



**NAN HUA PRIMARY SCHOOL
SEMESTRAL ASSESSMENT 1 - 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 answer in the Optical Answer Sheet (OAS) provided.

Marks Obtained

Booklet A		/ 60
Booklet B		/ 40
Total		/ 100

Name: _____ ()

Class: P 5 _____

Date : 12 May 2014

Parent's Signature: _____

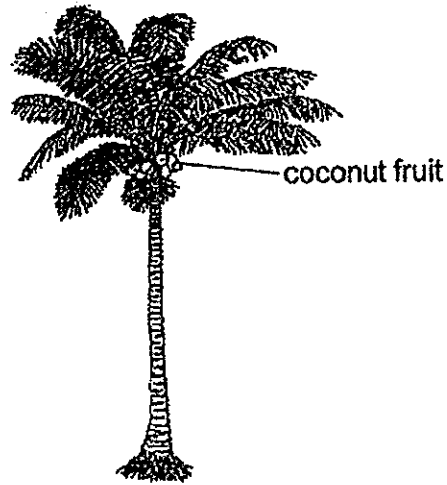
Section A: (30 x 2 marks = 60 marks)

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 pictures below show a tree fern and a coconut tree.



tree fern

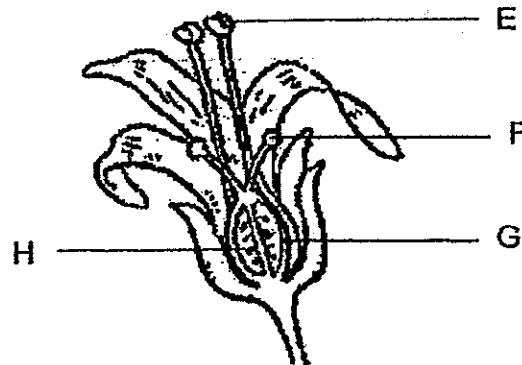


coconut tree

How are both plants similar to each other?

- (1) Both plants bear fruits.
- (2) Both are non-flowering plants.
- (3) Both the spores and seeds are dispersed by wind.
- (4) Both the spores and seeds will grow into new plants under suitable conditions.

2. The diagram below shows the cross-section of a flower.

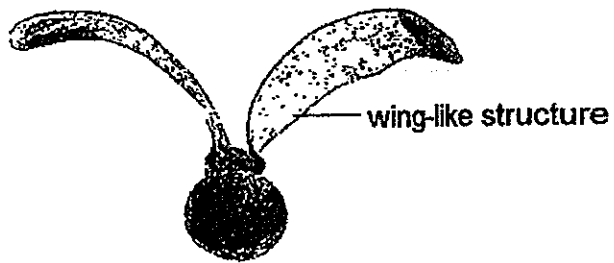


Which of the following statements is correct?

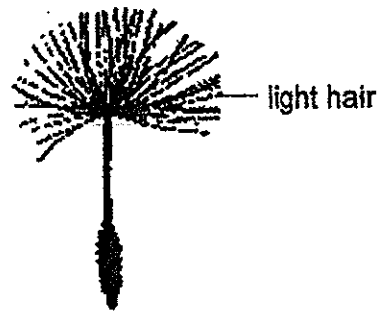
- A Part G will develop into a fruit while H will develop into the seed of the fruit.
- B Part E will form a pollen tube for the pollen grain to travel down to reach the ovary.
- C Part E is the male reproductive organ while F is the female reproductive organ of the plant.

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

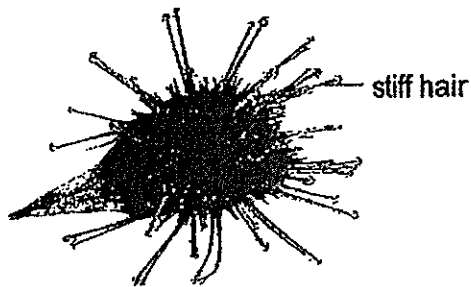
3. The diagrams below show four different types of fruits.



A



B



C



D

Which of the following fruits are most likely dispersed by animals?

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

4. Lily wrote down some notes on the germination process of a seed.

- A The seed coat traps light energy.
- B Oxygen is required in the process.
- C Stored food is used in the process.
- D The seed uses water stored in the seed leaves.

Which of the following statements are true?

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

5. Sue and her classmates made the following statements about some characteristics that are passed down from parent to young.

- Robert : Fingerprints of identical twins are identical.
- Suzhen : Hair length can be passed down from parent to young.
- Thaman : Some traits are passed down the generations but may not show in some generations.
- Umairah : The young resembles more of its mother as it develops in her womb.

Which one of the children made the correct statement?

- (1) Robert
- (2) Suzhen
- (3) Thaman
- (4) Umairah

6. In the sexual reproduction of humans, one egg is released at a time compared to many sperms being produced at one time. Which of the following could be the possible reason(s) for the large production of sperm at a time?

- A The egg has more sperms to choose from.
- B More sperms can fertilise the egg at one time.
- C The egg will take a shorter time to be fertilised.
- D The egg will have a higher chance of being fertilised.

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

7. An earthworm is placed in a sealed glass jar for half an hour. What changes would you observe to the composition of the various gases in the jar?

	Nitrogen	Oxygen	Carbon dioxide	Water vapour
(1)	remains the same	decreases	increases	decreases
(2)	remains the same	decreases	increases	increases
(3)	increases	increases	increases	remains the same
(4)	increases	decreases	decreases	remains the same

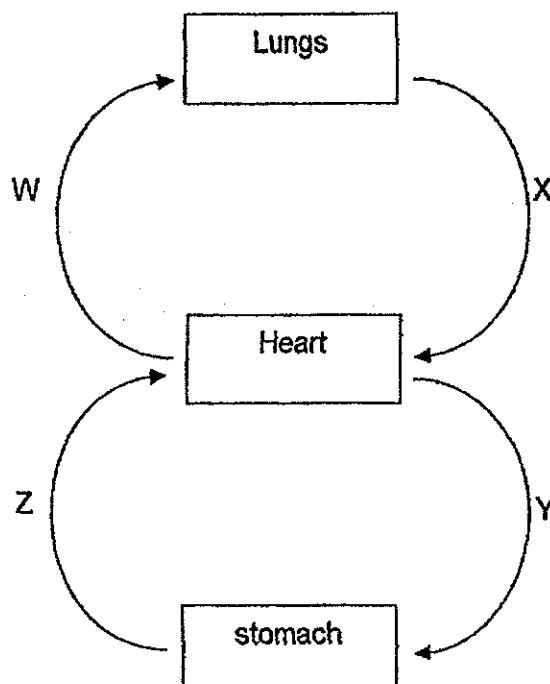
8. The list below shows parts of a human body.

- A nose
- B heart
- C lungs
- D ribcage
- E windpipe

Which of the following are parts of the human respiratory system?

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

9. The circulatory system in human is important as it circulates blood in our body.



W, X, Y and Z represent blood vessels in the body. In what way are they similar?

- (1) X and Z contain blood rich in oxygen
- (2) X and W contain blood rich in oxygen
- (3) W and Z contain blood rich in carbon dioxide
- (4) W and Y contain blood rich in carbon dioxide

10. The food-carrying tubes in plants and the blood vessels in human have similar functions.

The table below states some functions of the food-carrying tubes and the blood vessels.

	substances transported	food-carrying tubes in plants	blood vessels in humans
A	food	√	√
B	oxygen	√	√
C	carbon dioxide	√	√

Which of the following comparisons are correct?

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

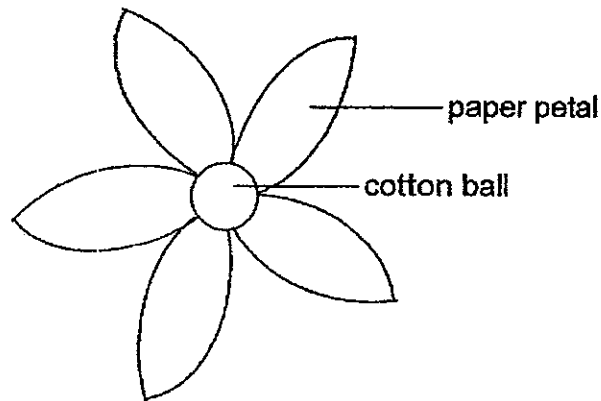
11. Devi made a list of properties on the three states of water. Which of the following is correct?

	Properties	Ice	water	water vapour
(1)	has mass	Yes	Yes	No
(2)	has a definite shape	Yes	Yes	No
(3)	has a definite volume	Yes	No	Yes
(4)	can be compressed	No	No	Yes

12. Which of the following states the correct comparison between the evaporation and boiling processes of water?

		evaporation	boiling
(1)	can occur at any temperature	Yes	Yes
(2)	temperature remains constant during the process	No	No
(3)	gains heat during the process	Yes	Yes
(4)	change from liquid to gaseous state	Yes	No

13. A class of pupils did an experiment to find out which colour of flowers attract the most butterflies. They made 4 flower models of the same size out of paper as shown in the diagram below. The centre of the flower is a ball of cotton wool of the same size.



The pupils made a syrup using sugar and water. They put 15 drops of syrup on each of the five balls of cotton. The model flowers were placed in an open field on a sunny day.

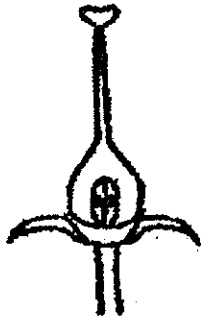
The pupils counted the number of butterflies that visited the flowers over a period of time as shown in the table below.

Colour of petals	Number of butterflies that visited the flower		
	8 to 9 a.m.	9 to 10 a.m.	10 to 11a.m.
Red	5	6	4
Green	0	1	0
White	3	4	3
Yellow	8	9	7

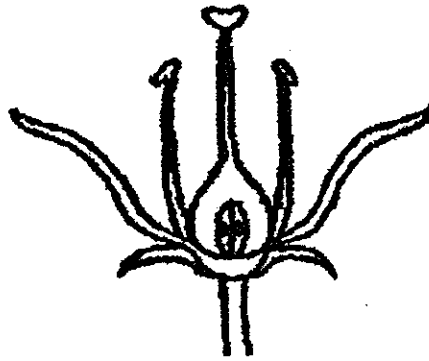
Based on the information collected, what conclusion can the pupils draw from the experiment?

- (1) More butterflies visited the white flower than the red flower.
- (2) The yellow flower is most frequently visited by the butterflies.
- (3) The most number of butterflies visited the flowers from 8-9 a.m.
- (4) The butterflies did not like the taste of the syrup on the green flower.

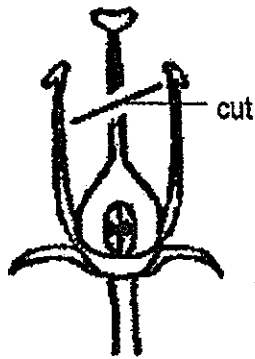
14. Study the four specimens of flowers below carefully.



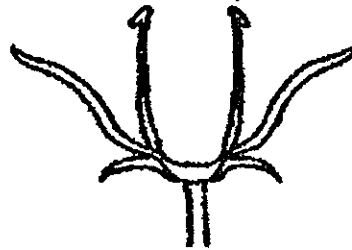
Flower A



Flower B



Flower C

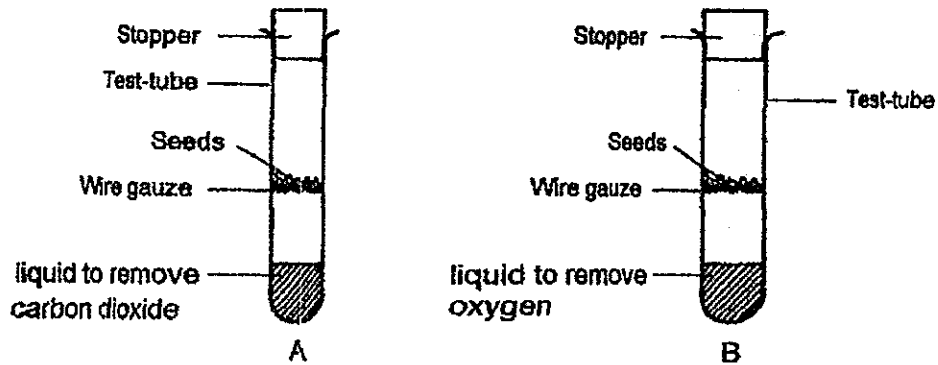


Flower D

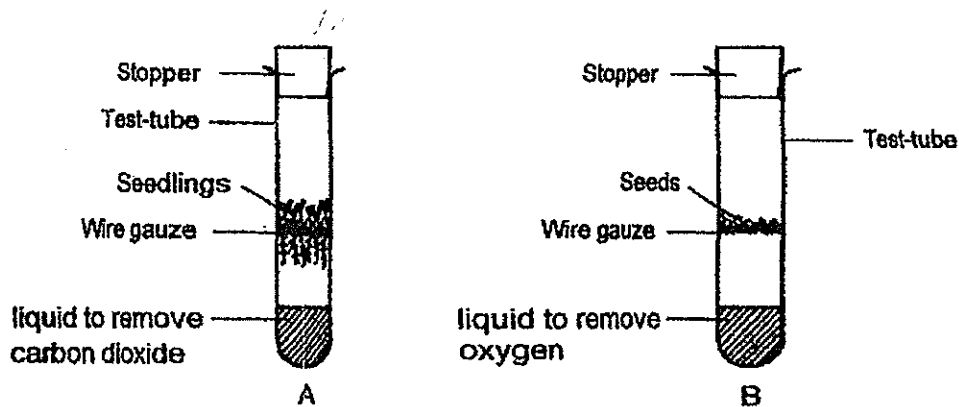
Which of the following flowers could possibly develop into a fruit?

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

15. Leon set up two test tubes as shown below.



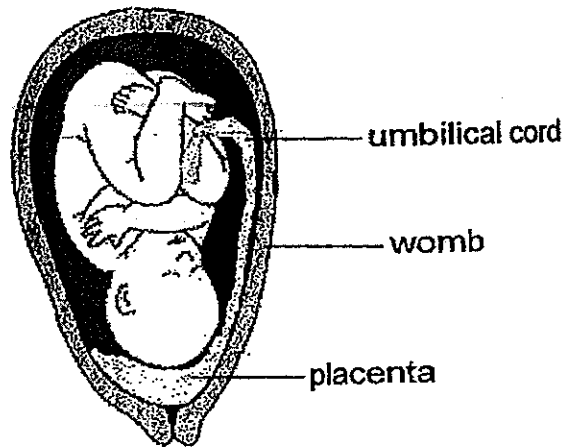
The two test tubes were left at the same corner of a room at 27°C. After a few days, the seeds in test tube A germinated but the seeds in test tube B did not.



Based on the observations stated, what can you conclude from this experiment?

- (1) Seeds will germinate at a temperature of 27°C.
- (2) Oxygen is released in the process of germination.
- (3) Seeds can germinate in the absence of carbon dioxide.
- (4) Roots grow first to absorb oxygen from the surrounding.

16. The diagram below shows a foetus growing in its mother's womb.

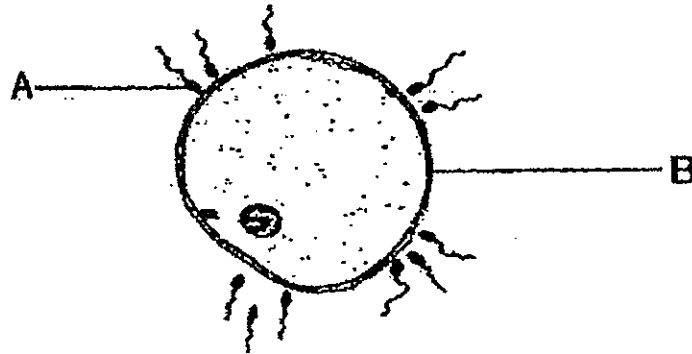


Which of the following processes must occur in order for the foetus to develop in the womb?

- A An egg cell is fertilised by a sperm cell.
- B The fertilised egg cell divides to form more cells.
- C More sperm cells are required to fertilise the cells that are formed from the division of the fertilised egg.

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

17. Study the diagram below which shows the fertilisation process of the human reproductive system.



Which one of the following information given below is correct?

	Male reproductive cell	Female reproductive cell	Organ producing male reproductive cell	Organ producing female reproductive cells
(1)	A	B	testes	ovaries
(2)	A	B	penis	vagina
(3)	B	A	testes	ovaries
(4)	B	A	penis	vagina

18. A class of pupils learnt about the sexual reproductive systems of both plants and humans in class. They wrote down lesson notes on what they had learnt. Read the statements below made by some of the pupils carefully.

Alan : The young will inherit characteristics of both parents.

Bernice : Once fertilised, the egg cell will divide and develop into the young.

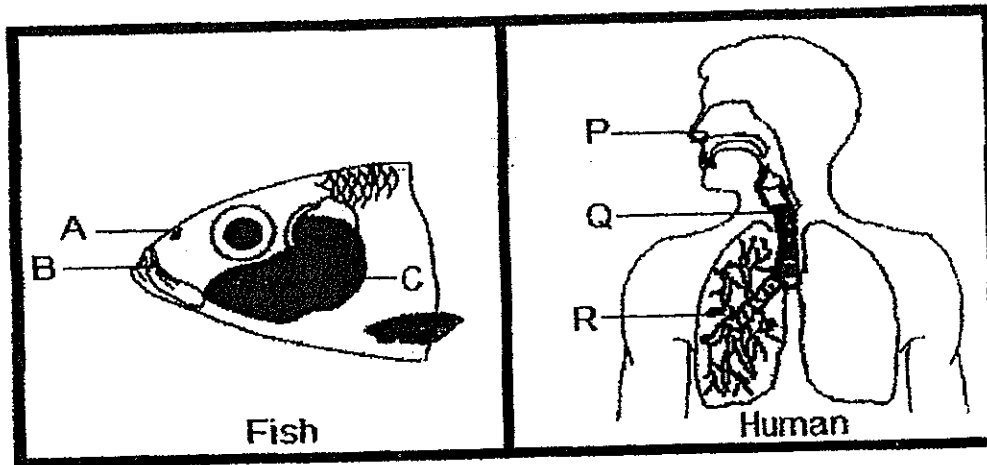
Carol : The sperms have to travel to meet the egg in order for fertilisation to take place.

Donald : The egg cell travels to meet the sperms in order for fertilisation to take place.

Who are correct about both the plant and human reproductive systems?

- (1) Alan and Donald
- (2) Bernice and Carol
- (3) Bernice and Donald
- (4) Alan, Bernice and Carol

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



Where does gaseous exchange occur in both the fish and human respiratory systems?

	Fish	Human
(1)	A	P
(2)	B	Q
(3)	C	R
(4)	B and C	P and R

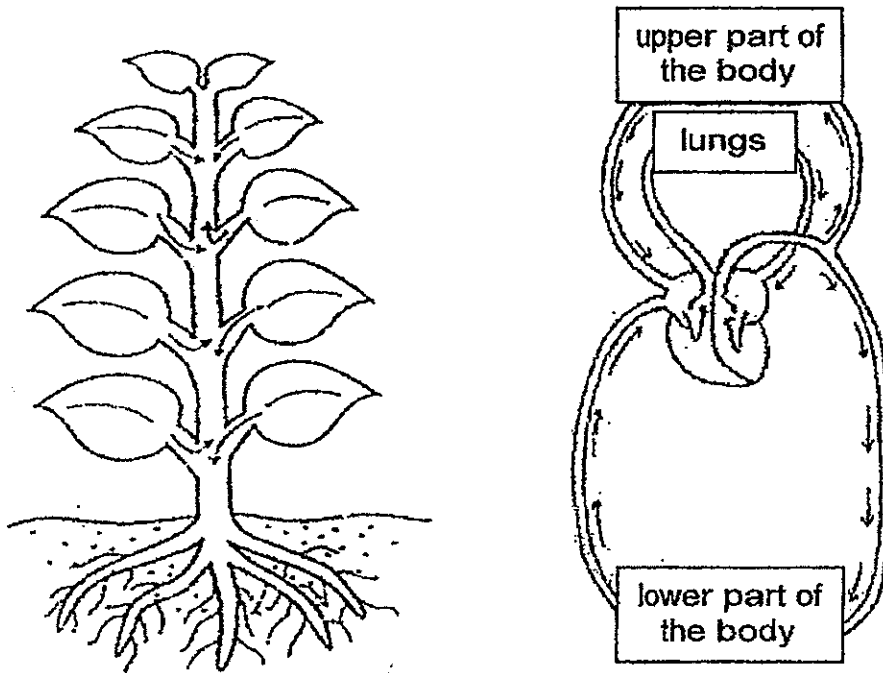
20. Peiling learnt that different systems in the human body work together in order for the body to function properly. She listed down three systems she had learnt.

- A Digestive System
- B Circulatory System
- C Respiratory System

Which of the following system(s) work together when a person is eating?

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

21. Plants and humans are living things that need food and they have transport systems to transport their food around their bodies.



Which one of the following statements is true about the transportation of food in plants and humans?

- (1) An organ is needed to pump food through the tubes.
- (2) Food is transported to all parts of the system through tubes.
- (3) Both systems have tubes to transport undigested food to be disposed of.
- (4) Food is broken down into simple substances before it is transported to other parts of the systems.

22. A gardener measured the depth of water in his school pond using the same method at 10 a.m. over a period of 10 days. He tabulated his results as shown below.

Day	Depth of water in the school pond (cm)
1	77
2	75
3	70
4	64
5	74
6	73
7	70
8	69
9	76
10	65

Based on the results in the table above, between which two days did the pond water gain the most heat from its surroundings?

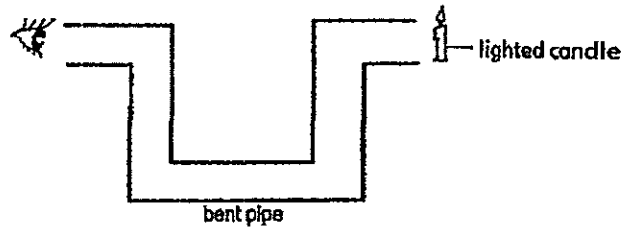
- (1) Between Day 2 and Day 3
- (2) Between Day 4 and Day 5
- (3) Between Day 8 and Day 9
- (4) Between Day 9 and Day 10

23. Which of the following describe what happen at the melting point of ice and boiling point of water?

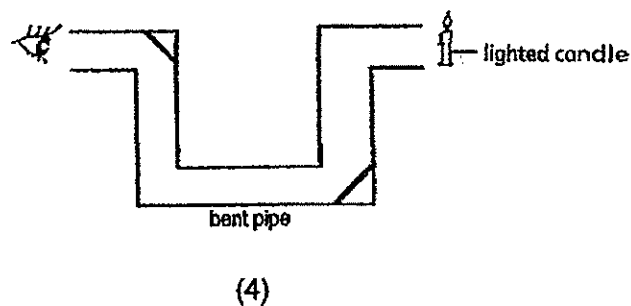
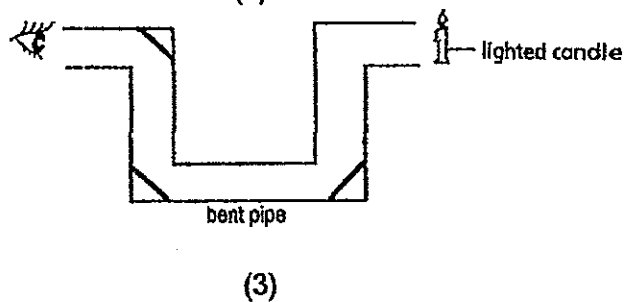
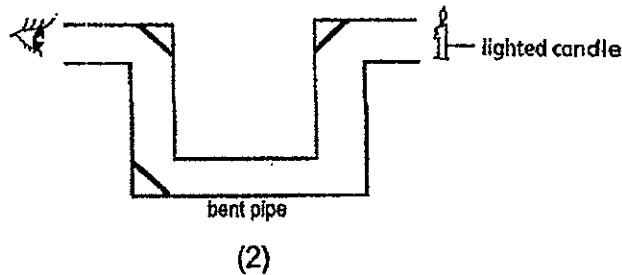
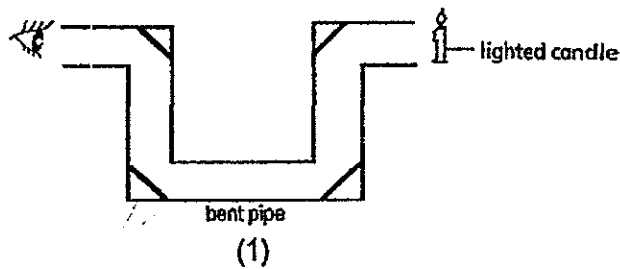
- A There is a change in state.
- B The surrounding air gains heat.
- C Heat is required in both processes.
- D The temperature remains constant.

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

24. Rashid looked through a bent pipe at one end but was unable to see the lighted candle at the other end.



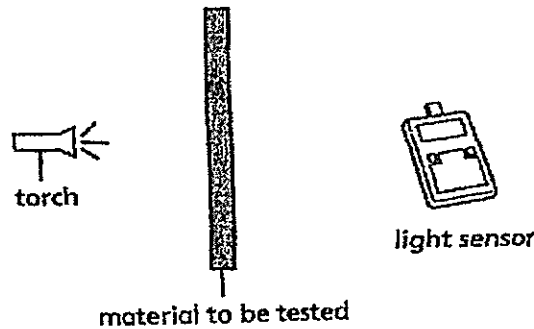
He learnt from his Science lessons that he would be able to see the lighted candle if he had placed mirrors in the pipe. Which one of the following set-ups will allow Rashid to see the lighted candle at the other end?



25. Ian wanted to investigate the degree of transparency of four different materials W, X, Y and Z. He measured the light intensity from the torch in a dark room without any material placed between the torch and the light sensor and took down the reading shown below.

Light intensity from the torch: 800 LUX

He then carried out the experiment in the dark room using the set-up shown below.



He recorded the results in the table below.

Material	Reading on the light sensor (LUX)
W	0
X	520
Y	800
Z	17

Based on Ian's results, which material is most suitable to make the lens of a pair of sunglasses?

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

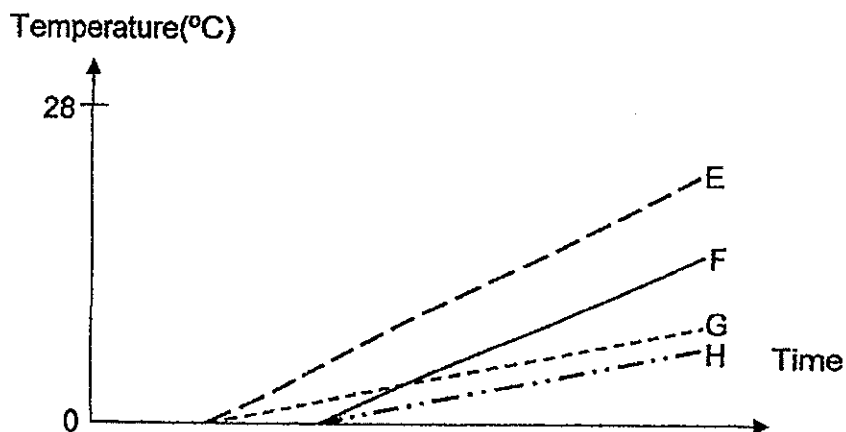
26. Muthu listed down a list of observations he made from the surroundings.

- A The water in the pot on the stove started to boil.
- B Ice cubes in a cup placed in the kitchen melted into water.
- C Water droplets formed on the outer surface of a glass of iced water.
- D Water in an ice tray turned into ice cubes when placed in the freezer.

Which of the following observations took place as a result of heat loss?

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

27. Lillian placed the same amount of crushed cubes in four cups of similar sizes made of different materials E, F, G and H, in a room of 28°C. She noted down the time taken for all the ice cubes to melt in each cup and sketched her findings in the graph below.



Based on the graph above, which of the following materials can keep a drink warm for the longest period of time?

- (1) Material E
 - (2) Material F
 - (3) Material G
 - (4) Material H
28. Maggie wanted to know the degree of hardness for Materials A, B, C and D. She used Material A to scratch on the surfaces of the other three materials and noted down the results in the table below. She repeated the experiment using Materials B, C and D.

material used for scratching	material that was scratched on			
	A	B	C	D
A		scratch marks	no scratch marks	scratch marks
B	no scratch marks		no scratch marks	scratch marks
C	scratch marks	scratch marks		scratch marks
D	no scratch marks	no scratch marks	no scratch marks	

Using the information from the table above, arrange the four materials, A, B, C and D, based on their degree of hardness, beginning with the hardest material.

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

29. Ponchos are used on rainy days instead of umbrellas by hikers as they are more convenient to use.



Besides being lightweight, which of the following properties must the material used to make the ponchos have?

- A hard
- B flexible
- C waterproof

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

30. A plant is made up of several plant parts and each part serves a different function to support the survival of the plant.

Which of the following statement(s) is/are true about the function(s) of leaves?

- A Make food for the plant.
- B Takes in water for the plant.
- C Provide shade for the plant.
- D Helps the plant reach for sunlight.

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



**NAN HUA PRIMARY SCHOOL
SEMESTRAL ASSESSMENT 1 – 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 answer in this booklet.

Marks Obtained

Section B

	/40
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Name: _____ ()

Class: P 5 _____

Date : 12 May 2014

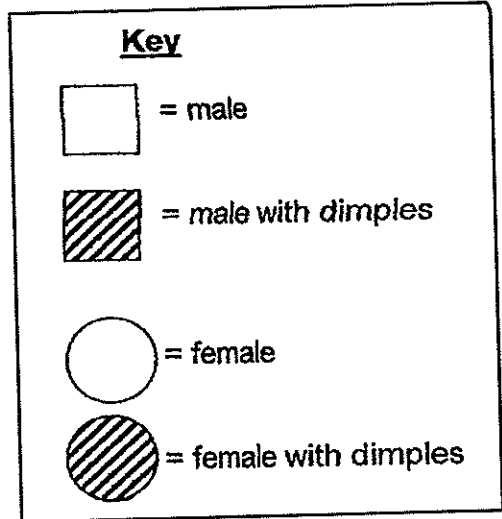
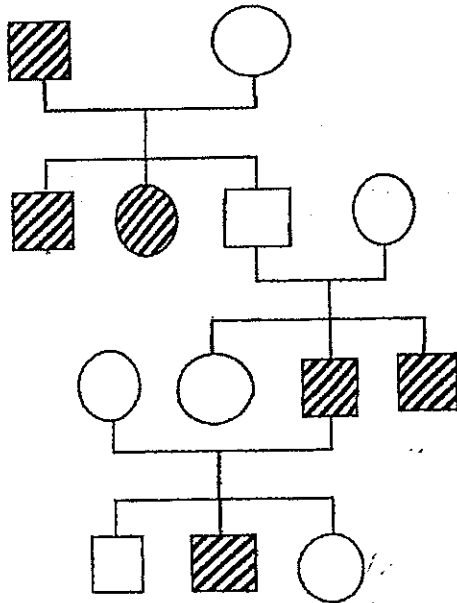
Parent's Signature: _____

Section B: (40 marks)

Write your answers to question 31 to 44.

The number of marks available is shown in brackets [] at the end of each question or part question.

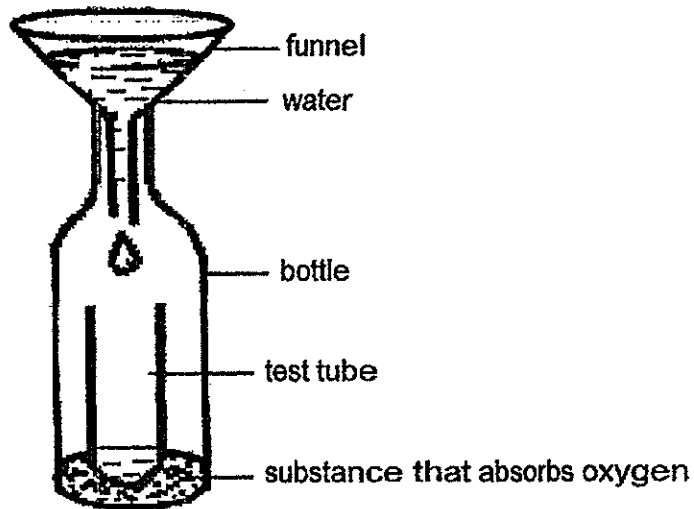
31. Study Muthu's family tree below.



- (a) Muthu has dimples and he notices that both Uncle Siva and Aunt Neera also have dimples. Put a cross (X) on the symbol that represents Uncle Siva in the family tree above. [1]
- (b) Uncle Siva marries a woman with no dimples and has a girl with dimples. Draw, using a ruler, the extension in the family tree. [1]
- (c) Not all Muthu's siblings have dimples. Why is this possible? [1]

Score	3
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32. Miss Tan poured some water through a funnel in the set-up shown below and her pupils observed that the water dripped down slowly.

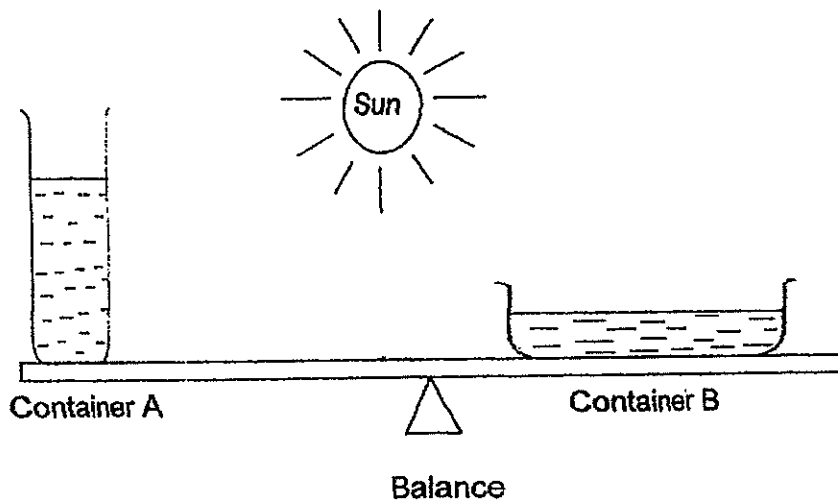


(a) The bottle contained a substance that would take away oxygen in the air so that water could enter to take the place of oxygen. However, it was observed that the water still dripped slowly into the bottle. Explain the observation. [2]

(b) What could be done to increase the rate of water dripping down into the test tube? [1]

Score	3
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33. Roger set up an experiment as shown below. He wanted to find out if certain factors would affect the rate of evaporation of water. The containers he used were made from the same type of material and had the same mass when empty. He poured in 200ml of water in each of the container and placed the set-up under the sun for two hours.



(a) What was the aim of Roger's experiment?

[1]

(b) The balance tilted downwards on one side after some time. Which side, A or B, do you think the balance had tilted downwards? Give a reason for your answer.

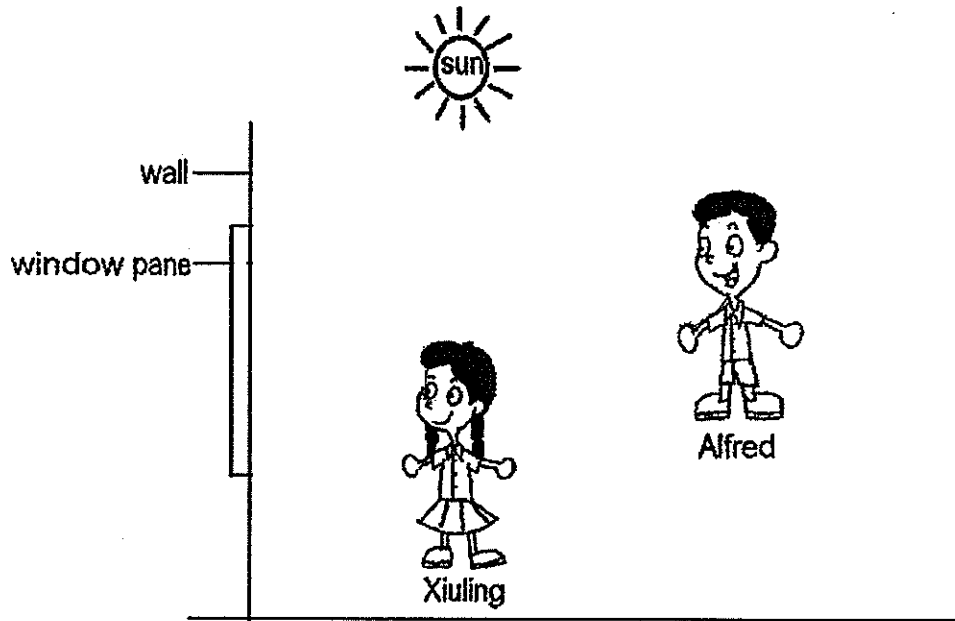
[2]

(c) State two other factors that would affect the rate of evaporation.

[1]

Score	4
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34. Alfred noticed Xiuling standing in front of a building and wanted to call out to her. .
Before he could do so, Xiuling turned around and greeted him.



(a) Describe how Xiuling was able to see Alfred who was standing behind her.

[1]

(b) With the help of a ruler, draw the light rays in the diagram above to show how the light travels to enable Xiuling to see Alfred.

[1]

Score	2
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35. Alex went to the park for his morning exercise and he noticed some water droplets on the leaves of the plants. His father told him that those were dew drops and they were formed from the condensation of water vapour in the air.



- (a) Explain how the water vapour in the air condenses into dew. [1]

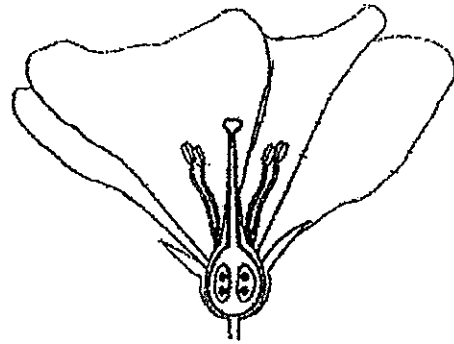
- (b) After a few hours, when the surrounding temperature increases, Alex noticed that the dew drops 'had disappeared'. Explain his observation. [1]

Score	2
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36. The diagram below shows the cross-sections of two flowers, R and S.



Flower R



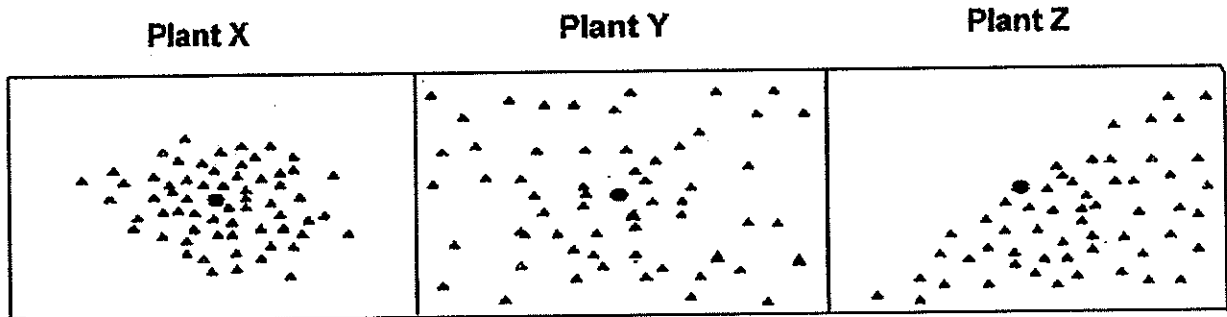
Flower S

- (a) Based on the diagrams above, which flower does not depend on insects for pollination? Suggest a possible method of pollination for this flower and give a reason for your answer. [1]

- (b) Suzy looked at the flower and concluded that only Flower S can develop into a fruit. Do you agree with her conclusion? Explain why. [1]

Score	2
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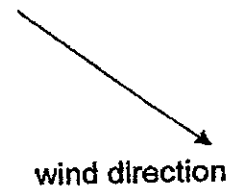
37. Three different plants were found growing on a plot of land. They flowered at the same time and their seed dispersal patterns over an area of 10 000 m² were shown in the diagrams below.



Key

● parent plant

▲ young plant



(a) Which of the plants, X, Y or Z, has its seeds dispersed by wind? Give a reason for your choice. [1]

(b) In the absence of wind, how would the dispersal of seeds of the plant relying on wind dispersal be affected? Which dispersal pattern will it resemble? [2]

Score	3
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38. Compare the plant and human sexual reproductive organs below.

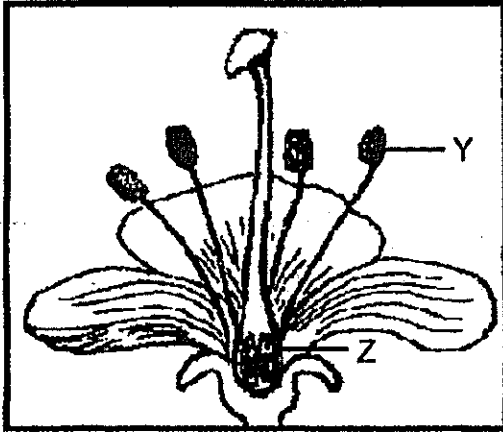


Diagram E

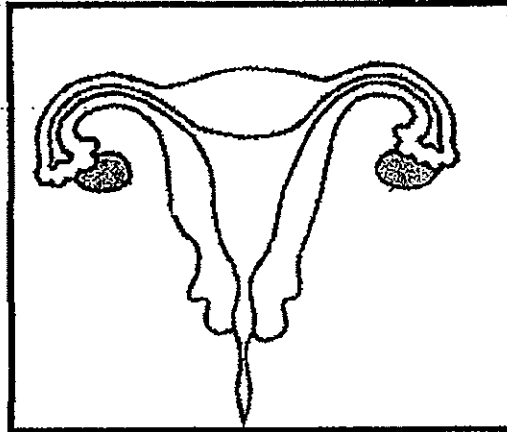


Diagram F

(a) Identify the part of the human reproductive system that has similar function as Part Z of the flower in Diagram E. Label the part(s) "Z" in Diagram F above. [1]

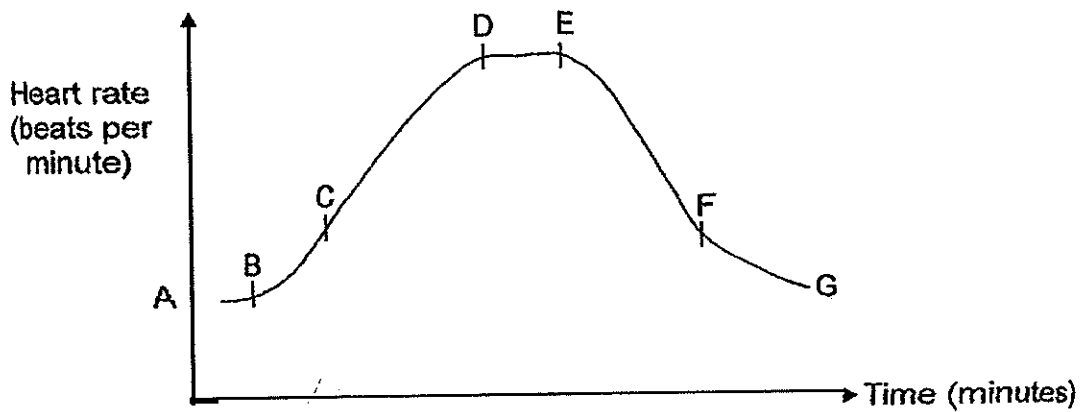
(b) Name the part of the human reproductive system that has similar function as part Y of the flower in Diagram E and state its function. [1]

(c) Animals can move by themselves. Two animals can come close to each other and mate so that the male can transfer the male reproductive cells to the female. Plants however cannot move about and mate. Identify the process in plants that has a similar function as mating in animals. [1]

Score	3
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39. Mr Ahmad has a daily morning exercise routine. He will walk round the running track once before increasing his speed to start his jog. After his jog, he will walk round the running track once again before sitting down on a bench to rest.

The graph below shows Mr Ahmad's heart rate plotted against time during his morning exercise routine.

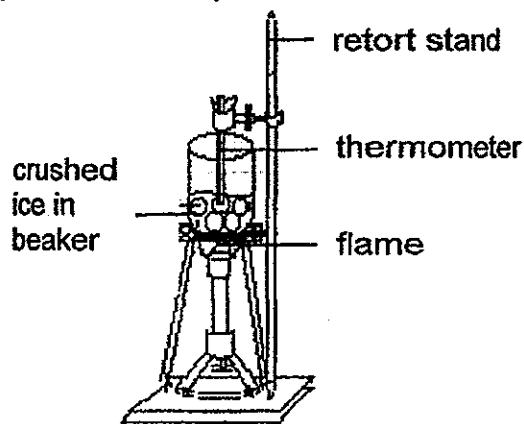


- (a) Study the graph above carefully. Which part of the graph shows the time when Mr Ahmad was jogging round the running track? [1]

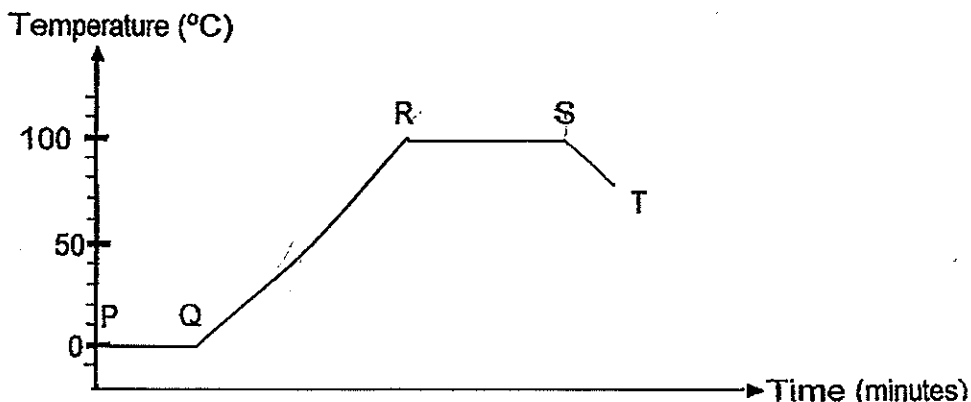
- (b) Explain why the heart rate increases from part C to D and then remains constant from part D to E. [2]

Score	3
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40. Study the set-up below carefully.



The graph below shows the changes in the temperature of the set-up above over time.



(a) What process is taking place at PQ? [1]

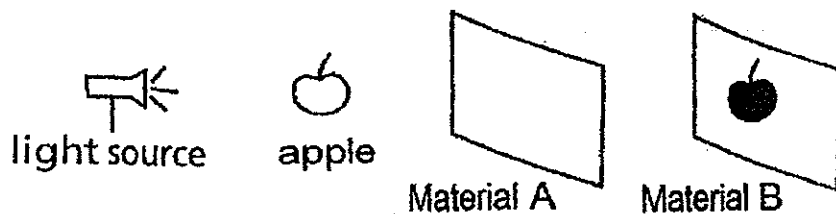
(b) Why did the temperature of water in the beaker start to rise at Point Q? [1]

(c) Explain why the temperature of water in the beaker remains constant at RS. [1]

(d) What could have happened at Point S? [1]

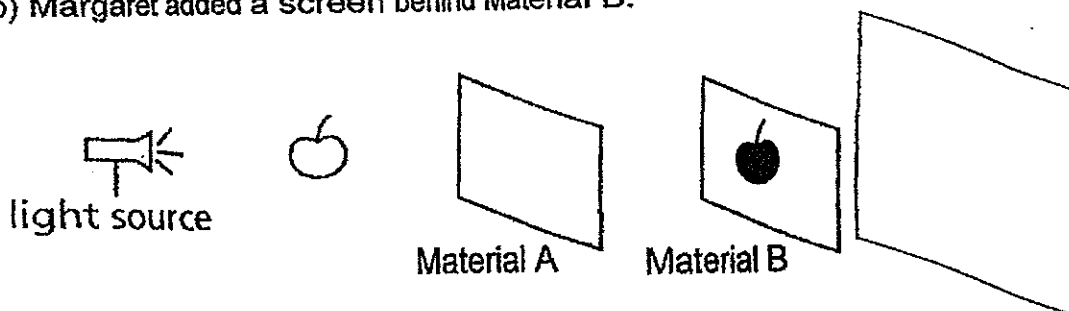
Score	4
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41. Margaret arranged a light source, an apple and a rectangular piece of Material A and Material B in a straight line in a dark room as shown below.

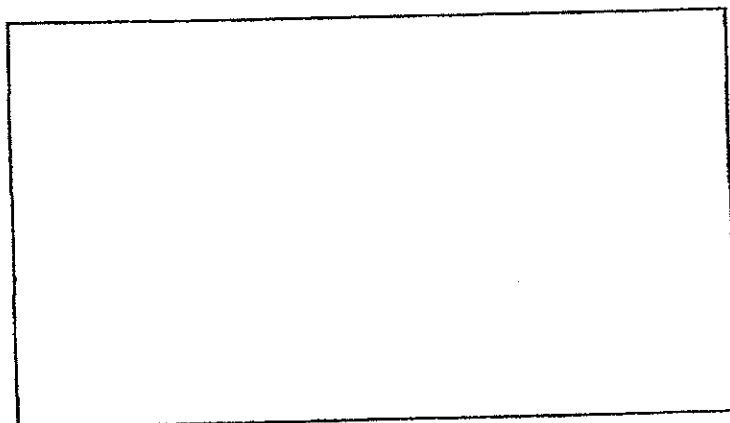


- (a) When Margaret switched on the torch, she found that a shadow of the apple was formed on Material B. Explain why the shadow was formed on Material B and not on Material A. [2]

- (b) Margaret added a screen behind Material B.

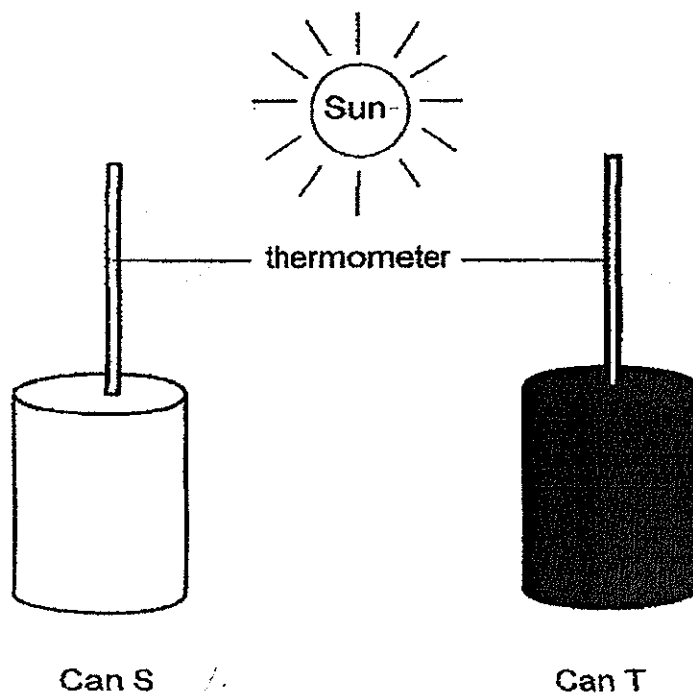


- Draw the shadow that will be seen on the screen in the space provided below. [1]



Score	3
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42. Paul filled up two similar cans with 150 ml of tap water. He placed a thermometer in each container. He painted Can S white and Can T black. He placed both set-ups in the sun for an hour as shown in the diagram below.



- (a) Complete the table below by putting a tick (✓) in the correct column. [2]

Variable	Dependent (variable measured)	Independent (variable changed)	Constant Variable
Colour of can			
Material of can			
Duration of experiment			
Reading on thermometer			

Paul recorded the temperature of water at 10-minute intervals. He tabulated the results in the table below.

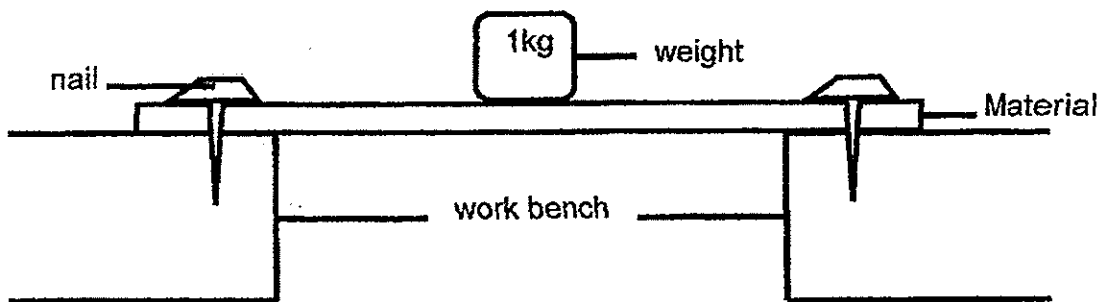
		Temperature of water ($^{\circ}\text{C}$)					
Duration (minutes)	0	10	20	30	40	50	60
S	30	31	32	33	34	35	35
T	30	33	36	38	41	43	44

(b) What can Paul conclude from the experiment? [1]

(c) Based on the results of the experiment, what coloured shirt should Paul wear on a hot day? Why? [1]

Score	4
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43. Father wanted to find out which material is more suitable to make a tabletop. He cut Materials K, L and M into the same size and prepared a set-up as shown below to carry out his experiment.



Father kept adding weights on the material to a maximum of 10 pieces of weight. He repeated the above experiment three times before moving on to the next material.

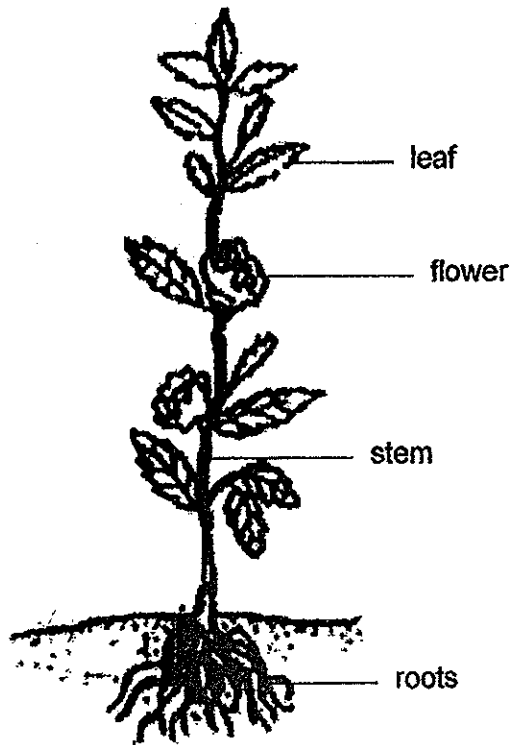
He wrote down his observations in the table below.

Material	Observations
K	Material became bent but did not break when the 10 th piece of weight was added.
L	Material broke when the 10 th piece of weight was added.
M	Material did not bend or break when the 10 th piece of weight was added.

(a) Why did Father repeat the experiment three times for each type of material?[1]

(b) Which material is the best choice for making a tabletop? State two properties of that material, from the observations above, which make it suitable to be used as a tabletop. [1]

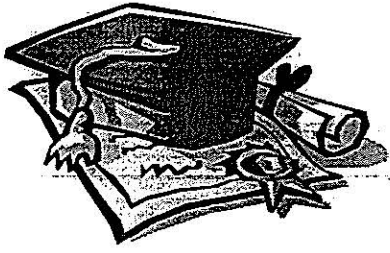
44. Study the diagram of a flowering plant below.



How does the stem work together with the roots and the leaves of the plant to enable the plant to survive? [2]

Score	2
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-End of paper-



ANSWER SHEET

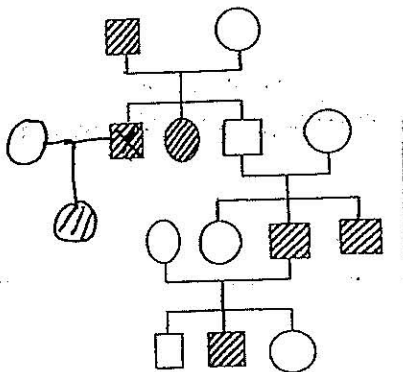
EXAM PAPER 2014
SCHOOL : NAN HUA
PRIMARY : P5
SUBJECT : SCIENCE
TERM : SA1

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

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

31)a)b)



c) Because some traits are passed down the generations but may not show in some generations.

32)a) There are still other gases present in the air in the bottle. These gases take up space in the bottle and they cannot escape, hence water cannot flow in to take up the same space.

b) He could poke a few holes on the bottle.

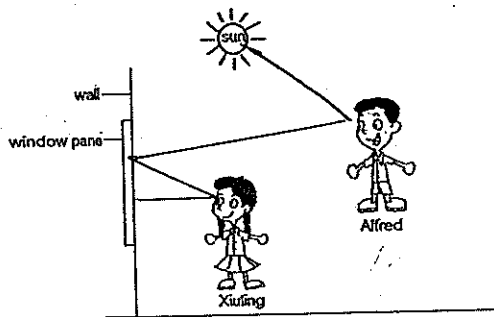
33)a) He wanted to find out if the size of the exposed surface area of the water will affect the rate of evaporation of water from the container.

b) The balance will tilt down wards on the side of container A. As container A has a smaller exposed surface area than B, less water has evaporated during the experiment, causing it to have a greater mass than B and hence the balance tilts downwards on the side of container A.

c) The presence of wind and the temperature of the surroundings.

34)a) Alfred reflects light (from the sun) to the window pane and the window pane reflects the light into Xiuling's eyes.

b)



35)a) The warmer water vapour in the air loses heat to the leaves when it comes into contact with the cooler surface of the leaves, condensing into water droplets.

b) The dew drops gained heat and evaporated.

36)a) Flower R. It is more likely pollinated by wind as it has its anthers hanging out for the pollen grains to be carried easily away by the wind.

b) Yes, I agree. Flower S has ovules and can be fertilised.

37)a) Plant Z. The seeds are dispersed in the direction of the wind.

b) It will be dispersed closer to the parent plant. It will resemble dispersal pattern X.

38)a)

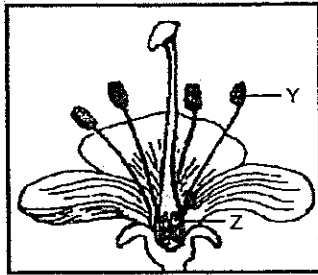


Diagram E

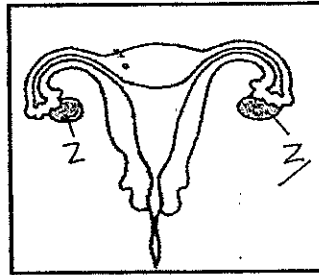


Diagram F

b) Testis. The testis produces sperms.

c) Pollination.

39)a) CE

b) When Ahmad starts to jog C, his body needs more energy. Therefore his heart has to pump faster to supply oxygen-rich blood and digested food to all parts of his body for respiration to release more energy. From D to E, there is sufficient oxygen and digested food to reduce energy, so the heart pumps at a constant rate.

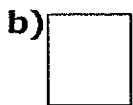
40)a) Melting.

b) The ice had melted into water and the water started gaining heat from the flame.

c) The water has reached its boiling point at point R.

d) The temperature could have been removed from the flame.

41)a) Material A is transparent, thus no shadow was formed on Material A but Material B is opaque, hence the shadow of the apple is formed on Material B.



42)a) ✓



b) The black can gains heat faster than the white can.

c) White. White colour gains heat slower.

43)a) He wanted to ensure reliability of the result.

b) M. Because it did not bend or break.

44) The stem transports water absorbed by the roots to the leaves. The stem transports the food made by the leaves to the roots.

10