NAN HUA PRIMARY SCHOOL
SEMESTRAL ASSESSMENT 2 – 2014
PRIMARY 5

SCIENCE

BOOKLET A

30 Multiple Choice Questions (60 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

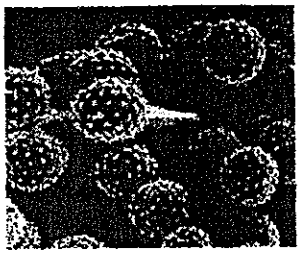
Booklet A		**/ 60**
Booklet B		**/ 40**
Total		**/ 100**

Name: _____ ( ) **Class: P 5** _____

Date : 27 October 2014 **Parent's Signature:** _____

Section A: (30 x 2 marks = 60 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.

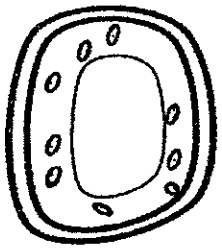
1. The diagram shows the picture of pollen grains of Flower P as seen under the microscope.



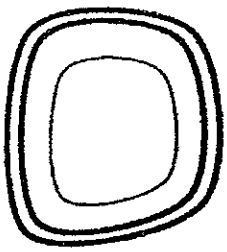
What happens to a pollen grain when it lands on the stigma?

(1) It fuses with the ovule.
(2) It fuses with the stigma.
(3) It develops a filament down the style.
(4) It develops a pollen tube down the style.

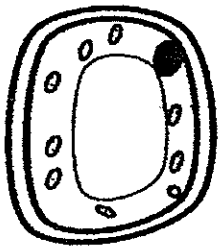
2. A seed was left to germinate under suitable conditions.



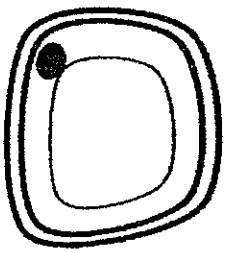
Cell Q



Cell R



Cell S



Cell T

Which cell(s) is/are most likely to be found in the first leaves of the seedling?

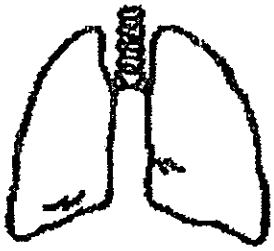
(1) Cell S only
(2) Cell T only
(3) Cell Q and S only
(4) Cell R and Cell T only

3. Which of the following statements correctly describe the process of fertilisation in the sexual reproduction of human?

A In a typical situation, only one egg fuses with one sperm.
B Fertilisation occurs internally in the female's reproductive system.
C The unfertilised egg attaches to the fallopian tube while the sperms move towards it.
D A fertilised egg does not require oxygen and digested food until a foetus develops from it.

(1) A and B
(2) B and C
(3) A, C and D
(4) All of the above

4. The following organs are found in the human body.



Lungs

Heart

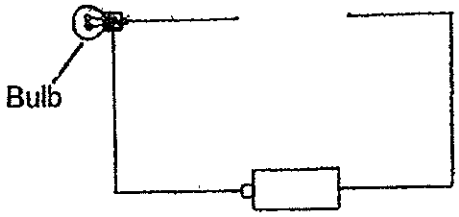
How are the two organs related to each other?

(1) They are made of the same types of cells with similar functions.
(2) They pump useful substances into our body and wastes out of the body.
(3) They ensure that cells in all parts of the body have a continual supply of oxygen.
(4) They are part of the human circulatory system since they are connected by blood vessels.

5. Which cell part controls the type of substances entering or leaving a cell?

(1) Nucleus
(2) Cytoplasm
(3) Chloroplast
(4) Cell membrane

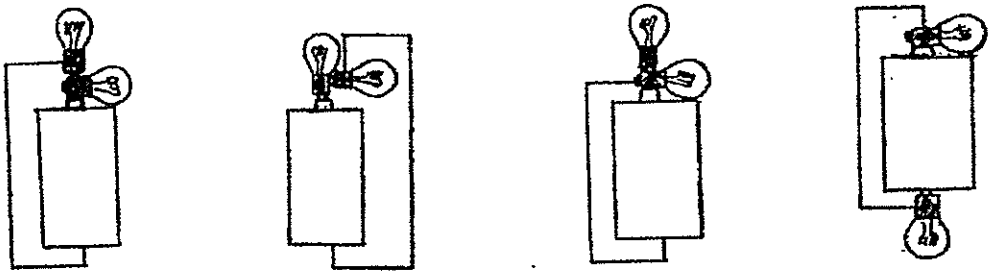
6. There is a gap in the electric circuit shown below. Which of the following components could be placed in the gap to light up the bulb?



A A wire
B A switch
C Another bulb
D Another battery

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

7. Study the circuits carefully. In which of the following circuit will both bulbs light up?



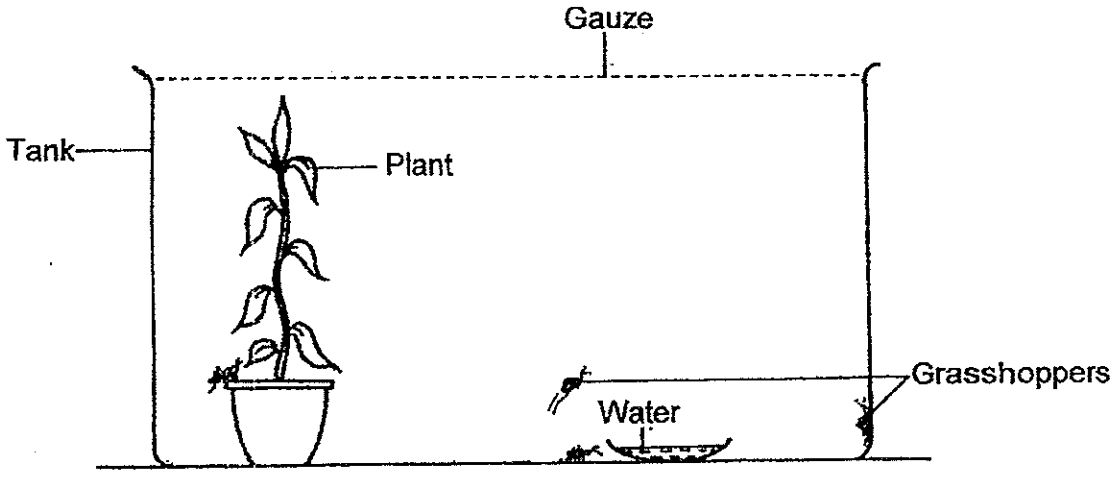
(1) (2) (3) (4)

8. Which of the following statement(s) is/are true about green plants?

A Animals depend on green plants for food directly.
B Without green plants, there will be no life on Earth.
C Green plants are green because they have chlorophyll.
D Green plants use carbon dioxide that we breathe out and provide us with oxygen during photosynthesis.

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

9. A plant, some male and female grasshoppers and a dish of water are placed in a tank next to the window.

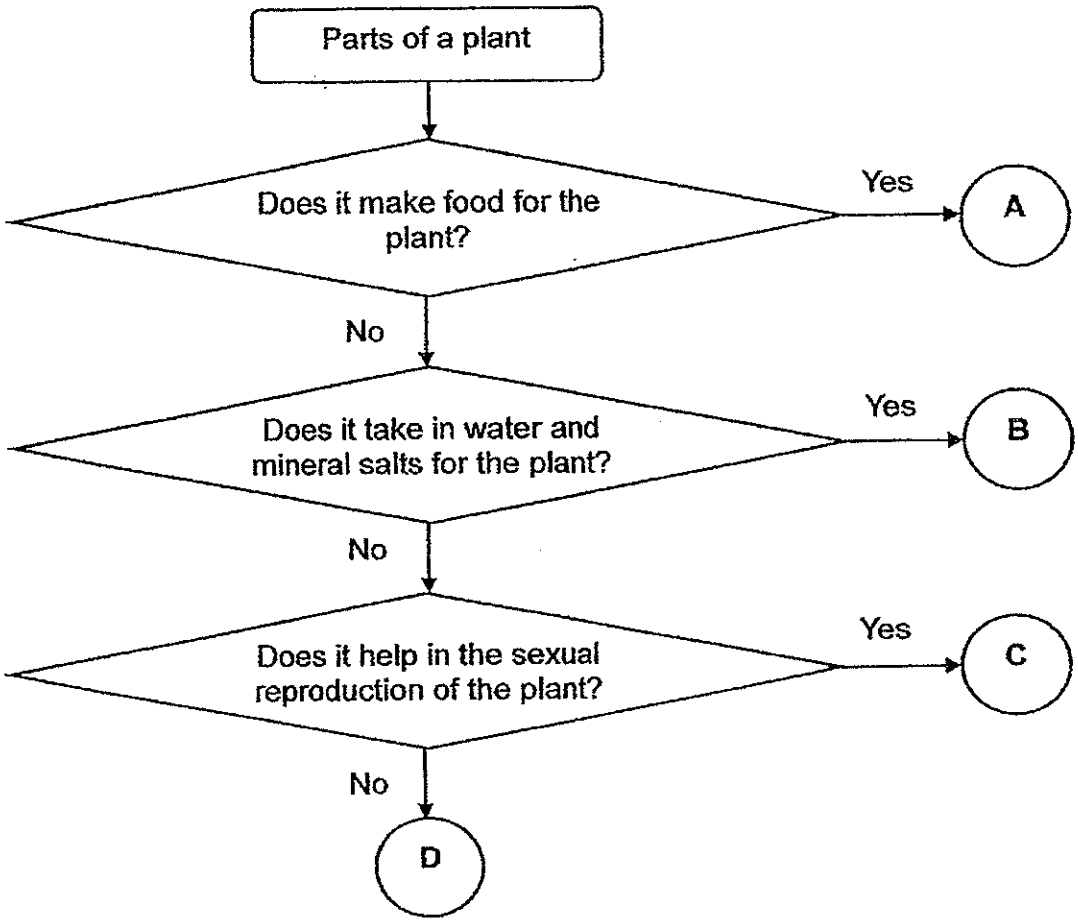


The plant is watered daily and the dish of water is refilled. What might be observed after a month?

A The plant might continue to survive and make new leaves.
B The number of grasshoppers might have increased.
C Some of the leaves of the plant might have been eaten by the grasshoppers.

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

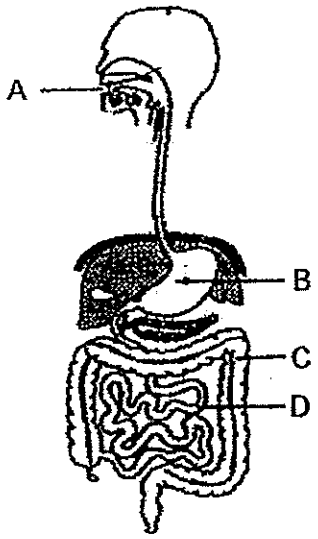
10. Study the flow chart below.



Which of the following correctly identifies A, B, C and D?

	A	B	C	D
(1)	Leaves	Stems	Flowers	Roots
(2)	Fruits	Roots	Spore bags	Stems
(3)	Leaves	Roots	Flowers	Stems
(4)	Fruits	Stems	Spore bags	Roots

11. The diagram below shows the human digestive system.



Which parts of the system does digestion take place?

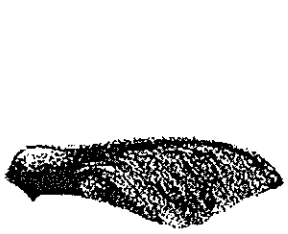
(1) A and C only
(2) B and D only
(3) A, B and D only
(4) A, B, C and D

12. Why are shadows not classified as matter?

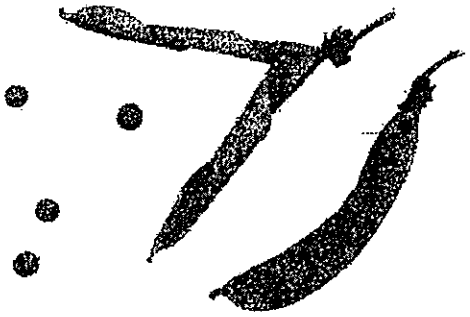
A They do not have mass.
B They do not take up space.
C They have no definite shape.
D They have no definite volume.

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

13. Study the seeds shown below carefully.



Seed A



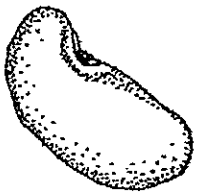
Seed B

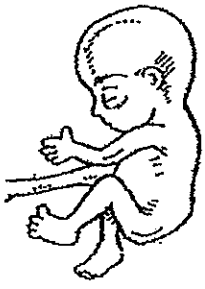
Seed C

Based on your observations of the seeds, which one of the following shows the dispersal method of each seed?

	Seed A	Seed B	Seed C
(1)	By explosive action	By wind	By wind
(2)	By wind	By explosive action	By wind
(3)	By wind	By explosive action	By explosive action
(4)	By explosive action	By wind	By explosive action

14. The diagrams below show a seed and a foetus.

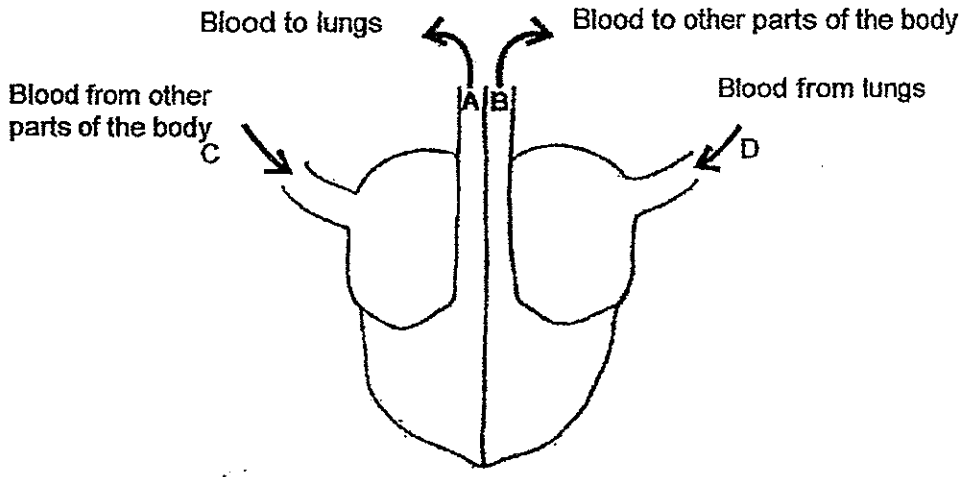




What is the similarity between the seed and the foetus?

(1) They are products of sexual reproduction.
(2) They do not need warmth for development.
(3) They carry out gaseous exchange by themselves
(4) They do not need food for the first few stages of their growth.

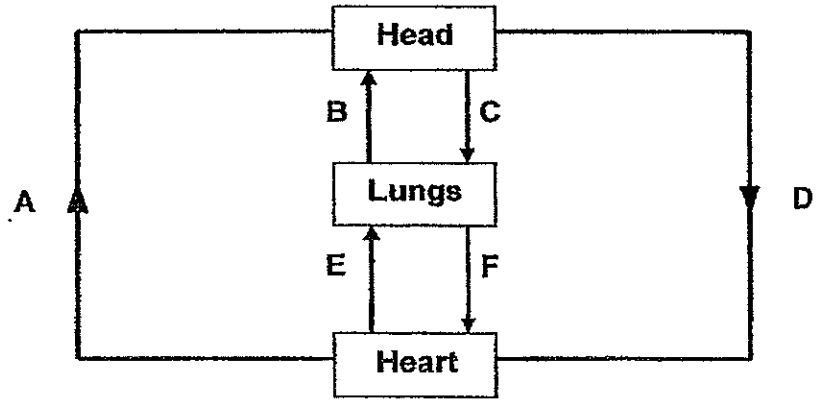
15. The diagram below shows the movement of blood to and from a human heart.



Which blood vessels are transporting blood rich in oxygen?

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

16. George drew the diagram below to show the flow of blood in some parts of the human body.



Which two arrows were **not** drawn correctly?

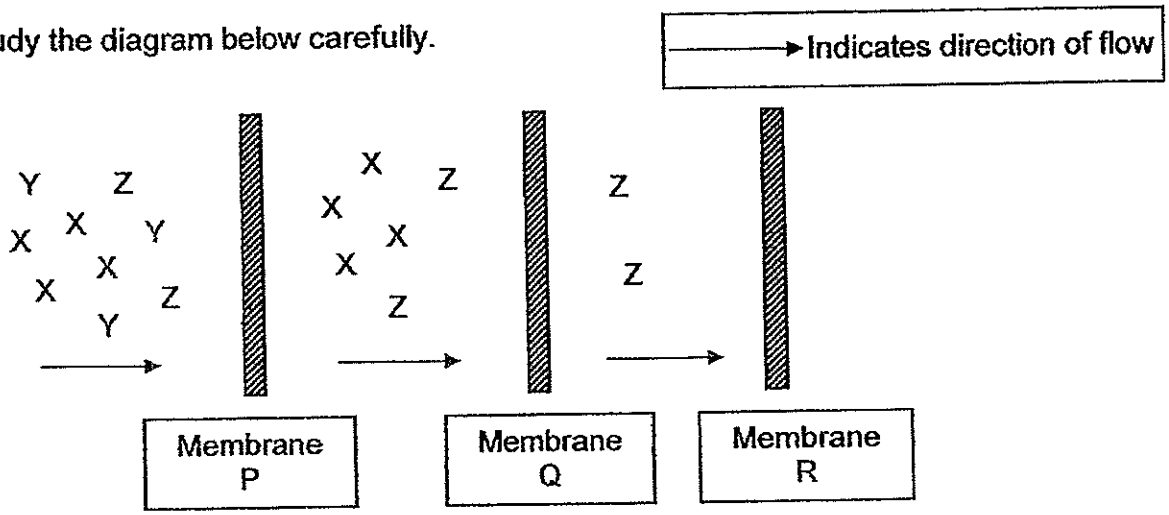
(1) A and B only
(2) B and C only
(3) C and D only
(4) E and F only

17. The plant and human body rely on transport systems to transport important materials to different parts of the organisms. Which one of the following statements describes the transport systems correctly?

The plant and human transport systems transport _____.

(1) materials with two networks of tubes
(2) materials in only one direction
(3) water throughout the organisms
(4) oxygen throughout the organisms

18. Study the diagram below carefully.

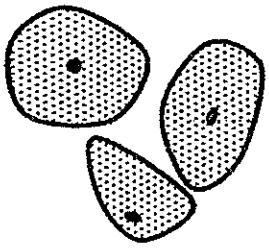


Which of the following statements are most likely to be true?

A Membrane Q is permeable to Substance Z.
B Membrane P is not permeable to Substance Y.
C Membrane P is permeable to Substance X and Z.
D Membrane R is not permeable to Substance X and Z.

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

19. Study the diagram below.

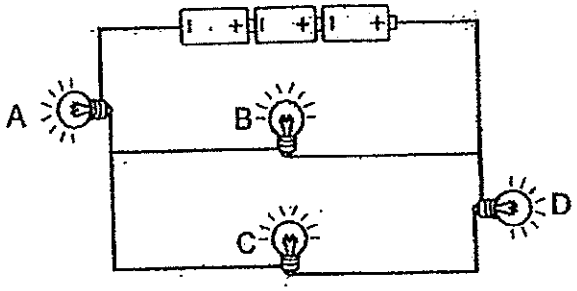


Human cheek cells

The human cheek cells are similar to the cells found in the flowers of a plant because they _____.

(1) do not have a regular shape
(2) do not have choloroplasts to make their own food
(3) do not have a nucleus to control their cell activities
(4) have cell membranes to allow any substance to enter them

20. Study the electric circuit below.

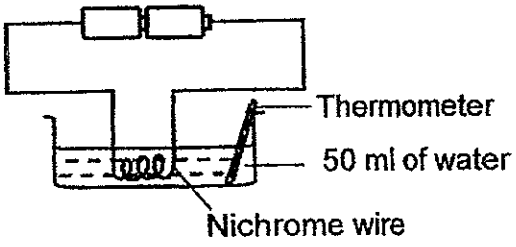


When one of the above bulbs fused, three bulbs remained lit. Which is the bulb that has fused?

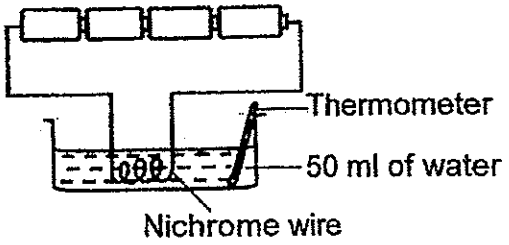
(1) A
(2) B
(3) C
(4) D

21. In which of the following set-ups will the water boil last?

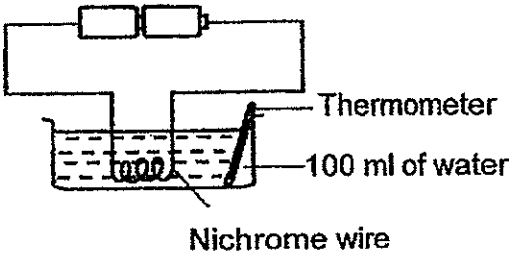
(1)



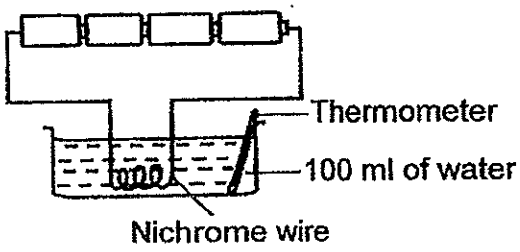
(2)



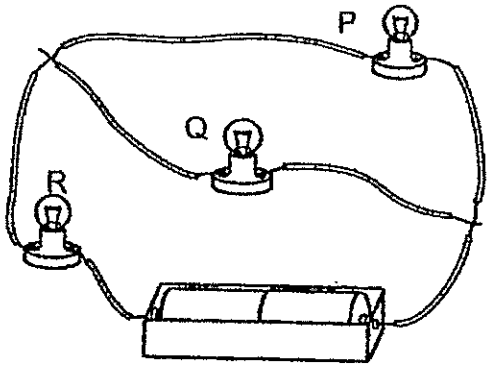
(3)



(4)



22. Identical bulbs are used in the circuit below. All the bulbs in the circuit light up.

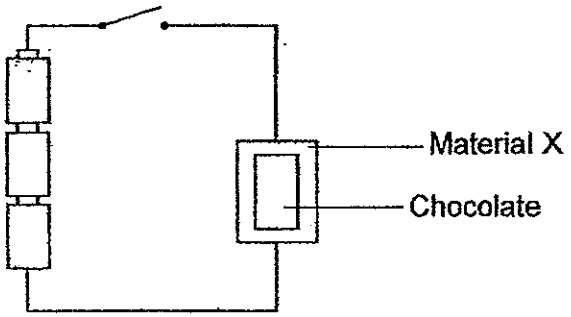


Which of the statements about the bulbs are true?

A P is brighter than Q.
B P is brighter than R.
C P and Q have the same brightness.
D Q and R have the same brightness.

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

23. In the circuit below, a bar of chocolate was placed on Material X. The chocolate starts to melt when the switch is turned on.



What material could X be?

A Wood
B Steel
C Plastic
D Copper

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

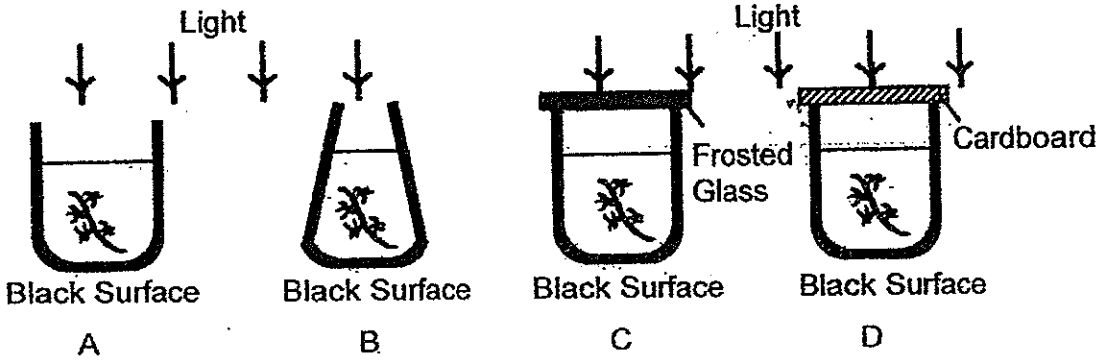
24. The table below shows the freezing points and boiling points of three unknown substances, X, Y and Z.

Substance	Freezing point (°C)	Boiling point (°C)
X	45	95
Y	30	125
Z	23	78

Which of the substance(s) is/are liquid at 80°C?

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

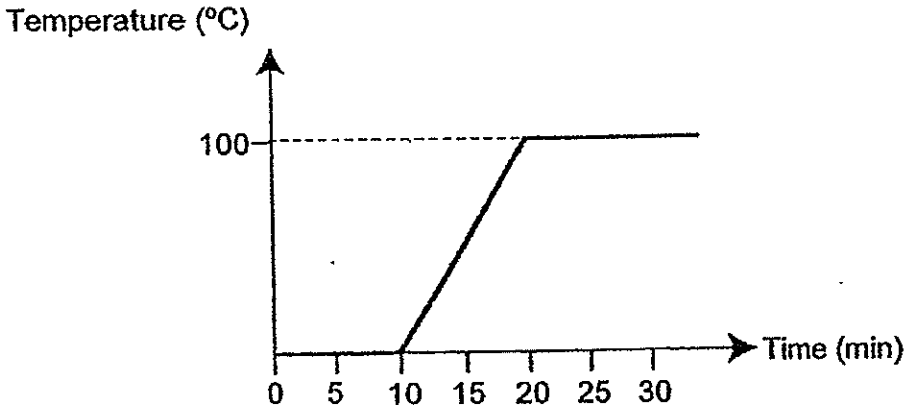
25. Four identical water plants are placed inside four containers as shown below.



Which of the following correctly arranges the set-ups according to the rate of photosynthesis, starting with the set-up with the fastest rate of photosynthesis?

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

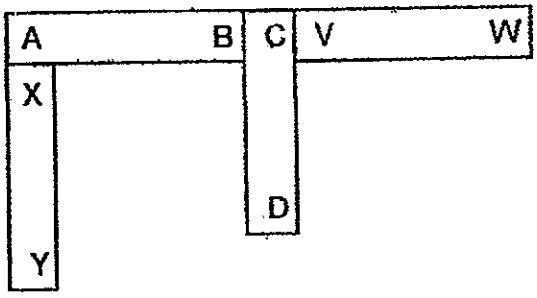
26. Mary placed some ice cubes in a beaker. She heated the beaker of ice cubes for 30 minutes. She plotted the graph below to show the change in temperature over a period of time.



What is likely to be found in the beaker or coming out of the beaker at the 5th minute and the 25th minute?

	At the 5th minute	At the 25th minute
(1)	Ice only	Water only
(2)	Water Only	Steam only
(3)	Ice and water	Water and steam
(4)	Ice and water	Water and water vapour

27. Four bar magnets are put together and their ends are marked as shown in the diagram below.



Which one of the following diagram shows the correct interaction when two of the magnets are brought close together?

(1)


(2)


(3)


(4)

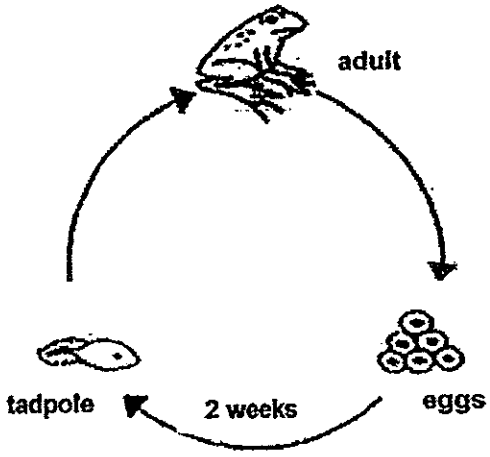

28. Raj wanted to find out what type of soil was suitable for growing lady's finger. He planted 3 lady's finger plants in three pots, A, B and C. He then recorded the growth of the plants.

	Pot A	Pot B	Pot C
Type of soil	Garden	Clay	Sand
Size of pot	1000cm^3	1000cm^3	1000cm^3
Amount of water used every day	500cm^3	500cm^3	500cm^3
Height of plant used at the start	5cm	10cm	25cm

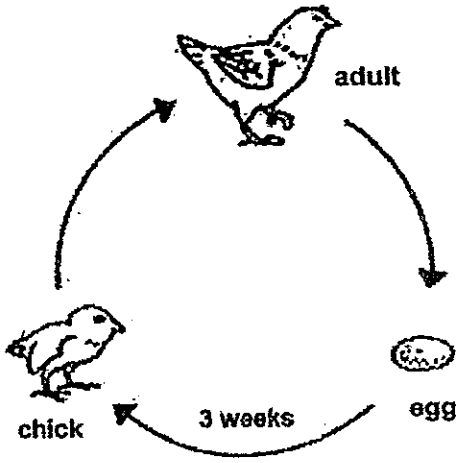
Why was the experiment not a fair one?

(1) The type of soil used in each pot was different.
(2) The same amount of soil was used in each pot.
(3) The height of plant used at the start was different.
(4) The same amount of water was given to each pot.

29. Study the life cycles below.



Life Cycle of a Frog

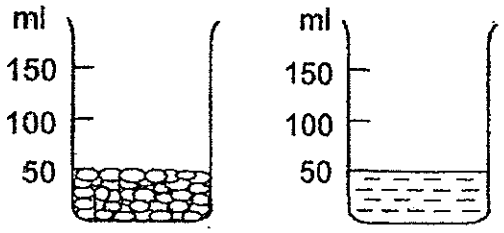


Life Cycle of a Chicken

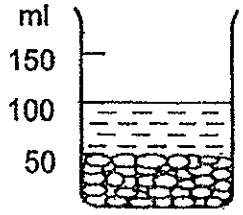
By comparing the life cycles above, we observe that the_____.

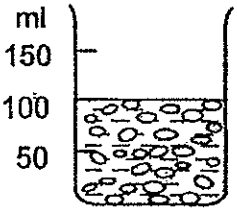
(1) life cycle of the chicken is longer than the life cycle of the frog
(2) young of both animals feed on the same type of food as the adult
(3) young of the frog does not resemble the adult but the young of the chicken resembles the adult
(4) life cycle of a frog happens only in water but the life cycle of a chicken happens only on land

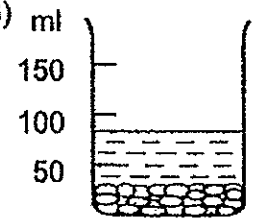
30. Two beakers, X and Y, were set up below. Beaker X and Beaker Y were filled with stones and water respectively to the 50ml mark.

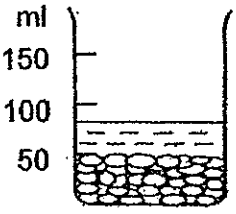


All the water in Beaker Y was then poured into Beaker X. Which diagram below correctly shows the water level in Beaker X?

(1)


(2)


(3)


(4)


NAN HUA PRIMARY SCHOOL
SEMESTRAL ASSESSMENT 2 – 2014
PRIMARY 5

SCIENCE

BOOKLET B

14 Open-ended questions (40 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

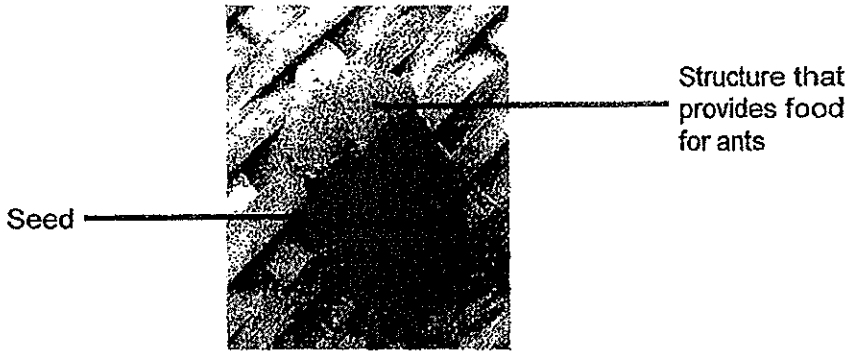
Section B		**/ 40**

Name: _____ ( ) **Class: P 5** _____

Date : 27 October 2014 **Parent's Signature:** _____

Section B: (40 marks)
Write your answers to questions 31 to 44. The number of marks available is shown in brackets [ ] at the end of each question or part-question.

31. Seeds of Plant X are dispersed with the help of ants. When the fruits ripen and split open, the seeds land on the ground. A structure that provides food for the ants is found on each seed.



a) Why is it important to disperse the seeds away from Plant X? [2]

b) Young plants of Plant X are often found near ant nests. State how the young plants end up near the ant nests. [1]

Score	
	3

32. Substance X is blue and turns pink upon absorbing water or water vapour. A plate of Substance X was placed near the window for one day.

a) What is the colour of Substance X after one day? Explain your answer. [2]

_____

_____

Holly opened a tin of biscuits and found a small packet within it. A label is found on the packet and this is what it reads:

Do Not Eat
Contains Substance X
Do Not Eat

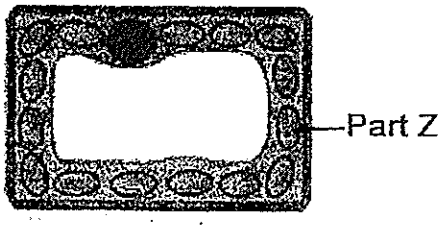
b) Based on the function of Substance X, what is the purpose of adding the small packet inside the tin of biscuits? [2]

_____

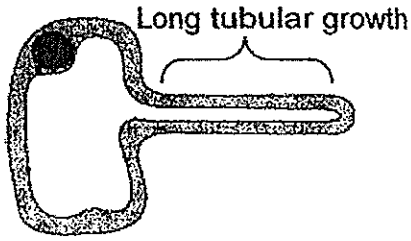
_____

Score	
	4

33. Study the diagrams below.



Cell X



Cell Y

Cell X is found in the leaves of a plant whereas Cell Y is found in the roots of the plant.

a) Name Part Z. [1]

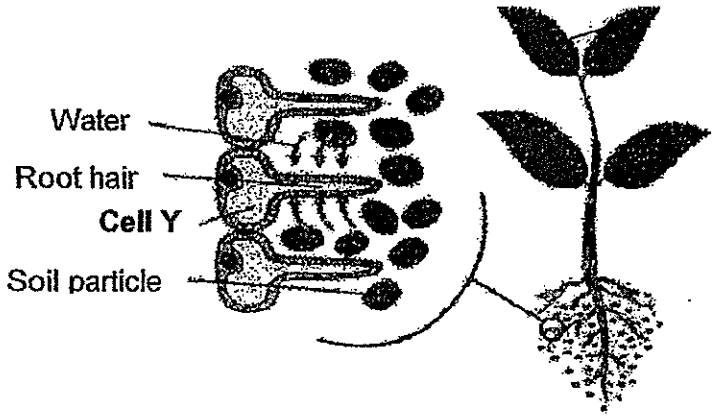
_____

b) Why is Part Z present in Cell X which is found in the leaves but not in Cell Y which is found in the roots? [1]

_____

_____

c) The diagram below shows where Cell Y is found in a plant.



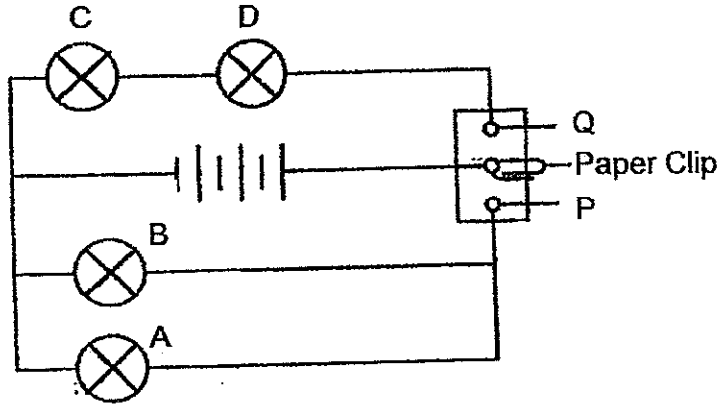
Cell Y is a special plant cell as it has a long tubular structure unlike other cells found in the plant. Based on your knowledge of the function of a root, suggest a reason why Cell Y has such a long tubular structure. [2]

_____

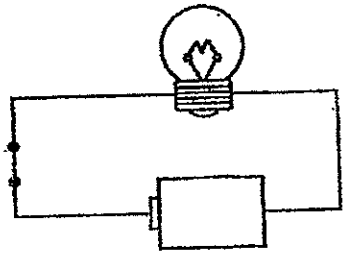
_____

Score	4

34. Celine sets up Circuit X and Circuit Y as shown below,



Circuit X



Circuit Y

a) When the paper clip is connected to thumbtack P, which bulb(s) in Circuit X will light up? [1]

_____

_____

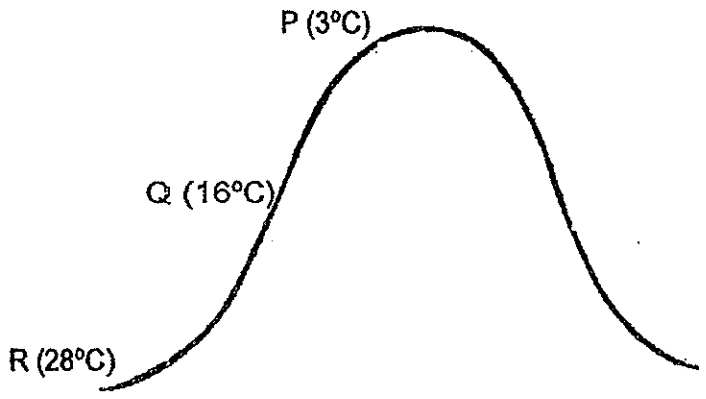
b) Explain why the bulb in Circuit Y did not light up? [1]

_____

_____

Score	2

35. The diagram below shows a mountain. As climbers climb up the mountain, they find that it is cooler higher up the mountain.



Which part of the mountain (P, Q or R) will have the most mist? Give a reason for your answer. [2]

_____

_____

_____

_____

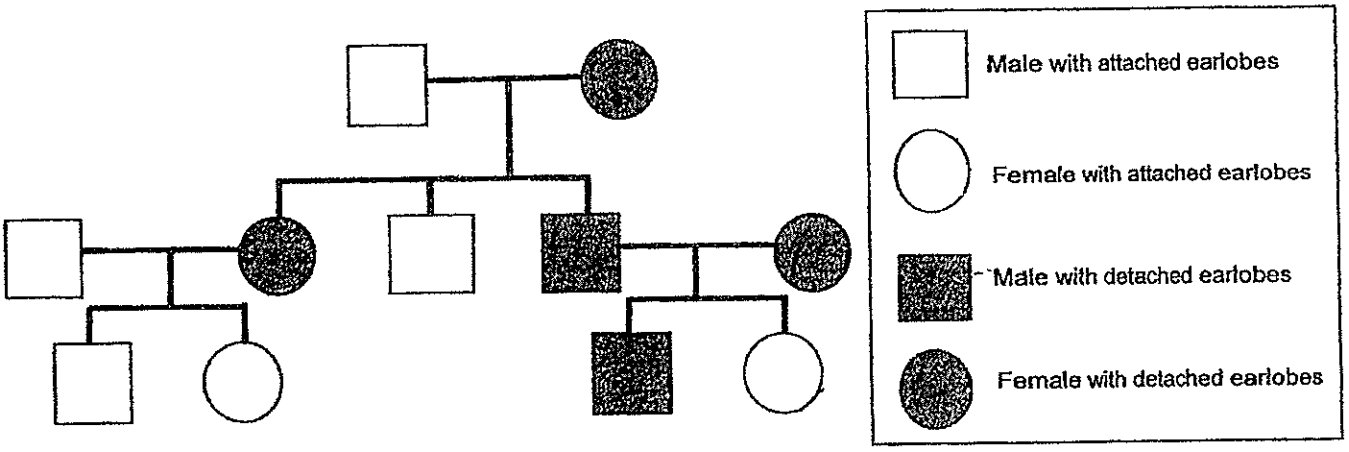
Score	/2

36. Mrs Ang has a sharp nose and naturally black curly hair. Mr Ang has a sharp nose and naturally black straight hair.

a) Put a tick (√) in the boxes below to predict the characteristics of their child. [1]

	Most likely	Not likely	Not possible to tell
Sharp nose			
Black hair			
Curly hair			

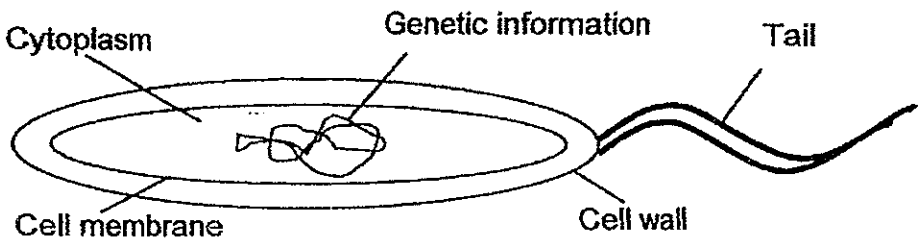
b) Study the family tree below.



Mr and Mrs Ang have detached earlobes but their daughter has attached earlobes. Mark out their daughter with a cross "X". [1]

Score	
	2

37. The diagram below shows a bacterial cell.



a) Does the bacterial cell feed on other organisms or does it make its own food? Explain your answer. [2]

_____

_____

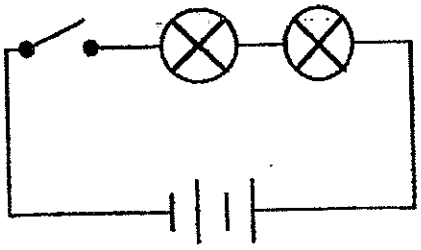
b) The genetic information functions like a nucleus of a typical cell. Is the bacterial cell able to survive when the genetic information is removed? Explain your answer. [1]

_____

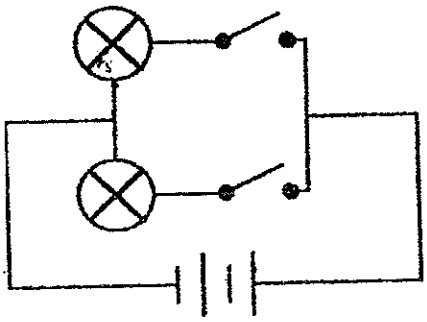
_____

Score	
	3

38. Study the circuit diagrams carefully.



Circuit A



Circuit B

a) What is the difference between the arrangements of the bulbs in circuits A and B?[1]

_____

_____

b) Name two advantages of using Circuit B to connect lights. [2]

_____

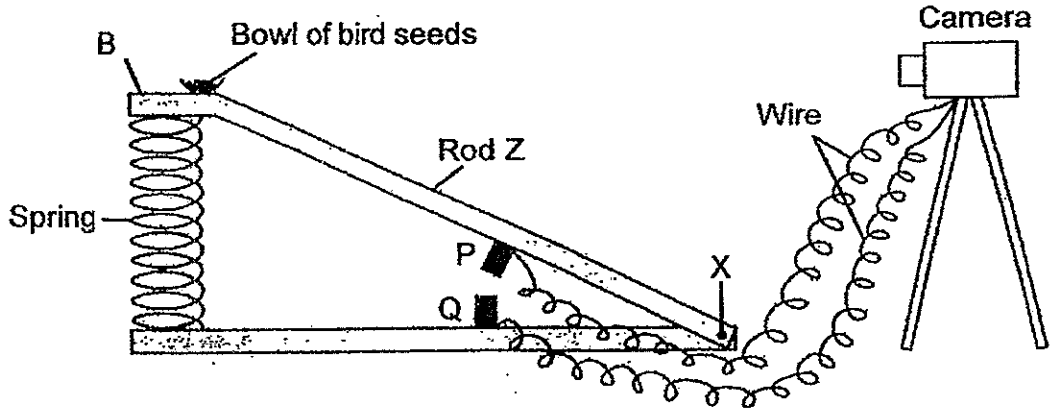
_____

_____

_____

Score	3

39. Alan uses the set-up below to take photographs of birds automatically. Z is a rod that is pivoted at X. The contacts, P and Q, are connected to a special camera by wires so that when P touches Q, the camera will take a photograph of the bird at B.



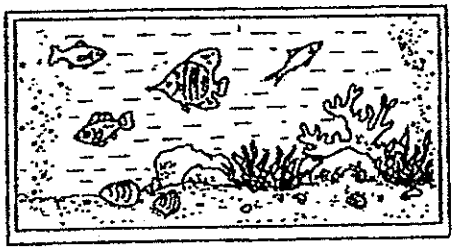
a) What property must the material use to make contacts P and Q have? [1]

b) Explain how this set-up enables the camera to take a photograph of a bird when it lands on B to eat the seeds. [2]

c) Alan found that photographs of some of the birds that landed at B were not taken. Give a reason why this happened. [1]

Score	/4

40. The diagram below shows a marine fish tank with a mixture of marine animals and plants set up by Howard. The tank was placed near a window.



a) During the night, Howard noticed that the marine fishes were swimming to the surface of the water and were breathing rapidly. Explain why the marine fishes behaved in this way. [1]

_____

_____

b) However, during the day, the marine fishes did not display the behaviour that they did at night. Explain why. [2]

_____

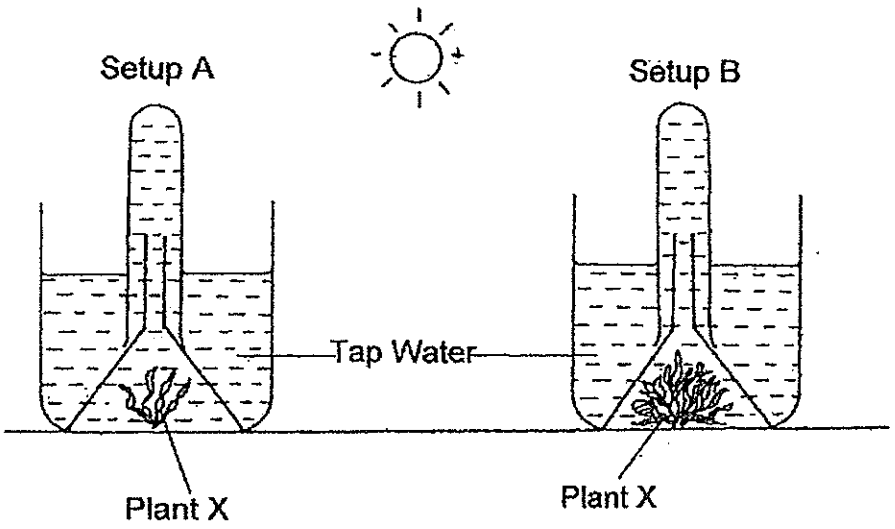
_____

_____

_____

Score	/3

41. The diagram below shows an experiment that Sandy set up to find out the rate of photosynthesis of the plants in the two set-ups.



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

_____

_____

b) By evening, Sandy noted that the amount of oxygen collected in set-up B was more than that in set-up A. Explain why it is so. [1]

_____

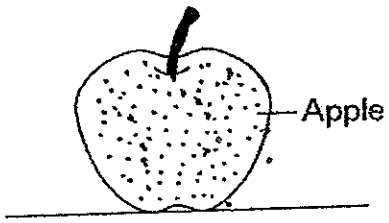
_____

_____

_____

Score	/ 2

42. Joseph took out an apple from the refrigerator and left it on the table,

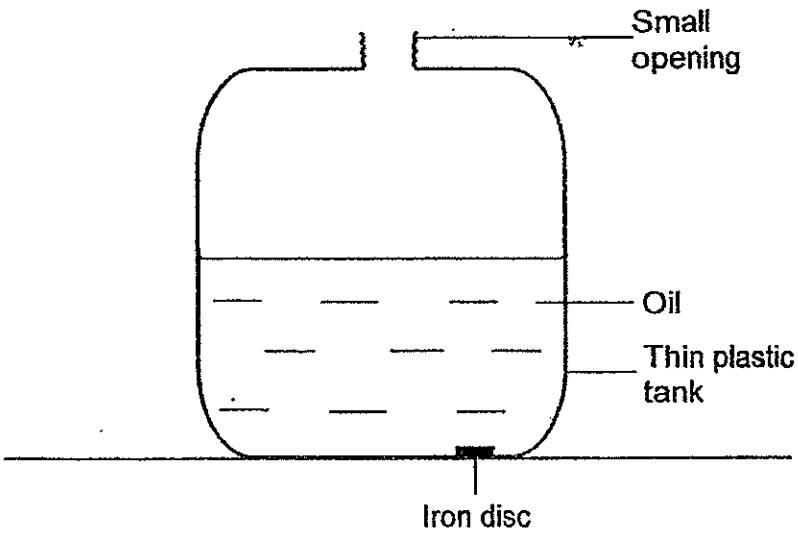


a) After a while, he saw tiny water droplets on the apple. How did the droplets of water formed on the apple? [1]

b) The tiny water droplets disappeared after some time. Explain why this happened. [1]

Score	/2

43. Mark found an iron disc at the bottom of a heavy plastic tank filled with oil in a room, as shown in the diagram below.



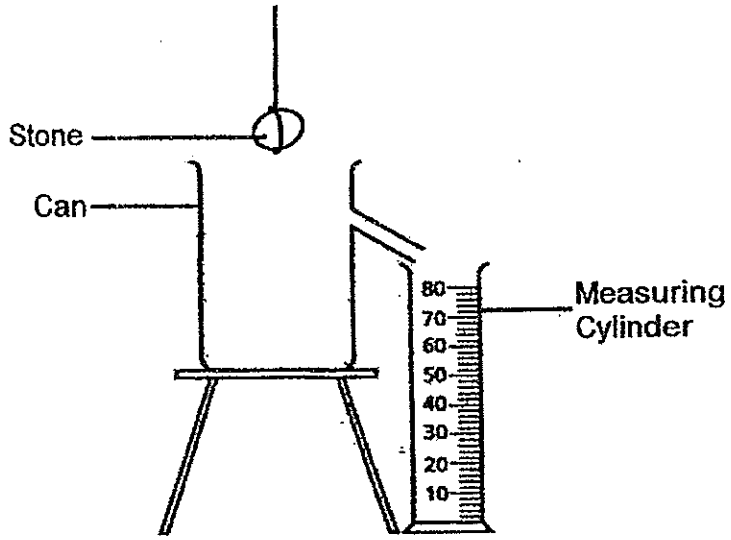
Mark also found a strong magnet in the room.

a) Using only the magnet, describe how Mark could remove the iron disc without wetting the magnet or moving the heavy plastic tank. [2]

b) Would Mark still be able to remove the disc from the tank if the disc was made of copper? Give a reason for your answer. [1]

Score	/3

44. Ming wants to find out the volume of a stone. She has the following set-up. When she places the stone into the can of water, the water that flows into the measuring cylinder will be the volume of the stone.



a) Ming has to pour some water into the can before she places the stone in the can. Draw the water level in the diagram above to show the amount of water that Ming has to pour into the can. [1]

b) State two properties of water that enable Ming to find the volume of the stone using the set-up above. [2]

_____

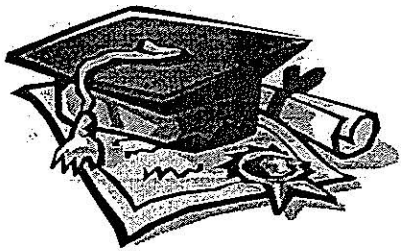
_____

_____

_____

End of paper

Score	/ 3



ANSWER SHEET

EXAM PAPER 2014
SCHOOL : NAN HUA
PRIMARY : P5
SUBJECT : SCIENCE
TERM : SA2

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

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

31)a)Seed dispersal pf part X prevents overcrowding so that there will be no competition of space, sunlight, water and nutrients between the parent and young plants.

b)Ant have thrown away the seeds near then heats after eating the structure.

32)a)Substance X will be pink after one day. There are water vapour in the surroundings so substance X will absorb them. Upon absorbing they substance X will turn pink.

b)Substance X will absorb moisture water/ water vapour in the tin of biscuit to ensure that the biscuits are kept crunchy.

33)a)Chloroplast.

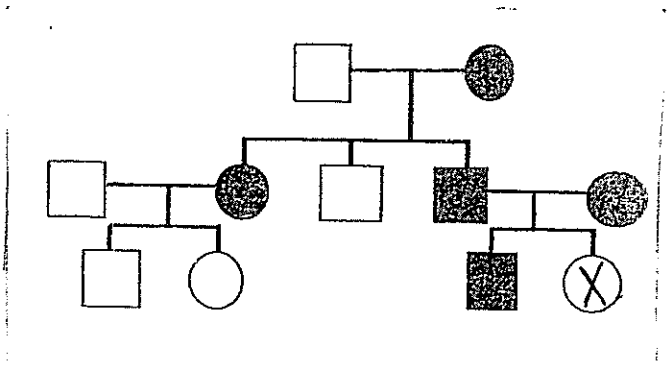
b)Cell X makes food for the plant but Cell Z does not make food for the plant.

c)The long structure increases the surface area bigger surface area longer surface area in contact with the water soil as the soil so that it can absorb more water.

34)a)Bulb A and B.
b)The metal tip of the bulb is hot connected for the wire.

35)P. The top of the mountain is the coolest most water vapour loses heat by the cooler air at the top of the mountain. Most water vapour will condense into most tiny droplets of water.

36)a)Sharp nose = Most likely
Black hair = Most likely
Curly hair = Not
b)



37)a)The bacterial cell feeds on other organisms since it does not have chloroplasts to make its own food.
b)The bacterial cell is not able to survive because all cell activities will stop, cell cannot function properly when the genetic information is removed.

38)a)Circuit A is arranged in series but Circuit B is arranged in parallel.
b)When one bulb fuses, the other bulbs will still light up and also, the bulbs can be controlled independently.

39)a)Conductors of electricity.
b)When the birds lands at B, the weight of the bird compressed the spring, pushed the spring down causing contacts P and Q to touched a forming a closed circuit. This cause the camera to take a photograph.
c)As the mass of the bird is light and it landed softly.

40)a)The plants did not photosynthesis so they cannot produce oxygen. The plants will also compete with the fishes with the oxygen in the water.
b)The water plants can photosynthesis in the presence of light and produce oxygen for the fish to respire.

b)There were more leaves so the rate of photosynthesis was higher. With a higher rate of photosynthesis, the amount of oxygen produce will also be higher.

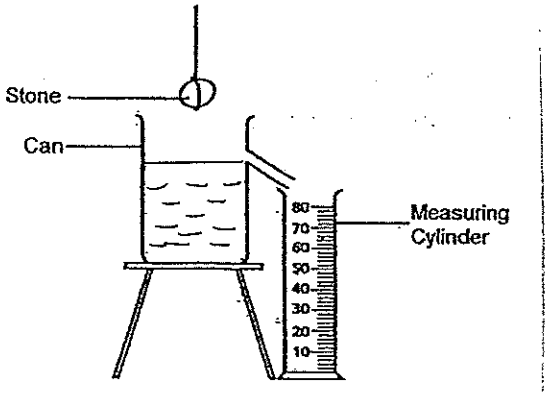
42)a)The water vapour in the surrounding is loses heat and condenses on the cooler surface of the apple.

b)The water droplets gain heat from the surrounding and evaporated.

43)a)Mark should place the strong magnet at the right corner of the thin plastic tank, When the iron disc is attracted to the magnet, slowly move the magnet up until it reaches the small opening. Then take the iron disc out.

b)No. Copper is a non-magnetic material and the magnet is not able to attract it.

44)a)



b)Water had a fixed volume and it takes the shape of the container that holds it.