Index No. | | | | | | |

NAN HUA PRIMARY SCHOOL
PRELIMINARY EXAMINATION – 2012
PRIMARY 6

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.

| | | |
|---|---|---|
| Booklet A | | / 60 |
| Booklet B | | / 40 |
| Total | | /100 |

Name: _____( ) Class: P 6_____

Date: 27 August 2012 Parent's Signature: _____

This booklet consists of 22 pages including this cover page.

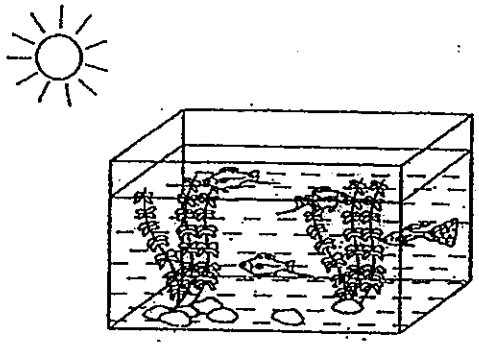
**Section A:** (30 x 2marks = 60marks)
For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

1. Which of the following are parts of the respiratory system?

A Nose
B Lungs
C Wind pipe

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

2. A tank containing some aquatic plants is placed outdoors on a sunny day.

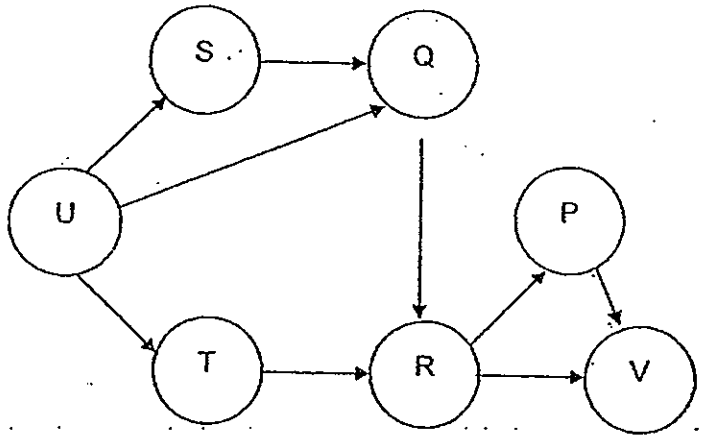


Identify the factors that will affect, directly or indirectly, the amount of oxygen in the water.

A The intensity of light in the water.
B The amount of plants in the tank.
C The material used for making the tank.
D The amount of carbon dioxide in the water.

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

The diagram below shows a food web in a certain habitat. Study the food web carefully and answer questions 3 and 4.




3. How many animals in this habitat are both a prey and a predator?

(1) 5
(2) 2
(3) 3
(4) 4

4. A disease wiped out the whole population of R. Which one of the following statements about the effects on the populations of other organisms in this habitat is incorrect?

(1) The population of Q will increase.
(2) The population of T will increase.
(3) The population of S will not be affected.
(4) The population of P will decrease the fastest.

5. Which of the following is/are a cause of acid rain?

A CFCs released from refrigerators
B Dust particles released from factories
C A farmer spraying insecticides on his crops.
D Gases produced from power stations using coal.

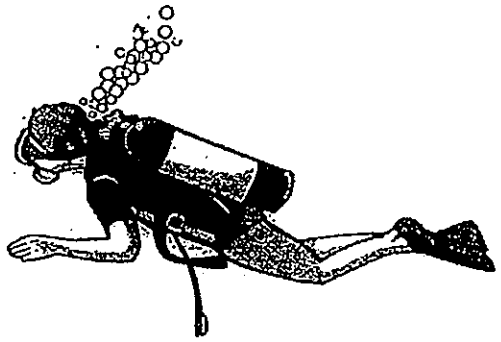
(1) A only
(2) D only
(3) A, C and D only
(4) A, B, C and D

6. The water cycle on Earth can take place repeatedly because water _____.

A freezes at 0°C and boils at 100°C.
B has volume and is not compressible.
C is essential for the survival of living things.
D can change from one state to another when it gains or loses heat.

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

7. The diagram below shows a diver carrying an oxygen tank and wearing a pair of rubber flippers.



Which one of the following structural adaptations and breathing methods are most similar to the rubber flippers and oxygen tank respectively?

| | Rubber flippers | Oxygen Tank |
|---|---|---|
| (1) | Long legs | Air bubble |
| (2) | Fins | Breathing tube |
| (3) | Tail | Breathing tube |
| (4) | Webbed feet | Air bubble |

8. We breathe in and breathe out air all the time. Which of the following describe what happens when we breathe?

| | Breathing in | Breathing out |
|---|---|---|
| A | Ribcage moves outwards | Ribcage moves inwards |
| B | Space in our chest becomes larger | Space in our chest becomes smaller |
| C | Air rushes into the lungs | Air moves out of the lungs |

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

9. The diagram below shows a sea dragon. It is an animal that looks like a plant.

What characteristics of the sea dragon do scientists observe before it is classified as an animal and not a plant?

A The way it takes in water.
B The ability to grow bigger.
C The ability to make its own food.
D The ability to move by itself from place to place.

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

10. Which one of the following adaptations does not help plants to obtain more sunlight for photosynthesis?

(1) Presence of twining stems to climb up support.
(2) Arrangement of leaves that reduces overlapping.
(3) Presence of stomata on the underside of the leaves.
(4) Presence of air spaces in between cells in the stem of a totally submerged aquatic plant to remain upright in water.

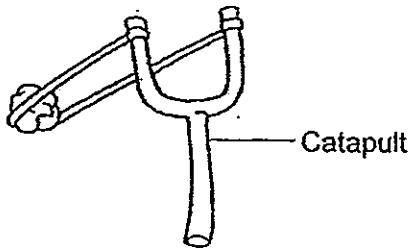
11. John threw a ball upwards.

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

A There is no force acting on the ball when it reaches the highest point.
B The gravitational force of the Earth causes the ball to change its mass.
C The gravitational force of the Earth causes the ball to change its direction of movement.
D When the ball is moving upwards, the gravitational force of the Earth does not act on it.

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

12. Tommy pulled the rubber band of a catapult and shot a pebble into the air.

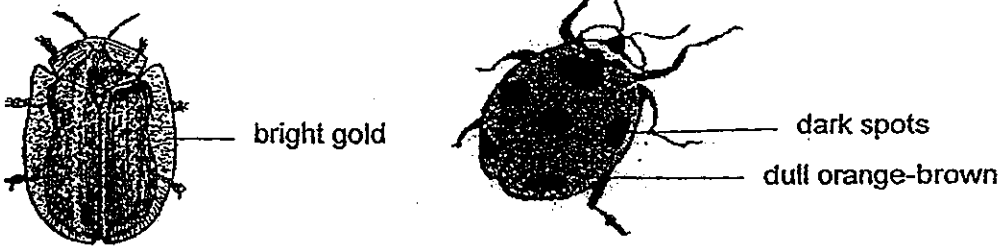



What can be done so that the pebble can travel a longer distance?

A Use a pebble of greater mass.
B Pull the rubber band to a greater length.
C Use a more elastic rubber band and stretch it to the same length.

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

13. Many birds find beetles very tasty but they don't like to eat ladybugs. Beetle X is usually bright gold. However, it can change to a dull orange-brown with dark spots.

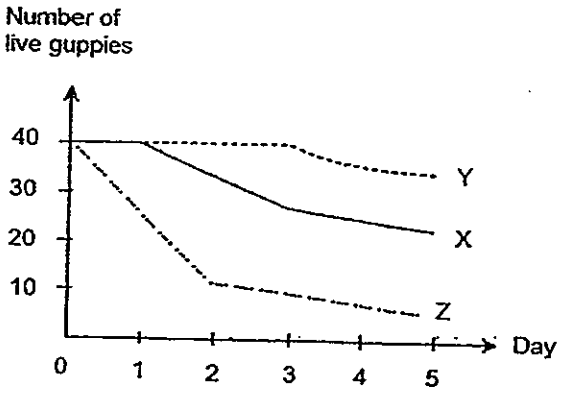



**Beetle X** **Ladybug**

Based on the information above, how does the behaviour of the Beetle X help it to survive better?

(1) The spots on its body help it to frighten away its predators.
(2) Its predators may think that it is a ladybug and will not eat it.
(3) It can hide among other ladybugs and will not be spotted by its predators.
(4) The colour change helps it camouflage with its surroundings and not be seen by its predators.

14. Jon collected the same amount of pond water from ponds, X, Y and Z. The water collected is poured into 3 separate tanks. Forty guppies were added into each of the tanks. The number of live guppies in the tanks were counted over five days. The graph below shows the results.




What can you conclude from the information gathered?

A Water from Pond X is the most polluted.
B Water from Pond Z is the least suitable for the guppies.
C Water from Pond Y has the greatest amount of bacteria in it.
D Water from Pond Y has more food producers than that of Pond X.

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

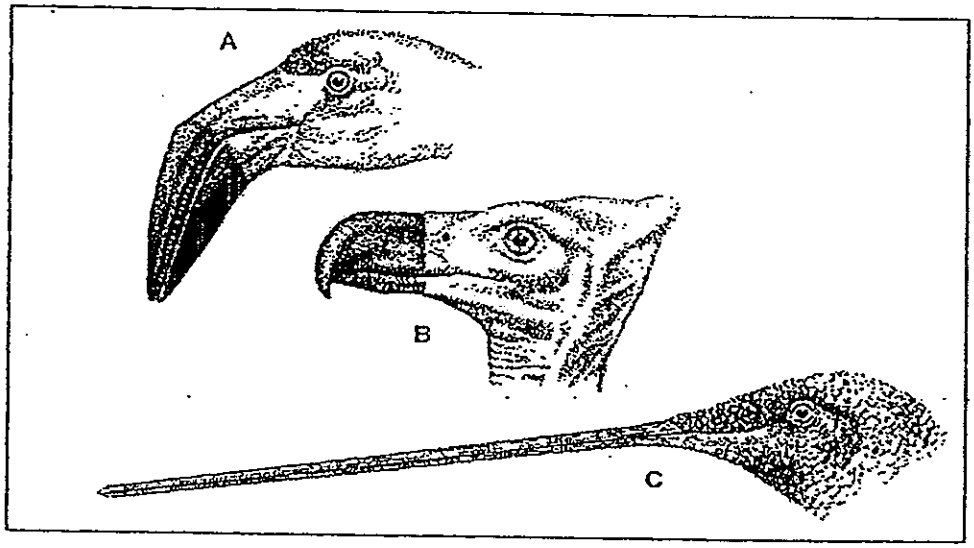
15. What are the benefits of the development of Science and Technology as a result of Man's interaction with the environment?

A We have food of better quality.
B The Earth becomes warmer due to the increasing greenhouse effect.
C We can communicate with people over long distances quickly and clearly.
D We have man-made materials such as alloys and plastics to meet our needs.

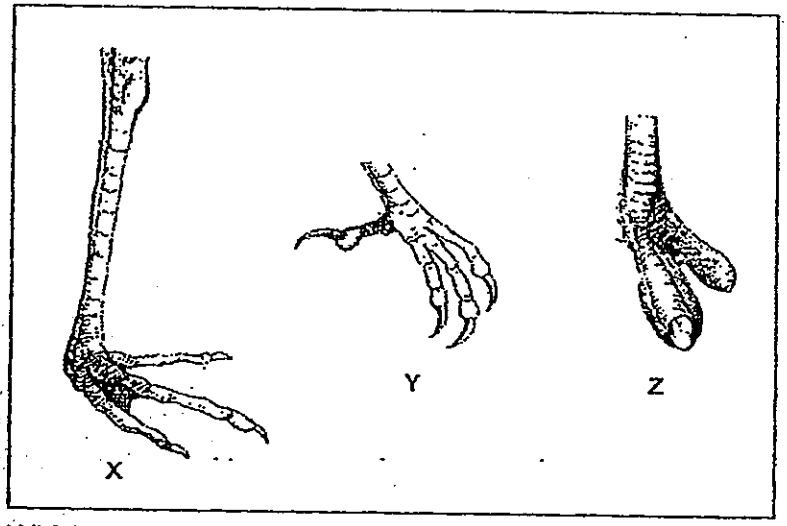
(1) A and D only
(2) B and C only
(3) A, C and D only
(4) A, B, C and D

16. Bird P is found in wetland. It feeds on small aquatic animals found in shallow water. The drawings below show the beaks and feet of some birds.

**Beaks of birds**



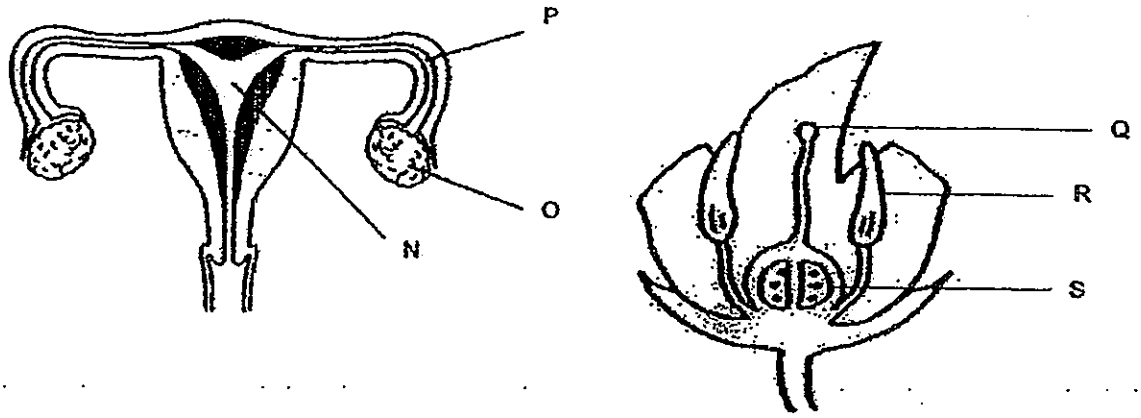

**Feet of birds**




Which one of the following correctly matches the beak and feet to that of Bird P?

| | Beak | Feet |
|---|---|---|
| (1) | A | X |
| (2) | A | Y |
| (3) | B | Z |
| (4) | C | Y |

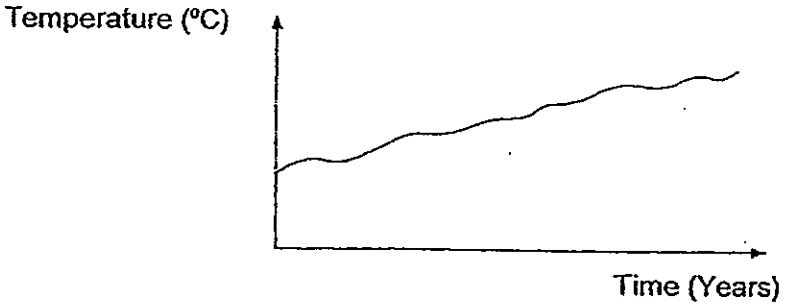
17. The diagrams below show the female reproductive system of a human and the cross-section of a flower.




Where does fertilization take place in the human reproductive system and the flower respectively?

(1) Parts O and Q
(2) Parts P and Q
(3) Parts P and S
(4) Parts N and R

18. The graph shows the average temperature of the Earth over the years.




Which of the following explain(s) the graph?

A Deforestation
B Cutting down the use of plastic bags
C Building of greenhouses to grow plants
D Fumes released from vehicles and factories

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

19. Read the following information.

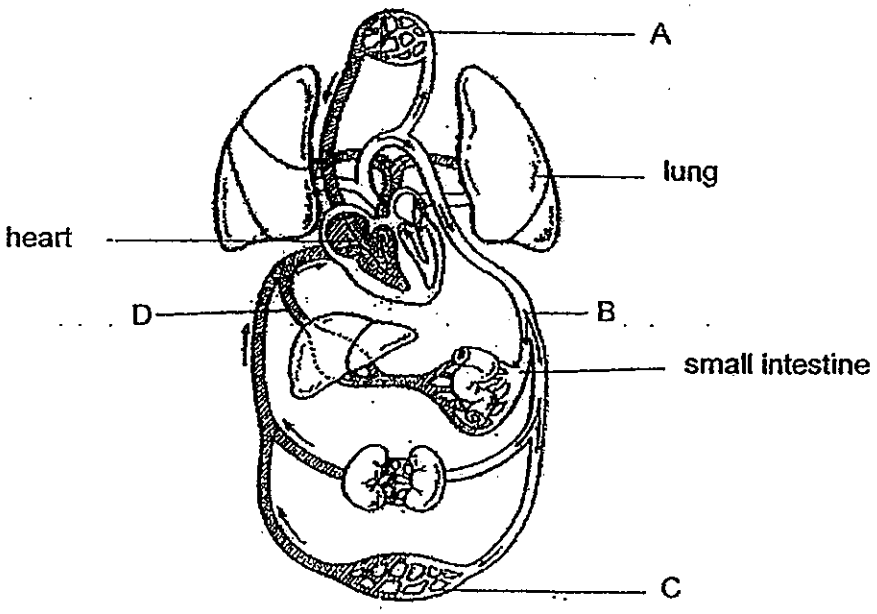
- When water gains heat, it changes into water vapour.
- 1 $cm^3$ of water forms more than 1 000 $cm^3$ of water vapour but the amount of particles (matter) in water remains the same.

What can you infer or conclude from the information given above?

A When water loses heat, it changes into ice.
B Water can exist in three interchangeable states.
C The mass of water is increased when water changes into water vapour.
D The spacing between the particles is increased when water changes into water vapour.

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

20. The diagram below shows the blood circulatory system of a human.

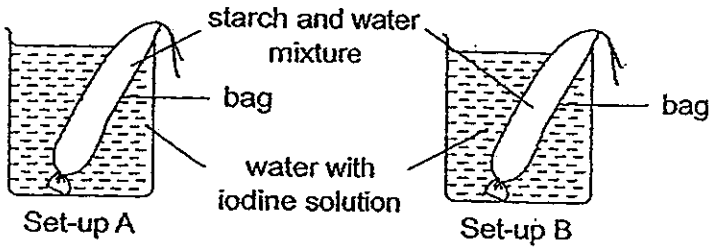



Which of the statements below are true?

W: The heart receives blood that is poor in oxygen only.
X: Blood that is rich in oxygen flows from the lungs to the heart.
Y: Exchange of gases only takes place between the blood vessels at A and C.
Z: Blood in blood vessel B has a higher oxygen content than blood in blood vessel D.

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

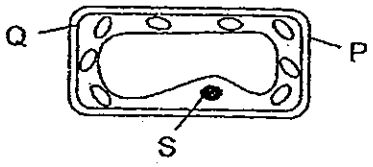
21. Jane conducted an experiment using bags made of two different materials. She poured starch mixture into the bags and left them in beakers with iodine solution. She knew that if iodine solution came into contact with starch, the iodine solution would change from brown to dark blue.




After 1 day, she recorded what she observed in the table below.

| | Set-up A | Set-up B |
|---|---|---|
| Starch and water mixture | Turned dark blue | Turned dark blue |
| Water and iodine solution | Remained brown | Turned dark blue |

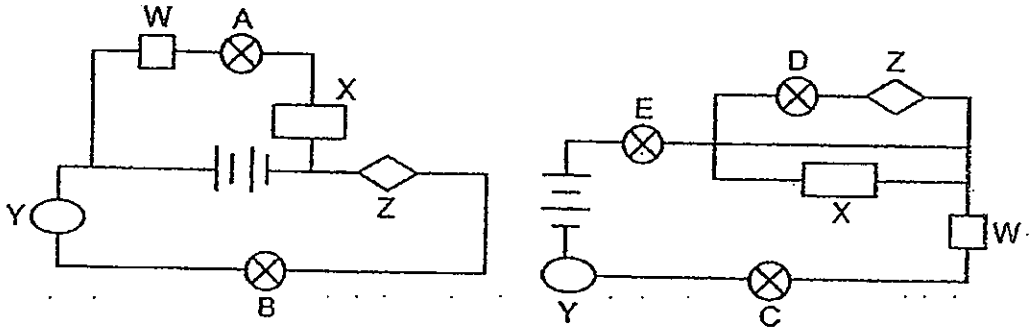
She related the experiment to what she had learnt about plant cells.




Which of the following statements best describes the experiment above?

(1) Both bags can be used to represent part Q of the cell.
(2) The starch particles can be used to represent part S which controls the movement of particles.
(3) The bag in set-up A can be used to represent part P of the cell while the bag in set-up B can be used to represent part Q of the cell.
(4) The bag in set-up A can be used to represent part Q of the cell while the bag in set-up B can be used to represent part P of the cell.

22. Vanessa set up the following electrical circuits to find out if materials W, X, Y and Z were electrical conductors.



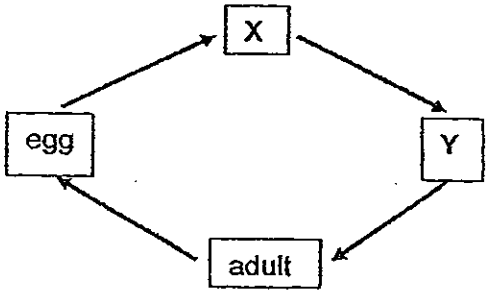

She recorded her observations in the table below.

| Bulb | Did the bulb light up? |
|---|---|
| A | Yes |
| B | No |
| C | Yes |
| D | No |
| E | Yes |

From the observations, which materials are conductors of electricity or insulators of electricity?

| | Conductors of electricity | Insulators of electricity |
|---|---|---|
| (1) | X | W, Y, Z |
| (2) | W, X, Y | Z |
| (3) | W, Z | X, Y |
| (4) | W, X | Y, Z |

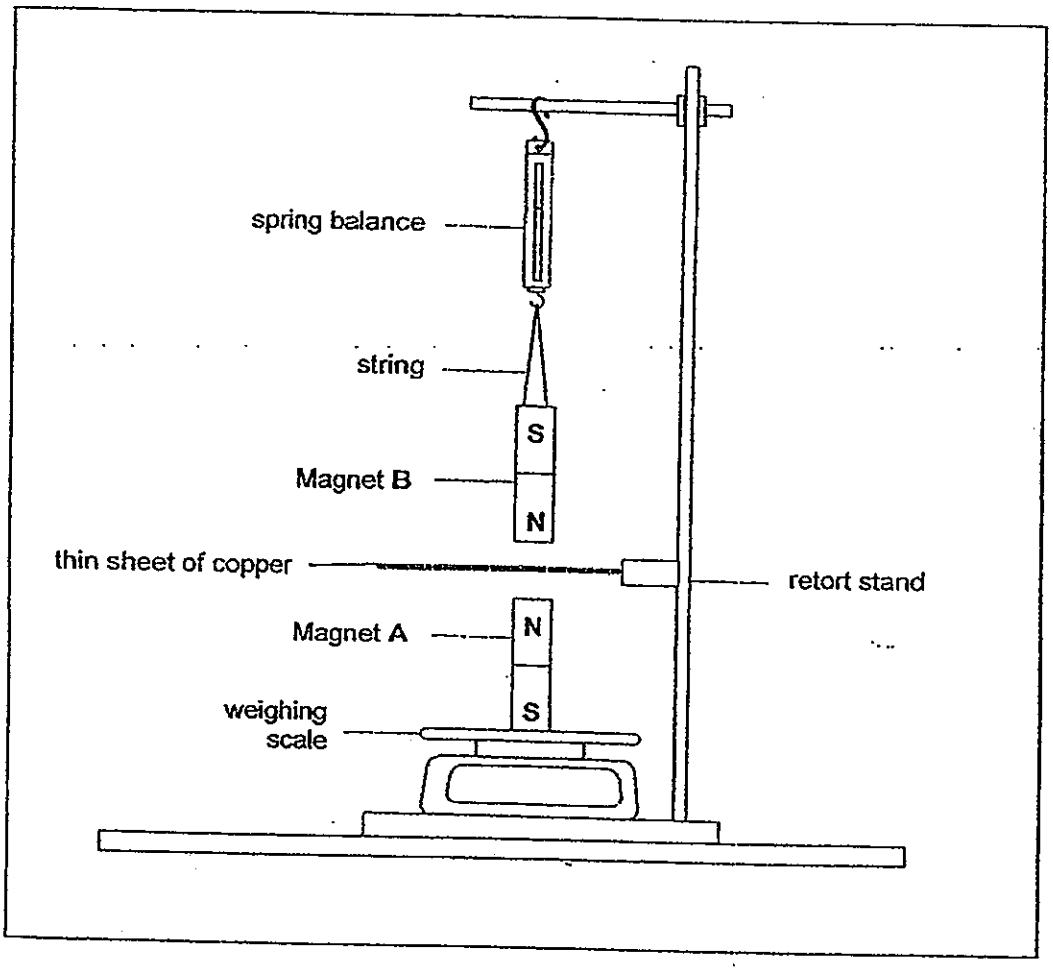
23. The diagram below shows the stages in the life cycle of a butterfly.




Which one of the following pairs of statements describes what happens at Stage X and Y?

| | Stage X | Stage Y |
|---|---|---|
| (1) | It eats a lot and grows very fast. | It does not eat at all. |
| (2) | It moults a number of times. | It feeds on plant sap. |
| (3) | It breathes through breathing holes. | It moults a number of times. |
| (4) | It grows bigger. | It feeds on plant sap. |

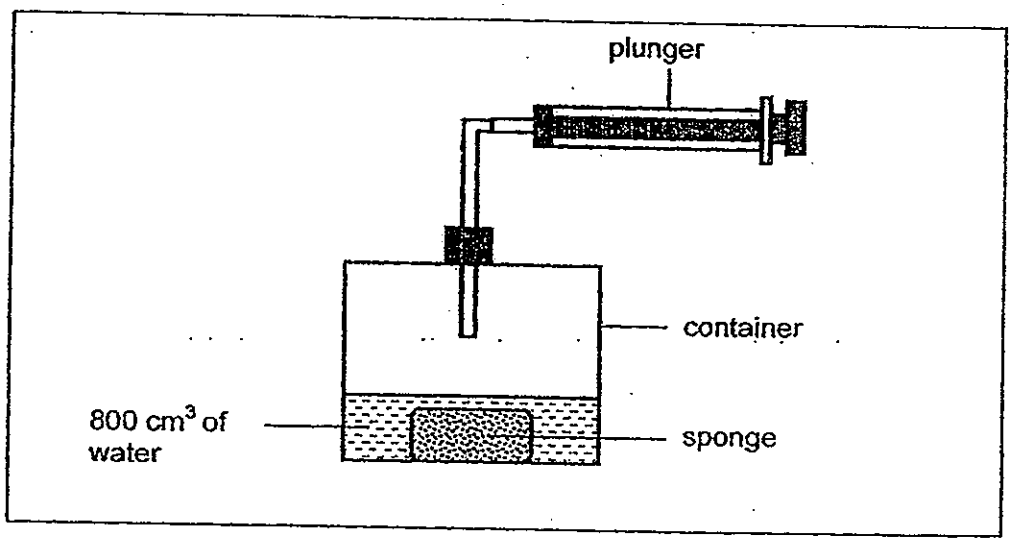
24. Mr Tan set up an experiment using two identical strong bar magnets as shown in the diagram below. Both Magnets A and B have a weight of 3N each.
(N stands for Newtons which is the unit for force.)




Which one of the following sets of readings on the weighing scale and spring balance is most likely to be the data that Mr Tan has recorded?

| | Reading on spring balance | Reading on weighing scale |
|---|---|---|
| (1) | Less than 3N | Less than 3N |
| (2) | More than 3N | More than 3N |
| (3) | Less than 3N | More than 3N |
| (4) | More than 3N | Equal to 3N |

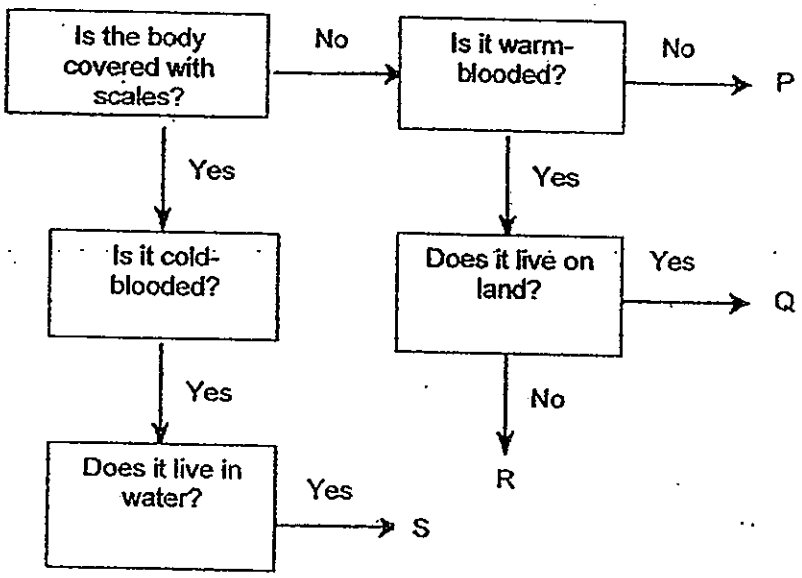
25. The diagram below shows a container which has a capacity of 3000 $cm^3$. A sponge with a volume of 200 $cm^3$ was placed into it and 800 $cm^3$ of water was then poured into the container. Another 1000 $cm^3$ of air was pumped into the container.




What one of the following is most likely to be the final volume of the air in the container?

(1) 2000 $cm^3$
(2) 2100 $cm^3$
(3) 2200 $cm^3$
(4) 3000 $cm^3$

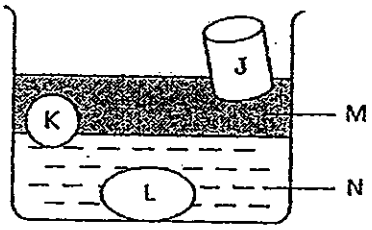
26. Study the flowchart on classification of animals carefully.




Which one of the letters represents a whale?

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

27. Sandra poured two liquids, M and N, into a container. Then she put three different solids, J, K and L, into the container. The diagram below illustrates her observation.

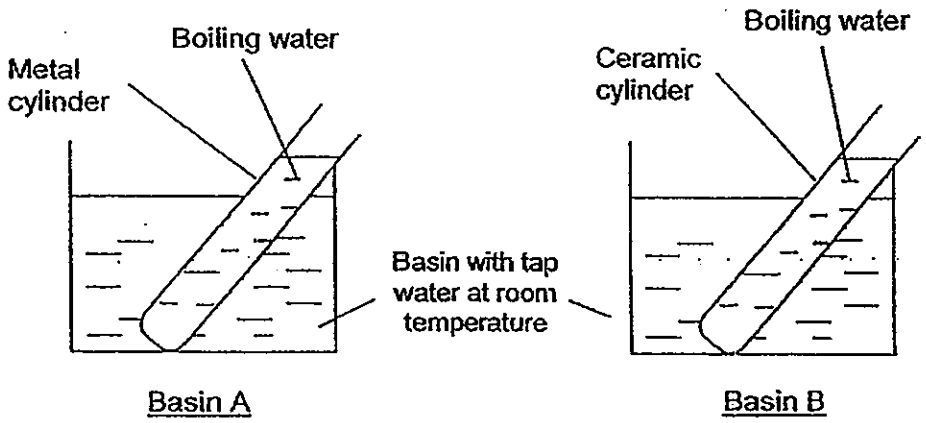



What can you conclude from her observation?

A Liquid M is oil and liquid N is water.
B Solid L will sink if it is put into a beaker filled with liquid M only.
C Solid J will float if it is put into a beaker filled with liquid N only.
D Solid K will sink if it is put into a beaker filled with liquid M only.

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

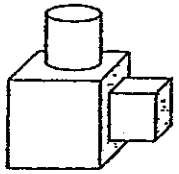
28. Mrs Lee set up an experiment as shown below. She poured an equal amount of tap water into two basins A and B. Next, she poured an equal amount of boiling water into a metal cylinder and a ceramic cylinder. Then she lowered the two cylinders into the basins A and B respectively.




Which one of the following shows the temperatures of water in different parts of the set-ups after 15 minutes?

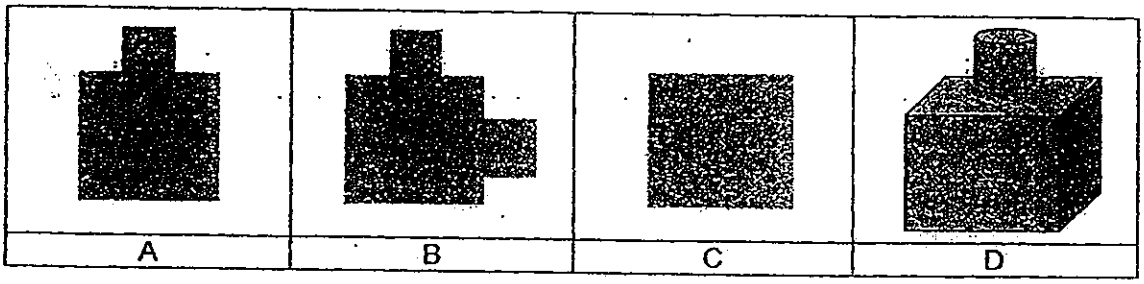
| | Temperature of water (°C ) after 15 minutes | | | |
|---|---|---|---|---|
| | Basin A | Metal cylinder | Basin B | Ceramic cylinder |
| (1) | 35 | 80 | 45 | 70 |
| (2) | 45 | 75 | 35 | 85 |
| (3) | 50 | 45 | 40 | 65 |
| (4) | 50 | 50 | 30 | 30 |

29. Study Object X below carefully.



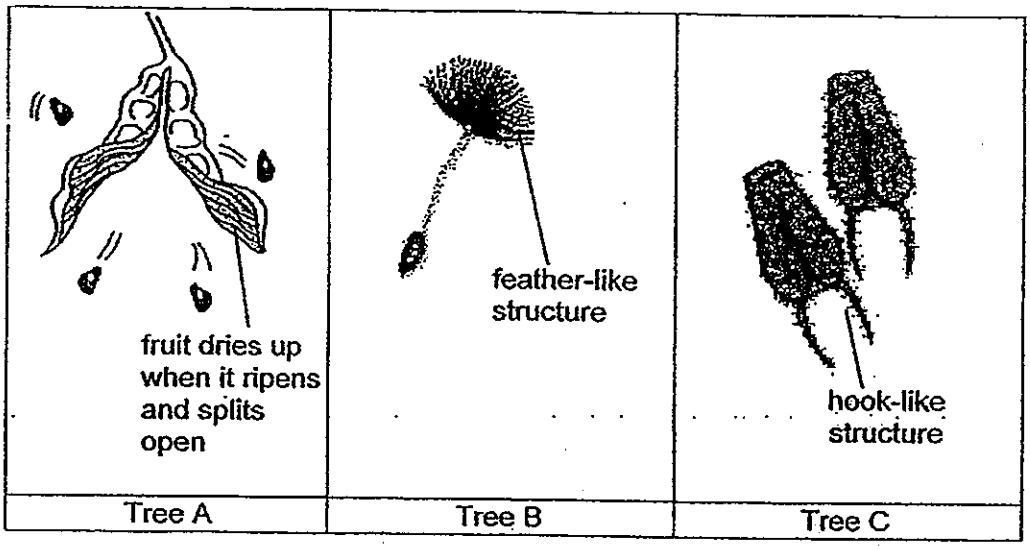
Object X

Which of the following shadows cannot be formed by Object X when light is shone on it?

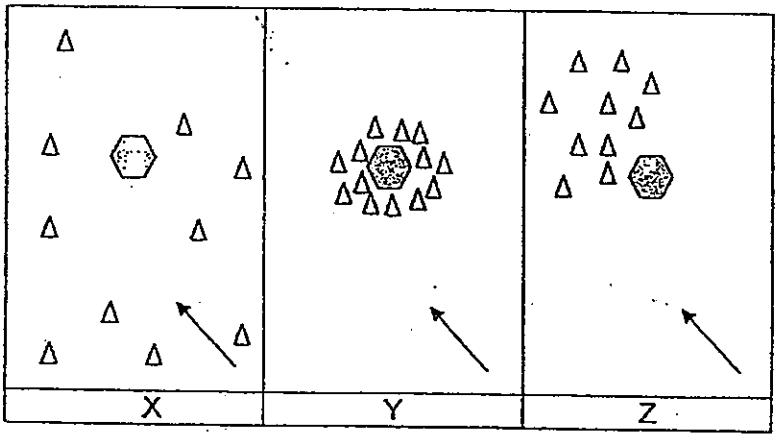



(1) B only
(2) A and C only
(3) C and D only
(4) A, C and D only

30. The diagrams below show the fruits of three different types of trees.




The distribution of seedlings of the parent trees are shown below.




Key:

| | |
|---|---|
| | Wind direction |
| | Parent tree |
| Δ | Seedling |

Which one of the following correctly matches the distribution of seedlings and their parent tree?

| | X | Y | Z |
|---|---|---|---|
| (1) | Tree A | Tree B | Tree C |
| (2) | Tree B | Tree A | Tree C |
| (3) | Tree C | Tree A | Tree B |
| (4) | Tree C | Tree B | Tree A |

Index No. | | | | | | |

NAN HUA PRIMARY SCHOOL
PRELIMINARY EXAMINATION – 2012
PRIMARY 6

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.

| Section B | | /40 |
|---|---|---|

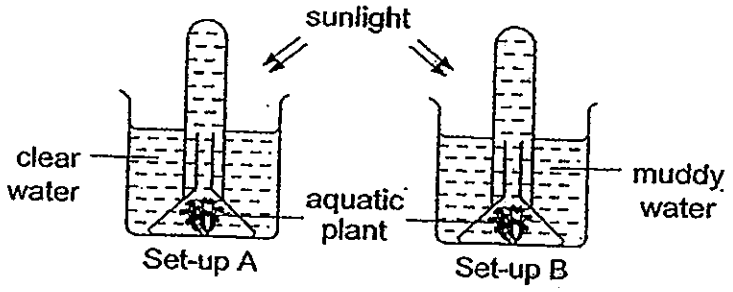
Name: _____( ) Class: P 6____

Date: 27 August 2012 Parent's Signature: _____

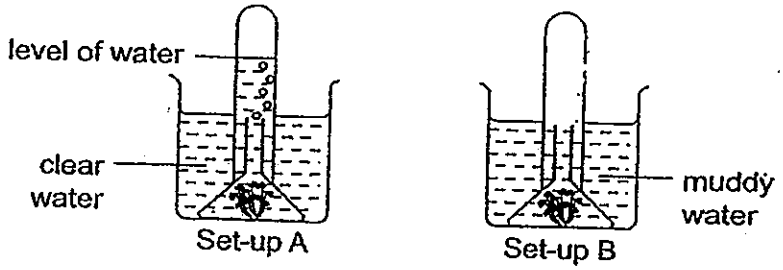
This booklet consists of 16 pages including this cover page.(Pg 23 to Pg 38)

**Section B:** (40marks)
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. Joseph set up an experiment to find out the effect of muddy water on the rate of photosynthesis in aquatic plants as shown below. The set-ups were placed under strong sunlight.




He then observed the amount of oxygen produced in Set-up A.




(a) Complete the diagram above by drawing what the level of water in Set-up B should be. [1]

(b) Explain your answer in (a). [2]

_____

_____

| Score | 3 |
|---|---|

32. Jackrabbits are adapted to the conditions of dry grasslands. Dry grasslands can be both very hot and very cold. In hot weather, the jackrabbit's ears stand straight up. In cold weather, the ears lie back close to the body.

How does the behavioural adaptation help the Jackrabbit to survive the hot and cold weather? [2]

Hot weather:

_____

_____

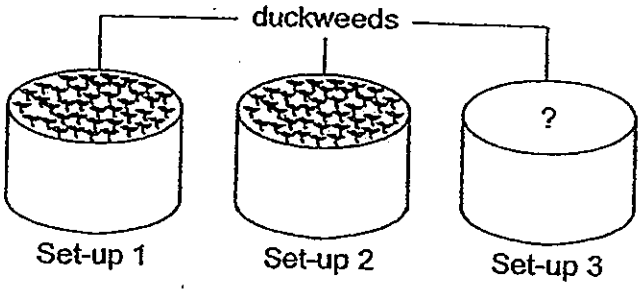
Cold weather:

_____

_____

| Score | /2 |
|---|---|

33. Christie set up an experiment to find out if duckweeds can grow well in soapy water.




The following table shows how the experiment was being set up.

| | Number of duckweeds | Soap Solution (m*l*) | Pond water (m*l*) |
|---|---|---|---|
| Set-up 1 | 40 | 1 | 500 |
| Set-up 2 | 40 | 2 | 500 |
| Set-up 3 | | | |

(a) In order to conduct a fair test, Christie used Set-up 3 as a control. Complete the table above for Set-up 3. [1]

(b) Besides using the same type of soap solution, pond water and duckweed, what is another factor not stated above that should be kept constant in order for the experiment to be a fair test? [1]

_____

_____

(c) What observation should Christie make in order to compare how well the duckweeds grow in each set-up? [1]

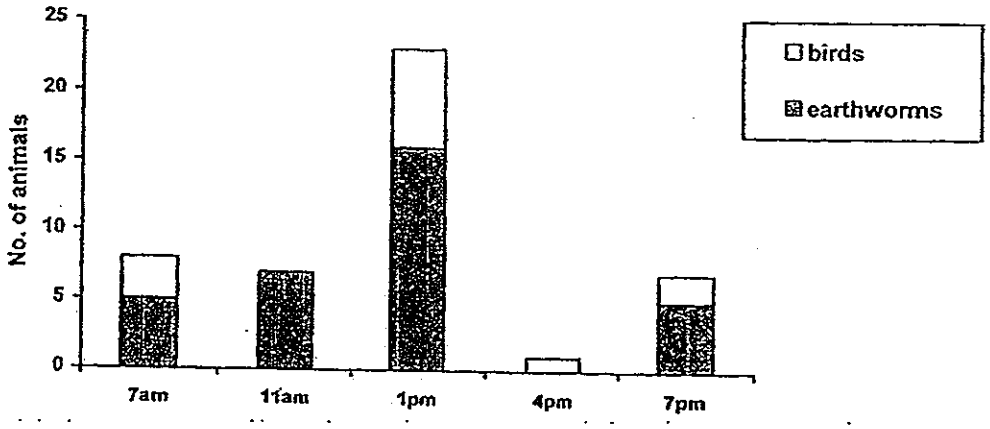
_____

_____

_____

| Score | |
|---|---|
| | 3 |

34. The graph below shows the number of earthworms (near the surface of the soil) and birds in an eco-garden over a period of 12 hours. The earthworm is the prey of the bird.




The weather condition of the eco-garden over the similar period of time is shown below.

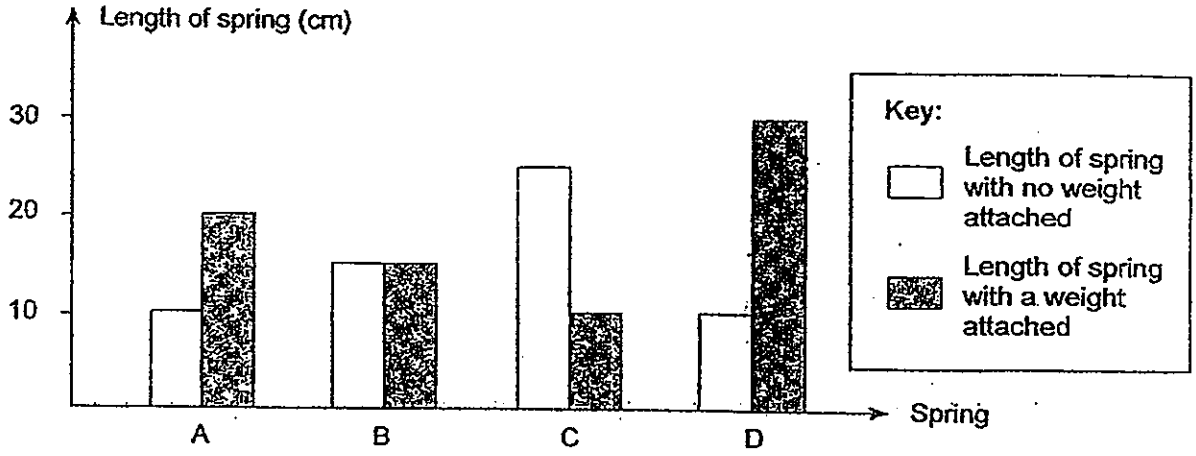
| Weather | | | | |
|---|---|---|---|---|
| 8 am | 10.30 am | 12.50 pm | 3 pm | 5 pm |
| Cloudy | Started raining | Stopped raining | Strong sunlight | Moderate sunlight |

Based on the information above, indicate whether the statements are True, False or Not possible to tell by putting a tick in the appropriate box. [2]

| Statements | True | False | Not possible to tell |
|---|---|---|---|
| Earthworm is the bird's only source of food. | | | |
| The greatest number of earthworm is found near the surface of the soil at 12pm. | | | |
| Less earthworms are found near the surface of the soil when the intensity of light is stronger. | | | |
| The greater the number of bird, the greater the number of earthworm found near the surface of the soil. | | | |

| Score | 2 |
|---|---|

35. The graph below shows how the lengths of different springs in different devices change when different weights are attached to each spring.




(a) Based on information from the graph, what can you observe about Spring B? [1]

(b) Give a reason for the observation stated in (a)? [1]

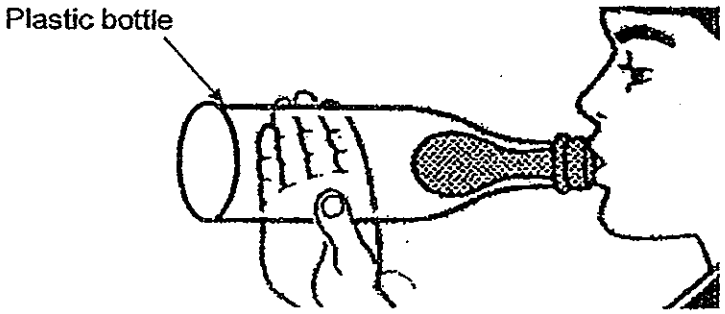
(c) What device is Spring C most likely found in? Explain your answer. [1]

(d) Which two springs most likely come from the same type of device? Give an example of such a device. [1]



Score 4

36. Kern pushed a deflated balloon into a plastic bottle and spread the small open section of the balloon over the mouth of the bottle.




(a) He tried to blow up the balloon but could only inflate the balloon slightly. Explain why this is so? [1]

_____

_____

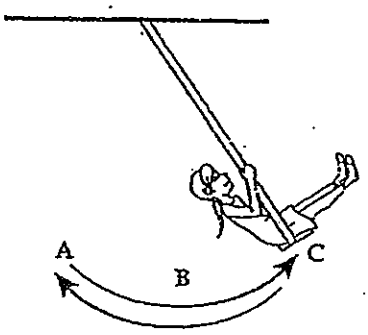
(b) What can Kern do to the bottle so that he can blow a bigger balloon in the bottle? Explain your answer. [2]

_____

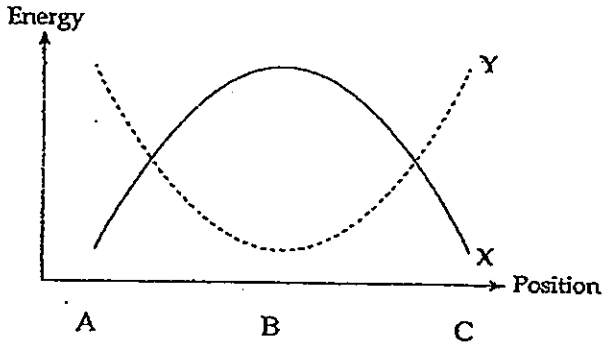
_____

| Score | / 3 |
|---|---|

37. Jolin sat on the swing in the playground as shown in the picture below.




The graph below shows the changes in energy as Jolin swings from A to B to C and back again to A.




(a) What does each of the lines on the graph represent? [1]

X : _____

Y : _____

(b) State the energy change from C to A. [1]

_____

| Score | 2 |
|---|---|

38. Many years ago, a scientist carried out an important investigation on plant growth. He planted 100 plots each of Plot X and Plot Y. Plot X consists of one type of plant whereas Plot Y consists of three types of plants as shown below. The number of plants in each plot is the same.

| | | | | | |
|---|---|---|---|---|---|
| A | A | A | A | A | A |
| A | A | A | A | A | A |
| A | A | A | A | A | A |
| A | A | A | A | A | A |
| A | A | A | A | A | A |
| A | A | A | A | A | A |

Plot X

| | | | | | |
|---|---|---|---|---|---|
| A | B | C | A | B | C |
| A | B | C | A | B | C |
| A | B | C | A | B | C |
| A | B | C | A | B | C |
| A | B | C | A | B | C |
| A | B | C | A | B | C |

Plot Y

He concluded from his investigation that:

> If a plot of land is sown with one type of plant and a similar plot is sown with the same type of plant and 2 other types of plants, the second plot will produce a greater number of healthier plants.

(a) Give one other variable that was controlled in the scientist's investigation to ensure a fair test. [1]

_____

_____

(b) Why did the scientist use two hundred plots rather than just two? [1]

_____

_____

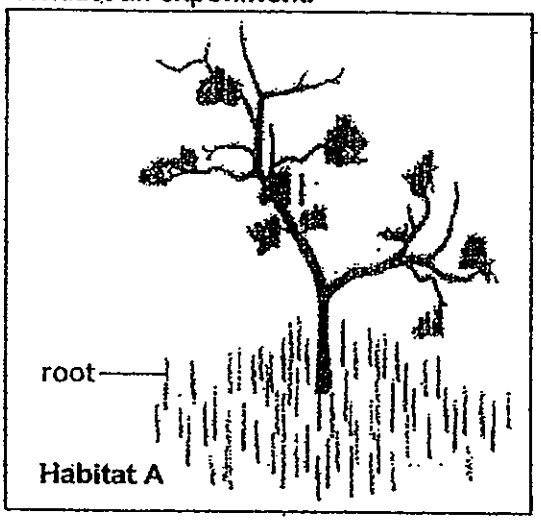
(c) Give one reason why several different types of plants in a plot produced a greater number of healthier plants than a single type of plant in a plot. [1]

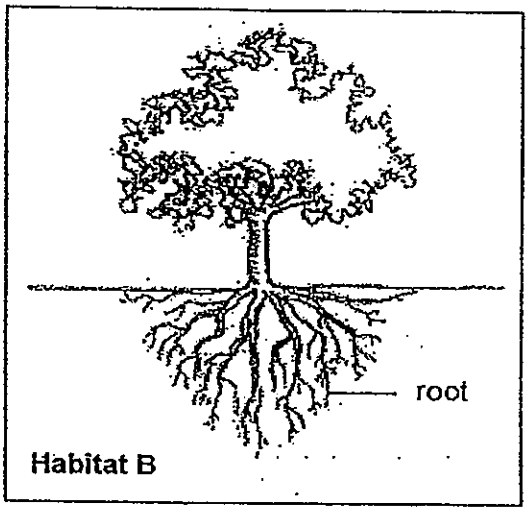
_____

_____

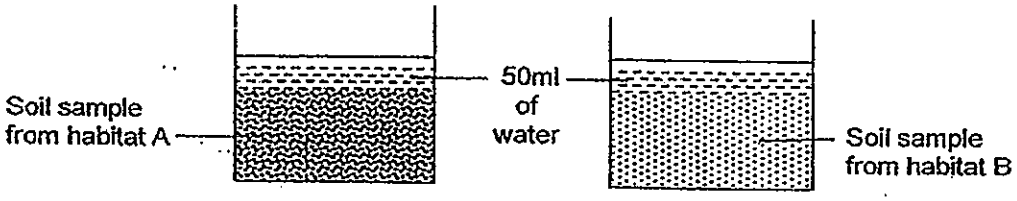
Score 3

39. Mary collected some soil samples from Habitats A and B shown below to conduct an experiment.




She filled two identical containers with equal amount of soil samples from habitats A and B. Next, she poured 50 ml of water into each of the beaker and recorded her observation in a table.




| | Observation | |
|---|---|---|
| | Water level | Presence of bubbles |
| Soil sample from Habitat A | Remained the same | No |
| Soil sample from Habitat B | Decreased | Yes |

(a) State a reason why bubbles formed on the soil from Habitat B. [1]

_____

_____

(b) Based on the result of Mary's experiment, give a reason why the roots of the tree in habitat A grow upwards above the ground. [2]

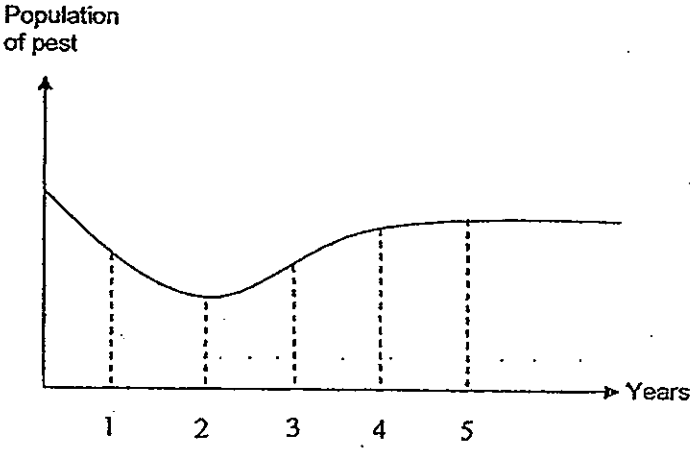
_____

_____



| Score | |
|---|---|
| | 3 |

40. A farmer found some pests in his farm and decided to use pesticide to kill the pests. He sprayed pesticide on the pests on a monthly basis over a period of 5 years. The graph below shows the population of the pest over the 5-year period.




(a) From the graph, describe the change in population of the pest over the 5-year period. [1]

_____

_____

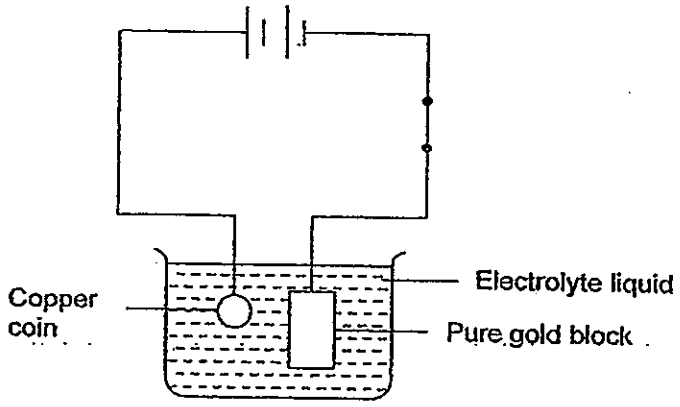
(b) Why did the population of the pest increase after 2 years despite repeated sprayings of the pesticide? [1]

_____

_____

| Score | 2 |
|---|---|

41. The diagram below shows the experimental set-up for a process known as electroplating. When the circuit is closed, the copper coin gradually becomes coated with a layer of pure gold.




(a) What physical property must the electrolyte liquid have in order for the experiment to work? [1]

_____

(b) State one possible way to have a thicker coat of pure gold on the surface of the copper coin. [1]

_____

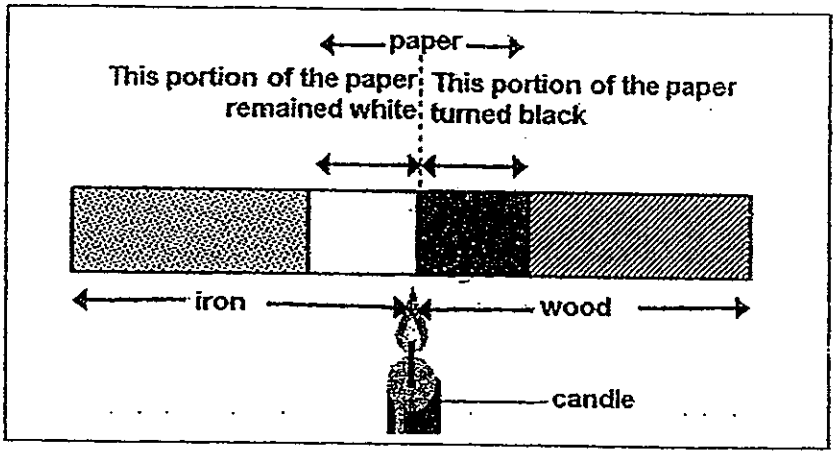
(c) Tammy wants to coat her plastic coin with a layer of gold using the same method above. Will she be able to do it successfully?
Explain your answer. [1]

_____

_____

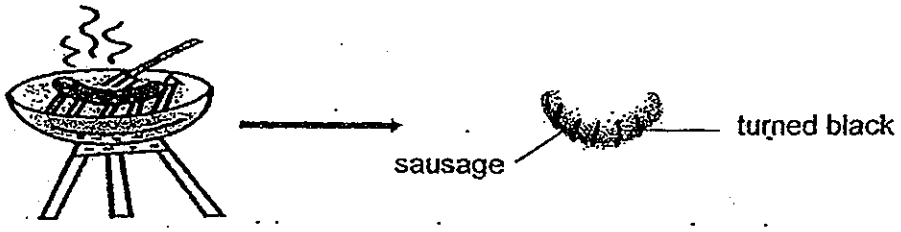
| Score | 3 |
|---|---|

42. Mrs Tan wrapped a piece of white paper tightly around the centre of a rod. Half of the rod was made of iron and the other half was made of wood. Next, she heated the paper with a flame. The diagram shows the observation she made at the end of the experiment.




(a) The part of the paper which was covering the wood turned black but not the part covering the iron. Explain this observation. [2]

(b) Mrs Ong used a portable barbecue pit to cook her sausage as shown below.

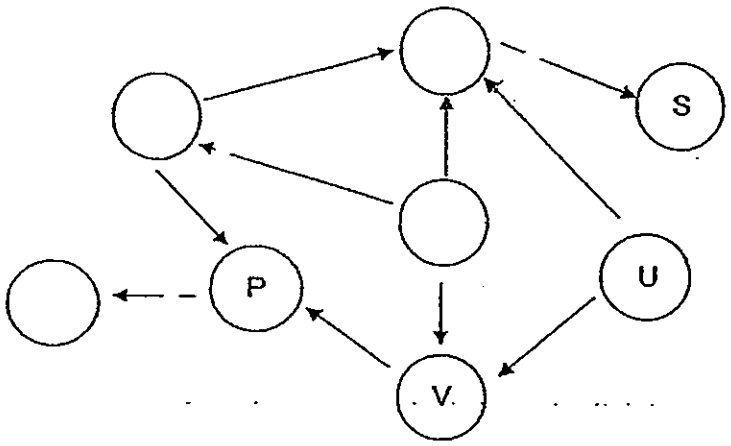



She noticed that the parts of her sausages that were in direct contact with the metal grilles on the barbecue pit turned black after cooking. Give a reason for her observation. [1]



Score 3

43. The diagram below shows an incomplete food web.




(a) Use the information given to complete the food web above. [1]

- W is a carnivore.
- Q is an omnivore.
- R feeds on T only.
- T is a food producer.

(b) How many food chains are there in the food web? [1]

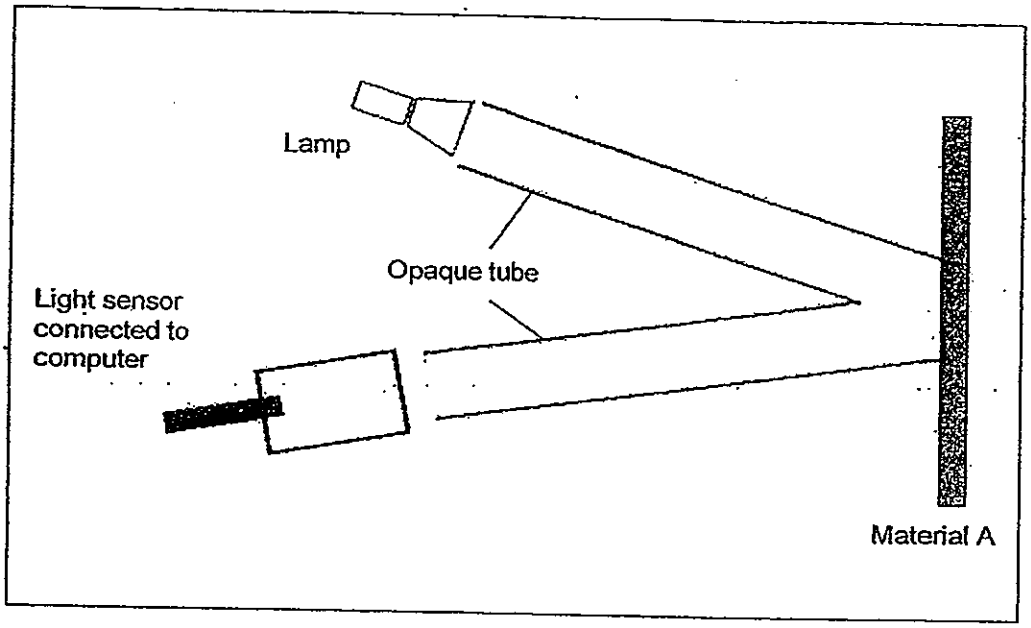
_____

(c) If an animal which feeds on organism S only was introduced to this habitat, which organism will show the greatest change in population? [1]

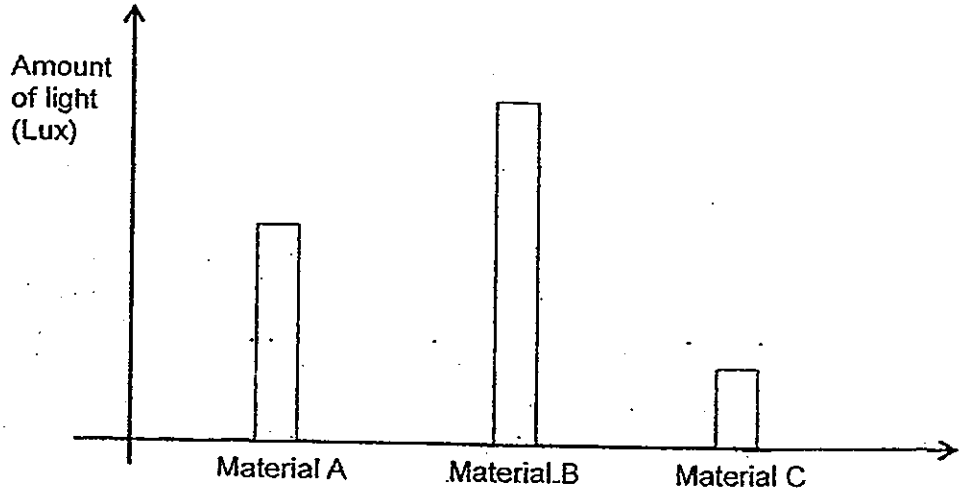
_____

| Score | 3 |
|---|---|

44. Jonathan conducted an experiment in a completely dark room to find out how well materials A, B and C reflect light. He shone a lamp through an opaque tube and recorded the amount of light reflected by material A using a light sensor. He then repeated the experiment using materials B and C, one at a time.




The graph below shows the results of Jonathan's experiment.



(a) Give a reason why Jonathan should conduct his experiment in a completely dark room? [1]

_____

_____

(b) An anti-glare computer screen is designed to cut down on the amount of light that reflects off the monitor screen of a computer. It makes viewing a display in the computer screen more pleasant for most people, and reduces eyestrain.
Based on Jonathan's experiment, which material is most suitable for making the anti-glare screen of a computer monitor? Explain your choice. [2]

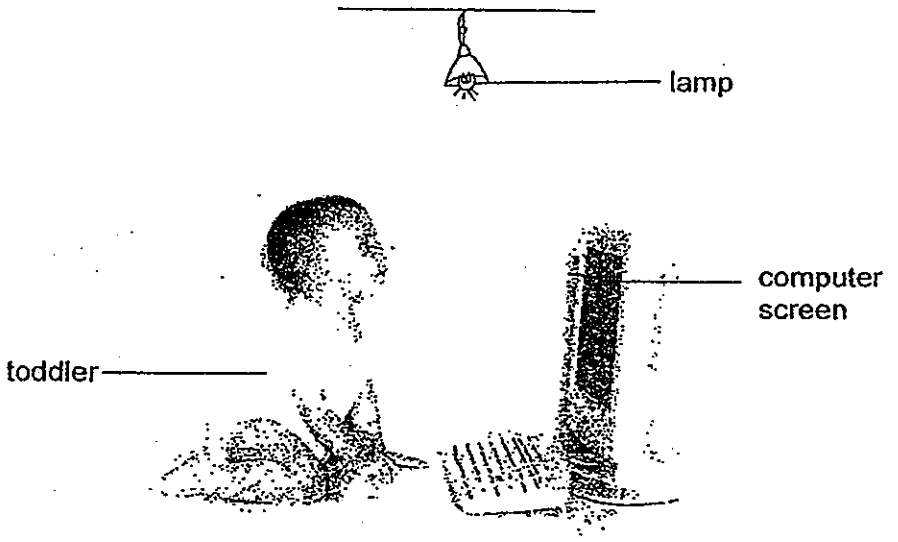
_____

_____

_____

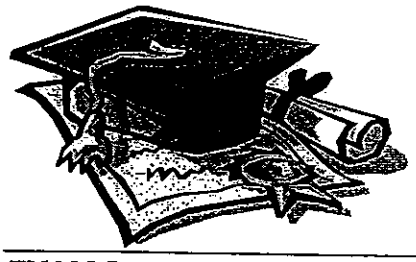
_____

(c) Draw light rays below to show how the computer screen reflects light from the lamp to the toddler's eyes. [1]




END OF PAPER

Score / 4



# ANSWER SHEET

**EXAM PAPER 2012**

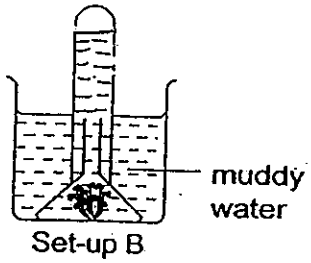
**SCHOOL : NAN HUA**
**SUBJECT : PRIMARY 6 SCIENCE**

**TERM : SA2**

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

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

**31)a)**



Set-up B

**b)The muddy water in set-up B prevented some sunlight from entering. Thus the rate of photosynthesis was lower.**

**32)Hot weather: The rabbit's ears stand up right increase exposed surface area of the surrounding air and allowing it to lost heat to the surrounding air.**

**Cold weather: When the rabbit's ears lie back close to the body, less surface area of the ears is exposed to the surrounding air and less body heat is lose.**

33)a)40, 0, 500
b)The type of container.
c)At the end of the experiment, count the number of duckweeds still surviving.

34)Not, Not, True, False

35)a)The length of spring B does not change even with a weight attached.
b)The weight attached is not strong enough to stretch the spring.
c)The device is most likely a kitchen scale. A kitchen scale works on the principle of measuring the weight an object by the compression of a spring, so the original length of the spring must be longer than the spring with a means added.
d)Spring A and D, Spring balance.

36)a)Air occupies space. When Kern bolus into the balloon he only inflate balloon slightly because the has been compressed until it cannot be compressed further.
b)He should make some holes on the surface of the plastic bottle to allow air to escape and let the balloon occupy space.

37)a)X: Kinetic energy. Y: Gravitational potential energy.
b)Gravitational potential energy→Kinetic energy→Gravitational potential energy.

38)a)Amount of water given to the plants.
b)To make the results more reliable and to find the average.
c)Less completion for the same kind of nutrients among plants of different types.

39)a)The water manage to occupy the space which the air once occupies in soil sample from habitat B allowing air to escape thus there were air bubbles from in the soil.
b)There is no air spaces between the soil particles in habitat A, so the root grow out of the soil to obtain oxygen for photosynthesis.

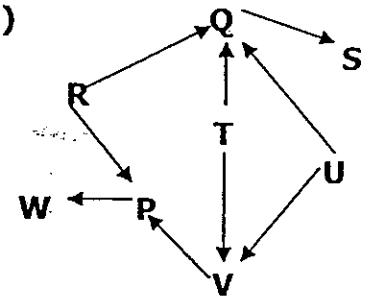
40)a)The population of pets decreased for the first two years but after the two years the population started to increase.
b)The pest had become more resistance to the pesticide.

41)a)The electrolyte liquid must be a conductor of electricity.
b)Use more batteries.
c)No, she will not be able to do so. As plastic in an insulator of electricity, so electricity will flow through the circuit and the electroplating process will not occur.

42)a)Iron is a better conductor of heat and it conducted heat away form the paper faster than wood.

b)The grills are made of good conductor of heat and conducted heat from the flame to the sausage more quickly.

43)a)




b)6 food chains.

c)Organism Q, because it does not have any predators to prey on them.

44)a)To ensure that the light sensor only measures the light reflected by the material.

b)Material C. It had the least amount of light being reflected into the light sensor like the computer cutting down on the amount of light that reflects off the monitor screen of a computer.

c)