

NANYANG PRIMARY SCHOOL

PRIMARY 5 SCIENCE

**SEMESTRAL ASSESSMENT 1
2011**

BOOKLET A

Date : 10 May 2011

Duration : 1 h 45 min

Name : _____ ()

Class: Primary 5 ()

Marks Scored:

Booklet A:		60
Booklet B :		40
Total :		100

Parent's signature:

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FOLLOW ALL INSTRUCTIONS CAREFULLY.**

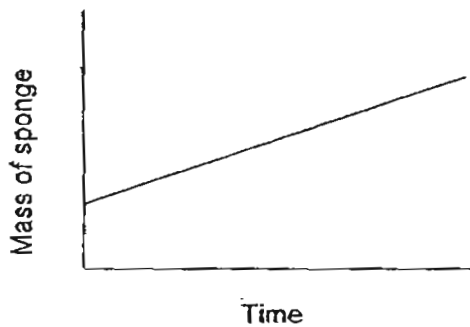
Booklet A consists of 20 printed pages including this cover page.

Section A (30 x 2 marks = 60 marks)

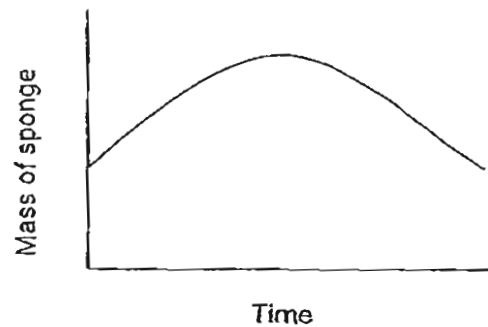
For each question from 1 to 40, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet provided.

1. A dry sponge is soaked in water and then squeezed dry and placed under the sun till it dries. Which one of the following graphs shows the changes in the mass of the sponge from the beginning to the end of the experiment.

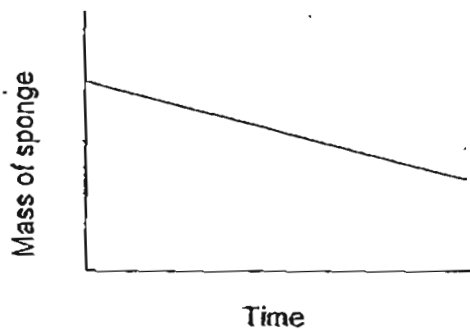
(1)



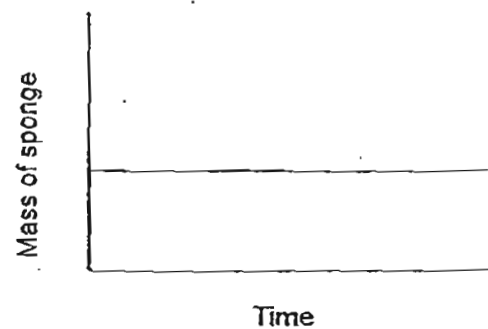
(2)



(3)



(4)



2. When water in a kettle boils, the lid rattles. What causes the lid to rattle?

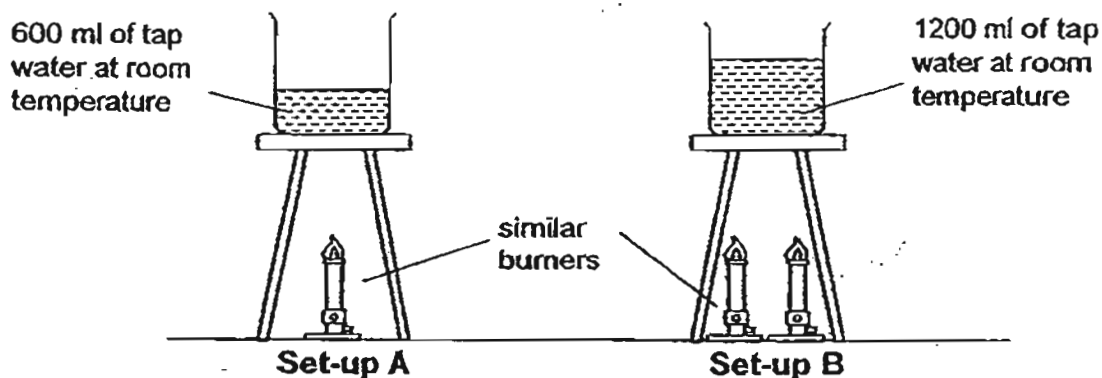
- (1) The steam escaping from the lid.
- (2) The oxygen escaping from the lid.
- (3) The carbon dioxide escaping from the lid.
- (4) The water droplets escaping from the lid.

3. The table shows the boiling points and melting points of substances P, Q, R and S.

	P	Q	R	S
Melting Point (°C)	45	10	2	7
Boiling Point (°C)	120	335	50	55

The above substances are placed in the same surrounding with a temperature of 40 °C. Which one of the following statement is correct?

- (1) Substance P will evaporate faster than Substance S.
 - (2) Substance Q will evaporate faster than Substance R.
 - (3) Substance R will evaporate faster than Substance P.
 - (4) Substance S will evaporate faster than Substance R.
4. Set-ups A and B showed different volume of water being heated till the water boiled.

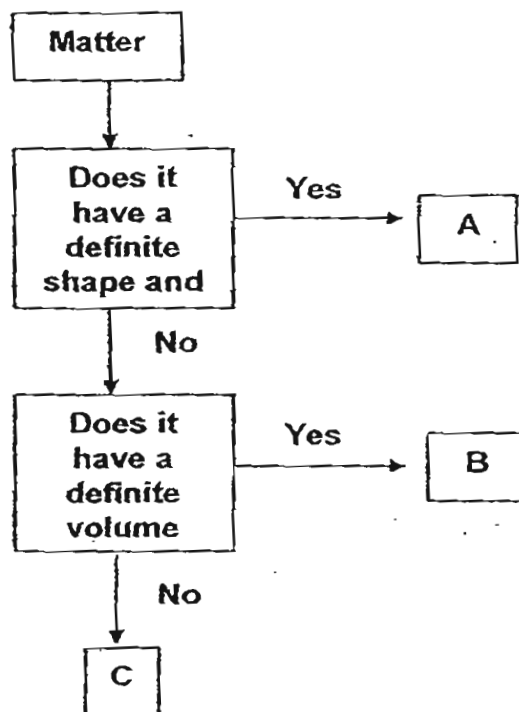


Which of the following statement(s) is/are true about the above experiment?

- A : Water in both set-ups boiled at the same time
- B : There was more heat supplied to set-up B than set-up A
- C : Water in set-up B had a higher temperature than set-up A at the start of the experiment.
- D : Water in both set-ups will have the same temperature at the end of the experiment

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

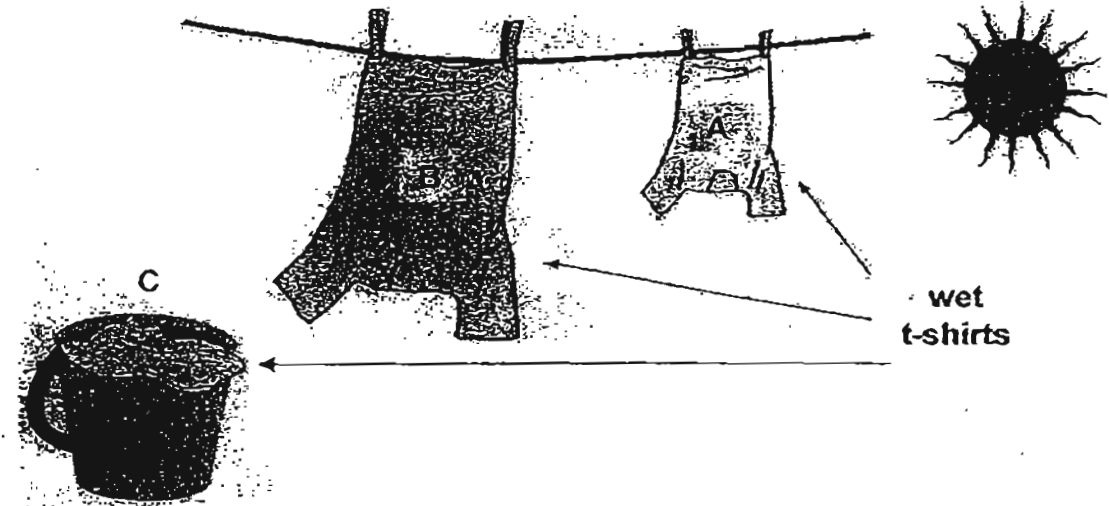
5. 3 substances were classified accordingly to the flowchart below.



Refer to the flowchart above, which one of the following best represent A, B and C?

	A	B	C
(1)	orange juice	carbon dioxide	ruler
(2)	table	apple juice	oxygen
(3)	air	chair	milk
(4)	ice	water	heat

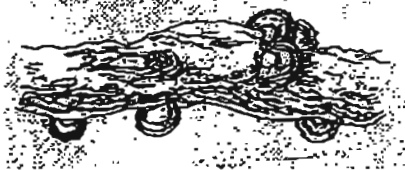
6. Study carefully the diagram given. T-shirts A, B and C were soaked with the same amount of water. Shirt A is the smallest size and Shirt B and C are of the same size.



Which one of the following statement is true?

- (1) Shirt A becomes dry the fastest.
 - (2) Shirt B becomes dry the fastest
 - (3) Shirt C become dry faster than A but slower than B
 - (4) Shirt B become dry faster than C but slower than A
7. Which one of the following organisms cannot make food using light energy?

(1) Bracket Fungi



(2) Bird's Nest Fern



(3) Venus Fly Trap



(3) Water hyacinth.

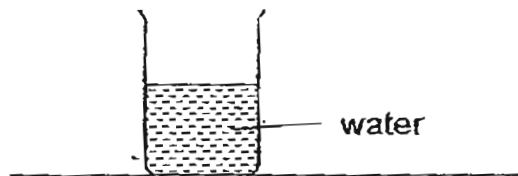


8. Two different animals have the following characteristics in common.
- They live in ocean
 - They give birth to and suckle their young.
 - They have blowholes and breathe through their lungs.

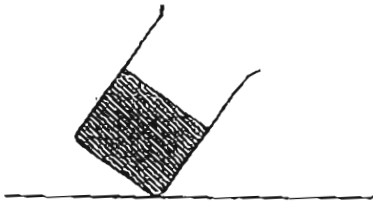
What animals are they most likely to be?

- (1) A shark and a seal
- (2) A dolphin and a whale
- (3) A penguin and a sea turtle
- (4) A mudskipper and a jellyfish

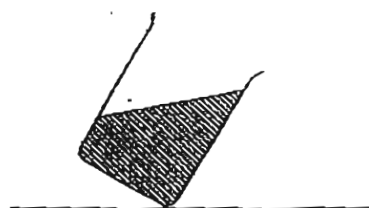
9. A beaker containing water is put in the freezer. After 1 day, the beaker is taken out and placed on the table. Which one of the diagrams would correctly show what you would observe when the glass is tilted.



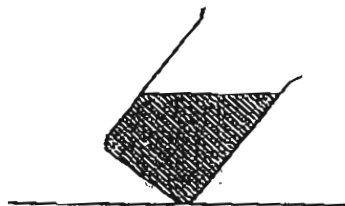
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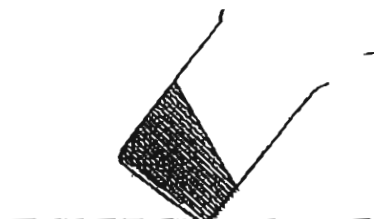
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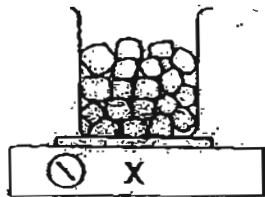
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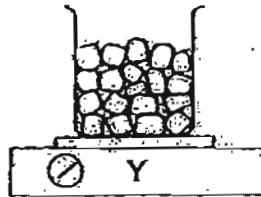
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10. Beaker X and Y contain an equal quantity of ice. They are heated separately with two heaters set at different temperatures as shown until the water starts to boil. Which one of the following graphs correctly shows the changes in their temperature?

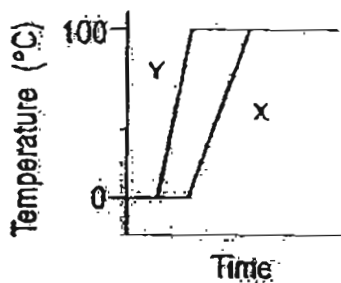


Heater at a lower temperature

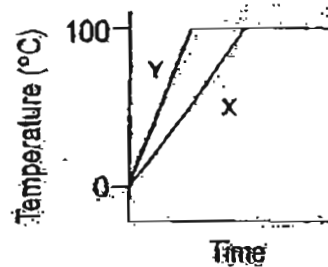


Heater at a higher temperature

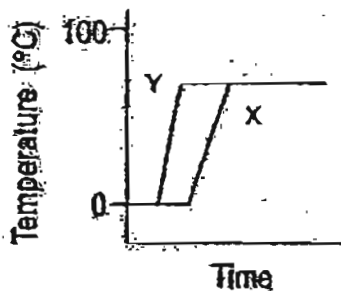
(1)



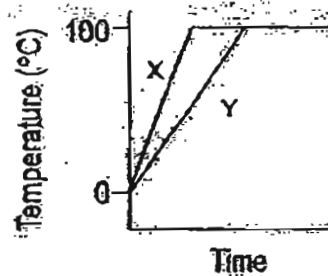
(2)



(3)



(4)



11. Which one of the following statements about bacteria and fungi is not correct?

- (1) Fungi feed on dead or living matter.
- (2) Not all bacteria cause people to be ill.
- (3) Yeast is a fungus that can be consumed.
- (4) Bacteria and fungus are microorganisms.

12. Some animals were classified into Group A, B, C and D in the classification table below.

A	B	C	D
Lizard Python Chameleon	Crab Tortoise Clam	Goat Tiger Bear	Pigeon Parrot Crane

Which one of the following shows how the animals are being grouped?

- (1) the way they move
 - (2) the places they live
 - (3) their outer coverings
 - (4) the type of food they eat
13. Some animals were classified into Group X, Y and Z.

X	Y	Z
tadpole	cheetah	Koala
goldfish	antelope	Rabbit
oyster	lizard	squirrel
prawn	ostrich	grasshopper

Referring to the table above, which one of the following shows the correct headings for X, Y and Z?

- (1)

X	Y	Z
Breathing method	Places where they live	Diet
- (2)

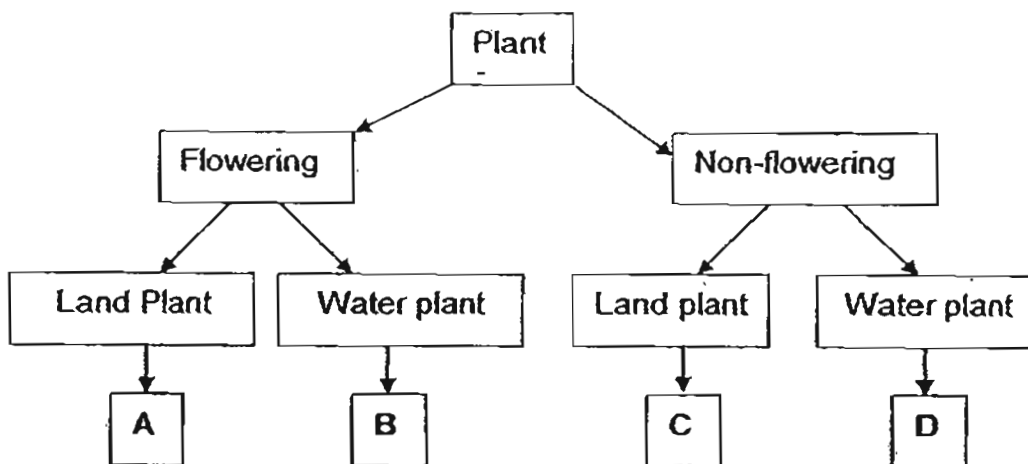
X	Y	Z
Places where they live	Diet	Outer coverings
- (3)

X	Y	Z
Breathing method	Outer coverings	Places where they live
- (4)

X	Y	Z
Diet	Breathing method	Outer coverings

14. Characteristics of Plant S and T are shown in the table.

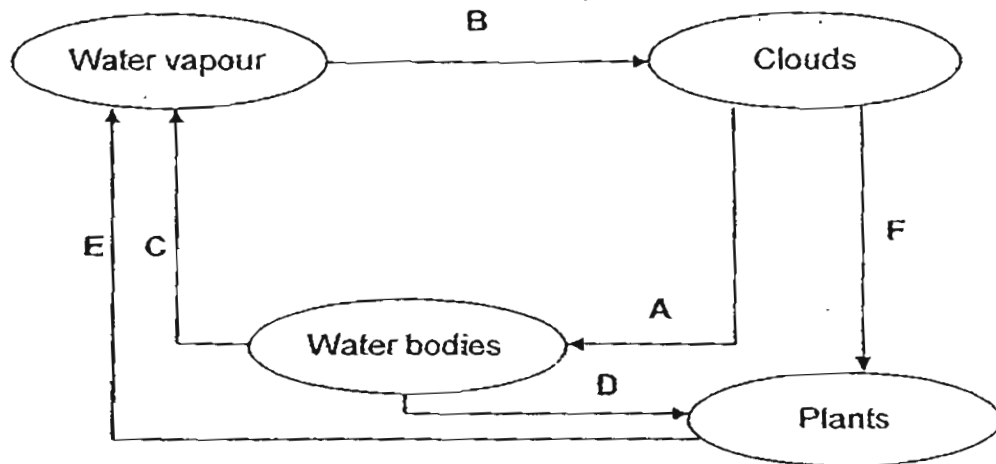
Plants	Bears fruit	Grows on land
S	No	No
T	Yes	No



Plant S and T were then classified together with 2 other plants. Using the classification chart shown above, in which boxes A, B, C or D do Plant S and T belong to?

	Plant S	Plant T
(1)	A	D
(2)	D	A
(3)	D	B
(4)	B	C

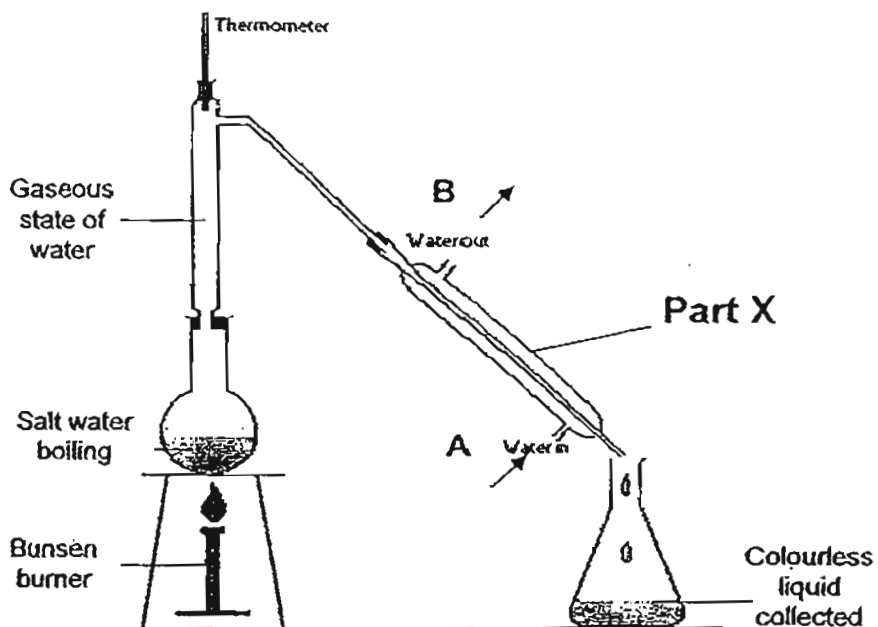
15. Study the water cycle below. A, B, C, D, E and F are processes occurring in the water cycles.



Which one of the following best describe the water cycle?

	Change from liquid state to gaseous state	Change from gaseous state to liquid state	No change in state
(1)	C, E	A	B, D, F
(2)	C, F	A	B, D, E
(3)	C, E	B	A, D, F
(4)	C, F	B	A, D, E

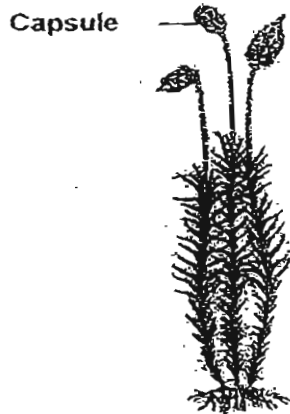
16. The diagram below shows an experiment for separating salt from salt water. It has a water inlet A and a water outlet B.



What is the purpose of Part X in the experimental set-up?

- (1) To cool down the hot water into water droplets.
- (2) To add water into the flask containing salt water.
- (3) To cool down the hot water vapour into water droplets.
- (4) To mix the water with the water vapour for cooling down.

17. The diagram below shows Moss T. Each capsule contains thousand of spores. Each spore can grow into a new moss.

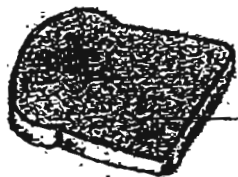


Which one of the following statements below best explains why Moss T produce such a large number of spores each time?

- (1) A large number of spores allow easier dispersal by wind.
- (2) A large number of spores allow dispersal over a further distance.
- (3) A large number of spores allow the plant to maximise its chances of survival.
- (4) A large number of spores allow good usage of energy produced during photosynthesis.

18. The diagram below shows four slices of bread from the same loaf in different conditions. Which one of the following conditions will bread mould most likely be found after 5 days?

- (1) At room temperature
- (2) In the refrigerator



Toasted bread



Plain bread

- (3) At room temperature
- (4) In the refrigerator

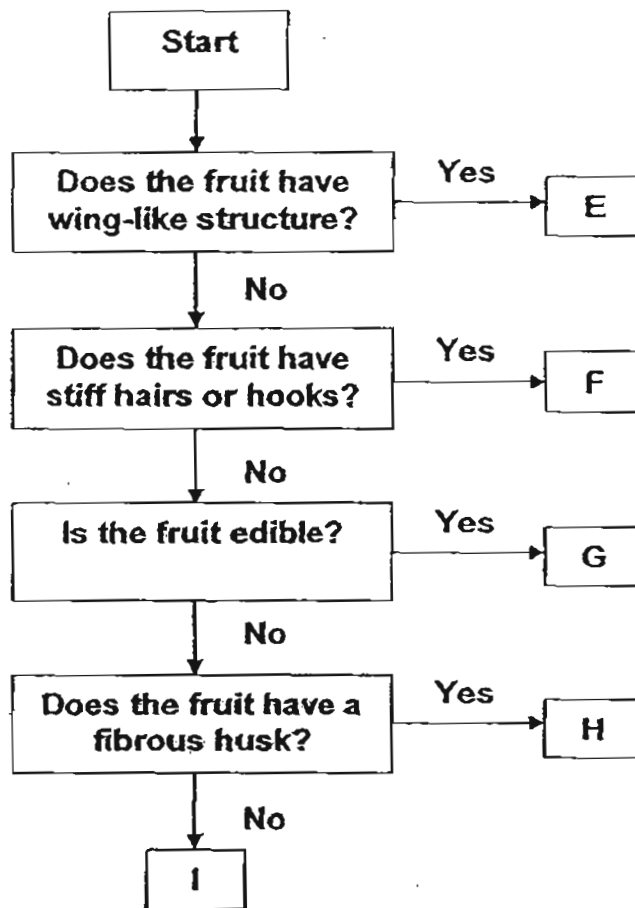


Plain bread



Toasted bread

19. Five fruits were classified using the flow chart below.



Based on the flow chart, which of the following fruits E, F, G, H and I are dispersed by animals?

- (1) E and H only
- (2) F and G only
- (3) F, G and H only
- (4) G, H and I only

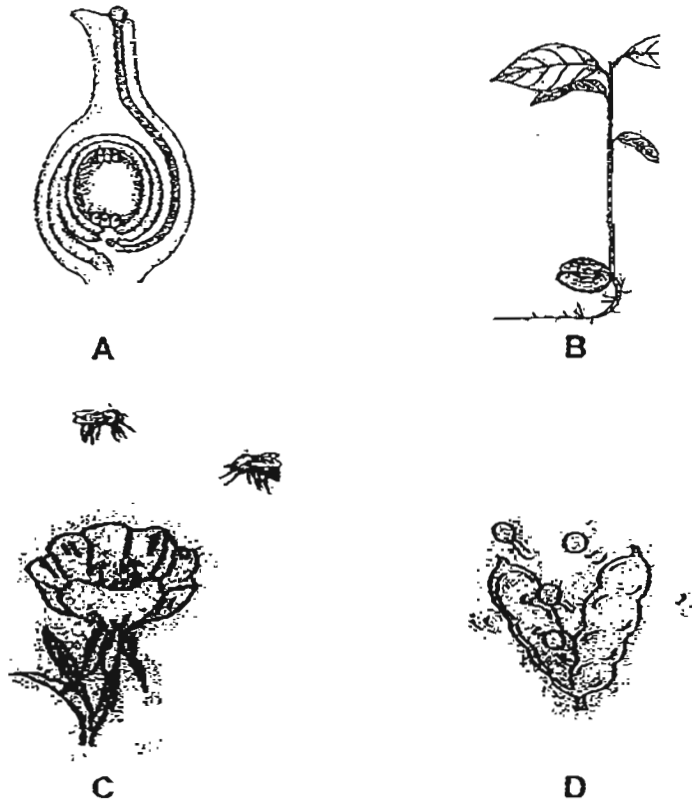
20. In a Science project, Zach made observations on the number of visits made by bees to 6 flowers of the same kind but with different colours U, V, W, X and Y in a garden. The results were recorded in the table below.

Flower	Size of Petals	Colour of Petals	Scent of flower	Number of visit by bees
U	Large	Red	Scented	54
V	Large	Yellow	No scent	32
W	Medium	Yellow	Scented	21
X	Medium	Red	Scented	?
Y	Small	Red	No scent	16
Z	Small	Yellow	No scent	10

Zach had forgotten to record the number of visits made by bees to Plant X. What is the most likely possible number of visits for Plant X?

- (1) 15
 - (2) 18
 - (3) 24
 - (4) 60
21. Mr Tay has a fruit tree in his backyard that can only bear flowers but not fruits. However, his neighbour's fruit tree produces fruits. Which one of the following could be the most likely reason that explains why Mr Tay's fruit tree does **NOT** bear fruits?
- (1) The tree has male flowers only.
 - (2) The tree has female flowers only.
 - (3) The tree has both male and female flowers.
 - (4) The tree has flowers that have been pollinated already.

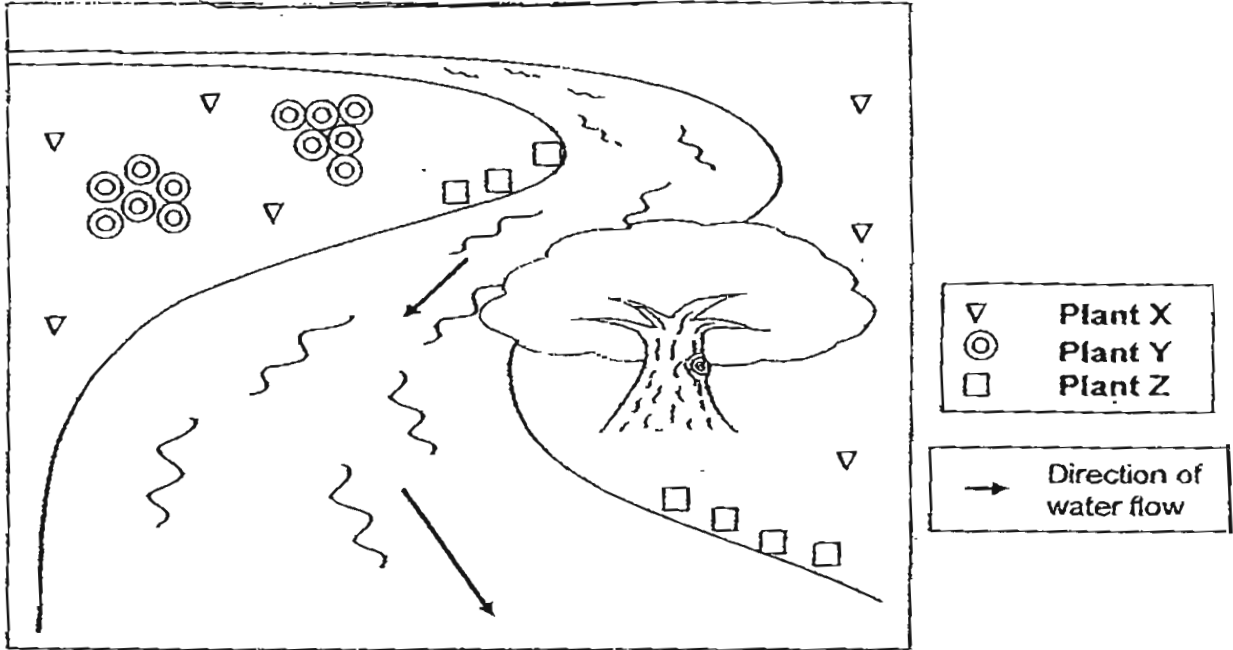
22. The pictures below show the different stages of reproduction of a plant Y.



Which one of the following shows the correct of the stages of the reproduction of plant Y?

- A B D C
- (1) ~~A, B, C, D~~
 - (2) A, B, C, D
 - (3) C, A, D, B
 - (4) C, D, A, B

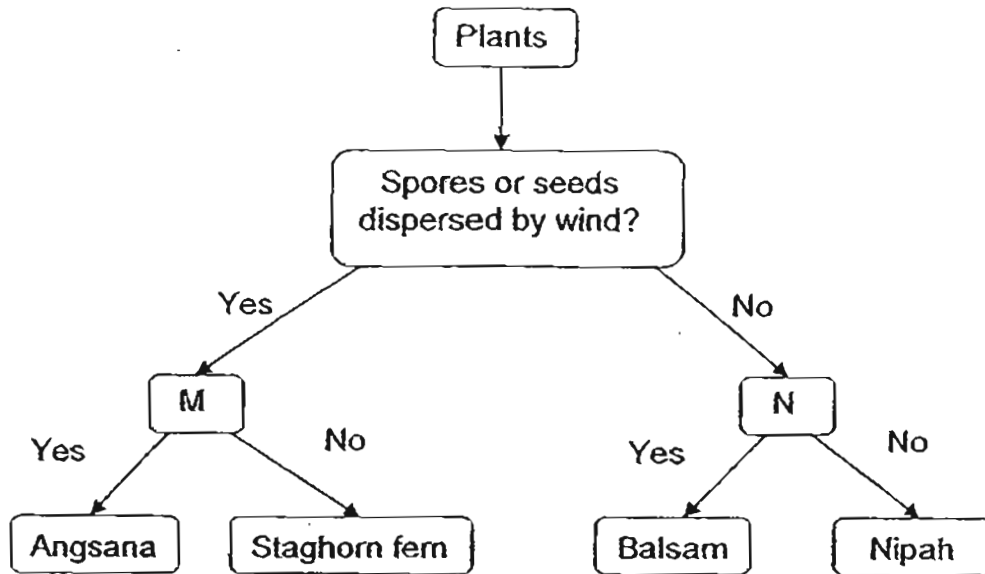
23. The diagram below shows the location of Plant X, Plant Y and Plant Z near a river.



Which one of the following matches the plants X, Y and Z to the characteristics of their seeds correctly?

	Plant X	Plant Y	Plant Z
(1)	Waterproof, fibrous husk	Dries up and splits open	Wind-like structure
(2)	Sweet, edible flesh	Wind-like structure	Dries up and splits open
(3)	Dries up and splits open	Wind-like structure	Sweet, edible flesh
(4)	Wind-like structure	Dries up and splits open	Waterproof, fibrous husk

24. Study the flow chart below.

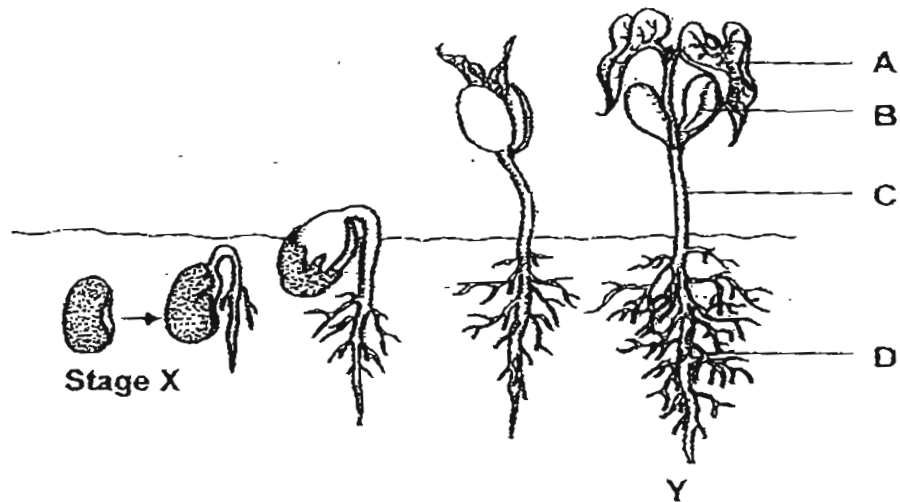


Which subheading best represent M and N?

	M	N
(1)	Presence of spores?	Fibrous husk?
(2)	Bear flowers?	Disperse its seeds far away?
(3)	Reproduce from seeds?	Disperse its seeds by splitting?
(4)	Presence of wing-like structure?	Fleshy fruits?

Use the diagram below to answer questions 25 and 26.

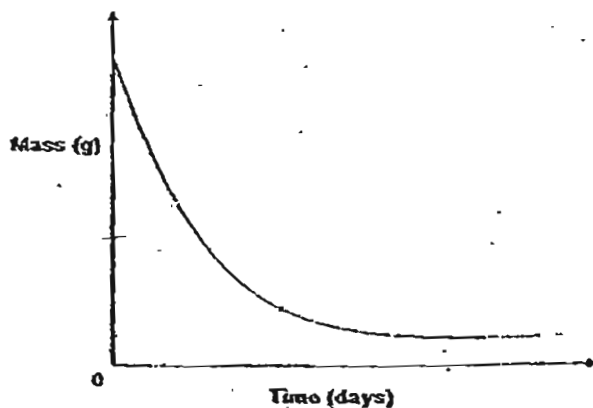
The diagram shows the stages of growth of a seed. A, B, C and D are parts of the seedling.



25. Which one of the following conditions are required for Stage X to take place?

- (1) Light, water and warmth
- (2) Oxygen, water and light
- (3) Light, Oxygen and warmth
- (4) Oxygen, water and warmth

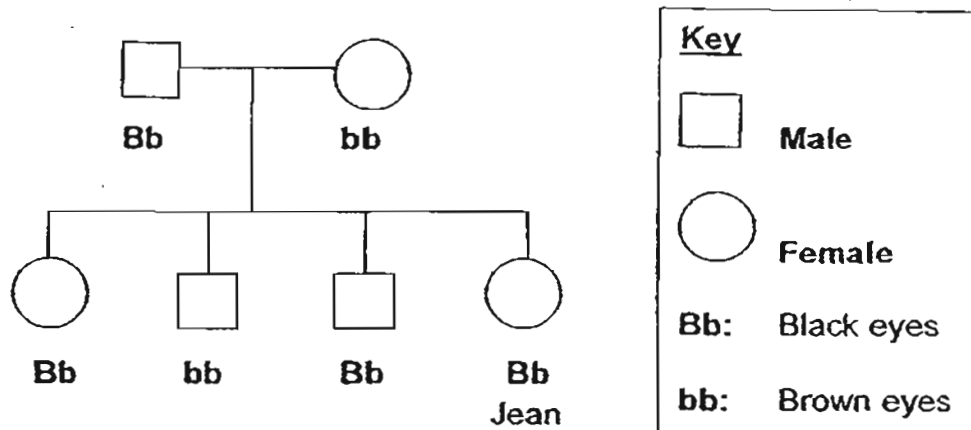
26. The graph below shows the change in mass of a part of the plant as the seedling develops.



Which part of the plant (A, B, C or D) does the graph show?

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

27. Eye colour is a visible characteristic that is passed on from parents to their young. The diagram below shows Jean's family tree. Jean has been labelled in the family tree.



Which of the following statements about Jean's family is correct?

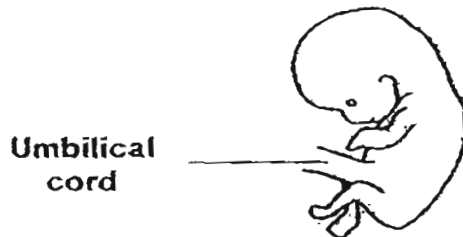
- (1) Jean has 2 sons and 2 daughters.
 (2) Jean has 2 brothers and 2 sisters.
 (3) Jean's sister has the same eye colour as her father.
 (4) Both Jean's brothers have the same eye colour as her mother.
28. Isaac collected 5 identical rubber fruits P, Q, R, S and T. He subjected each fruit to different temperatures to find out the effects of temperature on the splitting of the rubber fruits. The results were recorded in the table below.

Temperature (°C)	Effect on rubber fruit
20	P Does not split
25	Q splits after 1 day
30	R splits after 3 hours
35	S splits after 2 hours
40	T splits after 30 minutes

From the above results, what can you conclude about the effect of temperature on the time taken for the fruit to split?

- (1) The higher the temperature, the faster it splits.
 (2) The higher the temperature, the further it splits.
 (3) The faster the fruit splits, the higher the temperature.
 (4) The faster it splits, the further away from the parent plant.

29. The diagram below shows a developing baby in its mother's womb. Sometimes, the turning of the baby can cause the umbilical cord to twist.



What are some of the reasons why this situation can be dangerous for the developing baby?

- A: It prevents the baby from getting oxygen from the mother.
B: It prevents the baby from getting nutrients from the mother.
C: It prevents the baby from transferring its wastes to the mother.
- (1) A and B only
(2) A and C only
(3) B and C only
(4) A, B and C
30. A twin is one of two offspring produced from the same pregnancy. There are 2 types of twins: identical and non-identical twins. Identical twins are formed from the same fertilised egg whereas non-identical twins are formed from two different fertilised eggs.

What of the following statement(s) is/are true?

- A: A boy and a girl cannot be identical twins
B: Two eggs and two sperm cells provide genetic material to make identical twins.
C: Two eggs and two sperm cells provide genetic material to make non-identical twins.
- (1) B only
(2) A and B only
(3) A and C only
(4) All of the above

NANYANG PRIMARY SCHOOL

PRIMARY 5 SCIENCE

**SEMESTRAL ASSESSMENT 1
2011**

BOOKLET B

Date : 10 May 2011

Duration : 1 h 45 min

Name : _____ ()

Class: Primary 5 ()

Marks Scored:

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Booklet B :		40
Total :		100

Parent's signature:

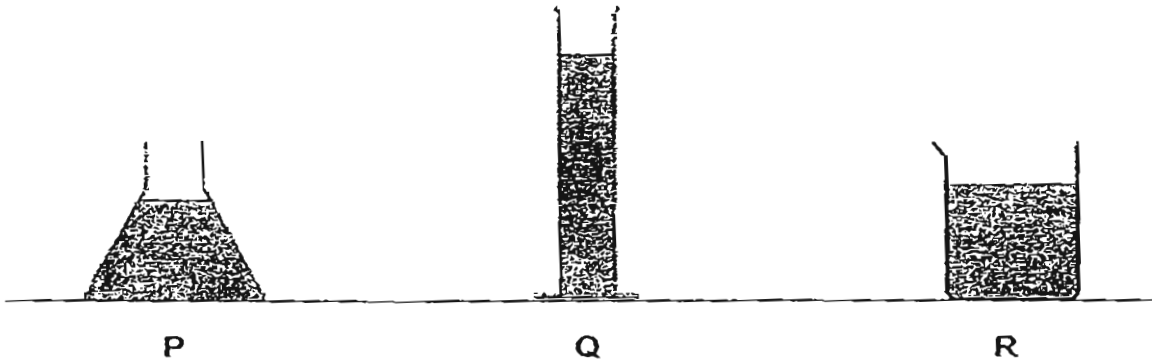
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Booklet B consists of 17 printed pages including this cover page.

Section B (40 marks)

**Write your answers to questions 31 to 46 in the spaces provided.
Marks will be deducted for misspelt key words.**

31. Francis set up an experiment shown below. He poured the same amount of water into each container. He left the containers in a room. After several days, he measured the amount of water left in each container.



(a) State the aim of the experiment?

[$\frac{1}{2}$]

(b) State the container expected to have the most amount of water left after 5 days.

[$\frac{1}{2}$]

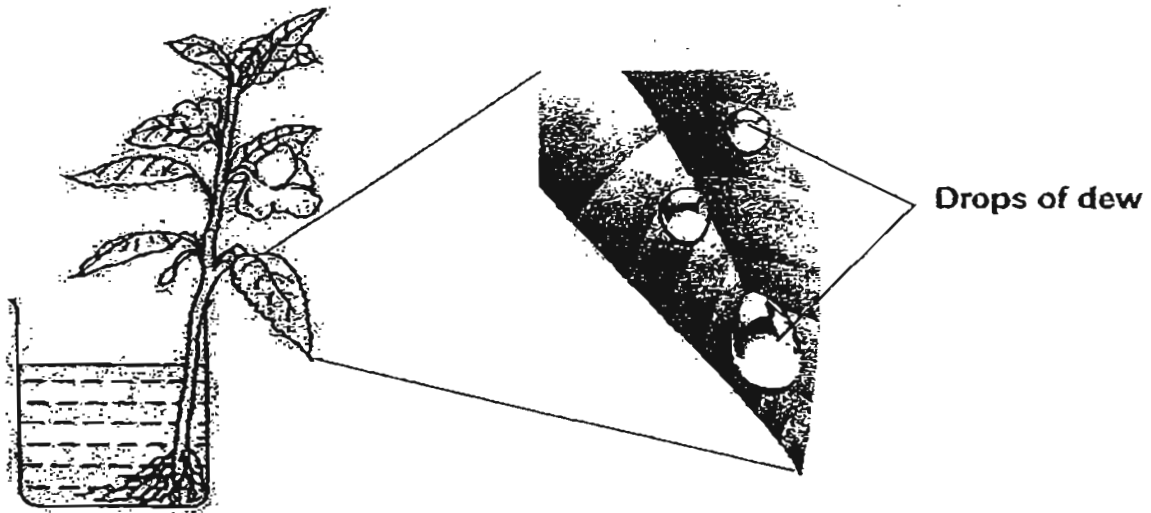
Francis then conducted another experiment as shown below and left the containers in another room for 5 days.



(c) Which container will have more water left? Explain why.

[1]

32. An experiment was carried out in the night as shown below. A plant was placed in a beaker of water and put in a garden. Drops of dew on a leaf were observed early next morning. There was no rain the night before.



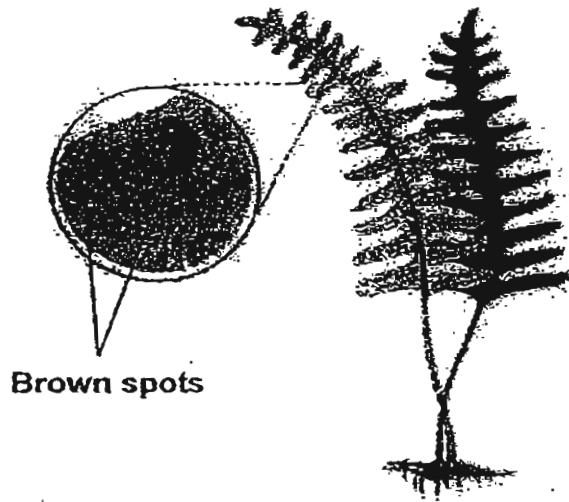
(a) Explain how the drops of dew were formed.

[1]

(b) Describe another situation whereby the process in part (a) occurs.

[1]

33. The diagram below shows mangrove ferns. Brown spots are found on the underside of the fern.



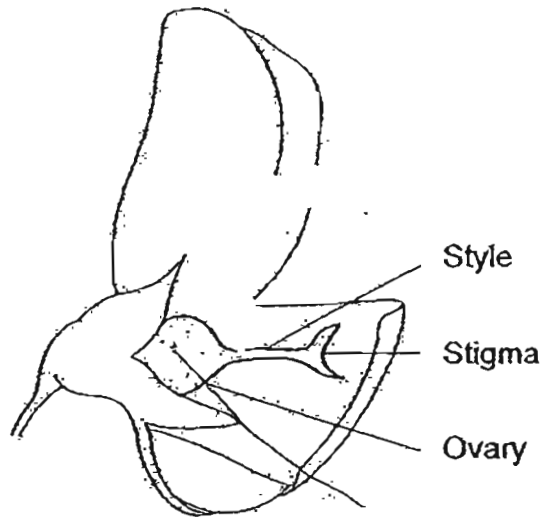
(a) How are these brown spots dispersed?

[1]

(b) Why is dispersal of these brown spots important for the plant?

[1]

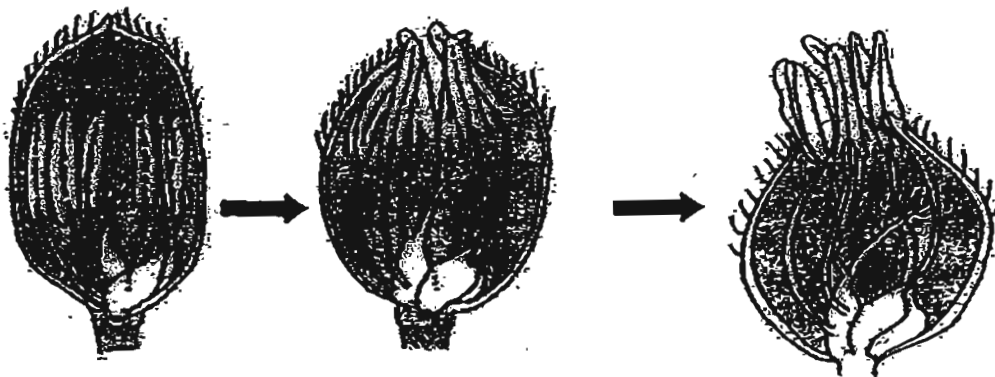
34. The diagram below shows a flower in which some of the parts are removed.



(a) On the diagram above, draw and label the following:

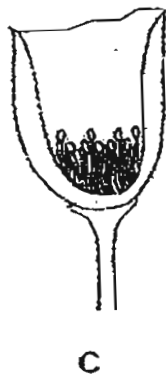
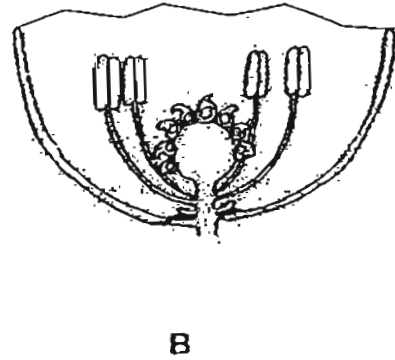
- (i) the male reproductive part(s)
- (ii) the part(s) that will form the seed(s) of an apple. [2]

As the flower blooms, Clement notices the elongation of the filaments while the stigma remains the same length.



(b) Why do the filaments lengthen? [1]

35. Anna went on a school field trip to the Botanic Gardens. She took samples of a few flowers and cut them into halves. The diagrams below show the cross sections of the flowers A, B, C and D. Study them carefully and answer the questions that follow.



(a) Based on what you observe in the diagrams above, classify the flowers A, B, C and D into 2 groups X and Y based on the methods of pollination.

Write the letters in the table below to show which flower you place in each group. [1]

Group X	Group Y

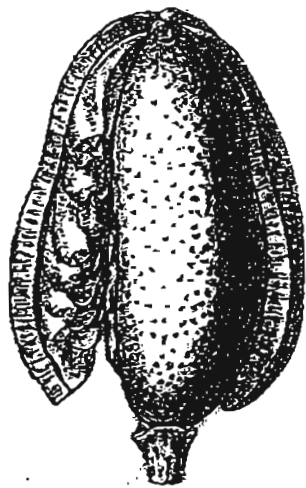
(b) Write down the appropriate headings for Group X and Group Y. [1]

Group X: _____

Group Y: _____

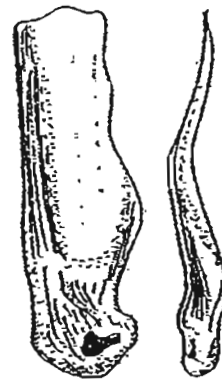
36. Josh was walking along the road when he found some interesting parts of a fruit under a tree as shown in Diagram A below. Out of curiosity, he walked around the tree and found more of the same. As he walked away from the tree, he saw many seed-like structures as shown in Diagram B.

He found out subsequently that the structures in Diagram A and Diagram B belong to the same tree.



A

Top View Side View



B

Josh said that the fruit dispersed its seeds by splitting. Explain whether his statement is correct. [2]

37. Ben conducted an experiment to investigate whether temperature affects the germination of green bean seeds. He soaked 40 beans in water at different temperatures for 10 hours. He recorded the number of seeds that germinated 1 day later in the table below.

Temperature (°C)	10	20	30	40
Number of seeds germinated	8	20	30	5

(a) What can Ben conclude from his experiment? [1]

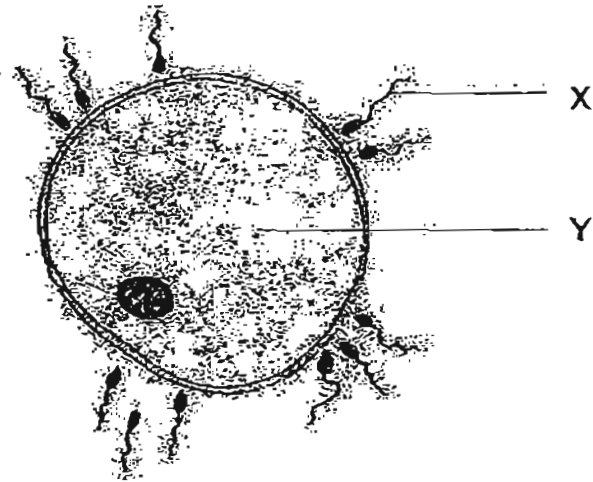
(b) Due to time constraint, Ben has no time to repeat the experiment. What should he do to ensure reliability of the experiment? [1]

The table below shows the average temperature for a year in a country with four seasons.

Season	Average Sunlight (hours)	Average Maximum Temperature (°C)	Average Rainfall (mm)
Spring	5	13	40
Summer	7	21	54
Autumn	3	14	57
Winter	1	3	47

(c) Which season should planting of green bean seeds be for maximum germination? Why? [1]

38. The diagram below shows some cells in a human reproductive system.



(a) Identify X and Y.

[1]

X: _____ Y: _____

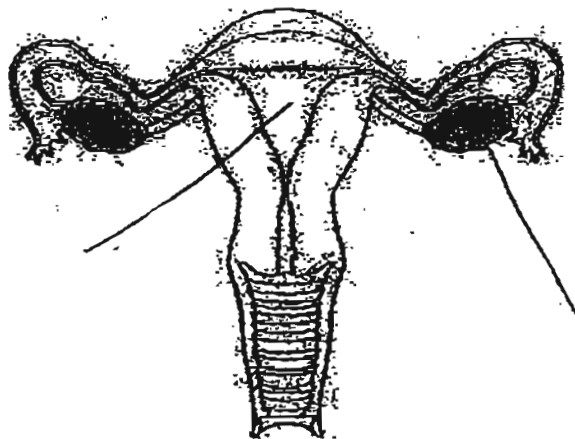
(b) On the diagram below,

(i) Name and label the part(s) where mature eggs are released.

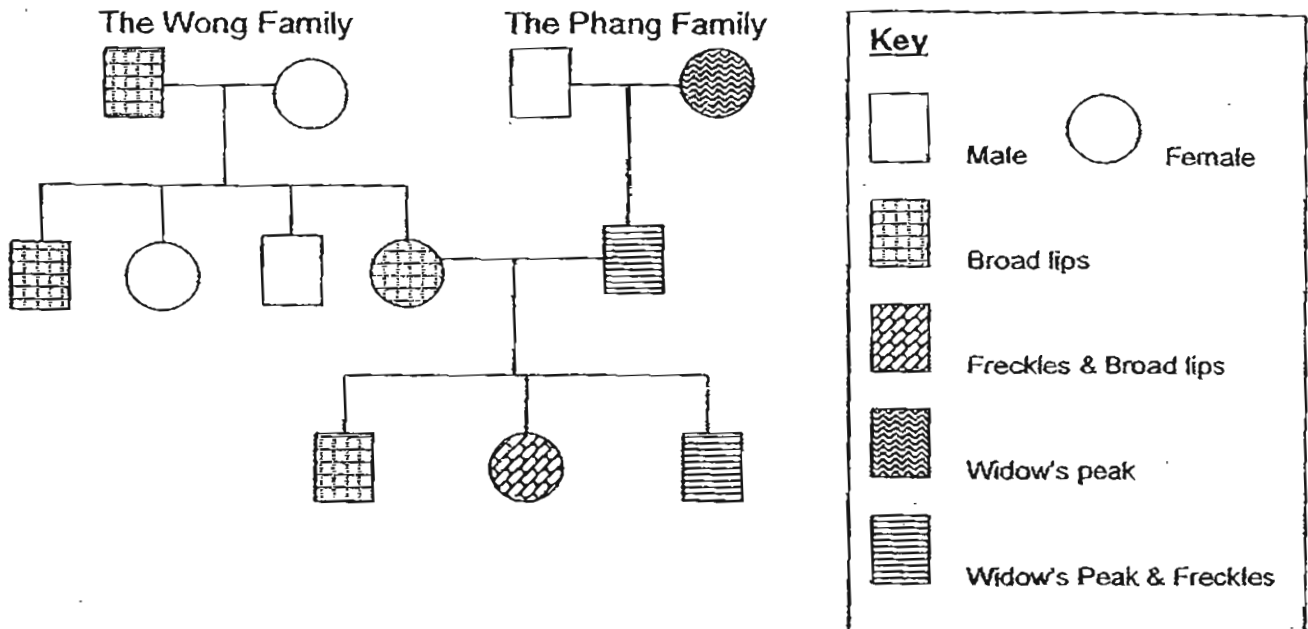
$\left[\frac{1}{2}\right]$

(ii) Label 'Z' on the diagram below, the part where the fertilised egg develops into a baby.

$\left[\frac{1}{2}\right]$



39. The diagram below shows a family tree and the characteristics of the family members



(a) Jane is the daughter of David Phang and Susan Wong.

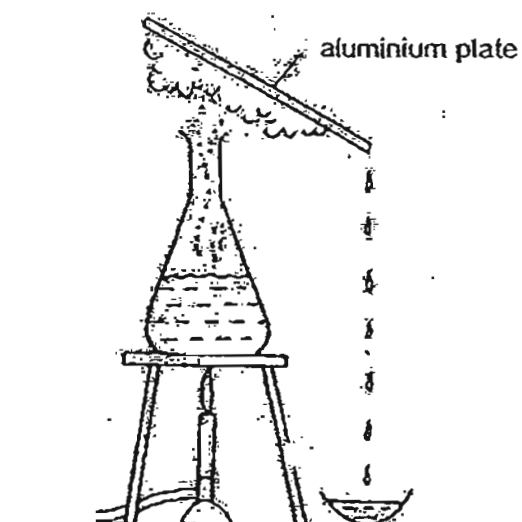
Write 'Jane' to indicate Jane on the family tree. [1]

(b) (i) What characteristics did Jane's father have that she did not inherit? $\left[\frac{1}{2}\right]$

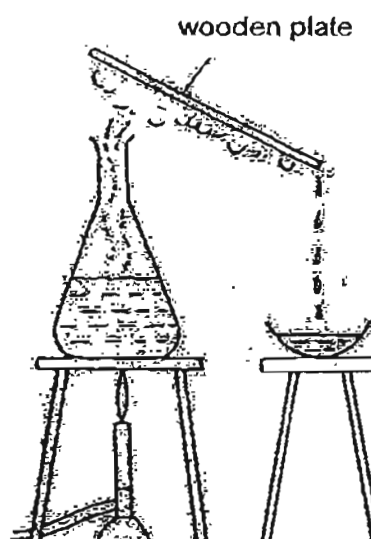
(ii) How many members of the Wong family have broad lips? $\left[\frac{1}{2}\right]$

40. In set-ups A and B, two flasks with 100ml of water each was heated as shown in the diagrams.
 An aluminium plate and a wooden plate of the same size and shape were placed above the flasks respectively. Water in each of the set-up was allowed to boil for 10 minutes and the water from the water vapour that condensed in each set-up was collected in separate bowls and the amount collected was being measured.

Set-up A



Set-up B



- a) In set-up A or B would more water droplets be collected? Explain your answer. [2]

- b) Based on the set-up A and B, was this experiment a fair one? Explain. [1]

41. Tiffany placed a funnel in an air-tight stopper of a flask as shown in Figure A. She then poured water into the funnel.

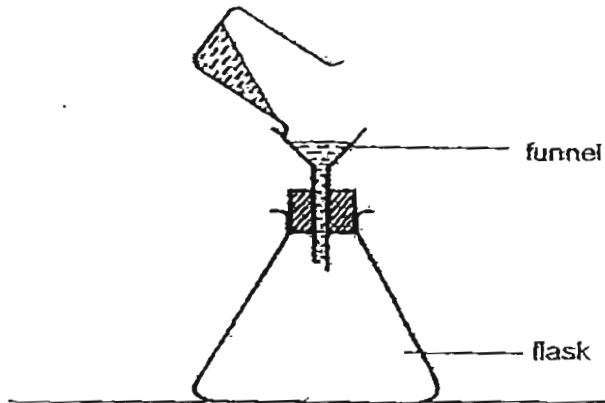


Figure A

- a) What would she observe? [1]

Tiffany then inserted a straw into the funnel as shown in Figure B.

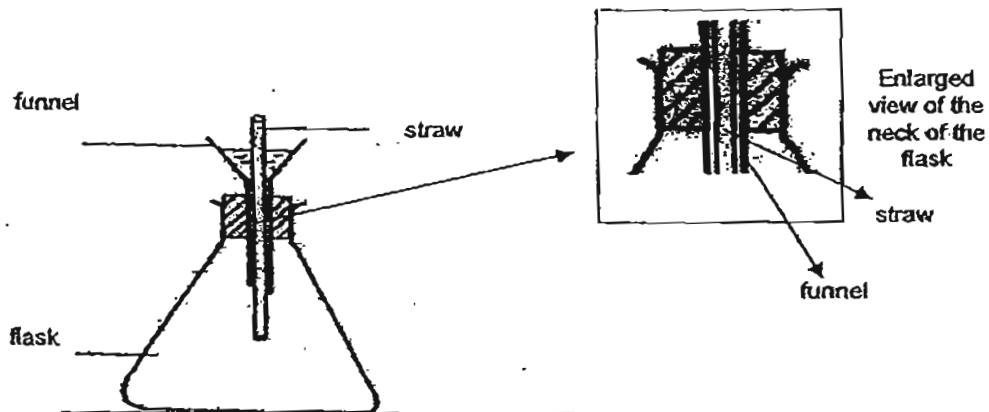
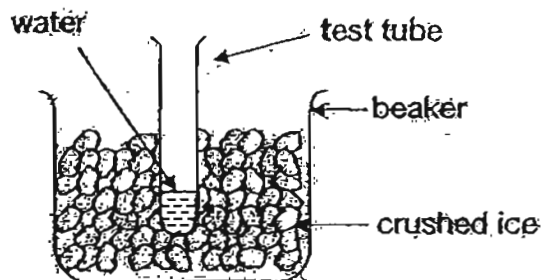


Figure B

- b) What would she observe now? Explain her observation. [2]

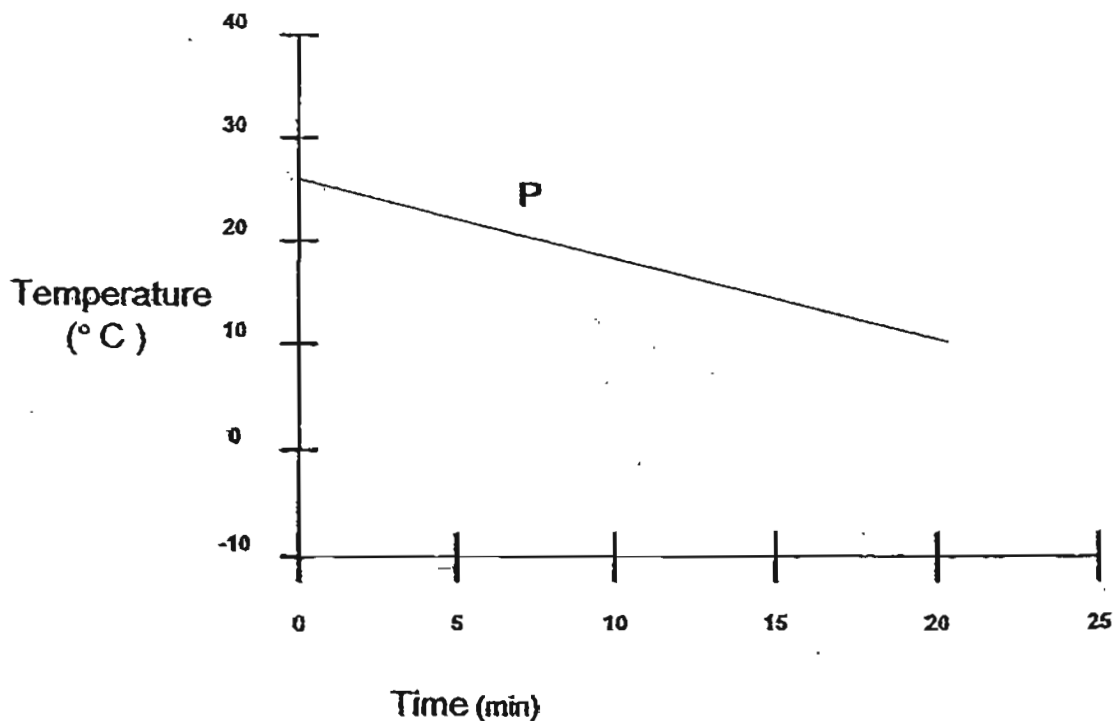
42. Set-up P below shows a test tube filled with water and placed in a beaker filled with crushed ice. The temperature of the water is 25°C . The graph shows the temperature change of the water in the test tube after 20 minutes.



Set-up P

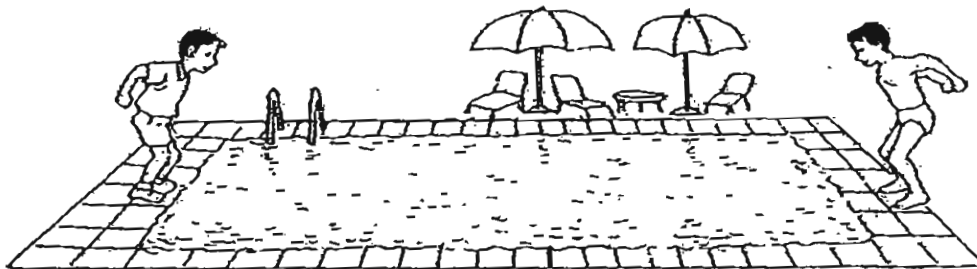
- a) A similar experiment using Set-up Q, was conducted and the test tube of water was placed in a mixture of crushed ice and salt. After 20 minutes, it was observed that the water in the test tube had frozen. Draw and label a graph to show the temperature changed of the water in the test tube from the start of the experiment to 20 minutes for Set-up Q.

[1]



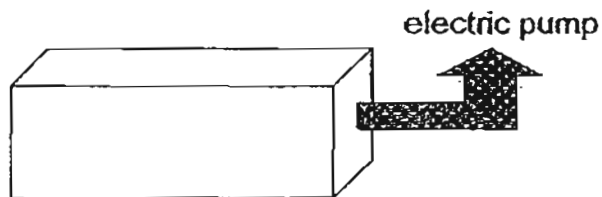
- b) During winter season, thick layers of snow would usually accumulate along the driveways and sidewalks after a heavy snowfall. Residents would always add a large quantity of salt to the thick layers of snow to aid in the clearing of the snow. Explain why. [2]

43. Samuel is fully clothed and Tom is in his swimming trunks. They both jumped into a swimming pool at the same time.



- When both of them climbed up of the pool, who would gain more mass? [2]
Explain why.

44. Air in a rectangular tank has been vacuumed. The volume of the tank is 200 cm^3 . John wants to pump air into the tank using an electric pump. With each stroke of the pump, 50 cm^3 of air will be pumped into the tank.



What is the volume of air in the tank after 2 strokes of the pump? Explain your answer.

[1]

45. The table below shows the characteristics of three organisms, P, Q and R

Characteristics	Organism P	Organism Q	Organism R
Body coverings	hair/fur	scales	feathers
Where it lives	both on land and in water	water	both on land and in water
How it reproduces	lay eggs	gives birth to its young	lays eggs
Part of body that helps it to move	webbed feet	fins	flippers
How it moves	walks or swims	swim	walks or swim
How it breathes	through lungs	through gills	through lungs

What could Organism P, Q and R be?

[1.5]

a)

Organism P	Organism Q	Organism R

b)

A tick is a small creature but it is not an insect. State 3 characteristics of a tick which help you conclude that it is not an insect. [1.5]





Nanyang Primary School
Primary 5 Science
Semestral Assessment 1, 2011

Booklet A

ANSWER SHEET

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
3	1	3	2	2	2	1	2	2	1

Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
3	3	1	3	1	3	3	3	2	2

Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
4	3	4	3	4	2	3	1	4	3

Booklet B

Q31a) It is to find out if the shape of the containers affect evaporation rate of water.

Q31b) Container Q

Q31c) The container with oil, the oil acts to reduce evaporation of water by covering it.

Q32a) When the temperature of the leaf drops below the dew point of the surrounding air, droplets will condense on it.

Q32b) Water droplets forming on a glass of cold water.

Q33a) The wind disperses the brown spots.

Q33b) It is to allow for the plant to reproduce.

Q34b) The filaments lengthen to test if the surround is safe for the flower.

Q35a) Group X: A, D | Group Y: B, C

Q35b) Group X: Cross pollination | Group Y: Self pollination

Q36) Yes it is correct. The fruit dries up and splits open, dispersing the seeds around the tree as seen by Josh.

Q37a) Temperature that is too low or too high can't germinate as much.

Q37b) Make a replica of the experiment to ensure accuracy.

Q37c) Summer. The amount of light, temperature and water is optimum for maximum germination.

Q38a) X: egg Y: Sperm

Q38bi) Ovary

Q39bi) It is the Widow's Peak

Q39ii) 3 members

Q40a) Aluminium plate. The wooden plate will absorb some of the water droplets thus lesser droplets will be collected.

Q40b) No. The set ups are not the same, Set-up B's bowl to collect the water vapour was on a chair, but Set up A was on the ground.

Q41a) The water will not drip as air occupies space, the flask had an air-tight stopper on it.

Q41b) She will observe the water dripping in to the flask. Now that the straw has been inserted into the funnel, there is space for the air in the flask to escape, letting the water take up the space.

Q42b) It makes the freezing point lower, so the temperature around the snow would have to be even lower to freeze it. Thus melting the snow.

Q43) Samuel. He had more clothes on and the clothes will absorb more water easily than swimming trunks.

Q44) 100cm^3 . The space in the tank can be compressed.

Q45a)

Organism P	Organism Q	Organism R
Platypus	Guppy	Penguin

Q45b) It has eight legs, does not have 3 body part and does not have feelers.