MARIS STELLA HIGH SCHOOL (PRIMARY)

WEIGHTED ASSESSMENT (SA1)

SCIENCE

3 JULY 2020

BOOKLET A

NAME: _____ ( )

CLASS: Primary 5 ( )

15 questions

30 marks

Total Time for Booklets A & B: 1 h

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

FOLLOW ALL INSTRUCTIONS CAREFULLY.

For each question from 1 to 15, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4) and shade your answer on the Optical Answer Sheet (OAS).

(30 marks)

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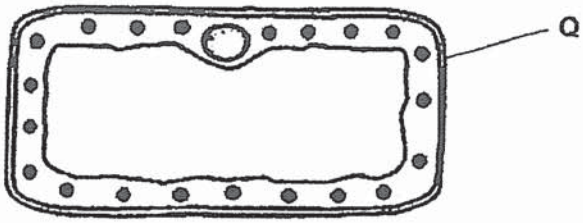
1 The diagram below shows a leaf cell.



What is the function of Q?

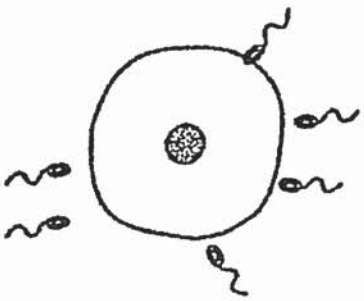
(1) gives the cell a fixed shape

(2) contains genetic information

(3) controls all activities in the cell

(4) controls substances moving in and out of the cell

2 The diagram below shows cells during a process in the reproduction of human.



What is the process shown in the above diagram?

(1) pollination

(2) fertilisation

(3) cell division

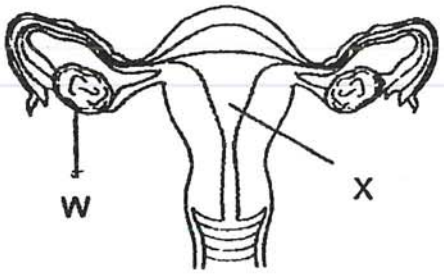
(4) germination

(Go on to the next page)

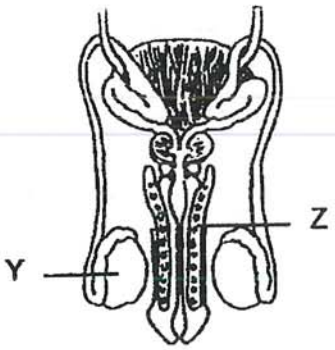
3 Which of the following is the unit of life for a tree and human?

	Tree	Human
(1)	cell	cell
(2)	nucleus	nucleus
(3)	cell wall	cell membrane
(4)	chloroplast	nucleus

4 The diagrams below show both the female and male human reproductive systems.



female reproductive system



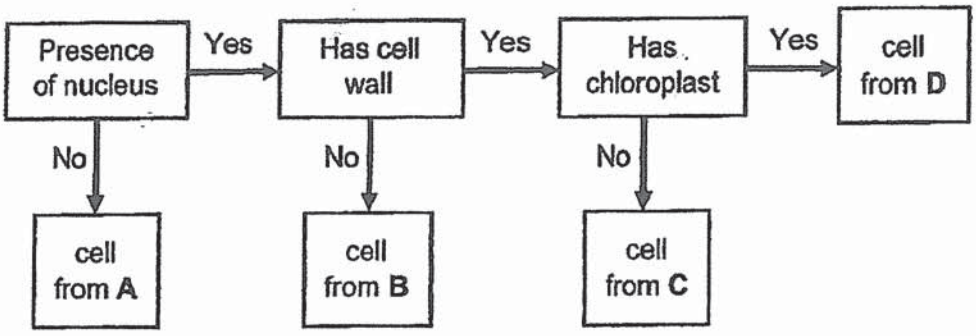
male reproductive system

Which of the following parts produce reproductive cells?

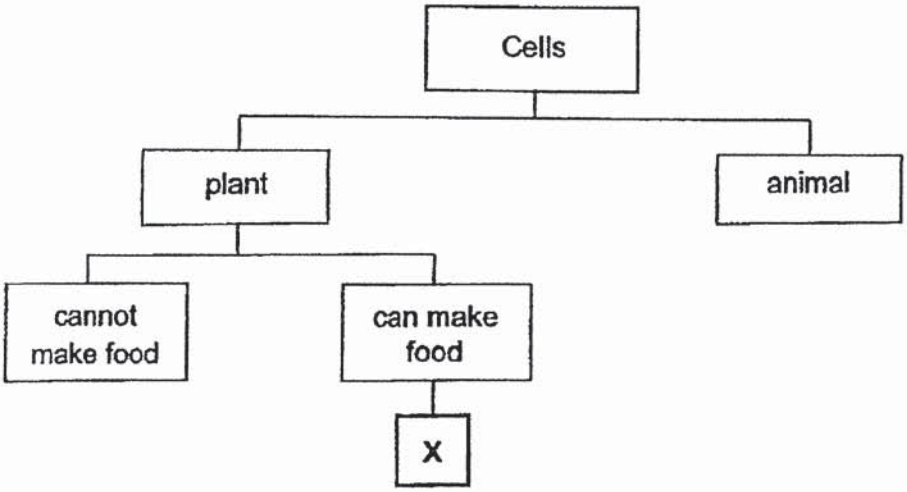
(1) X and Y
(2) X and Z
(3) W and Y
(4) W and Z

(Go on to the next page)

5 Fatimah examined some cells from organisms A, B, C and D under a microscope and recorded her observations in the chart below.



She then examined cell X and classified it as shown below.



From which organism, A, B, C or D, is cell X most likely taken from?

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

(Go on to the next page)

6 Teck Long made some statements about reproduction in humans and flowering plants.

A The fertilised egg is found in the ovary.

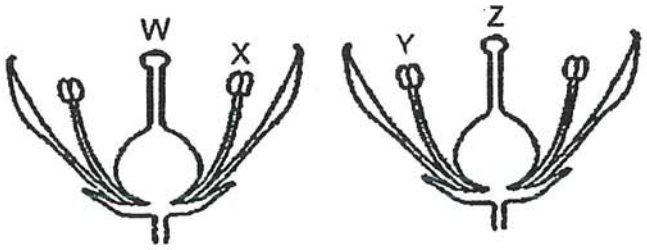
B Fertilisation occurs in a female reproductive part.

C Male reproductive cells are formed in the anthers.

Which of the following is correct?

	Plants	Humans
(1)	B	A and B
(2)	A and C	B
(3)	A, B, C	A
(4)	A, B, C	B

7 The diagram shows two flowers from the same plant.



Pollination between the two flowers occurs when pollen grains are transferred from _____.

(1) W to Y

(2) W to Z

(3) X to Y

(4) X to Z

(Go on to the next page)

8 Two flowers, M and N, are shown.

Flower M Flower N

Which of the following is correct about flowers M and N?

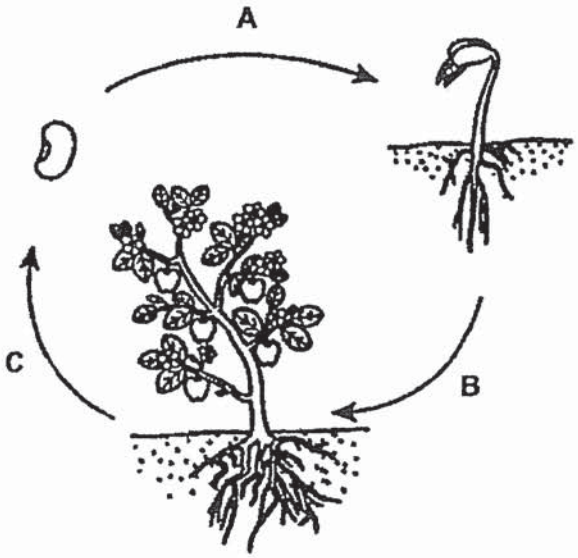
(1) Both flowers have anthers.

(2) Only flower N can be pollinated.

(3) Both flowers can develop into fruits.

(4) Flower M only has male reproductive parts.

9 The arrows in the diagram below represent different processes.



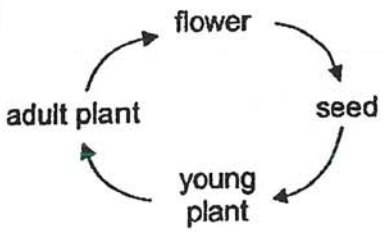
What do arrows A, B and C represent?

	A	B	C
(1)	dispersal	fertilisation	pollination
(2)	germination	fertilisation	dispersal
(3)	dispersal	germination	fertilisation
(4)	germination	pollination	fertilisation

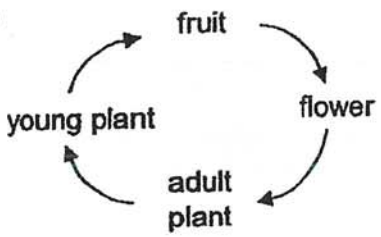
(Go on to the next page)

10 Which one of the following correctly shows the stages involved in the development of a flowering plant?

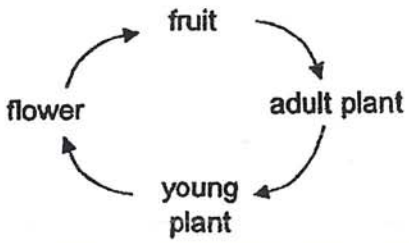
(1)



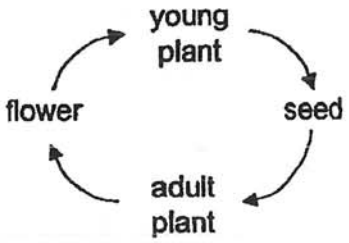
(2)



(3)



(4)



11 Study the table below.

Cell parts	Cell		
	X	Y	Z
nucleus	✓	✓	✓
cell wall	✓	✓	
cell membrane	✓	✓	✓
chloroplasts	✓		

Key

✓ : present

Which of the following is correct?

	Plant Cell	Animal Cell
(1)	X	Y and Z
(2)	X and Z	Y
(3)	X and Y	Z
(4)	Y and Z	X

(Go on to the next page)

12 The table below shows the melting point and boiling point of substances T and U.

Substance	Melting Point (°C)	Boiling Point (°C)
T	20	290
U	4	170

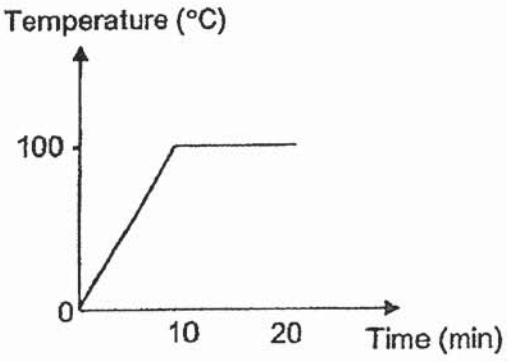
Which of the following shows the correct state of substances T and U at 200°C?

	Substance T	Substance U
(1)	solid	liquid
(2)	liquid	solid
(3)	liquid	gaseous
(4)	gaseous	solid

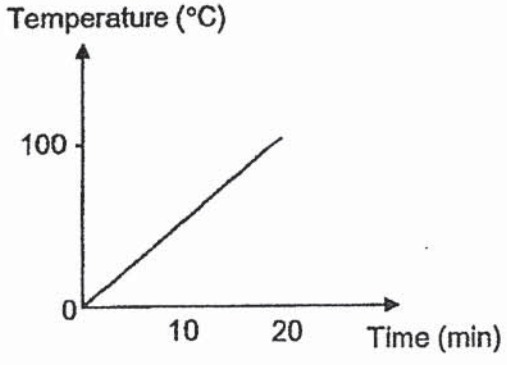
13 Ryan heated a beaker of tap water. After 10 minutes, he observed that the water had started to boil. He continued to heat the water for another 10 minutes.

Which one of the following graphs correctly shows the change in temperature of water?

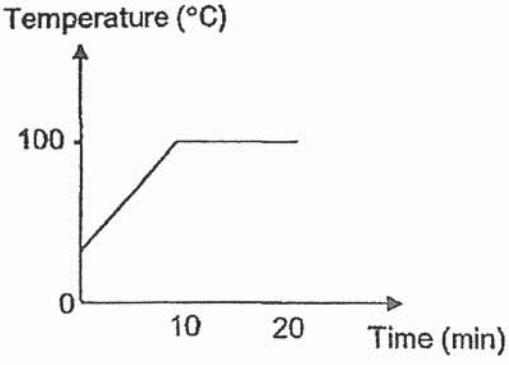
(1)



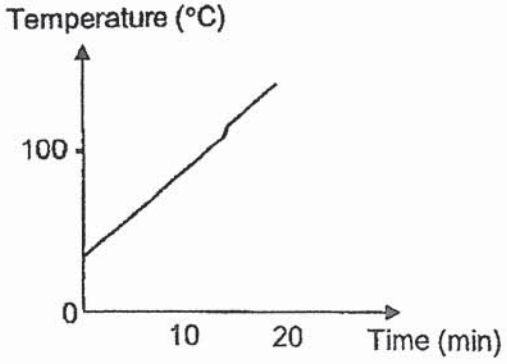
(2)



(3)



(4)



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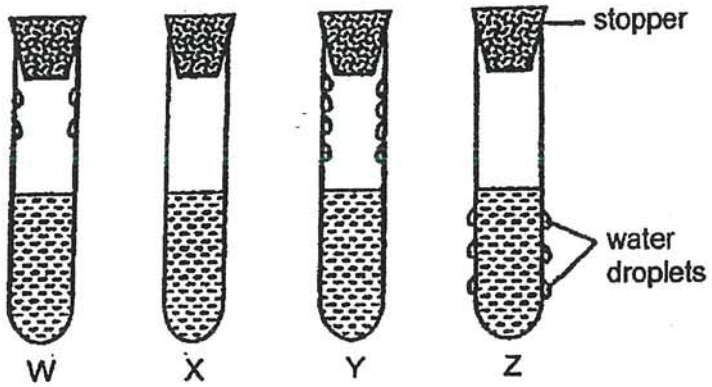
14 Aminah filled four identical test tubes with the same amount of water at different temperatures. She then covered each test tube with a stopper. The diagrams below show what she observed after some time.



Which of the following correctly shows the temperature of the water in the test tubes, starting from the lowest to the highest temperature?

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

15 Jun Yang wants to investigate the factors affecting the rate of evaporation of water. He prepared four set-ups using identical beakers as shown in the table below.

	Set-ups			
	P	Q	R	S
Temperature (°C)	30	30	25	25
Exposed surface area of water (cm^2)	50	120	50	120
Volume of water (cm^3)	500	500	500	400

Which two set-ups should Jun Yang use to find out if the surrounding temperature affects rate of evaporation?

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

End of Booklet A

Go on to Booklet B

MARIS STELLA HIGH SCHOOL (PRIMARY)

WEIGHTED ASSESSMENT

SCIENCE

3 JULY 2020

BOOKLET B

NAME: _____ ( )

CLASS: Primary 5 ( )

6 questions

20 marks

Total Time for Booklets A & B: 1 h

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

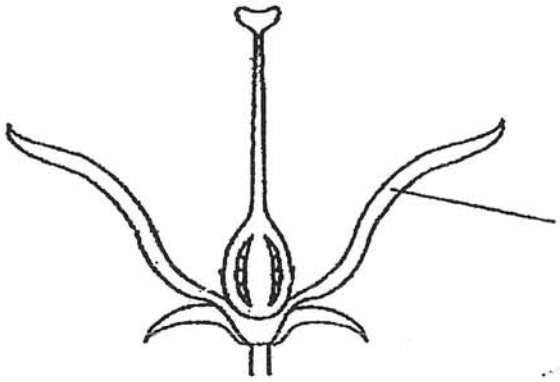
FOLLOW ALL INSTRUCTIONS CAREFULLY.

Booklet A:	**/ 30**
Booklet B:	**/ 20**
Grand Total:	**/ 50**

Parent's Signature: _____

For questions 16 to 21, write your answers in this booklet. The number of marks available is shown in brackets [ ] at the end of each question or part question. (20 marks)

16 The flower below has two reproductive parts removed.



Before the parts were removed from the flower, the flower could pollinate itself.

(a) Name the two reproductive parts of the flower that were removed. [1]

(b) Peter says that the flower above will not be able to become a fruit with the parts removed.

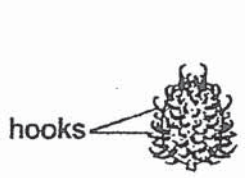
Do you agree with Peter? Give a reason for your answer. [1]

(c) How do large and colourful petals help in reproduction? [1]

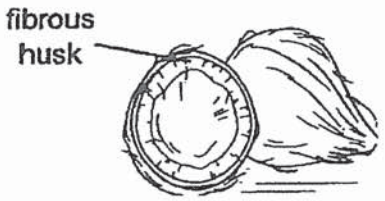
	3

(Go on to the next page)

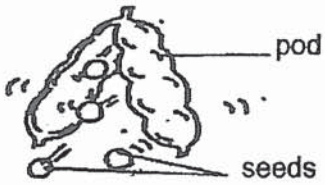
17 The diagrams below show fruits X, Y and Z and the distribution pattern of its young.



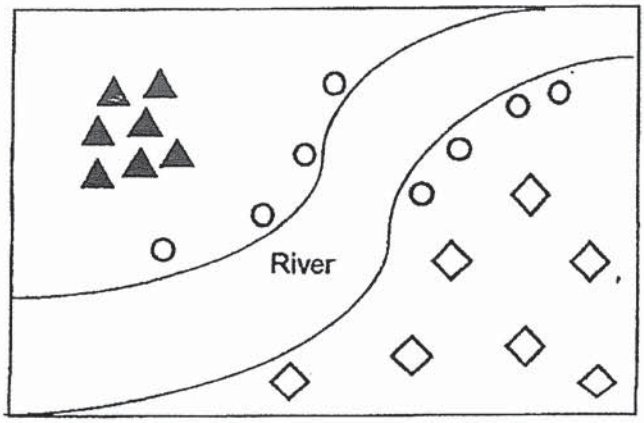
fruit X



fruit Y



fruit Z



(a) Which fruit, X, Y or Z, does each symbol most likely represent? [1]

◇ : Fruit _____

▲ : Fruit _____

○ : Fruit _____

(b) Explain how the fibrous husk of fruit Y helps in its dispersal. [1]

_____

_____

(c) Why is it important for fruits to be dispersed far away from their parent plants? [1]

_____

_____

	3

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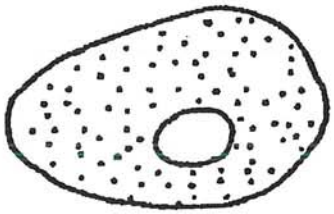
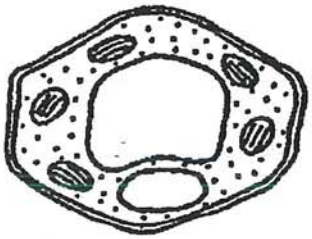
18 Study cells X and Y below.



Cell X



Cell Y

(a) Which cell, X or Y, is an animal cell? [1]

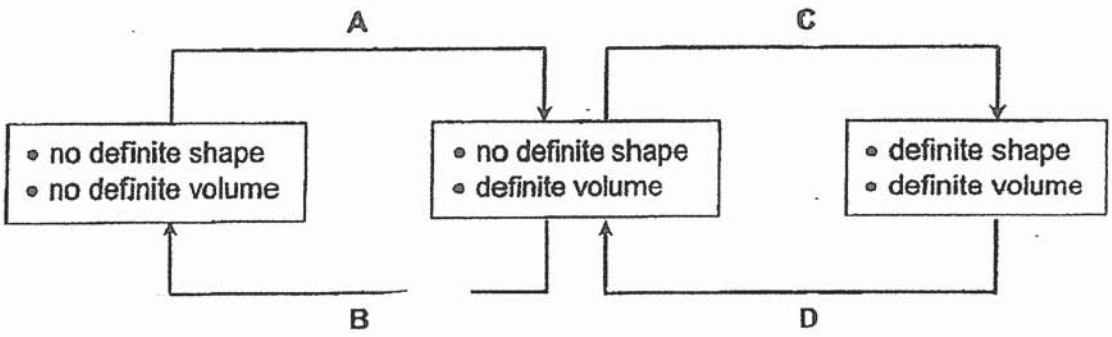
(b) Give a reason for your answer in (a). [1]

(c) Name three cell parts that cell X and Y have in common. [1]

	3

(Go on to the next page)

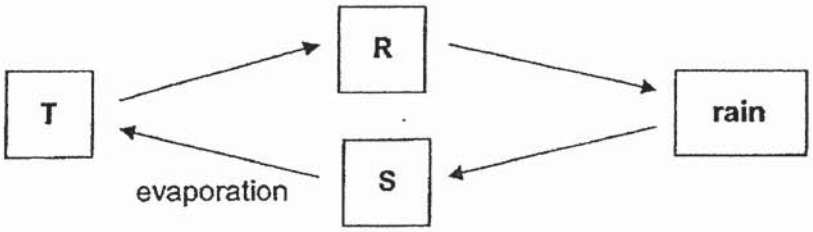
19 (a) The diagram below shows the properties and change in states of water. A, B, C and D represent the processes that water undergoes when it changes state.



(i) Which processes, A, B, C and D, involve heat loss to the surroundings? [1]

(ii) Which processes, A, B, C and D, are important in the water cycle? [1]

(b) The diagram below shows the water cycle.

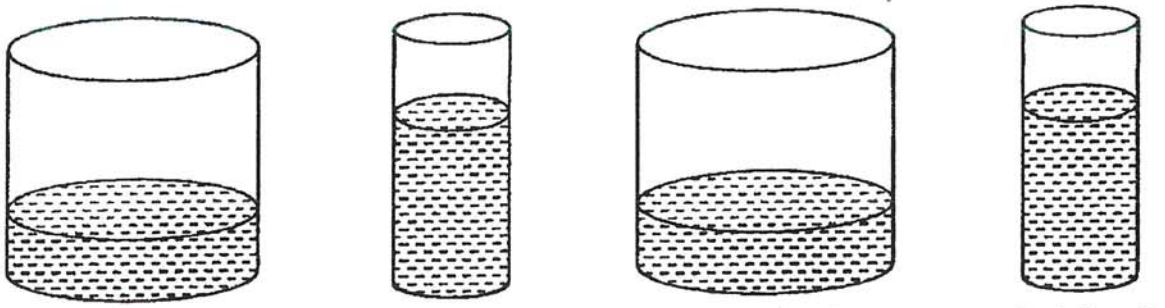


In which stages, R, S and T, do water not have definite shape? [1]

3

(Go on to the next page)

20 Study the experimental set-ups below. Containers A and C are of the same size, and containers B and D are of the same size. All four containers are made of the same material and have the same thickness. Each container contains 250 ml of water at different temperatures as shown below.



Container A
60°C

Container B
30°C

Container C
30°C

Container D
60°C

(a) Which container, A, B, C or D, would have the least amount of water left after a day? *Explain why.* [2]

(b) If David compares the results of containers B and C, which factor that affects rate of evaporation is he trying to find out? [1]

(c) For the experiment mentioned in (b), state another important variable that David should keep the same for a fair test. [1]

	4

(Go on to the next page)

21 (a) State two differences between evaporation and boiling. [2]

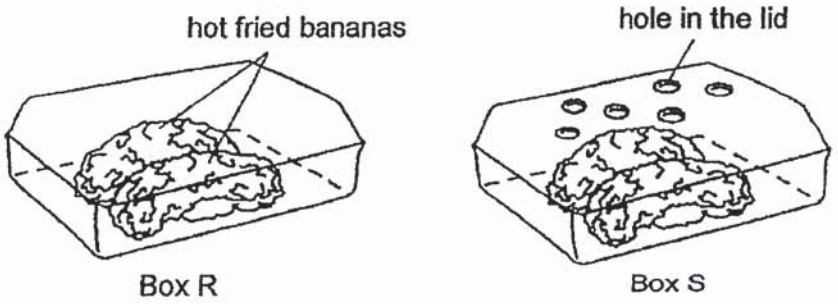
Difference 1: _____

_____

Difference 2: _____

_____

Trisha put two pieces of hot fried bananas in box R and box S as shown below.



She observed that the bananas in box R became slightly wet after some time, but not those in box S.

(b) Explain why the bananas in box R became wet. [2]

_____

_____

_____

End of Booklet B

4

ANSWER KEY

YEAR : 2020
LEVEL : PRIMARY 5
SCHOOL : MARIS STELLA
SUBJECT : SCIENCE
TERM : WEIGHTED ASSESSMENT (SA1)

BOOKLET A

Q1	1	Q2	2	Q3	1	Q4	3	Q5	4
Q6	4	Q7	4	Q8	3	Q9	2	Q10	1
Q11	3	Q12	3	Q13	3	Q14	4	Q15	1

BOOKLET B

Q16 a) The anther and filament
b) No. The flower can still be pollinated by other plants thus allowing the flower to become a fruit after being fertilized.
c) It attracts agents of pollination which carry pollen grains which will fertilized the ovule.

Q17 a) ◇ : Fruit X
▲ : Fruit Z

○ : Fruit Y

b) The fibrous husk traps air which allows Y to stay afloat on water longer thus allowing Y to be dispersed further away from the parent plant.
c) It reduces the seedling's competition for water and sunlight.

Q18 a) cell x
b) Cell X does not have a cell wall while Cell Y has a cell wall thus X is an animal cell as animal cells do not have cell wall.
c) Nucleus, cytoplasm and cell membrane.

Q19 a) (i) Processes A and C
(ii) Processes A and B

b) In stages T,S and R

Q20 a) Container A as it has the highest temperature and largest exposed surface area compared to B,C and D thus A has the highest rate of evaporation.

b) The exposed surface area.

c) Both containers must have the same surrounding temperature.

Q21 a)Difference 1 : Boiling of water occurs at 100 °c while evaporation of water occurs all the time.

b) The warm water vapour in box R came into contact with the cooler surface in the box, lost heat and condensed, forming water droplets to form dripping on the banana in R.

Q21 (a) Difference 2 : Boiling occurs throughout the liquid while evaporation occurs only on the surface of the liquid.