NAN HUA PRIMARY SCHOOL
SEMESTRAL ASSESSMENT 1 – 2019
PRIMARY 5

SCIENCE

BOOKLET A

28 Multiple Choice Questions (56 marks)

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

INSTRUCTIONS TO CANDIDATES

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

Marks Obtained

Booklet A		/ 56
Booklet B		/ 44
Total		/ 100

Name: _____ ( ) Class: P 5 _____

Date : 15 May 2019 Parent's Signature: _____

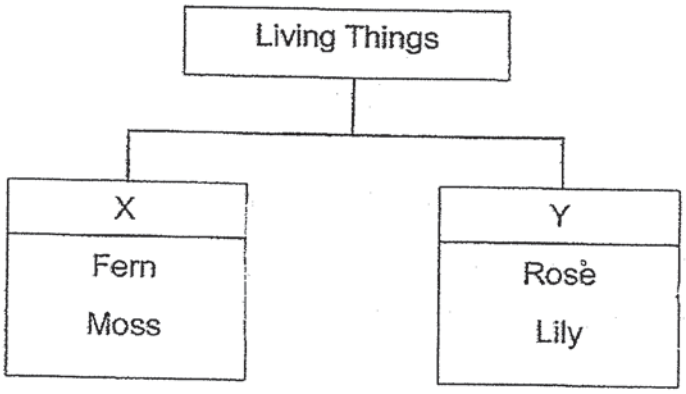
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3 The diagram below shows how some living things can be grouped.



Which of the following statements correctly describe(s) the living things in the diagram above?

A Living things in group X cannot bear fruits.
B Living things in group Y reproduce by spores.
C Living things in group Y can make their own food.
D Living things in group X cannot make their own food.

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

4 Which of the following are similarities between reproduction in plants and reproduction in humans?

A Fertilisation occurs in the female.
B Seeds are produced after fertilisation.
C Testes produce the male reproductive cells.
D Ovaries produce the female reproductive cells.

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

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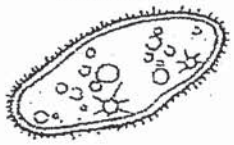
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Section A: **(28 x 2 marks = 56 marks)**

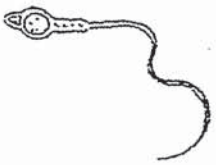
For each question from 1 to 28, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4) and shade the correct oval on the Optical Answer Sheet.

1 Which of the following organisms is made up of only a single cell?

amoeba



sperm



ant



egg



(1) amoeba and ant only
(2) sperm and egg only
(3) amoeba, sperm and egg only
(4) amoeba, ant, sperm and egg

2 The diagram below shows a parent banana plant with two young plants.



Which of the following statements is **not** correct?

(1) The young plant will not resemble the adult plant.
(2) The adult plant is able to reproduce more than once.
(3) The young plant will have similar characteristics as the adult plant.
(4) The adult plant reproduces to ensure the continuity of its own kind.

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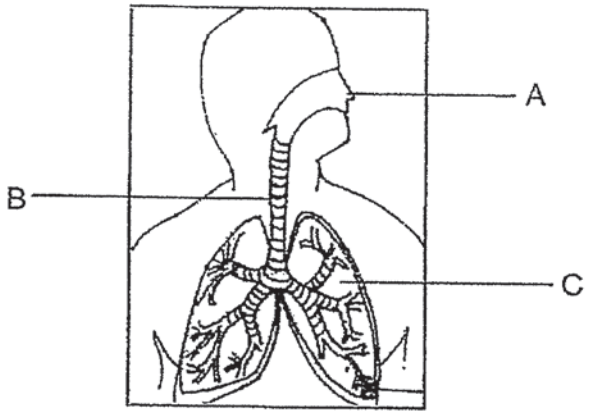
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5 Which statement(s) about the transport system of a plant is/are correct?

A Food made by the leaves is transported to all parts of the plant.
B Water will be absorbed by the leaves to make food for the plant.
C Water absorbed by the roots is transported to all parts of the plant.
D All excess food made by the leaves will be transported to the roots for storage.

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

6 The diagram below shows a human respiratory system.



Some children made the following statements about the respiratory system.

Abby	Gaseous exchange takes place at B.
Ben	B allows only oxygen to travel from A to C.
Caleb	Air enters the respiratory system at A.
Daisy	Oxygen will be absorbed into the bloodstream at C.
Elliot	Carbon dioxide will removed from the bloodstream at C.

Which of the children made a correct statement?

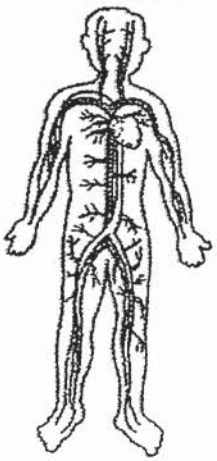
(1) Ben and Caleb only
(2) Abby, Caleb and Daisy only
(3) Ben, Daisy and Elliot only
(4) Caleb, Daisy and Elliot only

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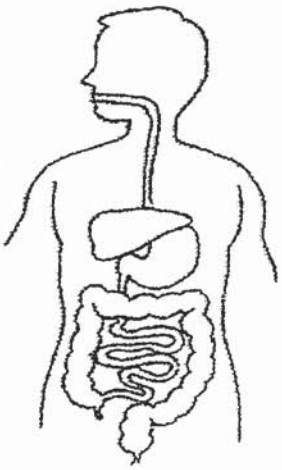
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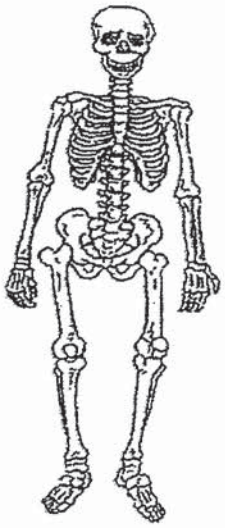
7 The diagrams below show some organ systems in our bodies.

system A

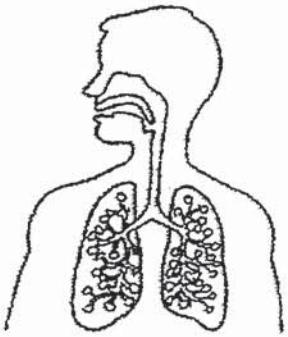


system B





system C



system D

Which of the following body systems work together to help Michael exercise after he had his breakfast?

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

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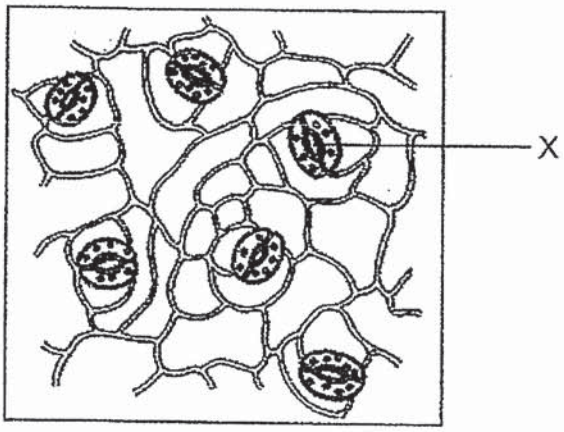
8 The diagram below shows a floating water plant.



What is the function of Y?

(1) Help the plant to reproduce
(2) Trap sunlight and make food
(3) Help take in water and mineral salts
(4) Help anchor the plant firmly to the ground

9 The diagram below shows the underside of a leaf.



Which of the following describe the functions of X?

A allows the plant to take in sunlight to make food
B allows water to leave the plant as water vapour
C allows the plant to transport food to other parts of the plant
D allows the plant to carry out gaseous exchange with the surroundings

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

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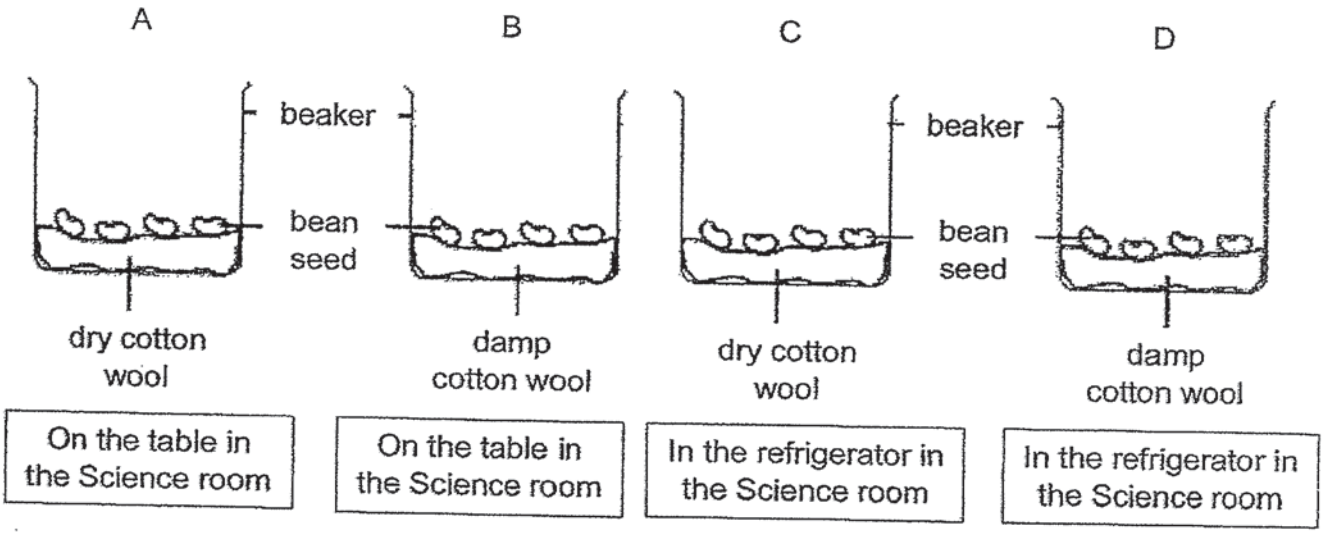
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10 Peter had a fall and cut his knee. Which of the following statements describe(s) what will happen to the cells after his fall?

A The damaged cells will increase in size.
B The cells in his knee will not be affected by the fall.
C The number of cells in his body will remain the same.
D New cells are reproduced to replace and repair the damaged cells.

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

11 Lily wanted to find out if seeds need warmth for germination. She had four containers, each with four green been seeds placed on some cotton wool, as shown in the diagram below.



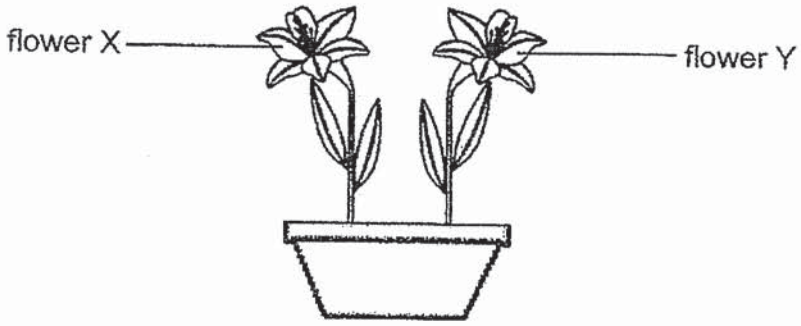
Which pairs of containers should she use to find out if seeds need warmth for germination?

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

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12 The picture below shows a pot with two similar plants. The flowers have not been pollinated.



Jia Min conducted an experiment on both plants.

She removed some parts of flower X. Then, she transferred pollen grains to the remaining parts of flower X.

She then removed some parts of flower Y and also transferred pollen grains to the remaining parts of flower Y.

After some time, she discovered that flower X developed into a fruit whereas flower Y did not develop into a fruit.

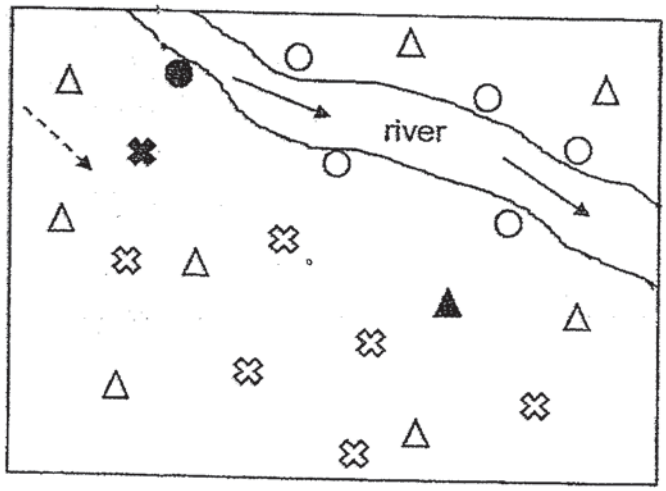
Which of the following correctly identifies the parts that had been removed from flowers X and Y?

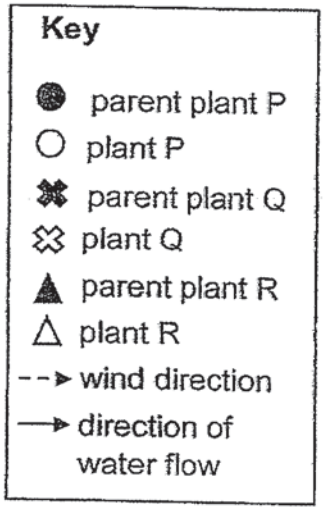
	Flower X	Flower Y
(1)	anther	stigma
(2)	anther	filament
(3)	ovary	anther
(4)	stigma	ovary

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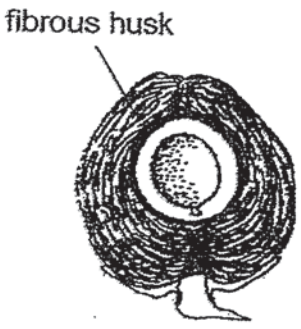
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13 The diagram below shows the location of plants P, Q and R in an area.





The following fruits, X, Y and Z, were found in the same area.



fruit X



fruit Y



fruit Z

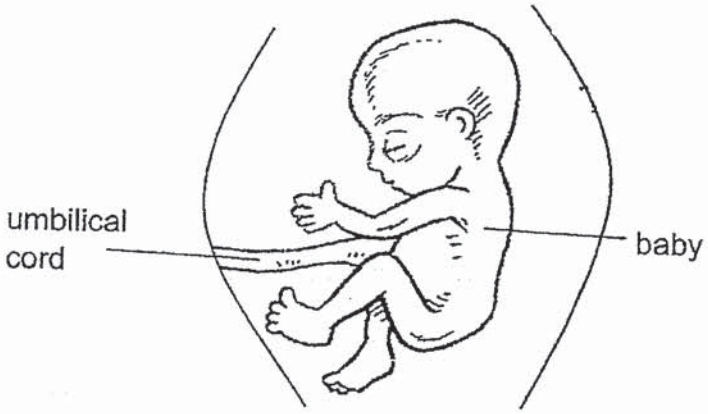
Which of the following correctly matches the fruits to the plants?

	Fruit X	Fruit Y	Fruit Z
(1)	P	Q	R
(2)	P	R	Q
(3)	Q	R	P
(4)	R	Q	P

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14 The diagram below shows a developing baby.



Which of the following statements about the developing baby are correct?

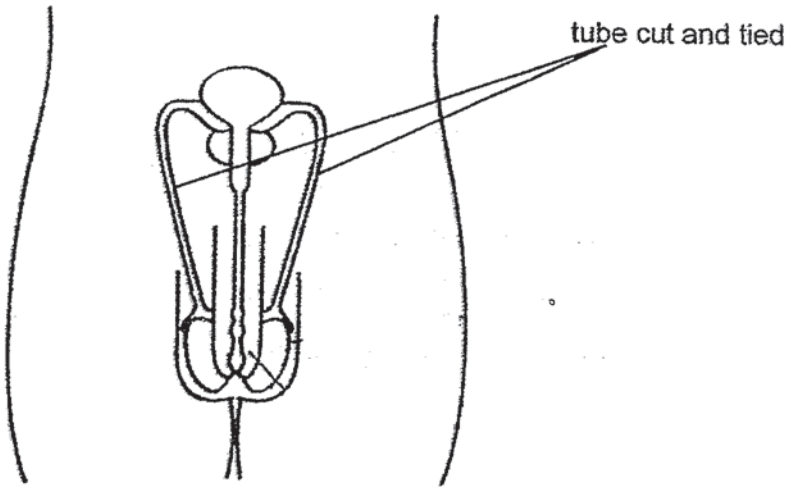
A The baby is developing in the womb.
B The baby developed from a fertilised egg.
C The baby does not need oxygen, food and water.
D The baby carries the genetic information from the mother only.

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

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15 The diagram below shows the male reproductive organs.



The tubes connected to the testes are cut and tied to prevent couples from having any children after that.

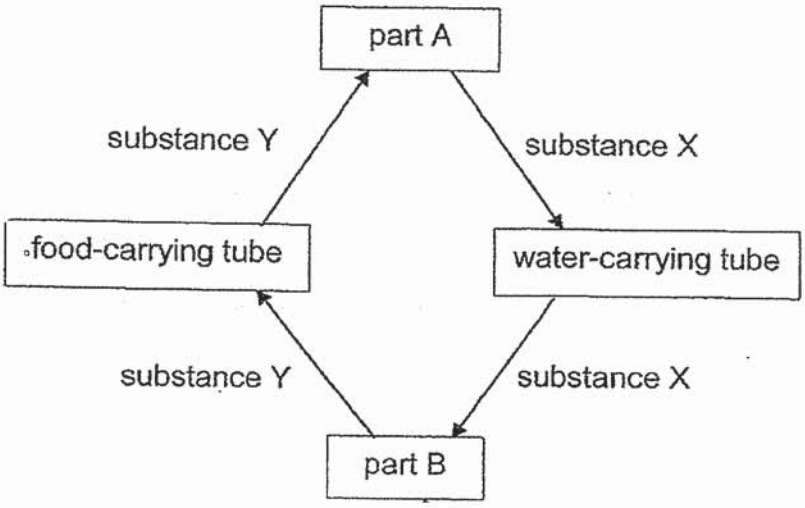
Which of the following statements is true after the above medical procedure is performed on a male?

(1) No sperm will be produced.
(2) Only some sperm will be released
(3) Fertilisation will definitely take place
(4) No sperm will be released from the penis to fertilise the egg.

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16 The diagram below represents the transport system of a plant.



Which of the following correctly identifies parts A and B and substances X and Y?

	Part A	Part B	Substance X	Substance Y
(1)	leaf	root	water	food
(2)	root	stem	water	mineral salts
(3)	root	leaf	mineral salts	food
(4)	stem	leaf	food	water

17 The table below shows the gases present in the surrounding air.

Gases present in the air
Nitrogen
Oxygen
Carbon Dioxide
Water Vapour

Jamie exercised for an hour and took a sample of the air that she breathed out.

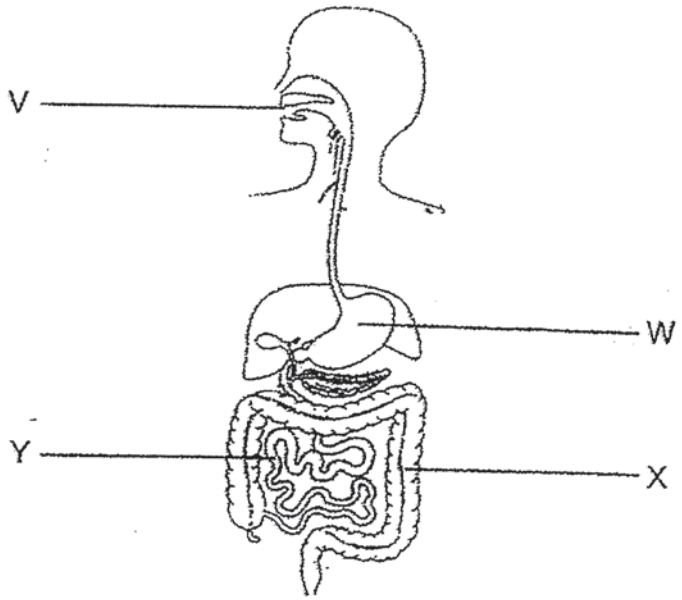
Which of the following correctly shows the changes in the air that Jamie breathed out as compared to the air that she breathed in?

	Amount of gases present in the air that was breathed out			
	Nitrogen	Oxygen	Carbon Dioxide	Water Vapour
(1)	no change	decreases	increases	increases
(2)	increases	increases	decreases	decreases
(3)	no change	decreases	increases	no change
(4)	decreases	increases	increases	no change

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18 The diagram below shows the human digestive system.



Mary wrote down the following statements about the various parts of the digestive system.

A Digestion starts here.
B Digestion is completed here.
C Water is absorbed from the undigested food here.
D After the gullet, food is transported here for more digestive juices to be added.

Which of the following correctly matches each statement to the corresponding labelled parts of the digestive system?

	Statement A	Statement B	Statement C	Statement D
(1)	V	X	Y	W
(2)	V	Y	X	W
(3)	W	X	V	Y
(4)	W	Y	X	V

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19 Kellie was studying the life cycles of a butterfly and a beetle. The tables below show the average duration of the different stages in the life cycle of a butterfly and a beetle.

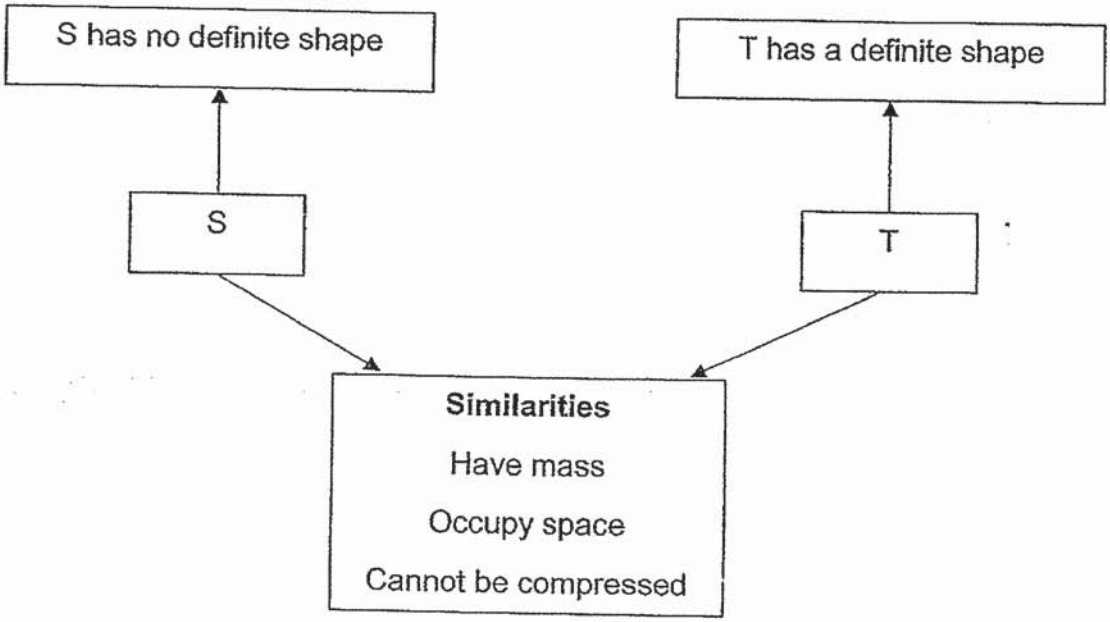
Butterfly	
Egg	4 days
Larva	14 days
Pupa	10 days
Adult	28 days

Beetle	
Egg	10 days
Larva	56 days
Pupa	15 days
Adult	56 days

Kellie collected some eggs from a butterfly and a beetle that has been laid on the same day. On which day will she be able to observe caterpillars and mealworms at the same time?

(1) 6 days after the eggs are laid
(2) 14 days after the eggs are laid
(3) 15 days after the eggs have hatched
(4) 28 days after the eggs have hatched

20 The chart below shows the similarities and differences of S and T.



What can S and T be?

	S	T
(1)	Air	Ice
(2)	Heat	Stone
(3)	Milk	Eraser
(4)	Pebble	Cork

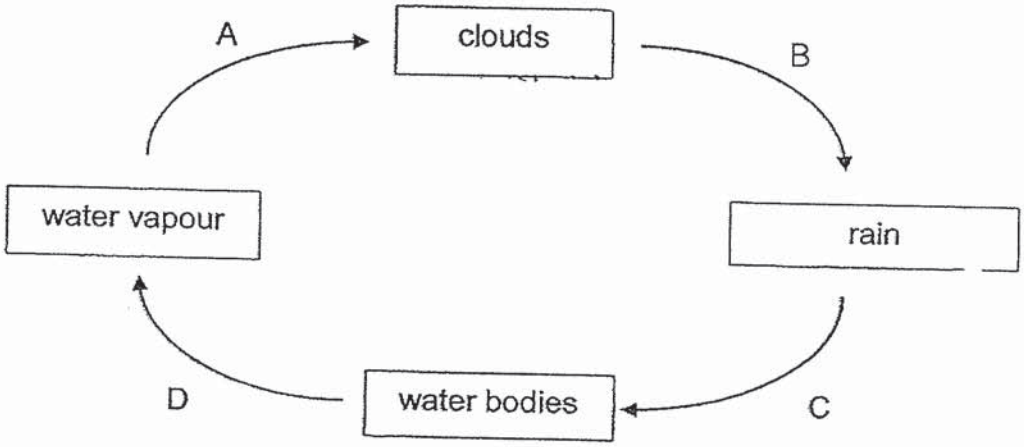
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21 Which of the following correctly shows whether heat is gained or lost in each of the three processes?

	Boiling of water	Melting of ice	Freezing of ice
(1)	heat gained	heat lost	heat gained
(2)	heat gained	heat gained	heat lost
(3)	heat lost	heat gained	heat lost
(4)	heat lost	heat lost	heat gained

22 Study the water cycle below.



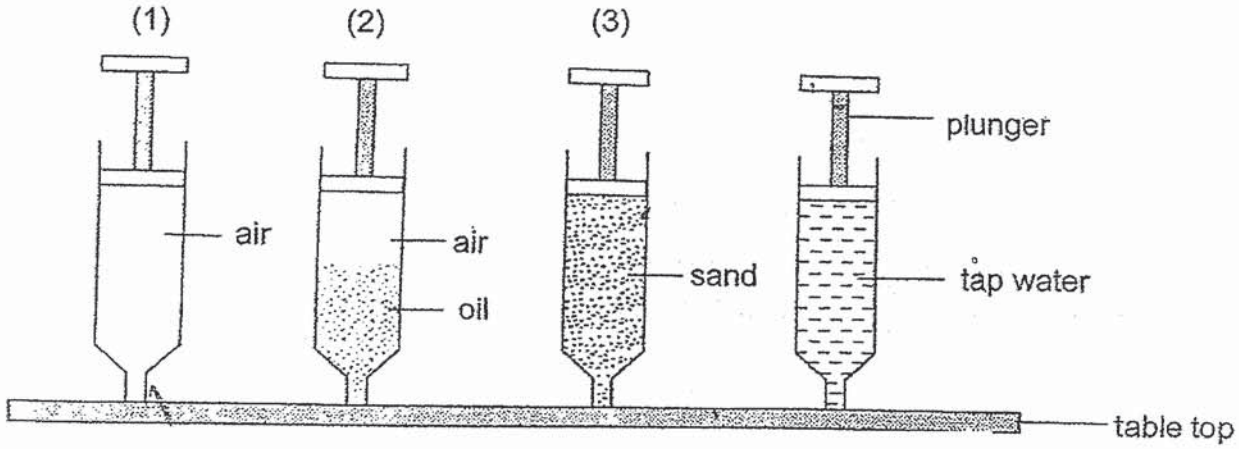
At which point in the water cycle will the water be changing from the gaseous state to the liquid state?

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

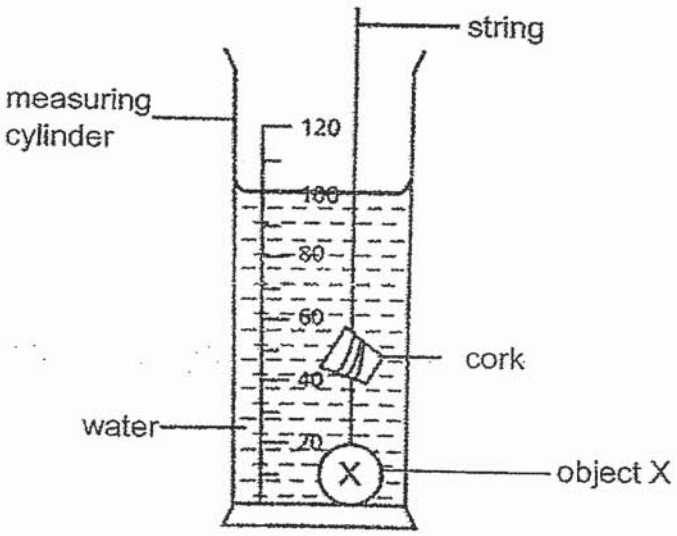
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23 The diagram below shows four syringes. Which plunger cannot be pushed down at all?



24 Anne wants to find out the volume of a cork. She designed a set-up as shown below.



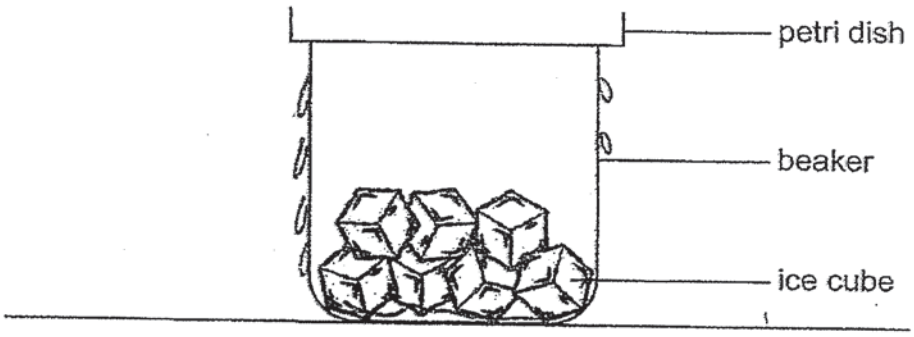
Why does Anne need to use object X in her set-up?

(1) To ensure that object X occupies space.
(2) To ensure that object X has a fixed volume.
(3) To ensure that the cork is completely in water.
(4) To ensure that the cork has mass and occupies space.

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25 Peter set up an experiment as shown in the diagram below.



What would Peter most likely observe after some time?

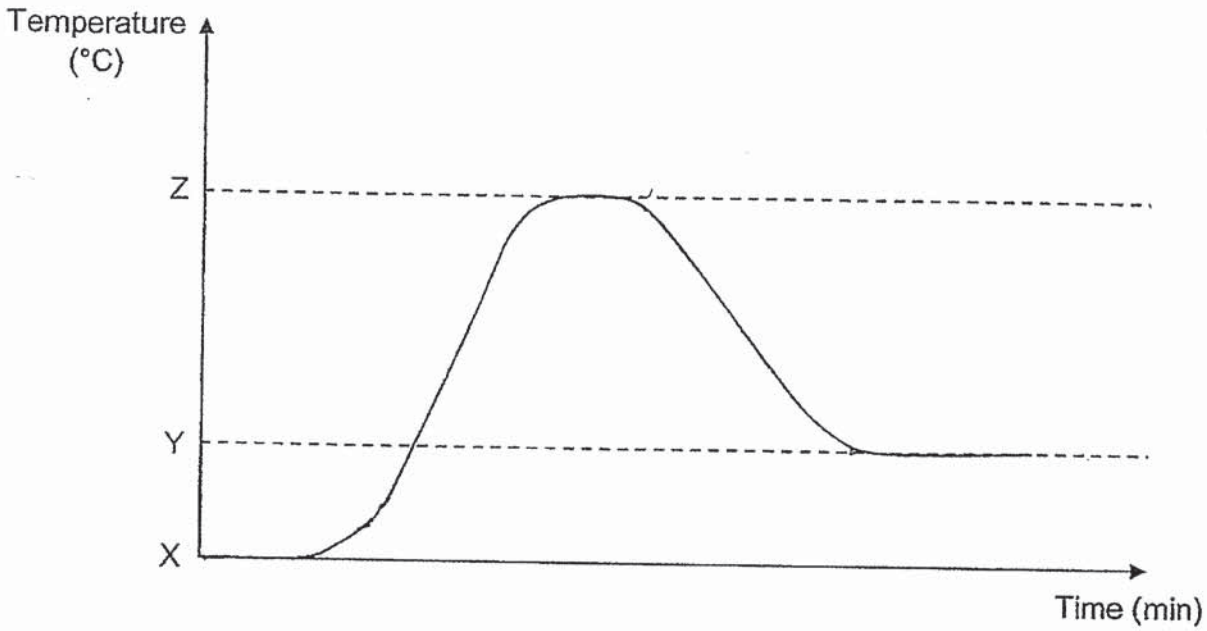
(1) There would be no water in the beaker.
(2) There would be more water vapour inside the beaker.
(3) Tiny water droplets would be observed on the underside of the petri dish.
(4) Tiny water droplets would be observed on the outer surface of the beaker.

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26 Henry heated a beaker of ice until the ice had melted. He continued to heat the water till it boiled. He immediately turned off the heater and the water was left in a room with a temperature of 30°C.

The graph below shows the changes in the temperature of ice or water over a period of time.



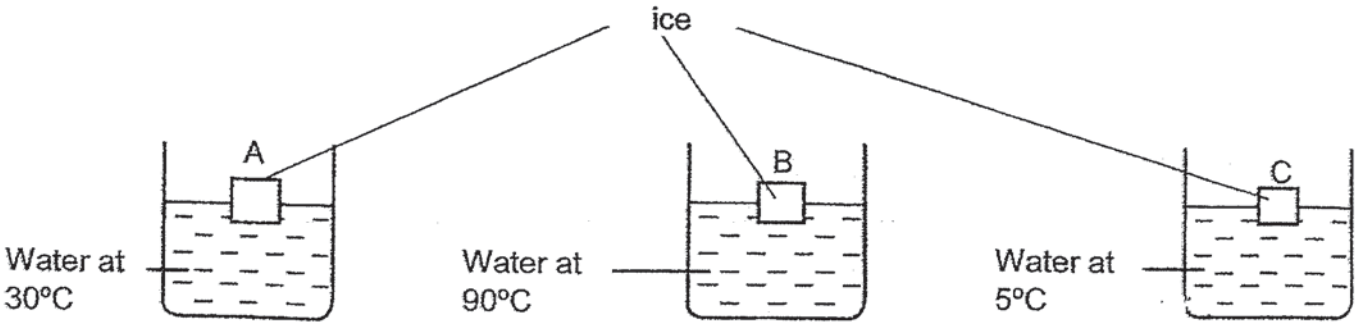
Which of the following correctly represents temperatures X, Y and Z?

	X (°C)	Y (°C)	Z (°C)
(1)	0	30	100
(2)	0	30	110
(3)	0	100	30
(4)	10	30	100

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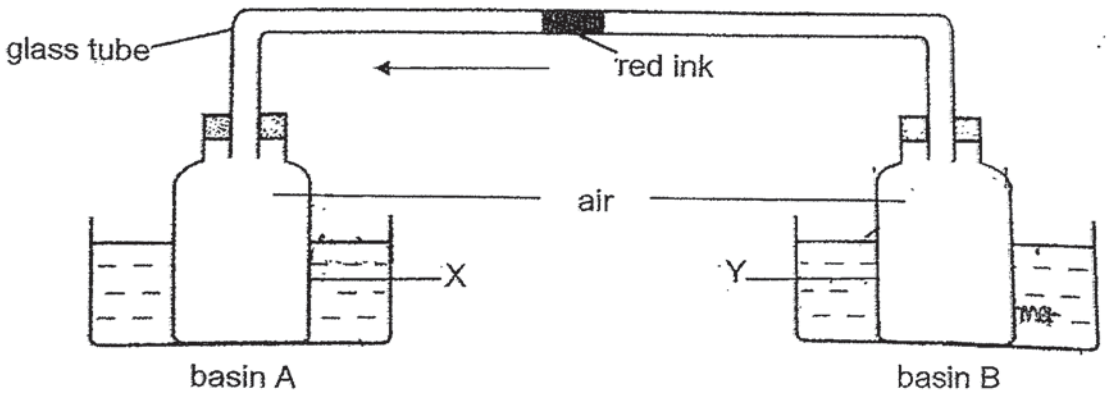
27 Three identical pieces of ice were placed in three identical beakers with the same amount of water at different temperatures.



Which of the following correctly arranges the ice according to the time taken for the it to melt completely, starting from the shortest time to the longest time?

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

28 An experiment was set up as shown below.



A drop of red ink is placed in the glass tube which connects the two bottles, X and Y. Each bottle is placed in a basin of water.

Which of the following set-ups will make the drop of red ink move the longest distance towards bottle X?

	Basin A	Basin B
(1)	Water at 80°C	Water at room temperature
(2)	Water at room temperature	Water at 5°C
(3)	Water at 5°C	Water at 80°C
(4)	Water at 5°C	Water at room temperature

End of Booklet A

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NAN HUA PRIMARY SCHOOL
SEMESTRAL ASSESSMENT 1 – 2019
PRIMARY 5

SCIENCE

BOOKLET B

12 Open-ended questions (44 marks)

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

INSTRUCTIONS TO CANDIDATES

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

Marks Obtained

Section B		/ 44

Name: _____ ( ) Class: P 5 _____

Date : 15 May 2019 Parent's Signature:_____

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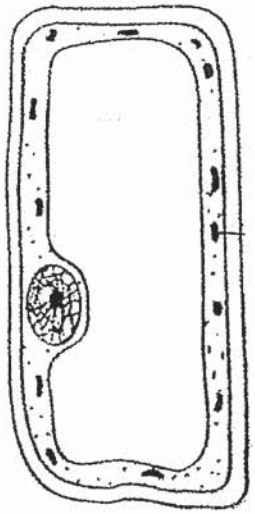
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Section B: (44 marks)
Write your answers to questions 29 to 40.
The number of marks available is shown in brackets [ ] at the end of each question or part question.

29 The diagram below shows a cell.



(a) Name two parts of the cell that suggest that it is a plant cell. [1]

_____

_____

(b) Name the cell part that contains the genetic information. [1]

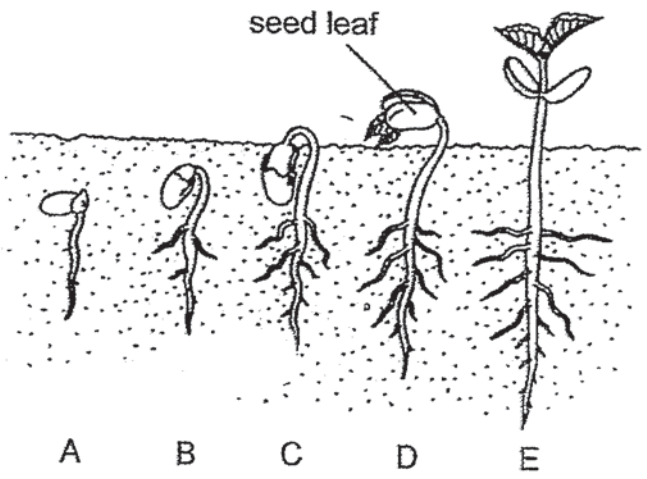
_____

Score	2

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30 The diagram below shows the stages of a seed growing into a seedling.



(a) What is the function of the seed leaf for the seedling? [1]

(b) What will happen to the mass of the seed leaf as the seedling grows? [1]

(c) At which stage(s), A, B, C, D and/or E, will the seedling no longer need the seed leaf? Explain why. [2]

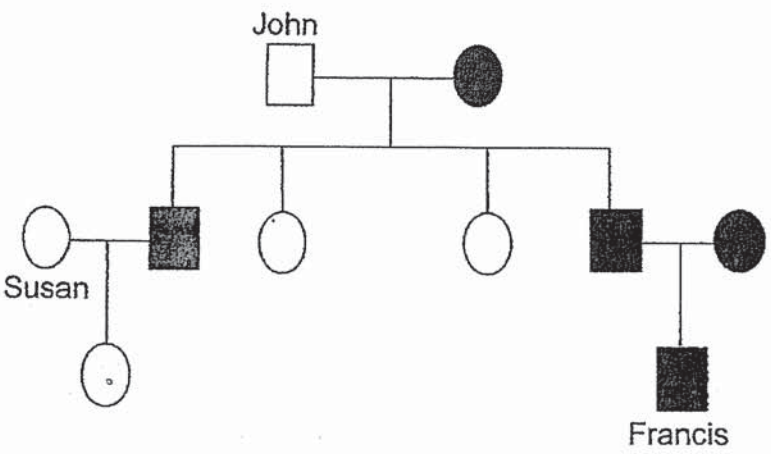
(d) At which stage(s), A, B, C, D and/or E, will the seedling require to take in oxygen? [1]

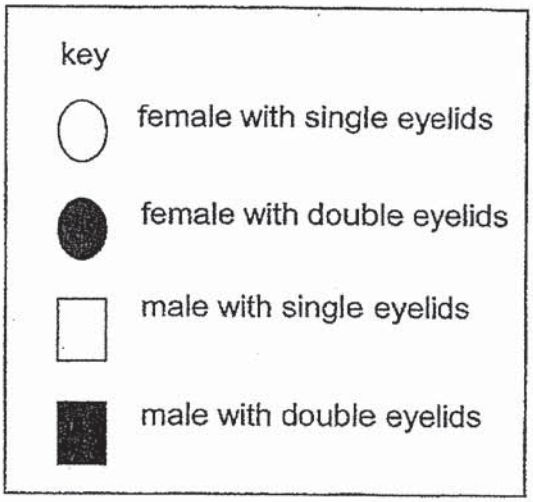
Score	5

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31 Study John's family tree below.





(a) Francis has double eyelids. Explain why Francis has double eyelids. [1]

_____

_____

(b) Susan has an interest in drawing cartoons. Can her daughter inherit this characteristic from her? Explain why. [1]

_____

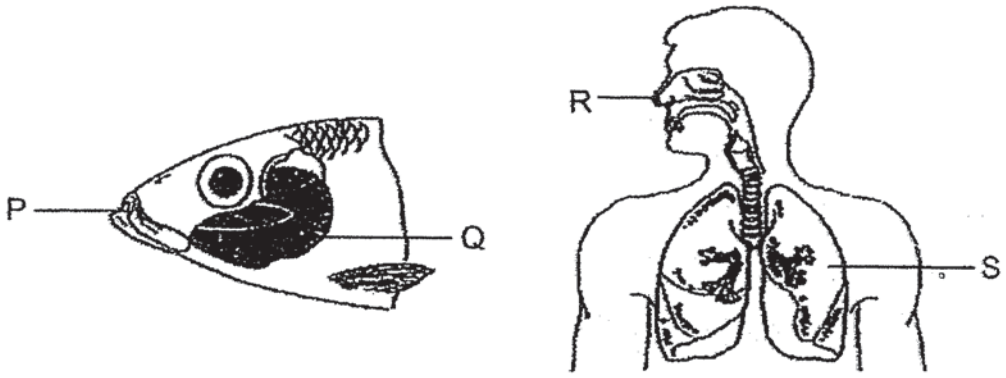
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Score	2

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32 The diagrams below show the respiratory systems of a fish and a human.



fish human

(a) At which positions, P, Q, R or S, does gaseous exchange take place in a fish and human? [1]

Fish : _____

Human : _____

(b) Describe clearly how the fish gets oxygen for its survival. [2]

_____

_____

_____

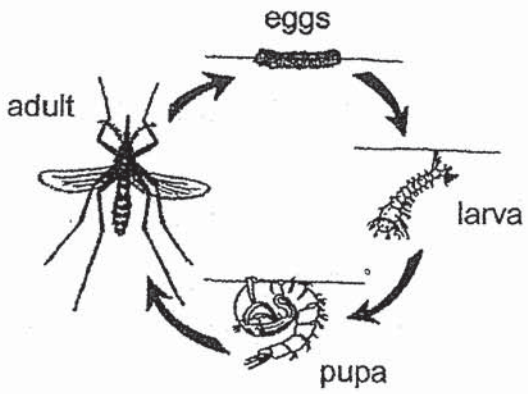
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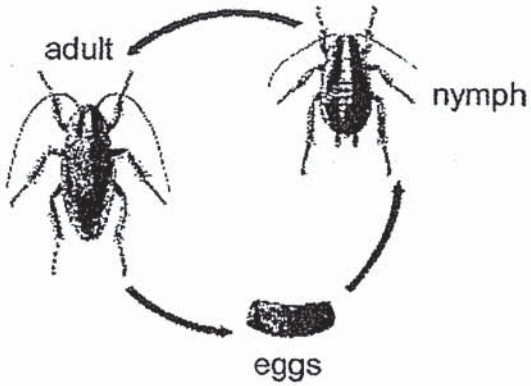
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33 The diagrams below show the life cycles of a mosquito and a cockroach. The young of the mosquito spend its entire time in the water.



life cycle of a mosquito



life cycle of a cockroach

(a) Based on the diagrams above, state one similarity and one difference between the life cycles of the two insects. (Do not name the stages.) [2]

Similarity : _____

_____

Difference : _____

_____

(b) Mr Lee spotted some mosquito larvae breeding in a drain near his house. His wife suggested pouring some oil into the drain. Explain how this will help to get rid of the mosquito larvae in the drain. [1]

_____

_____

Score	3

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34 Jason was asked to identify the cells on three prepared glass slides. He recorded what he observed in the table below. A tick (✓) indicates the presence of the cell part in the cells.

	Types of cells		
Cell Parts	**Cell A**	**Cell B**	**Cell C**
Nucleus	✓	✓	✓
Cell membrane	✓	✓	✓
Cytoplasm	✓	✓	✓
Cell wall		✓	✓
Chloroplasts			✓

(a) Based on his observations, what could cells A, B and C be? [1]

Root cell: _____

Leaf cell: _____

Cheek cell: _____

(b) Cell B does not contain chloroplasts. Explain why. [2]

_____

_____

_____

_____

(c) Jason wanted to increase the reproduction rate of Cell A. Which cell part should he change. Explain why. [1]

_____

_____

Score	4

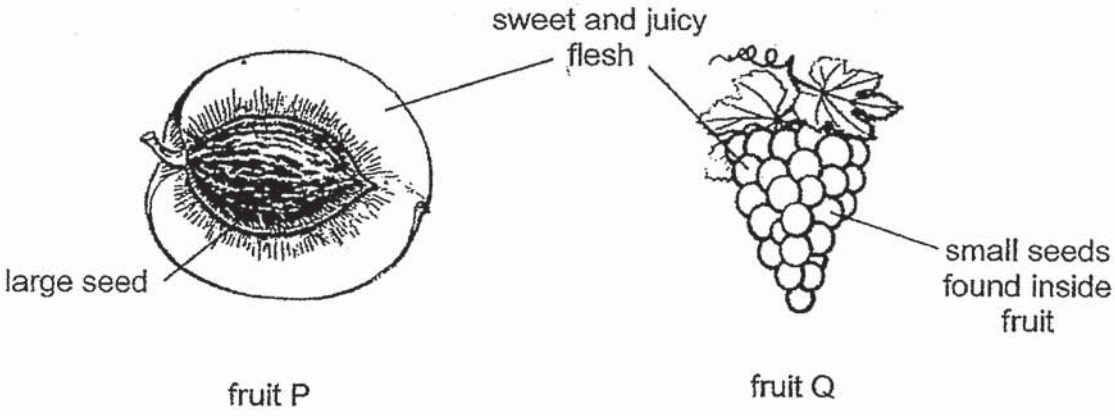
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35 The table below shows the number of seedlings found at different distances away from the parent plant.

Distance away from the parent plant (m)	Number of seedling	
	Plant A	Plant B
5	7	1
10	5	3
15	3	6
20	0	8
25	0	12

The following fruits belong to either plant A or plant B.



fruit P fruit Q

(a) State the seed dispersal method for plants A and B. [1]

(b) Which fruit, P or Q, belongs to plant A? Explain your answer. [2]

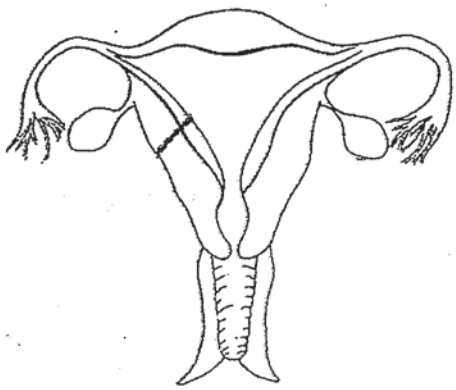
(c) Explain clearly how having smaller indigesfible seeds is more advantageous as compared to having larger seeds in seed dispersal. [2]

Score	/ 5

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36 The diagram below shows a female human reproductive system.



(a) On the diagram, identify and name the parts that produce the female reproductive cells. [1]

(b) On the diagram, identify and name the part where the baby will develop. [1]

(c) The table below compares the male reproductive parts in a human and a plant.

	Human	Plants
Organ that produces the male sex cells	Testes	X
Male reproductive cell	Sperm	Reproductive cell found in the pollen grain

Identify X. [1]

X: _____

(d) What is fertilisation? [1]

_____

_____

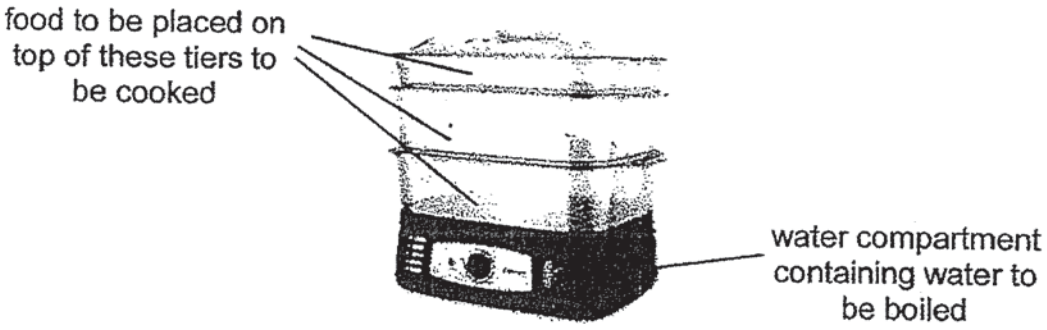
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Score	/ 4

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37 The diagram below shows a food steamer which is an equipment that is used to cook food.



food steamer

What gas is formed in the steamer when the steamer is being used to cook the food? Explain your answer. [2]

_____

_____

_____

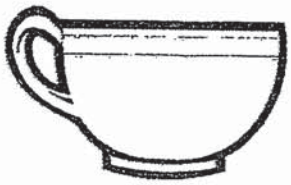
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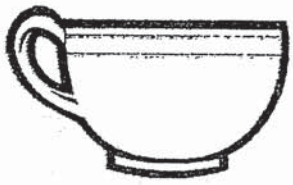
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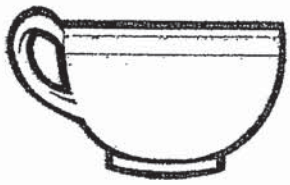
38 John conducted an experiment to find out if the temperature of tea will affect the rate of evaporation. He prepared three identical teacups with equal amount of tea at different temperatures as shown below. He then left the teacups in a room for 30 minutes.



cup X with tea at 90°C



cup Y with tea at 50°C



cup Z with tea at 10°C

He recorded the results in a table shown below.

Cup	Amount of tea in the cup (ml)	
	At the start	After 30 minutes
X	100	88
Y	100	91
Z	100	97

(a) What is the independent variable (changed variable) in this experiment? [1]

_____

(b) What is the relationship between the temperature of the tea and the rate of evaporation? [1]

_____

_____

(c) His teacher told him to repeat the experiment two more times. What is the purpose of doing so? [1]

_____

(d) Besides temperature, state two other factors that affect the rate of evaporation. [2]

Factor 1: _____

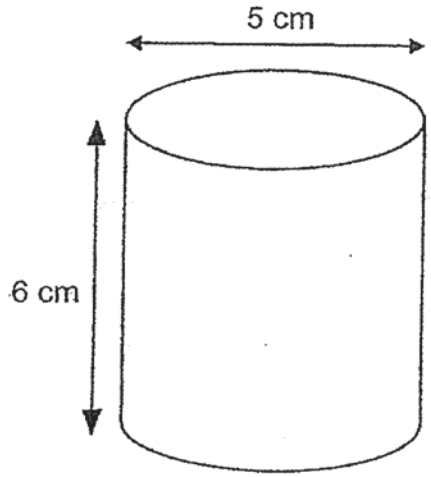
Factor 2: _____

Score	5

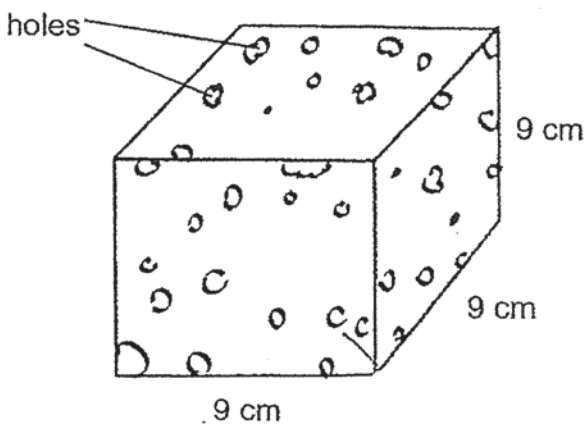
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39 Jamie was given a cube-like sponge and a cylindrical container. She was able to squeeze the whole sponge into the cylindrical container.



cylindrical container



sponge

(a) What state of matter is the cylindrical container? Explain your answer. [1]

(b) Explain why Jamie is able to squeeze the sponge into the cylindrical container. [2]

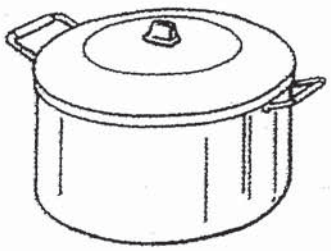
(c) Jamie was not able to fit a bar of soap of the same size as the sponge into the cylindrical container? Use a property of the soap to explain why. [1]

Score	/ 4

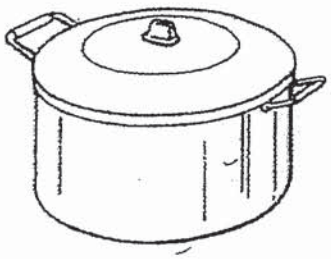
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40 Chloe filled two pots, made of different materials, with 700 ml and 400 ml of tap water respectively. Both pots were heated with the same amount of heat until the water in them boiled.



pot X
700 ml of water



pot Y
400 ml of water

(a) Name two variables related to the pots that must be kept the same in order for the experiment to be a fair test. [1]

_____

_____

It took 12 minutes for the water in both pots to reach boiling point.

(b) What can Chloe conclude about the heat conductivity of the material used to make pot X based on the experiment? Explain your answer. [2]

_____

_____

_____

_____

(c) Which pot should Chloe use to keep her soup hot for a longer period of time after she stop boiling the soup? Explain your answer. [2]

_____

_____

End of Booklet B

Score	5

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ANSWER KEY

YEAR : 2019
LEVEL : PRIMARY 5
SCHOOL : Nan Hua Primary School
SUBJECT : Science
TYPE : SA1 Examination

Booklet A

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

Booklet B

Q29.

a) The cell have a cell wall and chloroplasts.
b) Nucleus.

Q30.

a) The seed leaf helps to store food for the seedling.
b) The mass of the seed leaf will decrease as the seedling grows.
c) Stage E, because the plant have grown its leaves and the leaves can trap sunlight and make food for the plant so it does not need the seed leaves.
d) Stages A,B,C,D,E.

Q31.

a) Francis parents both have double eyelid so they passed down the characteristic to Francis.
b) No, because drawing cartoons is an interest and not a characteristic so her daughter will not inherit it.

Q32

a) Q Human: S
b) The water flows into the fish's mouth, the water flows over the gills. The oxygen in the water is absorbed by the blood in the gills and carbon dioxide from the blood will flow out of the water.

Q33.

a) Similarity: Both of the insects reproduce by laying eggs.
Difference: The cockroach has three stages but the mosquito has four stages.
b) The oil will prevent oxygen from entering the drain. As mosquito is a living thing, it will need air food and water to survive. If there is no oxygen, the mosquito cannot breathe and will die.

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Q34.

a) Root cell: B Leaf cell: C Cheek cell: A
b) Cell B is underground and will not receive sunlight so there will not be chloroplasts to trap light and make food for the plant.
c) Nucleus. The nucleus controls all activities within the cell this changing it will increase the reproduction rate of cell A.

Q35.

a) Animal dispersal
b) Fruit P. The animal will eat the flesh and spit out the seeds. The seeds are heavier and larger so it will be dispersed near the parent plant.
c) The animal will eat the seeds in the fruit, the seeds are indigestible and will come out through the animals droppings. While eating the seeds, the animals are running further from the parent plant so the seeds will be dispersed further from the parent plant. The larger seeds are more difficult for the animals to swallow so the seeds will be dispersed nearer to its parent plant.

Q36.

a) Ovary
b) Womb
c) Anther
d) Fertilization is when the male sex cell fuse with the female sex cell.

Q37. Steam. When the water boils and evaporates, steam is formed and trapped in the steamer.

Q38.

a) The temperature of the tea in each cup
b) As the temperature of the tea increases, the rate of evaporation increases.
c) It is to ensure the results are reliable.
d) Surface area exposed to the surroundings. Wind speed.

Q39.

a) Solid because it has definite shape and volume.
b) ɛ are holes in the sponge which traps air. When the sponge is squeezed, the air ɔes and thus the sponge can be squeezed.
c) The soap is a solid which has definite shape and volume so it cannot be compressed into the cylindrical container.

Q40.

a) The size of the pots and the thickness of the pot.
b) The material used to make pot X is a better conductor of heat as the water in it reached boiling point at the same time as the water in pot Y despite there being more water in pot X as compared to Y.
c) Pot Y. Pot Y is a poorer conductor of heat as compared to pot X. In order to keep the soup hot for a longer period of time, she needs a pot that conducts heat at a slower rate which in this case is the material of pot Y.

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