of plant B. [1]

(b) The leaves help both plants to make _____ in the light. [1]

30. Study the diagram below.



(a) After a few days, will the amount of water in the bowl increase, decrease or remain the same? [1]

_____

(b) Based on the diagram above, name one substance this animal needs so that it remains alive. [1]

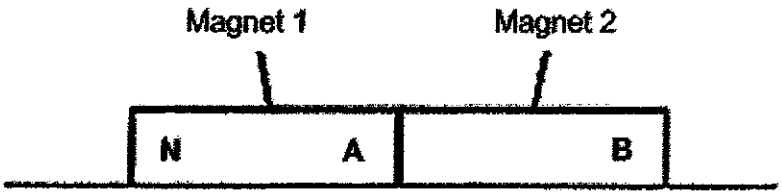
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31. Two magnets are placed together as shown below.
They did not repel each other.



The north pole of magnet 1 is labelled N.

Identify the poles labelled A and B on the magnets 1 and 2. [2]

A : _____

B : _____ _____

32. The diagram shows a beaker of water.



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

gas	decreases	solid
remains unchanged	increases	

When heat is removed from the water, its temperature _____ [1]

The beaker of water is put in the freezer. After some time, the water will change its state to become _____ . [1]

4

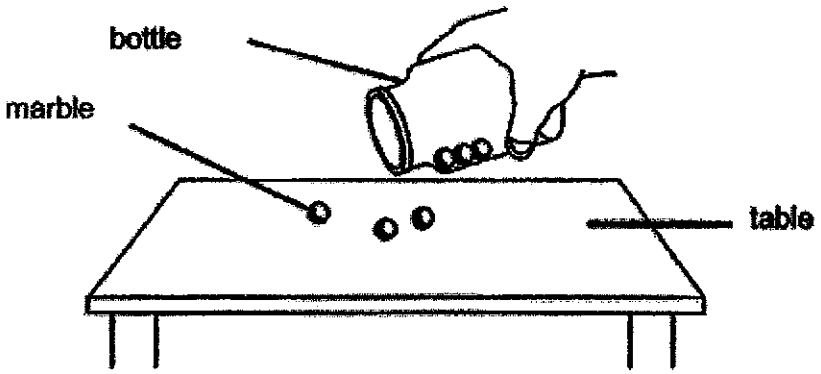
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33. Choose the correct words from the box to fill in the blanks below.

solid	liquid	gas

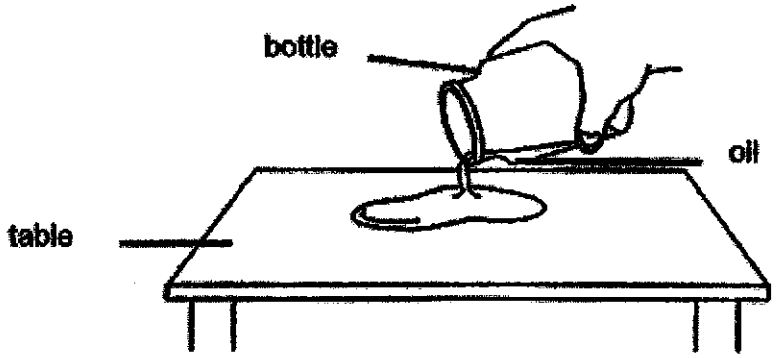
Amy pours some marbles from a bottle onto a table as shown below.



The volume and shape of the marbles remain the same.

(a) This shows that a marble is a _____. [1]

Amy pours oil from a bottle onto a table as shown below.



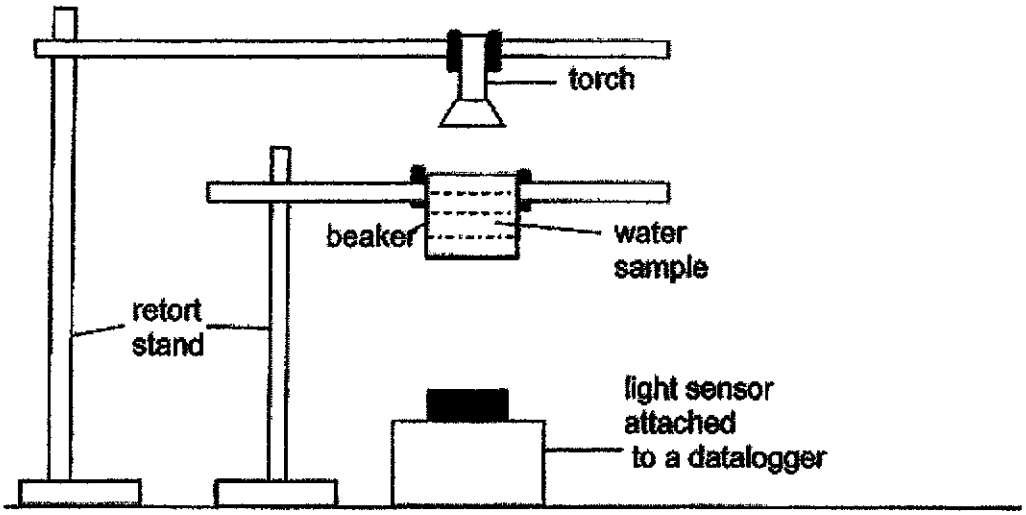
The volume of oil remains the same but its shape changes.

(b) This shows that oil is a _____. [1]

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34. Maya carried out an experiment with water samples collected from 3 different ponds, S, T and U. She placed 100 ml of water samples into a glass beaker and set up the experiment as shown below.



Maya switched on her torch and shone it over the water sample. She used a datalogger to measure the amount of light that passed through the water sample. She repeated her experiment for water sample T and U, She recorded her results in the table below.

Amount of light detected (unit)		
Pond S	Pond T	Pond U
300	910	77

(a) Based on the results collected, arrange the water samples from pond S, T and U, starting from the **clearest** water sample. [1]

Clearest ⟶ Least Clear

☐ ☐ ☐

Maya also observed that there is the greatest number of water plant X growing in pond T compared to pond S and U.

(b) Based on the results of the experiment, explain Maya's observations of the growth of water plant X in pond T. [1]

_____

_____

2

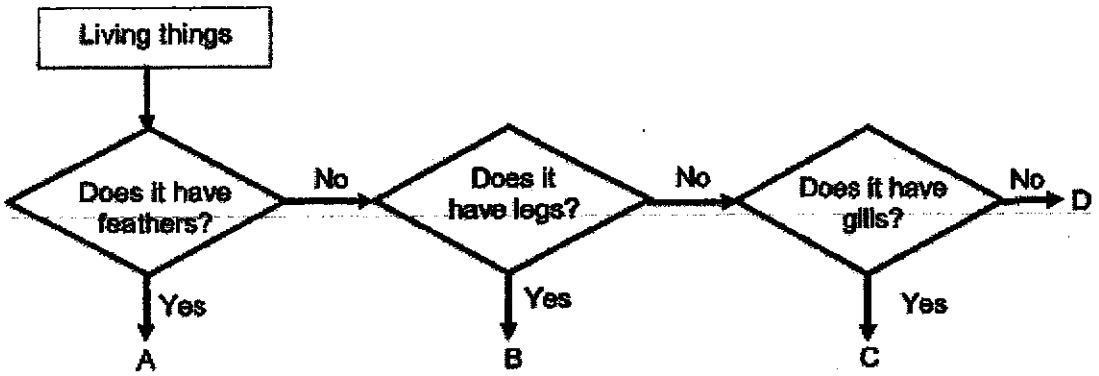
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(c) Maya identified a few variables in her experiment. Put a tick in the correct place for each variable so that her experiment will be fair. [2]

Variables	Keep the same	Change
Light source		
Water sample		
Amount of water sample		
Distance between torch and light sensor of data logger		

35. The diagram shows a flowchart of four animals, A, B, C and D.



(a) Which group of animals does animal A belong to? [1]

_____

(b) Write down all the characteristics of animal B. [1]

_____

_____

(c) State all the similar characteristics between animal C and animal D. [1]

_____

_____

(d) Give an example of animal C. [1]

_____

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36. Shayna classified some living things into different groups based on their characteristics.

Group W	Group X	Group Y	Group Z
penguin cat	bamboo plant bird's nest fern	mushroom mould	bacteria

(a) In which group, W, X, Y and Z, should yeast be placed? [1]

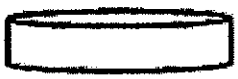
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(b) Identify one difference in characteristics between the living things in Group X and Y. [1]

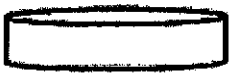
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Mr Tan wanted to keep a pair of shoes in the cupboard for some time. His friend told him that he needed to put something in the cupboard together with his shoes to stop mould from growing on them. He was given two substances, A and B.



Substance A – absorbs moisture from the surroundings



Substance B – adds extra moisture to the surroundings

(c) Which substance should he use to place in his cupboard so that mould would not grow on his shoes? Explain your answer. [2]

_____

_____

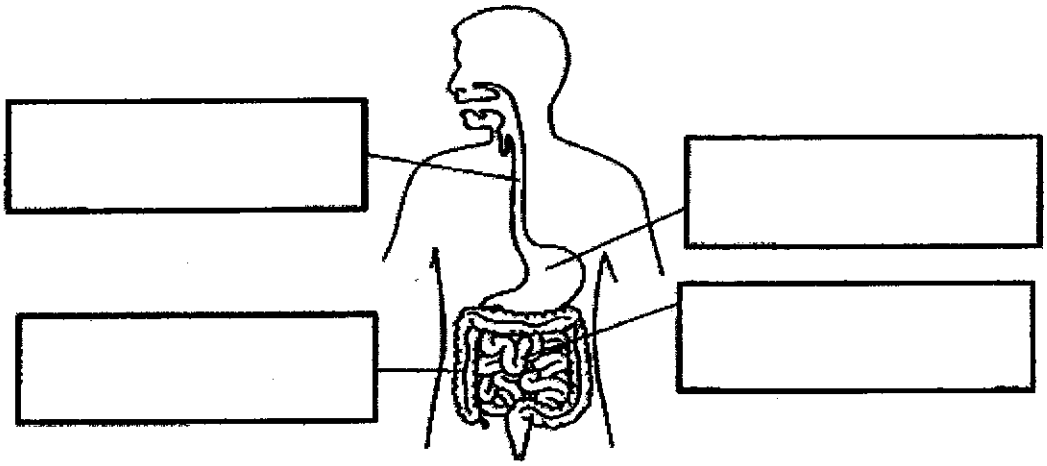
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37. The diagram below represents the digestive system.



(a) **Label the parts of the digestive system in the boxes above.** [2]

(b) **Identify the substances that these two parts of the digestive system absorb.**[2]

(i) **small intestine :** _____

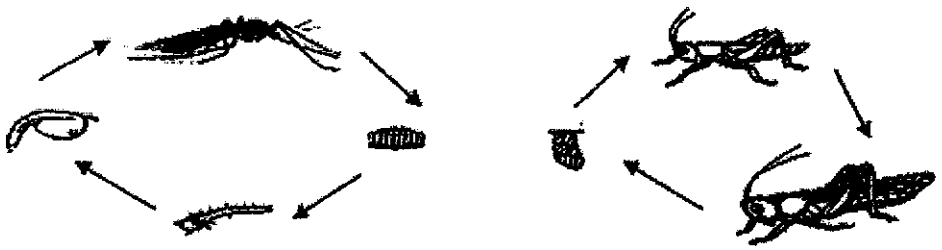
(ii) **large intestine :** _____

4

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38. The diagram below shows the life cycles of animal P and animal Q.



animal P animal Q

(a) Based only on the diagram above, state two differences between the life cycles of animal P and animal Q. [2]

Difference 1: _____

_____

Difference 2: _____

_____

Ruben collected several eggs that belongs to a butterfly. He set up an experiment to find out how the surrounding temperature affects the number of eggs that hatch. The table below shows the results of his experiment.

Set-up	A	B	C
Surrounding temperature (°C)	28	30	32
Number of eggs that hatched	20	24	29

(b) What is the relationship between the surrounding temperature and the number of eggs that hatched? [1]

_____

_____

(c) Based on the results above, what can be done to increase the number of adult butterflies? Explain your answer. [2]

_____

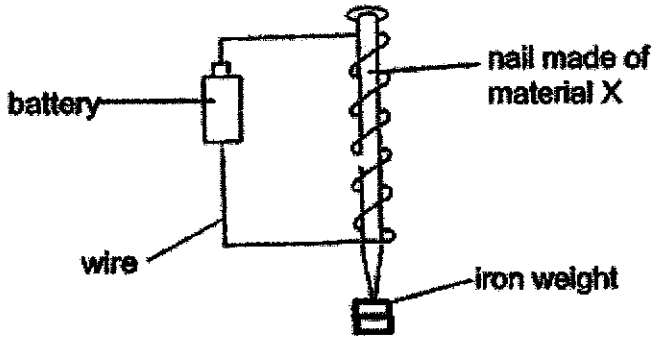
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39. Xue Wen wanted to find out which material, X, Y or Z, can be used to make a stronger electromagnet. He made an electromagnet by using a nail made of material X and carried out an experiment as shown below.



He kept adding iron weights to the tip of the electromagnet until they could no longer be attracted. He repeated the experiment with materials Y and Z and recorded the results in the table below.

Material	X	Y	Z
Number of iron weights attracted	2	8	5

Xue Wen's teacher advised that he should have repeated the experiment at least 3 times for each material so that he would get three readings for each material.

(a) Why did Xue Wen's teacher ask him to repeat the experiment? [1]

_____

(b) State 2 ways to increase the strength of the electromagnet. [2]

(i) _____

(ii) _____

(c) Based on Xue Wen's experiment, which material, when used as an electromagnet, will take the least amount of time to separate iron from the scrap pile? Explain why. [1]

_____

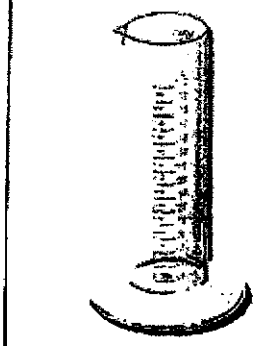
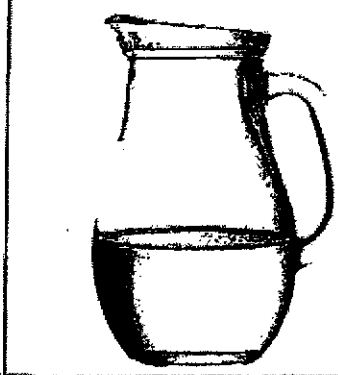
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40. Jie Ling was asked to determine the volume of a metal cube. She was given the following items.

		
measuring cylinder	jug with 1liter of water	metal cube

(a) Using only the items provided, list down the steps that she needs to take to determine the volume of the cube. [2]

Step 1: Pour in 200 ml of water into the measure measuring cylinder.

Step 2: _____

_____

Step 3: _____

_____

(b) State two actions that Jie Ling should take while carrying out the experiment to ensure that the volume she measured is accurate. [2]

(i) _____

_____

(ii) _____

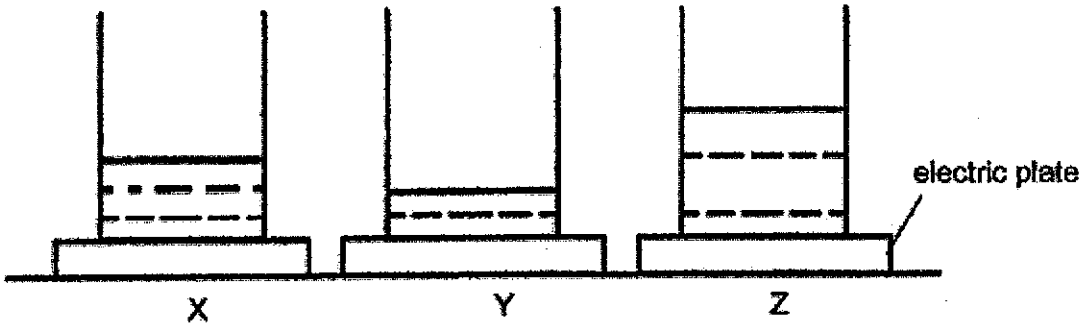
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41. The diagram below shows three beakers with different amounts of water. They were placed on three identical electric plates and heated till the water boiled.



The time needed for the water to reach 100 °C was recorded down.

(a) Based on the set-up above, arrange beakers X, Y and Z in the table below, beginning with the beaker of water that took the shortest time to boil to the beaker of water that took the longest time. [1]

Shortest time to boil	⟶	Longest time to boil

(b) Nadya decided to use one of the beakers of boiling water to cook an egg. Which beaker of water should she use if she wanted to make hard-boiled egg as fast as possible? Explain your answer. [2]

_____

_____

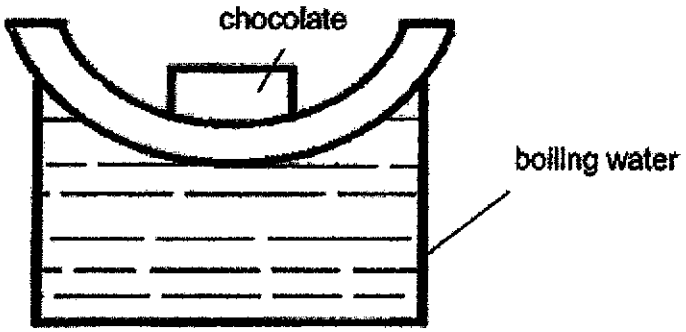
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(c) Nadya wanted to melt her chocolate. She placed a dish with a piece of chocolate on top of a container of boiling water as shown in the diagram below.



Explain why the chocolate melted after some time. [2]

~ END OF BOOKLET B ~

2

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Nanyang Primary School
P4 SCIENCE End-of-Year Examination 2020 - Suggested Answer Key

Section A

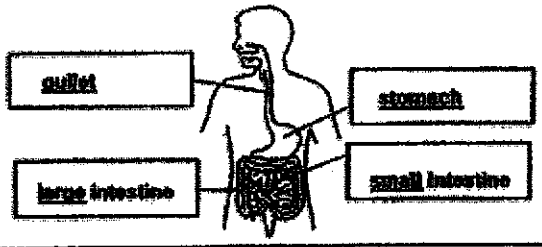
1	2	11	1	21	4
2	4	12	2	22	4
3	4	13	3	23	4
4	3	14	2	24	3
5	3	15	2	25	3
6	1	16	3	26	2
7	2	17	1	27	3
8	4	18	1	28	2
9	2	19	1		
10	2	20	2		

Section B

<table>
<tr><th>Qn No</th><th>Acceptable Answers</th></tr>
<tr><td>29a.</td><td>shorter/thinner</td></tr>
<tr><td>29b.</td><td>food</td></tr>
<tr><td></td><td></td></tr>
<tr><td>30a.</td><td>decrease</td></tr>
<tr><td>30b.</td><td>water/food/air</td></tr>
<tr><td></td><td></td></tr>
<tr><td>31.</td><td>A: south
B: south</td></tr>
<tr><td></td><td></td></tr>
<tr><td>32a.</td><td>decreases</td></tr>
<tr><td>32b.</td><td>solid</td></tr>
<tr><td></td><td></td></tr>
<tr><td>33a.</td><td>solid</td></tr>
<tr><td>33b.</td><td>liquid</td></tr>
<tr><td></td><td></td></tr>
<tr><td>34a.</td><td>(clearest) T , S, U (least clear)</td></tr>
<tr><td>34b.</td><td>The plants in Pond T can make the most food.</td></tr>
<tr><td>34c.</td><td>
<table>
<tr><th>Variables</th><th>Keep the same</th><th>Change</th></tr>
<tr><td>Light source</td><td>✓</td><td></td></tr>
<tr><td>Water sample</td><td></td><td>✓</td></tr>
<tr><td>Amount of water sample</td><td>✓</td><td></td></tr>
<tr><td>Distance between torch and light sensor of data logger</td><td>✓</td><td></td></tr>
</table>
</td></tr>
<tr><td></td><td></td></tr>
<tr><td>35a.</td><td>Bird</td></tr>
<tr><td>35b.</td><td>B has no feathers but has legs.</td></tr>
</table>

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35c.	Both have no feathers and no legs.
35d.	Fish
36a.	Group Y
36b.	Group X can make their own food but Group Y cannot make their own food.
36c.	He should use Substance A, because there will not be any moisture present and mould needs moisture to grow.
37a.	
37b.	(i) digested food (ii) water
38a.	1. Animal P has a 4 stage life cycle while animal Q has a 3 stage life cycle. 2. The young of Animal P does not resemble the adult whereas the young of animal Q resembles the adult.
38b.	As the surrounding temperature increases, the number of eggs that hatched increases.
38c.	Increase the surrounding temperature so that the most number of eggs will hatch and increase the chances of most of the young turning into adults.
39a.	To ensure that the results are reliable.
39b.	Increase the number of batteries. Increase the coils of wire around the magnetic material.
39c.	Material Y, as it can attract the most number of iron weights so it is the strongest electromagnet.
40a.	Step 2: Place the metal cube into the cylinder. Step 3: Read the new volume and subtract off the original volume to get the volume of cube.
40b.	Take the readings at eye level Ensure that the metal cube is fully submerged
41a.	(shortest time) Y,X,Z (longest time)
41b.	Container Z, as it contained the most amount of boiling water and therefore it has the most amount of heat, so the egg will be most cooked.
41c.	The dish gained heat from the boiling water that is inside the container and the chocolate gained heat from the dish, causing it to melt.

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