TAO NAN SCHOOL 道南学校

SINCERITY & PERSEVERANCE

PRIMARY 5 MID-YEAR EXAMINATION 2013

Name : _____ ( ) Date: 20 May 2013

Class : Primary 5 ( ) Time: 8.00 a.m. - 9.45 a.m.

Parent's Signature : _____ Marks: _____ / 60

SCIENCE

BOOKLET A

INSTRUCTIONS TO CANDIDATES

Write your name, class and register number.

Do not turn over this page until you are told to do so.

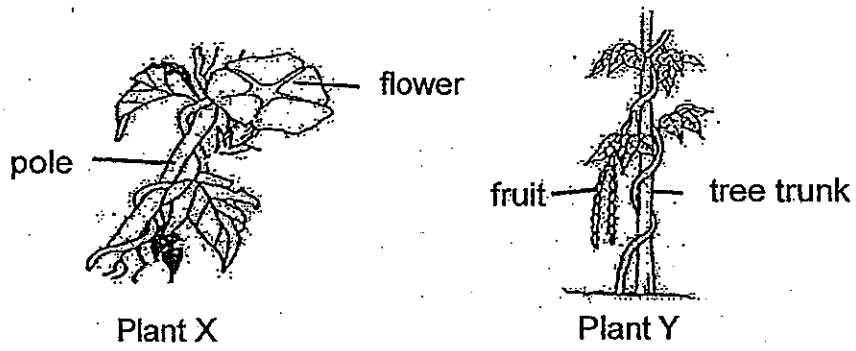
Follow all instructions carefully.

Answer all questions.

Section A (30 x 2 marks)

For each question from 1 to 30, 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 (OAS) provided.

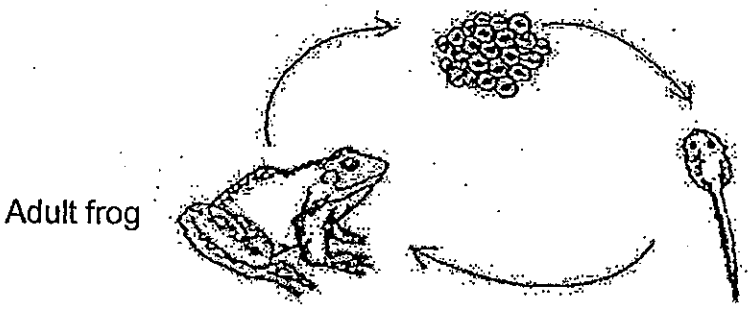
1. The pictures below show Plant X and Plant Y.



Which of the following about Plant X and Plant Y is true?

(1) Only Plant Y bears fruit.
(2) Only Plant X is a flowering plant.
(3) Plant X and Plant Y have weak stems.
(4) Plant X and Plant Y reproduce by spores.

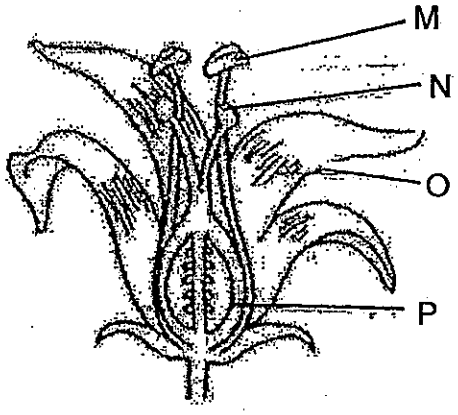
2. The life cycle of a frog is shown below.



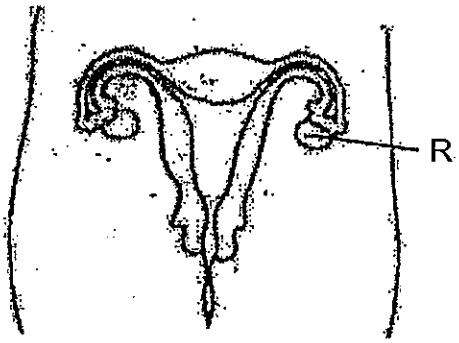
Based on the life cycle above, which of the following is true?

(1) The young resembles its parent.
(2) A frog gives birth to its young alive.
(3) There are three stages in the life cycle.
(4) All the eggs that were laid were fertilised.

3. The diagrams below show the parts of a flower and a female reproductive system.



Flower



Female reproductive system

Which part of the flower, M, N, O or P, has a similar function as R of the female reproductive system?

(1) M
(2) N
(3) O
(4) P

4. Thomas wanted to find out how balsam plants grow under certain conditions. The steps that he took in his investigation are recorded below.

Step 1: Two identical pots, A and B, were filled with equal amounts of soil.

Step 2: Five seeds were placed in Pot A and twenty seeds were placed in Pot B.

Step 3: Both pots were placed side by side in a garden.

Step 4: Both pots were watered with an equal amount of water daily.

What was the aim of his experiment?

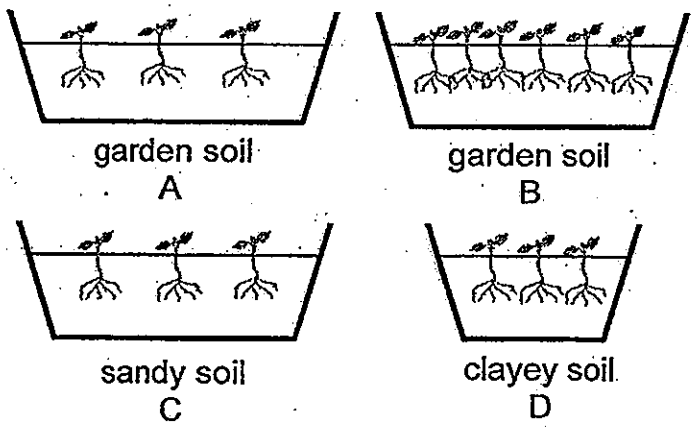
(1) To find out if the balsam plants grow well in pots.

(2) To find out if the balsam plants grow well in gardens.

(3) To find out if water is necessary for balsam plants to grow.

(4) To find out if overcrowding can affect the growth of balsam plants.

5. Samy wanted to find out if overcrowding can affect the growth of seedlings. He placed some green bean seeds in four pots of soil in a sunny part of a garden. He watered the seeds with the same amount of water daily. After a few days, the seeds developed into seedlings.



Which pots of seedlings should Samy observe to make a fair comparison?

(1) A and B

(2) A and D

(3) B and C

(4) C and D

6. The table below provides some information on three cells, W, X and Y. A tick (✓) indicates the presence of a part of a cell.

	W	X	Y
nucleus	✓	✓	✓
chloroplast		✓	
cell wall	✓	✓	

Which of the following are represented by the cells, W, X and Y?

	W	X	Y
(1)	leaf cell	root cell	red blood cell
(2)	root cell	leaf cell	~~red blood cell~~ plant stem cell
(3)	root cell	leaf cell	cheek cell
(4)	red blood cell	root cell	~~root cell~~ plant stem cell

7. Which of the following about a developing baby in a woman's womb is correct?

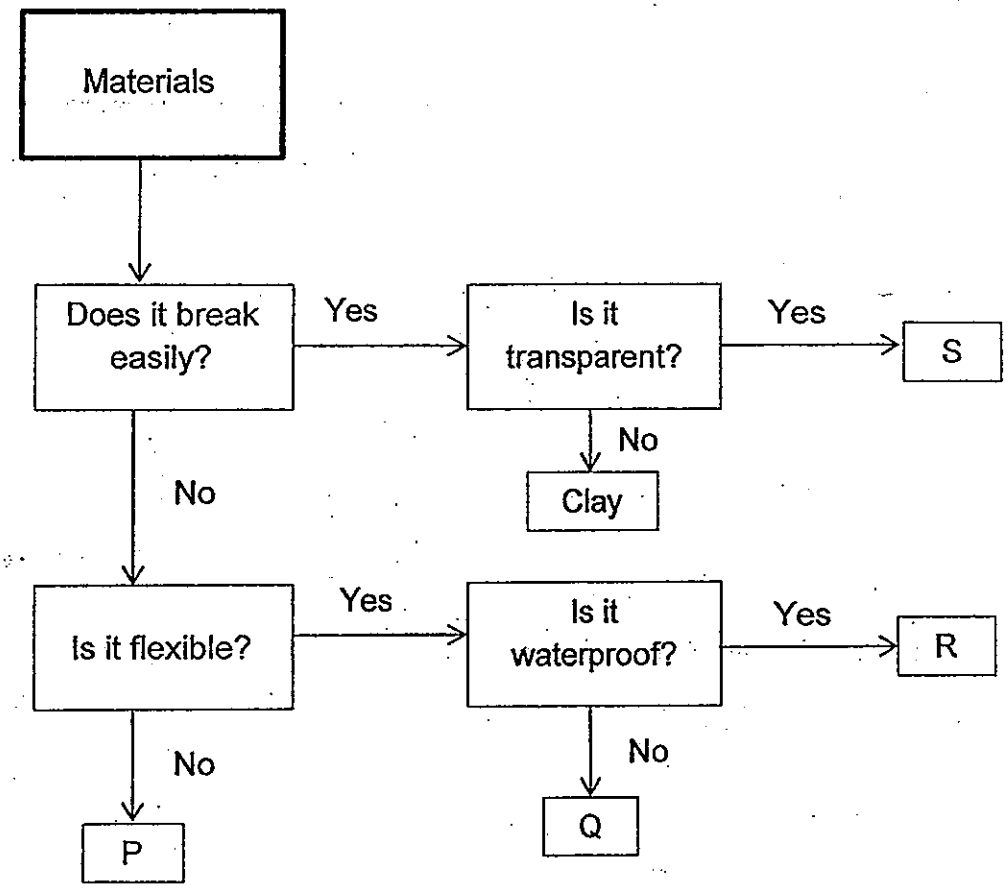
(1) It develops from a fertilised ovary.

(2) It is made up of only one kind of cell.

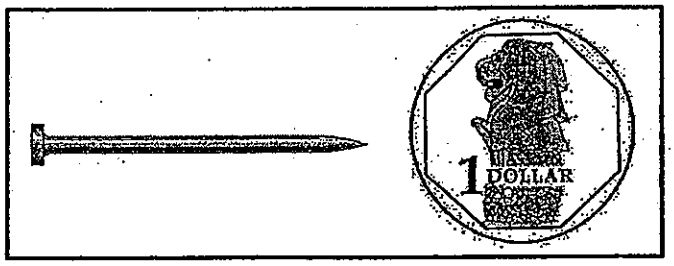
(3) It carries genetic information from only its father.

(4) It develops after a sperm cell fuses with an egg cell.

8. The flow chart below differentiates materials, P, Q, R, S and clay.



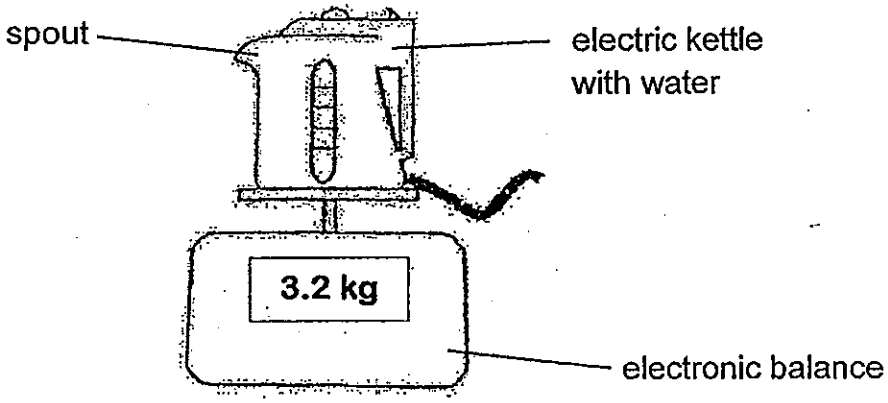
Based on the flow chart above, which material, P, Q, R or S, is used to make the objects below?



metal nail metal coin

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

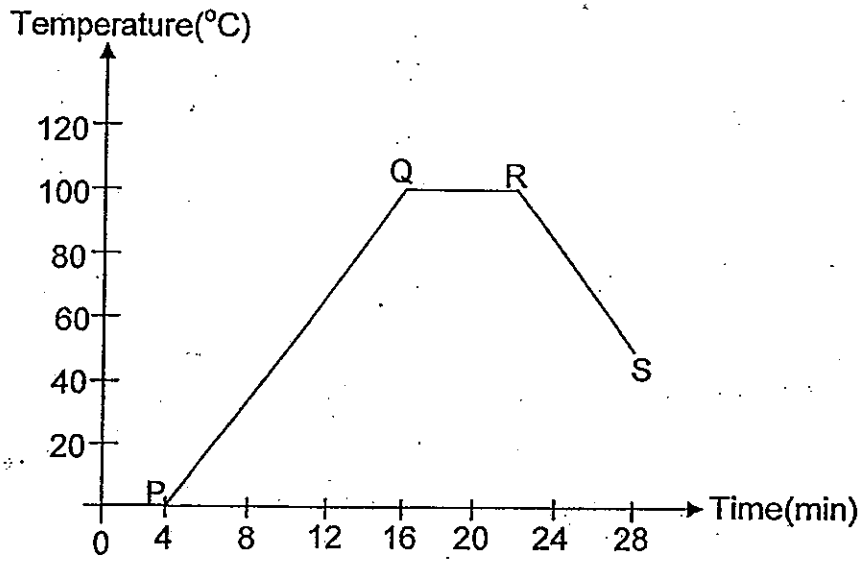
9. An electric kettle containing some water weighed 3.2 kg as shown in the picture below.



The kettle was switched on until the water in it boiled. What was the weight of the kettle of water after the water in it boiled?

(1) It was 3.0 kg.
(2) It was 3.2 kg.
(3) It was 3.4 kg.
(4) It was 3.6 kg.

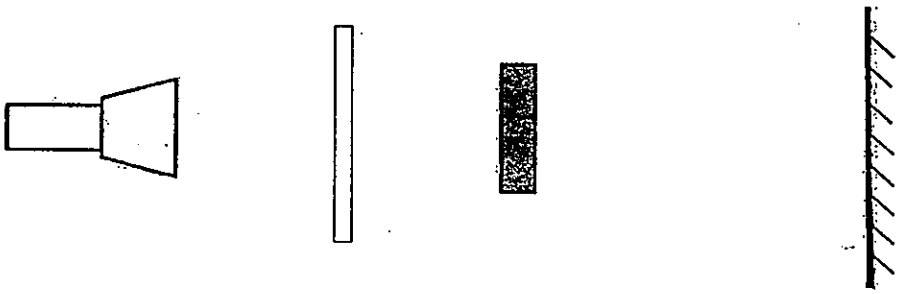
10. Freddy heated a beaker of ice continuously. He recorded the changes in the temperature of the contents in the beaker over a period of time in the graph below.



Based on the information above, which of the following could have possibly happened?

(1) The ice started to melt at P.
(2) Water did not gain heat between Q and R.
(3) Some tap water was added at the 22nd minute.
(4) Water changed from liquid to solid from R to S.

11. A piece of clear glass and an object were placed between a lighted torch and a screen as shown in the diagram below.

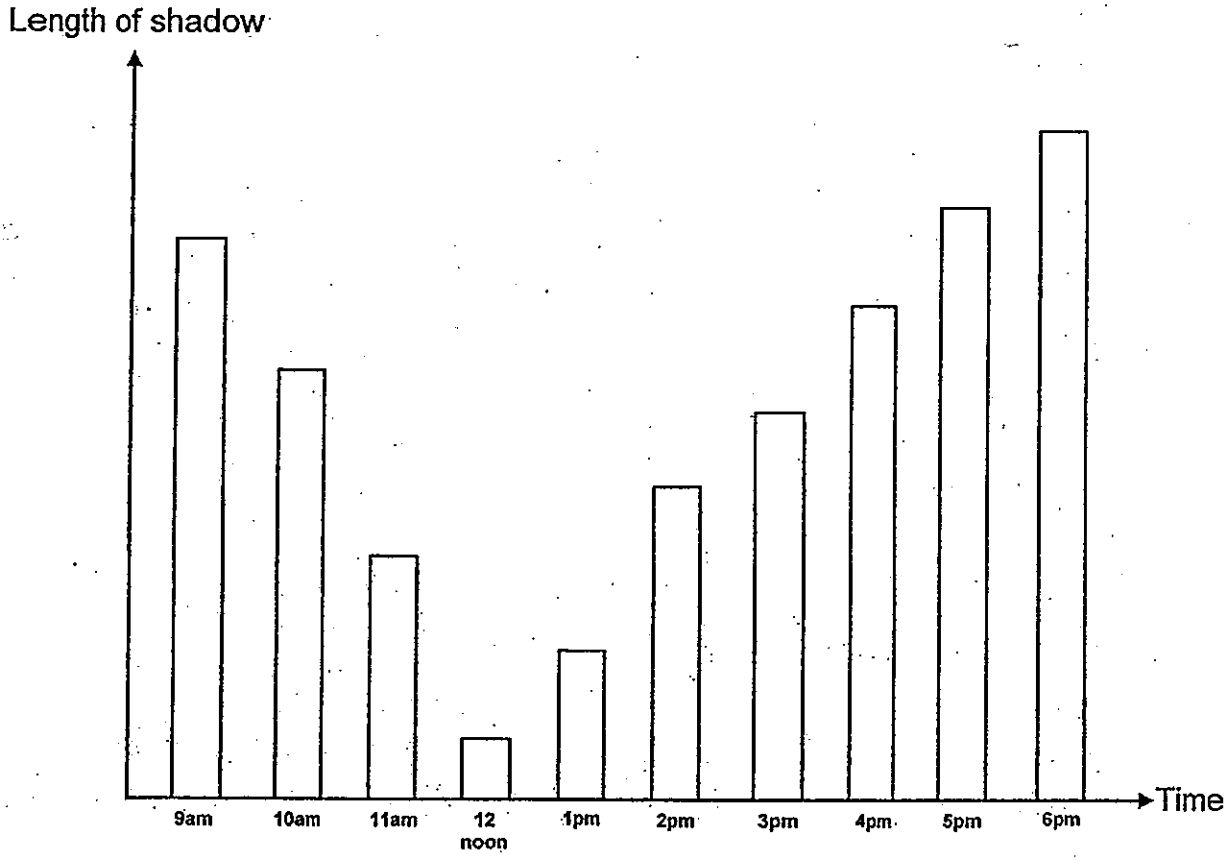


A shadow was formed on the screen. How could the shadow on the screen be enlarged?

(1) Remove the clear glass.
(2) Move the object nearer to the screen.
(3) Move the object nearer to the clear glass.
(4) Move the lighted torch further from the screen.

12. Peter conducted an experiment to find out if the length of the shadow of a pole depends on the time of the day. He placed a wooden pole in an open field on a sunny day. Next, he measured the length of the shadow of the pole every hour from 9 a.m. to 6 p.m.

He recorded the results of his experiment in the bar graph below.



Based on the bar graph above, which of the following is correct?

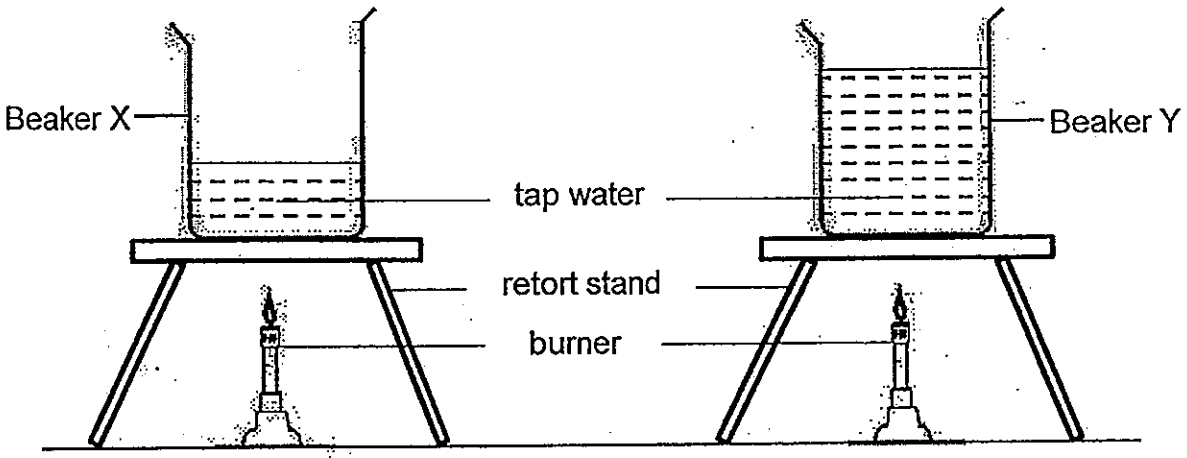
(1) The shadow was shortest in the morning.

(2) The shadow was formed when the light blocked the pole.

(3) The length of the shadow increased from 12 noon to 6 p.m.

(4) The length of the shadow increased every hour after 6 p.m.

13. Identical beakers, Beaker X and Beaker Y, were each filled with a different volume of tap water at 29°C. The beakers of water were heated till the water in each beaker boiled. Then, they were left in a classroom for an hour.



Which of the following about both beakers of water is correct?

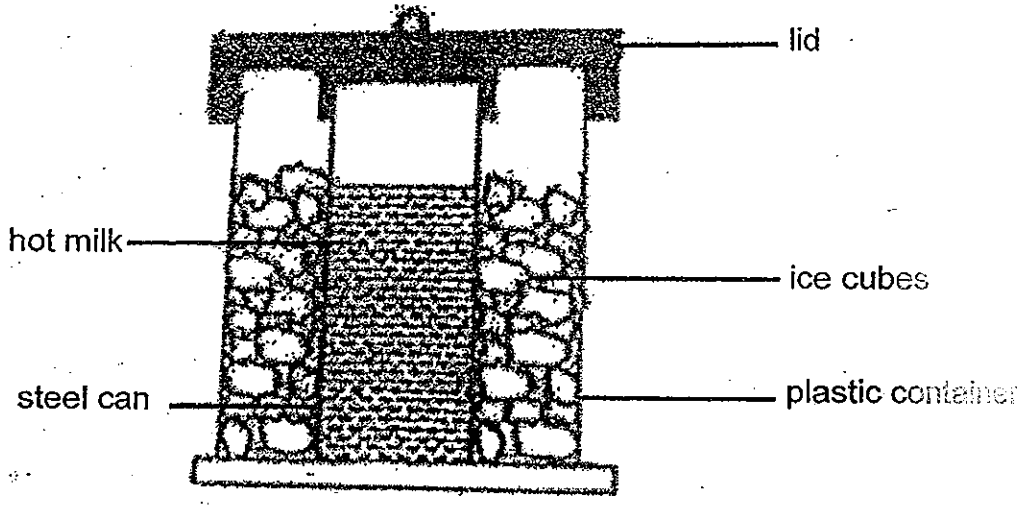
(1) Beaker Y will reach room temperature first.

(2) At 90°C, both beakers of water contained the same amount of heat.

(3) At the 10th minute both beakers of water have the same amount of heat.

(4) The time taken to heat the beakers of water to boiling point was different.

14. Mrs Tan poured a packet of hot milk into the steel can of the apparatus below.



Which of the following is correct?

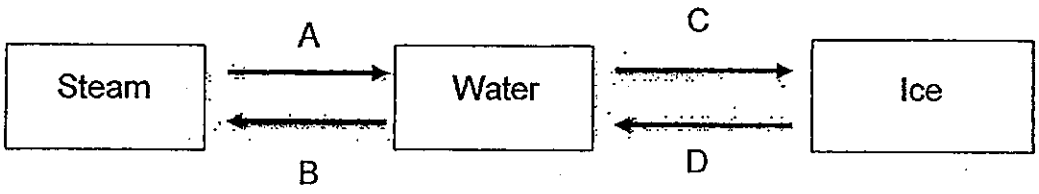
(1) The steel can transferred heat to the ice cubes and hot milk.

(2) Heat travelled from the ice cubes to the hot milk in the steel can.

(3) The ice cubes and hot milk gained heat from the plastic container.

(4) Heat was lost from the hot milk to the ice cubes in the plastic container.

15. The diagram below shows what happens when water changes from one state to another.



Which of the following heat transfers are represented by A, B, C and D?

	A	B	C	D
(1)	Lose heat	Gain heat	Lose heat	Gain heat
(2)	Gain heat	Gain heat	Lose heat	Lose heat
(3)	Lose heat	Lose heat	Gain heat	Gain heat
(4)	Gain heat	Lose heat	Gain heat	Lose heat

16. Which of the following about the water cycle is false?

(1) The water cycle takes place all the time.

(2) Water evaporates to form water droplets.

(3) Water fall from the clouds as rain, snow and hailstones.

(4) Condensation is a process that takes place in the water cycle.

17. Suggestions on how water can be conserved are stated below.

A : Purify water to make NEWater

B : Take a quick shower instead of a bath.

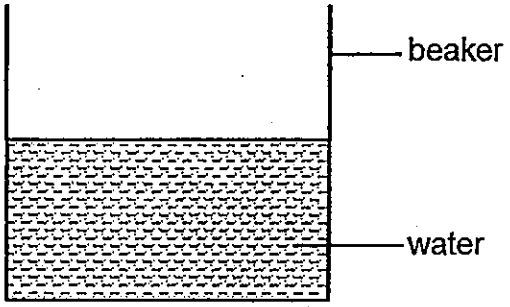
C : Collect water used for rinsing clothes to wash the toilet.

D : Use a pail of water instead of a hose when washing a car.

Classify the suggestions, A, B, C and D, under the correct headings of recycling, reducing and reusing.

	Reducing	Reusing	Recycling
(1)	A	B	C and D
(2)	B and C	D	A
(3)	B and D	C	A
(4)	C	A and B	D

18. A beaker with 100 ml of water in it is shown below. Joanne wants the water in the beaker to dry up in the shortest possible time.



Which of the following should Joanne do?

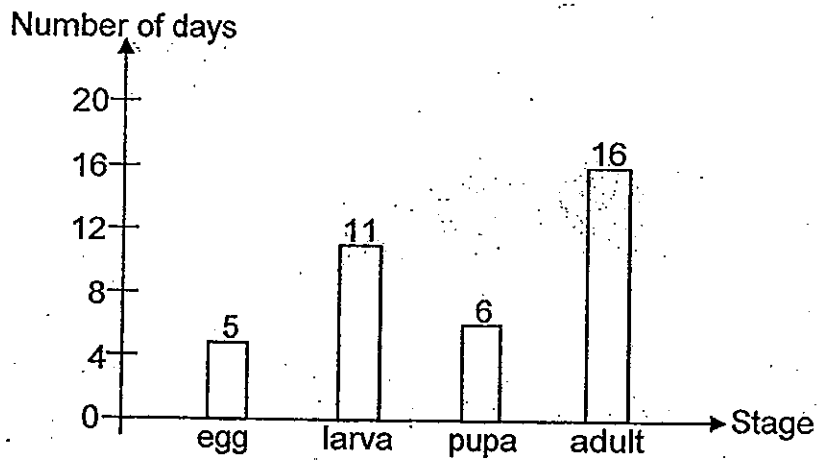
(1) Add salt to the water.

(2) Pour the water into a big plate.

(3) Boil the beaker of water over a fire.

(4) Put the beaker of water near the fan.

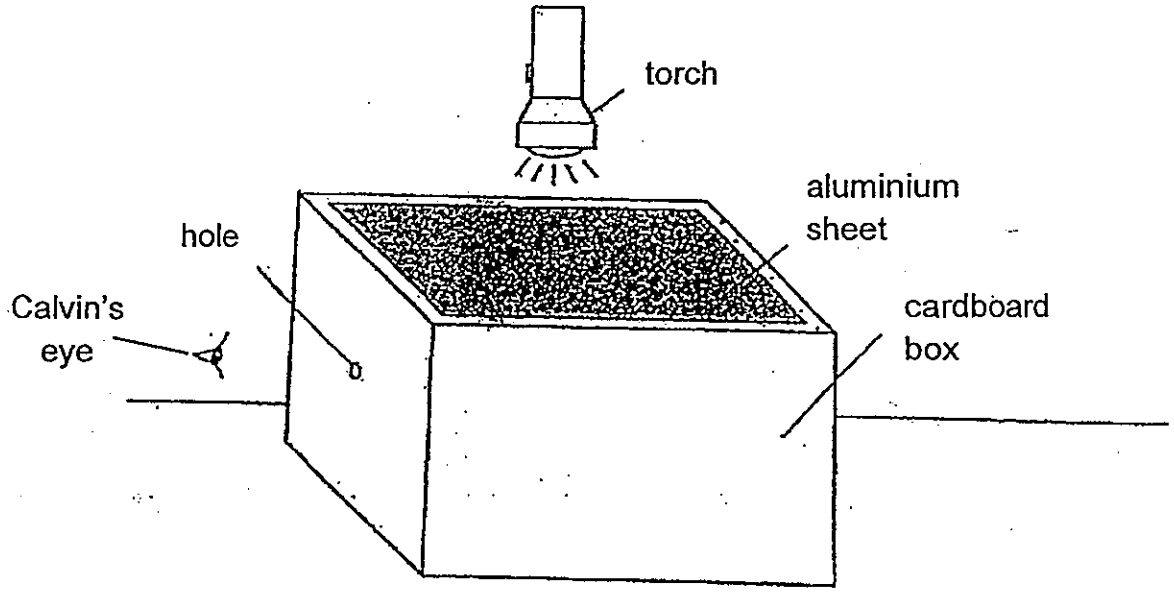
19. The bar graph below shows the number of days in each stage of the life cycle of an insect.



At which stage would the insect be 16 days after the egg was hatched?

(1) Egg
(2) Larva
(3) Pupa
(4) Adult

20. Calvin placed some objects inside a cardboard box and covered the top of the box with an aluminium sheet.



Calvin then turned on the torch and tried to see the objects in the box through the hole at its side. However, he could not see the objects.

What should Calvin do to see the objects in the box?

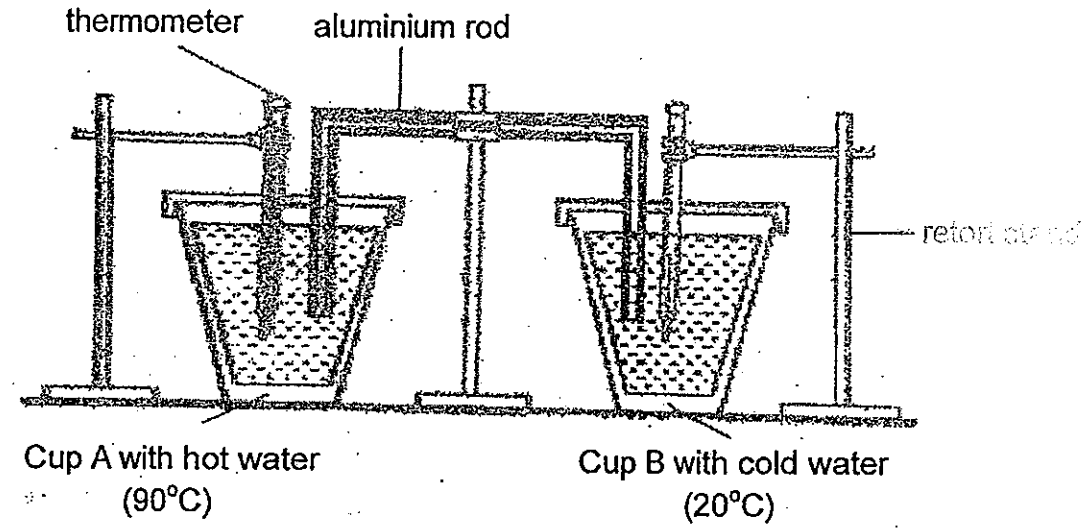
(1) Use a brighter torch.

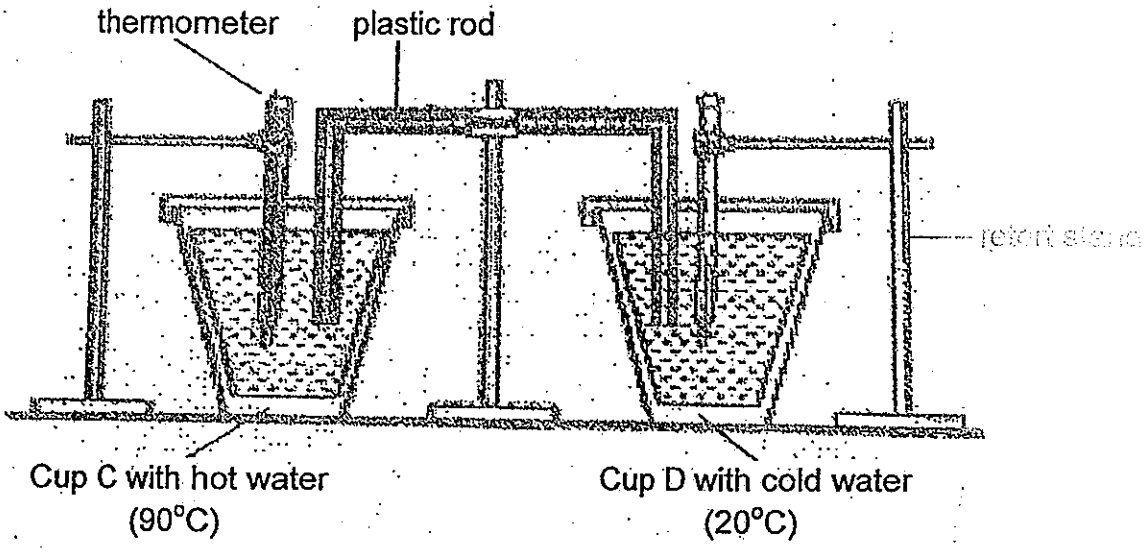
(2) Make the hole smaller.

(3) Place his eye nearer the hole.

(4) Replace the aluminium sheet with a clear plastic sheet.

21. Winnie set up an experiment using four identical insulated cups as shown below.





After ten minutes, Winnie recorded the temperature of the water in each cup. Which of the following shows the temperature of the water in each cup from the coolest to the hottest after ten minutes?

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

22. In a Science project, Helmi made observations on the number of visits by bees to six flowers, U, V, W, X, Y and Z, in a garden. The results were recorded in the table below.

Flower	Size of Petals	Colour of Petals	Scent of flower	Number of visits by bees
U	Large	Orange	scented	45
V	Large	Orange	no scent	23
W	Medium	Violet	scented	12
X	Medium	Orange	no scent	?
Y	Small	Orange	no scent	8
Z	Small	Violet	no scent	5

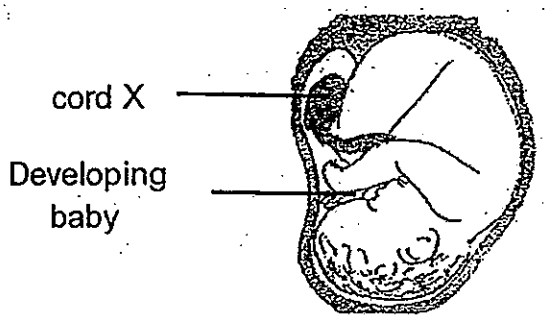
Unfortunately, Helmi had forgotten to record the number of visits by bees to the flower, X. What is the most likely number of visits by bees to the flower, X?

(1) 7
(2) 10
(3) 24
(4) 60

23. Mr Tay has a fruit tree that bears flowers but not fruits. Which of the following 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 more male than female flowers.

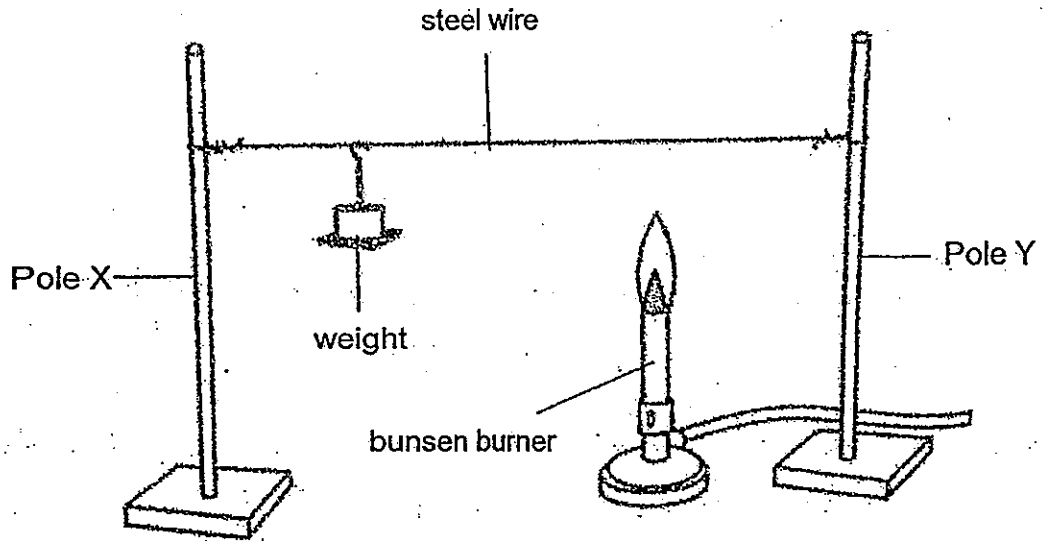
24. The diagram below shows a developing baby in a mother's womb.



Which of the following about cord X is true?

(1) The fertilisation takes place in cord X.
(2) It connects the developing baby to the mother.
(3) Wastes from the mother are passed out through cord X.
(4) It carries food and oxygen to the mother from the developing baby.

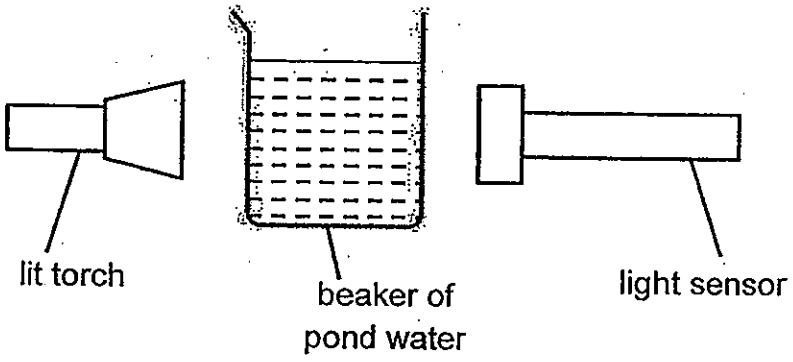
25. Jonathan set up an experiment as shown below.



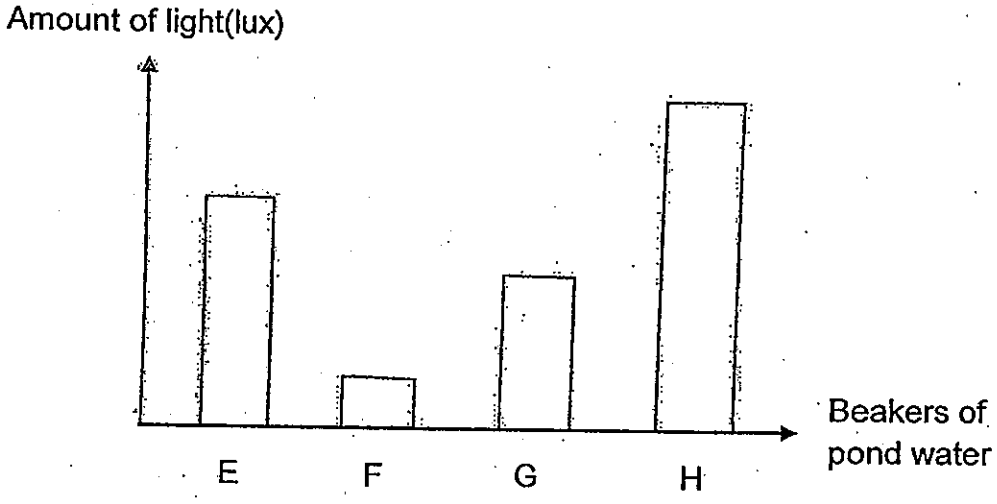
What will happen to the weight after 30 minutes?

(1) The mass of the weight will increase.
(2) The mass of the weight will decrease.
(3) The weight will move towards Pole X.
(4) The weight will move towards Pole Y.

26. Jacinta collected four beakers of pond water from four different ponds, E, F, G and H. Using the set-up below, she measured the amount of light that passed through each beaker of pond water using a light sensor.



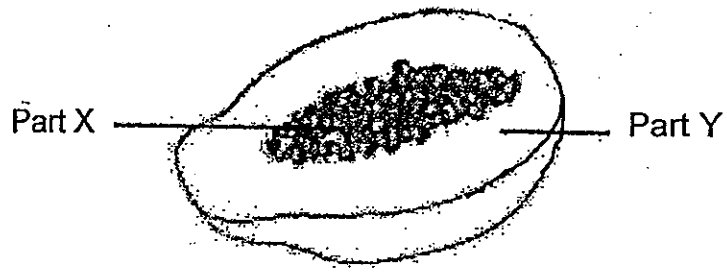
She then plotted the bar graph below based on the amount of light recorded by the light sensor for each beaker of pond water.



A submerged plant was placed in each of the beakers of pond water. In which of the beakers will the submerged plant receive the most light?

(1) E
(2) F
(3) G
(4) H

27. The diagram below shows the cross section of a papaya.



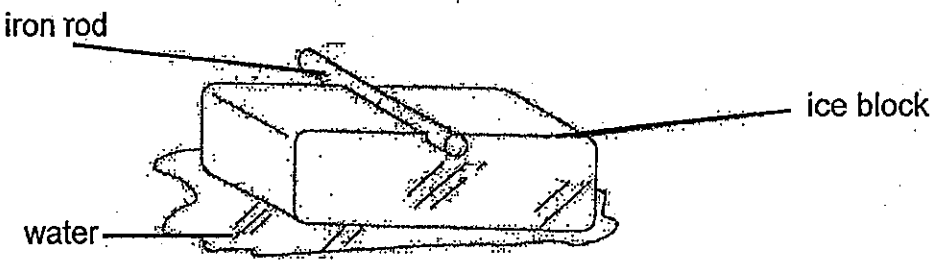
Which part of the flower did Part X and Part Y develop from?

	Part X	Part Y
(1)	Ovule	Stigma
(2)	Ovary	Ovule
(3)	Ovule	Ovary
(4)	Style	Ovary

28. Which of the following statements about unicellular organisms is correct?

(1) They have cell walls.
(2) They are made of many cells.
(3) They cannot be seen with the naked eye.
(4) They get their food through their cytoplasm.

29. In the experiment shown below, an iron rod was placed on a block of ice. The ice melted.



Why did the ice block melt?

(1) The iron rod and surrounding air lost heat to the ice block.
(2) The ice block lost heat to the iron rod and surrounding air.
(3) The ice block lost coldness to the iron rod and surrounding air.
(4) The iron rod and surrounding air gained coldness from the ice block.

30. Three plants, •, ☆ and ✦, were planted on a piece of land as shown in Figure 1 below.

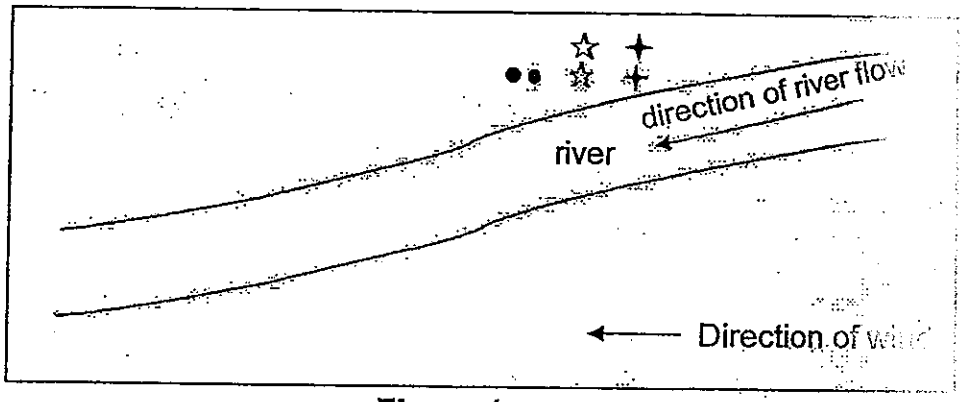


Figure 1

Their seeds have different methods of dispersal. After a few years, more of the three plants were found growing on that piece of land as shown in Figure 2 below.

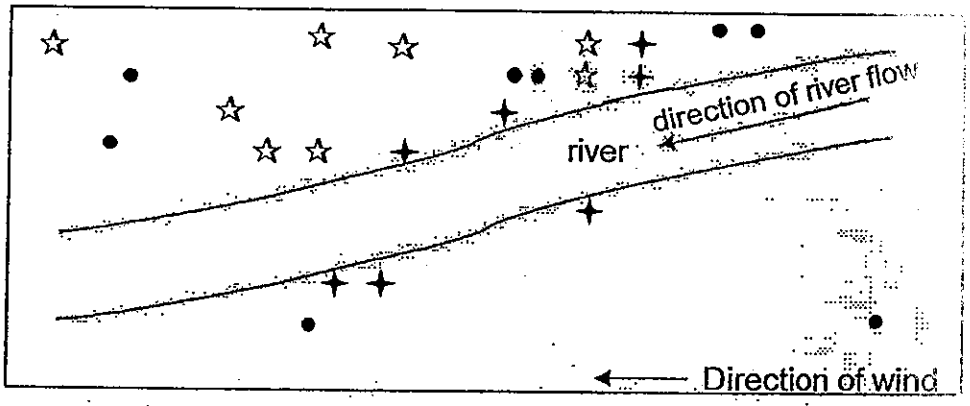


Figure 2

How are the three plants, •, ☆ and ✦, dispersed?

	•	☆	✦
(1)	by wind	by animals	by water
(2)	by animals	by wind	by water
(3)	by water	by wind	by animals
(4)	by animals	by water	by wind

End of Booklet A

PRIMARY 5 MID-YEAR EXAMINATION 2013

Name : _____ ( ) Date: 20 May 2013

Class : Primary 5 ( ) Time: 8.00 a.m. - 9.45 a.m.

Parent's Signature : _____ Marks: _____ / 40

SCIENCE

BOOKLET B

INSTRUCTIONS TO CANDIDATES

Write your name, class and register number.

Do not turn over this page until you are told to do so.

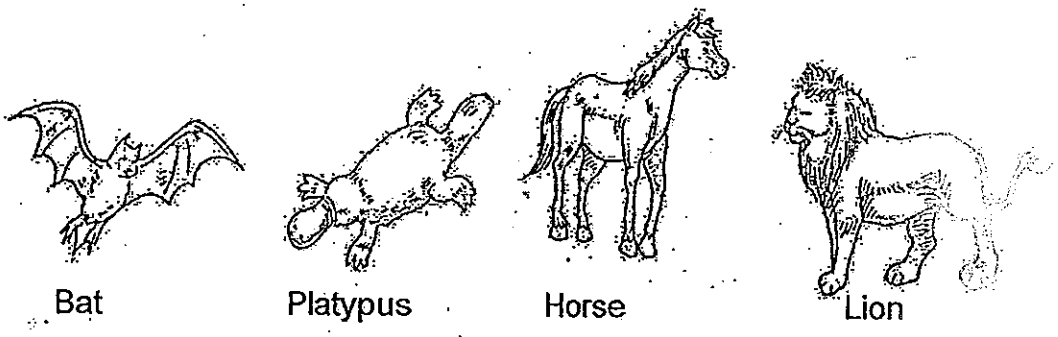
Follow all instructions carefully.

Answer all questions.

Section B (40 marks)

Write your answers to the questions, 31 to 44, in the spaces provided.

31. Study the animals below.



Bat Platypus Horse Lion

(a) Which group of animals do they belong to? [1]

_____

(b) State two characteristics of this group of animals. [2]

_____

_____

32. Some pupils collected information on the locations, P, Q, R and S, to decide on the location to grow some plants. They recorded their information in the table below.

Location	Temperature	Light
	Reading (°C)	Reading (lux)
P	27	89 000
Q	32	96 000
R	30	94 000
S	29	91 000

(a) Based on the information collected, what is the relationship between light and temperature? [1]

_____

_____

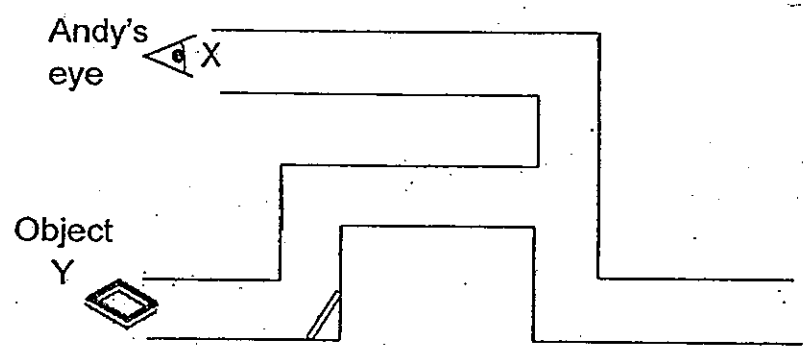
(b) Plant X grows better at location P, than at location Q. Explain why this is so based on the information collected. [2]

_____

_____

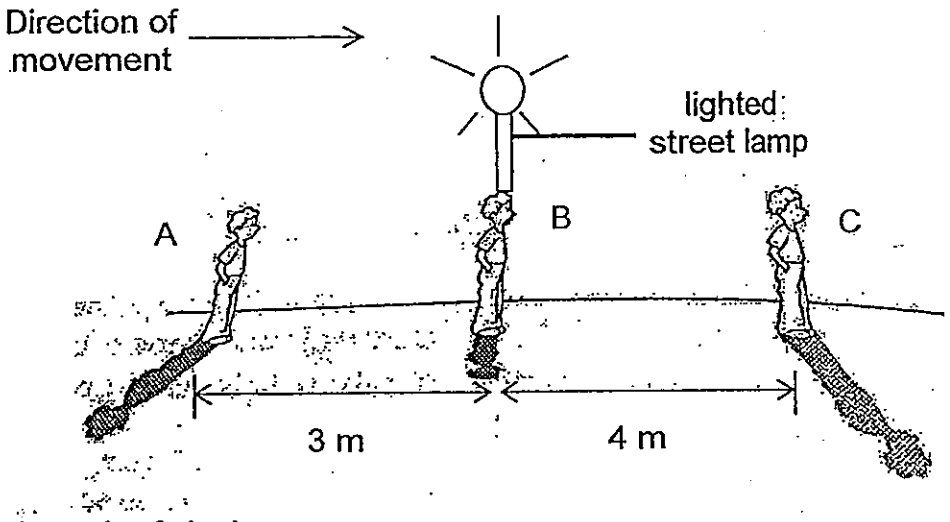
33. The diagram below shows a connection of pipes with a mirror placed inside it. Andy is looking through the pipe. He wants to see Object Y. More mirrors have to be placed in the connection of pipes.

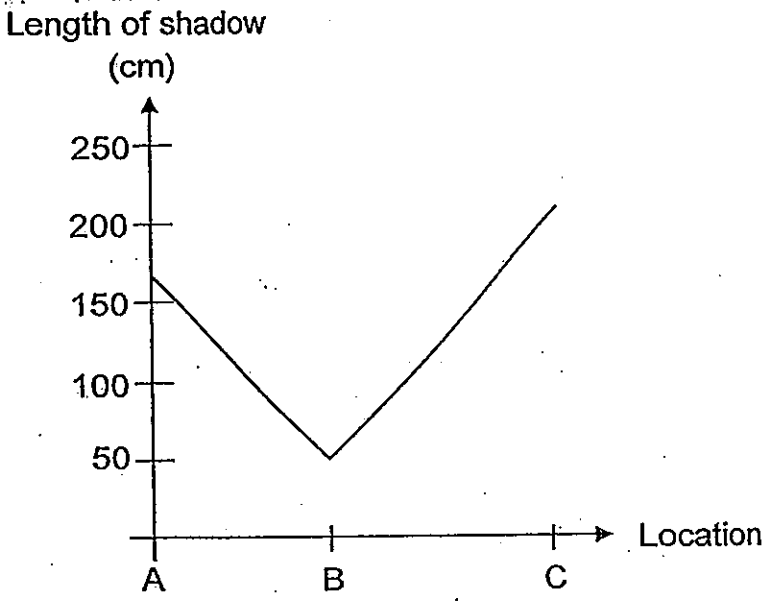
(a) Draw the mirrors and light rays in the diagram below to show how Andy can see Object Y. [2]



(b) State one property of light that allows Andy to see object Y. [1]

34. The diagram below shows the change in the length of a man's shadow as he walked towards a lighted street lamp and eventually past it.





(a) State the changed variable.. [1]

_____

(b) Based on the graph above, what is the relationship between the length of the man's shadow and the man's distance from the lighted street lamp?[2]

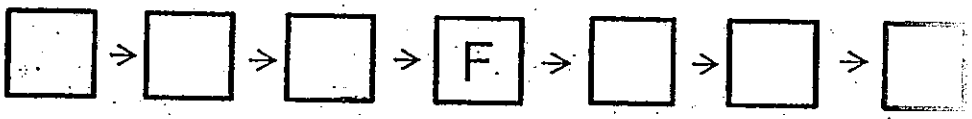
_____

_____

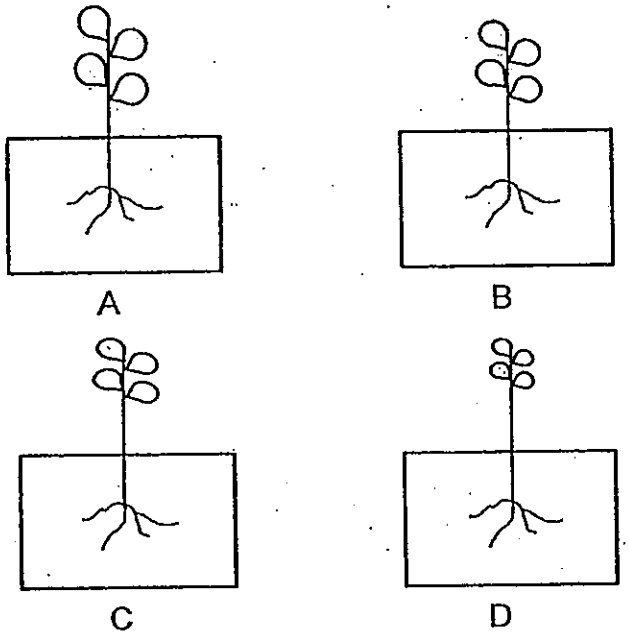
35. The statements below describe how rain is formed.

A	Heat from the Sun warms the Earth.
B	Rain falls when water droplets in the clouds become too big and heavy.
C	Water droplets in the clouds become bigger and heavier.
D	Tiny droplets of water form clouds.
E	Water evaporates from the ground and water bodies.
F	Water vapour cools and condenses.
G	Water vapour rises.

Fill in the boxes below with the letters, A, B, C, D, E, F and G, in the correct order to show the formation of rain. [2]



36. Jamilah and her friends conducted an experiment using four plants with leaves having different surface areas (m^2) as shown below.



They recorded the results in the table below.

Set up	Total loss of water (ml)	Surface area of leaf (m^2)	Rate of water loss (ml/ m^2)
A	1.5	0.20	7.5
B	1.0	0.16	6.25
C	0.6	0.12	5
D	0.2	0.10	2

(a) What is the relationship between the surface area of the leaf and the rate of the water loss? [1]

_____

_____

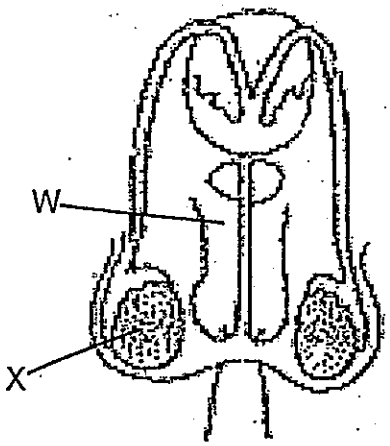
(b) In a desert, where water is scarce, plants usually have leaves of small surface area. Based on the information given in the table above, explain how such a feature is beneficial to the plants. [2]

_____

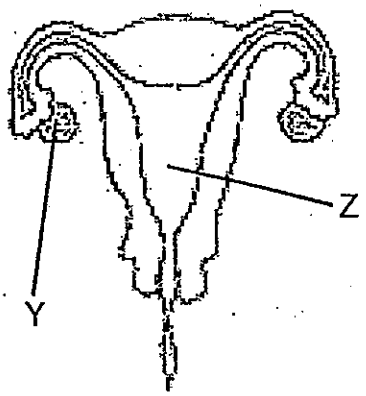
_____

_____

37. The diagrams below show the male and female reproductive systems of humans.



Male Reproductive System



Female Reproductive System

(a) Name the organs, W, X, Y and Z. [2]

W : _____

X : _____

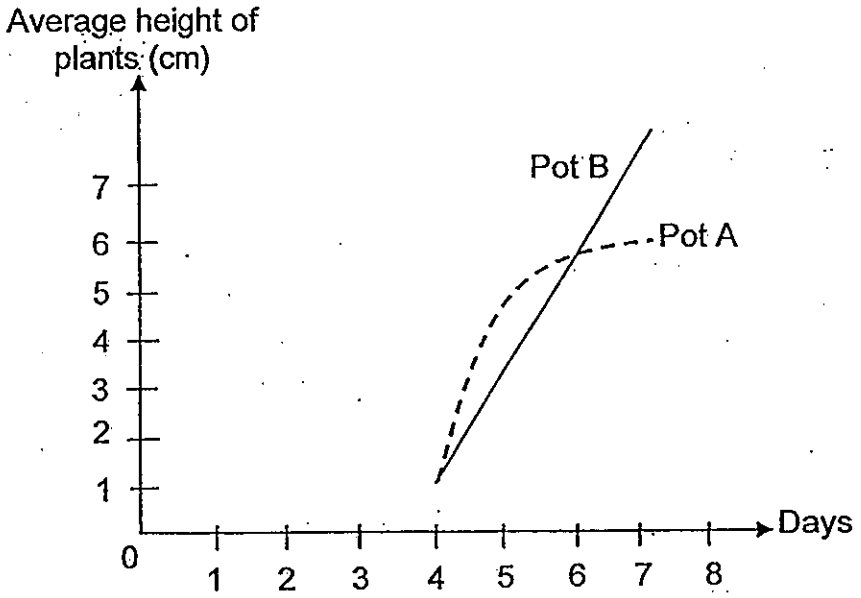
Y : _____

Z : _____

(b) Name the part of the female reproductive system where the fertilised egg develops. [1]

_____

38. Charlie has two similar pots of soil, Pot A and Pot B. He places 10 bean seeds in each pot. He places Pot A in a dark cupboard and Pot B in a garden. Charlie waters the pots daily and records the height of plants in each pot. The results are shown in the graph below.

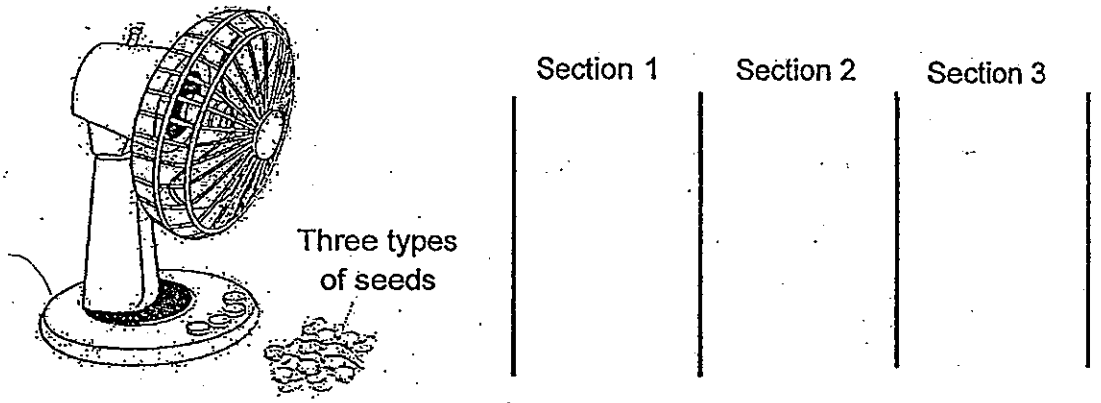


(a) Based on the above, indicate whether each of the following is 'True', 'False' or 'Not Possible to Tell'. Put a tick (✓) in the correct box. [1]

Statement	True	False	Not Possible to Tell
All the seeds germinated by the 4th day.			
Light is necessary for germination of the seeds.			
All the plants placed in the dark are taller than the plants placed in the light.			

(b) Why do you think the plants in Pot A grow more slowly than those in Pot B from Day 5 to 7? [2]

39. Sarah had three types of seeds which are dispersed by wind. She took 10 seeds of each type and mixed them together. She then placed them on a table in front of a fan. She switched on the fan for 30 seconds and then counted the number of each type of seed in the sections she had marked out on the table.



The number of each type of seed in the sections is shown in the table below.

Type of seeds	Average mass of seed (g)	Number of seeds		
		Section 1	Section 2	Section 3
X	2	0	1	9
Y	4	0	10	0
Z	6	8	2	0

(a) What can Sara conclude from the above table? [1]

_____

_____

(b) Why did Sara place all three types of seeds at the same starting point? [1]

_____

_____

(c) What should Sara do to make sure that her results are reliable? [1]

_____

_____

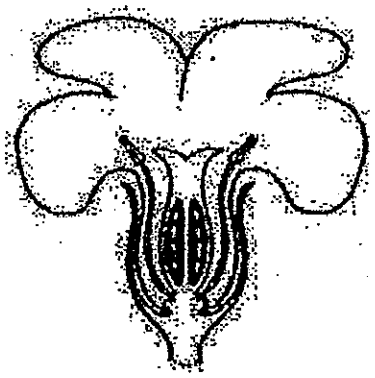
40. (a) A classification table is shown below.

Group X	Group Y	Group Z
Potato	Banana	Begonia
Ginger	Pineapple	Byrophyllum

How are the plants grouped in the classification table above? [1]

_____

(b) The diagram below shows the cross-section of a flower.



Based on the above diagram, indicate whether each of the following is 'True', 'False' or 'Not Possible to Tell'. Put a tick (✓) in the correct box. [1]

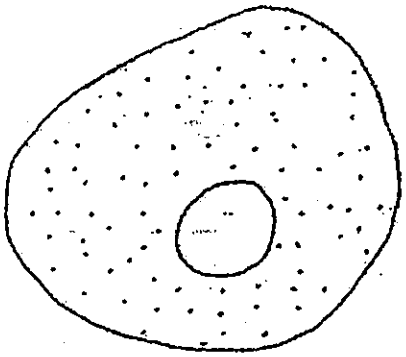
Statement	True	False	Not Possible to Tell
There are many ovaries in the flower.			
Many pollen grains are needed for the flower to be fertilised.			

(c) State one reason why insects are attracted to flowers? [1]

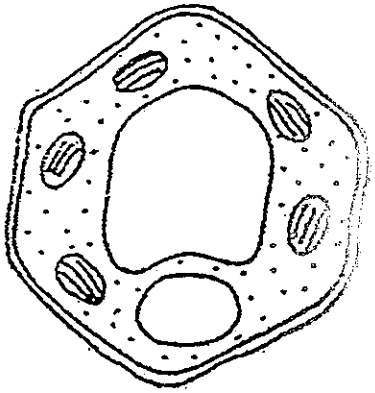
_____

_____

41. The diagrams below show a plant cell and an animal cell. The cells are labelled Cell X and Cell Y.



Cell X



Cell Y

(a) Identify the plant cell and the animal cell. [1]

Plant cell: _____

Animal cell: _____

(b) Some parts of Cell Y are not found in Cell X. Identify one of these parts. [1]

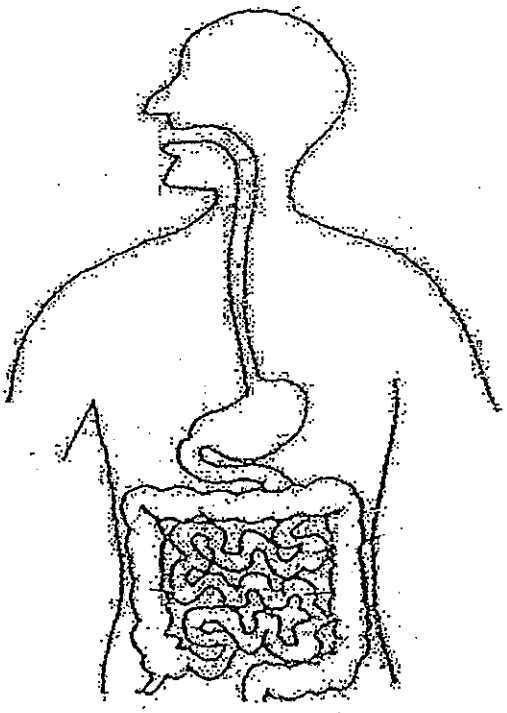
_____

(c) What is the function of the part in (b)? [1]

_____

_____

42. The diagram below shows a human digestive system.



(a) Label the part of the human digestive system where digestion of food is completed. [1]

(b) After digestion of food is completed, explain what happens to the digested food. [1]

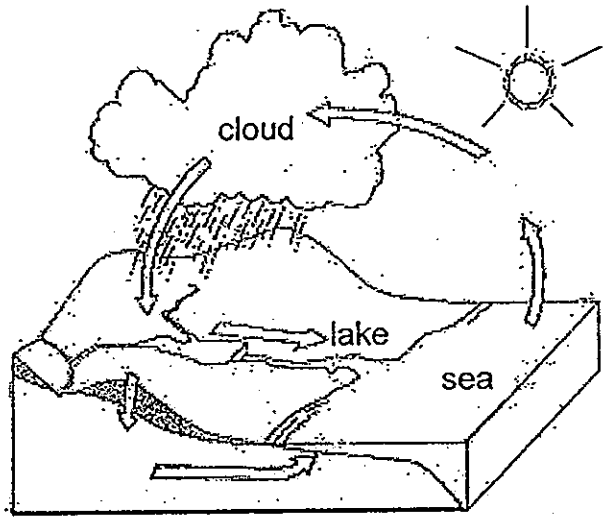
_____

_____

(c) Wendy used a knife to cut an apple into smaller pieces. Name the part of the human digestive system where a similar action takes place. [1]

_____

43. Below shows the water cycle and the drying of a wet T-shirt.



Water Cycle

Drying of a wet T-shirt

(a) Name the process that is found in both the water cycle and the drying of the wet T-shirt? [1]

_____

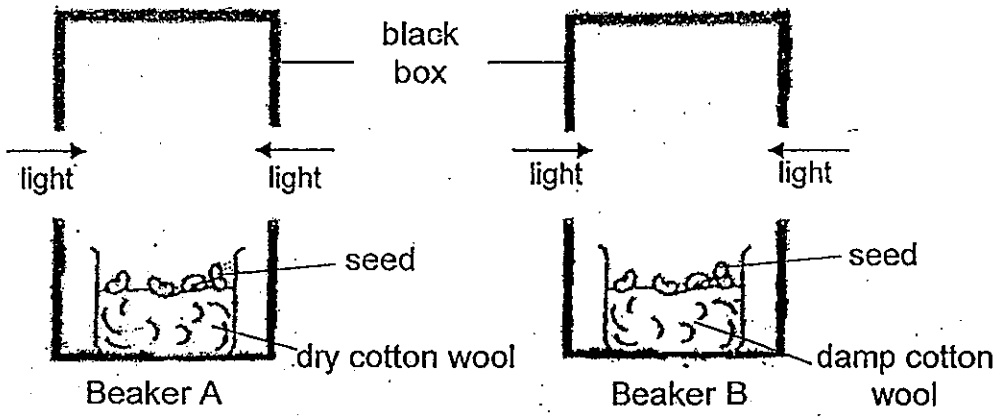
(b) A pupil commented that the water from the wet T-shirt will eventually fall as rain. Explain why. [2]

_____

_____

_____

44. An equal number of seeds were put in identical glass beakers, Beaker A and Beaker B, each with an equal amount of cotton wool. The two beakers were placed in black boxes made of the same material near an open window.



(a) In which beaker, Beaker A or Beaker B, would the seeds most likely germinate? Explain why. [1]

_____

_____

(b) How would you know that the seeds have germinated? [1]

_____

End of Paper

ANSWER SHEET

EXAM PAPER 2013
SCHOOL : TAO NAN
SUBJECT : PRIMARY 5 SCIENCE

TERM : SA1

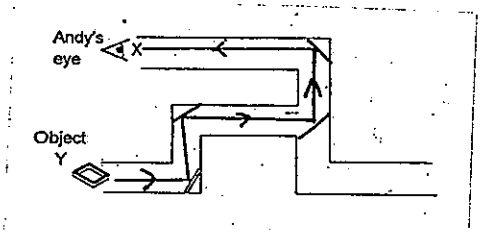
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
3	3	4	4	1	3	4	1	1	3	3	3	4	4	1	2	3

Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
3	3	4	4	2	1	2	4	4	3	3	1	2

31)a)They belong to the mammals group.
b)They have air and they give birth to their young alive.

32)a)As the light increases, the temperature also increases.
b)Plant X grows better at location P as the temperature of the plant is lower than that at position Q and at location P, the exposure to light for the plant is lower compared to the exposed of light at position Q.

33)a)



b)Light travels in a straight line.

34)a)The changed variable is the distance of the man from the street lamp.
b)As the man's distance from the lighted street lamp increases, the length of the man's shadow increases.

35)A→E→G→F→D→C→B

36)a)As the surface area of the leaf increases, the rate of water loss also increases.
b)Leaves with small surface area will lose less water and this will help the plants to survive longer in the desert where water is scarce.

37)a)W: Penis X: Testes Y: Ovary Z: Womb
b)The fertilised egg develops in the womb.

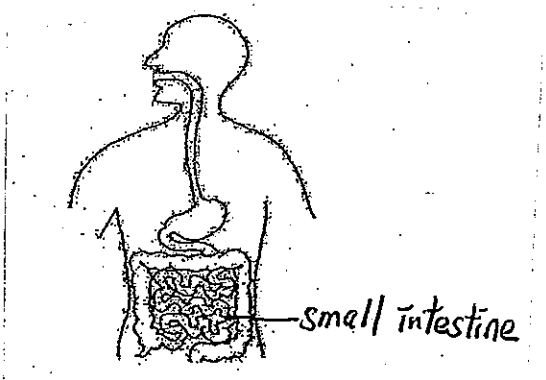
38)a)Not
F
Not
b)The plants in Pot B had light to make their own food but the plants in Pot A did not therefore plants in Pot A grow more slowly than those in Pot B from Day 5 to 7.

39)a)She can conclude that the lighter the mass of the seed, the further the seed will travel.
b)It was to make the experiment a fair test.
c)She can repeat the experiment at least three times to make sure that her results are reliable.

40)a)They are grouped according to the way they reproduce.
b)F , Not
c)Insects are attracted to flowers as they can get nectar from the flowers.

41)a)Plant cell: Cell Y.
Animal cell: Cell Y.
b)It is the cell wall.
c)It keeps the shape of the cell.

42)a)



42)b)The digested food goes in the bloodstream to provide food for the rest of the body.

c)It is the mouth.

43)a)It is evaporation.

b)The water from the wet T-shirt will evaporate into warm water vapour which will rise and touch the cooler surface of the surrounding air and condense into tiny water droplets which will eventually join together with other tiny water droplets and form clouds and fall as rain.

44)a)Beaker B. It has all the variables, warmth, oxygen and water needed for germination.

b)You would know that the seeds have germinated when the roots and the shoots have grown.