

Anglo-Chinese School (Primary)

P6 SCIENCE 2008

SA1 (MID-YEAR) EXAMINATION

BOOKLET A

Name: \_\_\_\_\_ (     )     Class: Primary 6 \_\_\_\_

Date: 9 May 2008

Duration of paper: 1h 45 min

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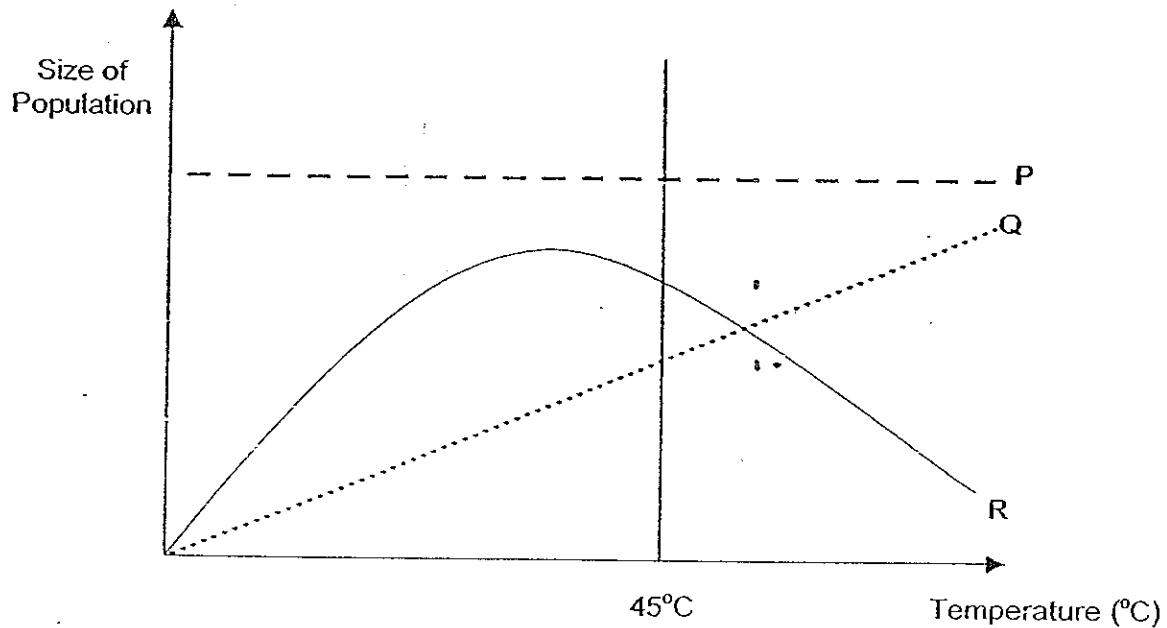
THIS BOOKLET CONTAINS 17 PAGES.  
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FOLLOW ALL INSTRUCTIONS CAREFULLY.

### PART I

For each of the following questions 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.

(30 x 2 marks)

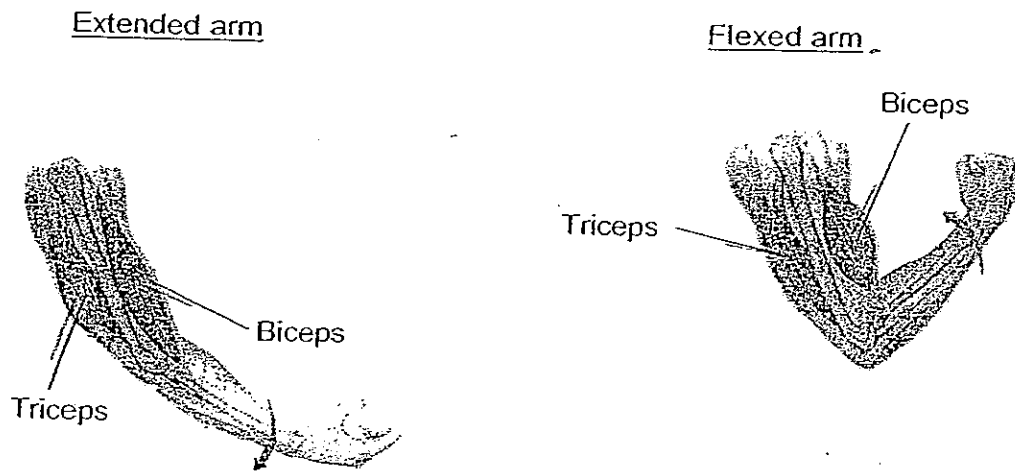
1. The line graph below shows the effect of temperature on the size of population of 3 different organisms, P, Q and R.



The population size of which organism(s) was not negatively affected by a temperature of above 45°C?

- (1) P only
- (2) R only
- (3) P and Q only
- (4) P, Q and R

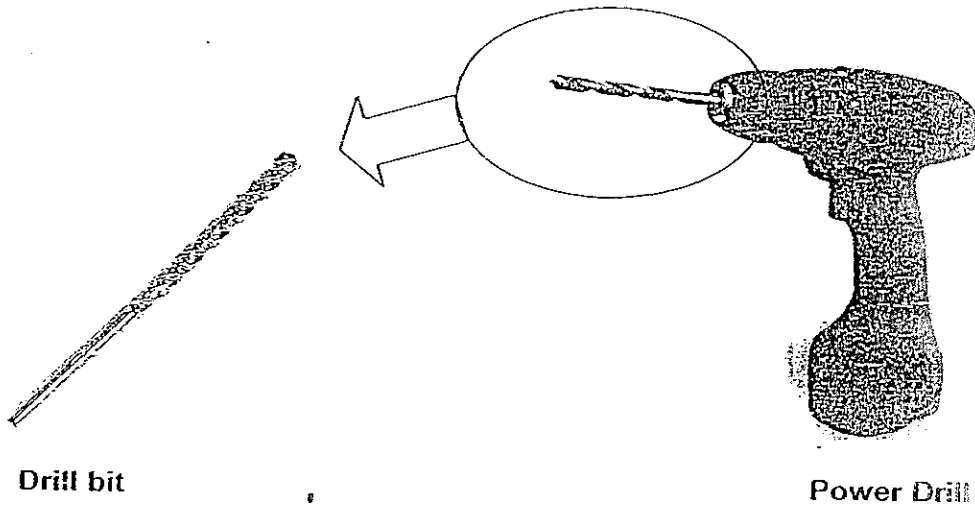
2. The diagram below shows part of the human skeletal and muscular system.



Which one of the following best describes how the muscular system function when the arm is extended (straightened) and flexed (bent) respectively?

	Extending the arm	Flexing the arm
(1)	The biceps will contract while the triceps will relax.	The biceps will relax while the triceps will contract.
(2)	The biceps will relax while the triceps will contract.	The biceps will contract while the triceps will relax.
(3)	Both the biceps and triceps will contract.	Both the biceps and triceps will relax.
(4)	Both the biceps and triceps will relax.	Both the biceps and triceps will contract.

3. The diagram below shows a drill bit that is used in a cordless power drill to drill holes in wood, plastic, metal and concrete walls.



Which of the following physical properties must the material that the drill bit is made of possess in order for it to serve its function well?

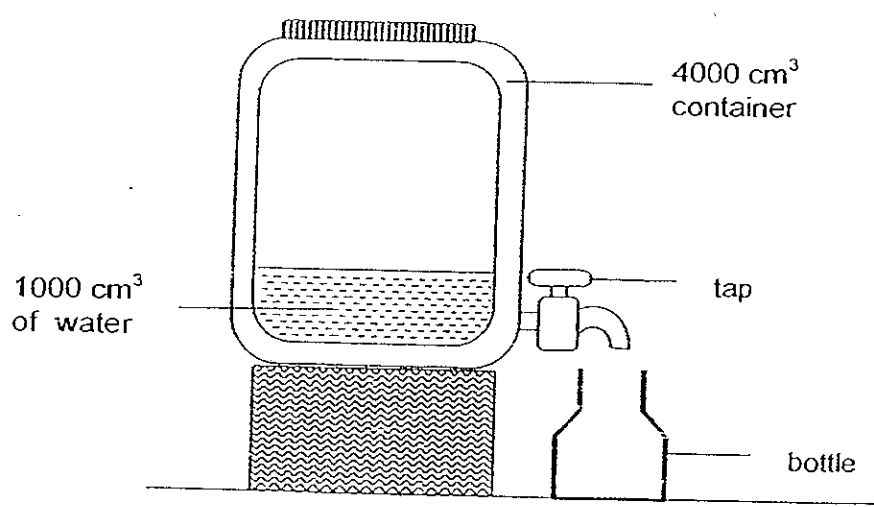
- A Hard
  - B Flexible
  - C Opaque
  - D Strong
- (1) A and D only  
(2) B and C only  
(3) A, B and D only  
(4) A, C and D only

4. Which of the following items are made from magnetic materials?

- A Aluminium foil
- B Copper wire
- C Iron nail
- D Steel paper clip

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

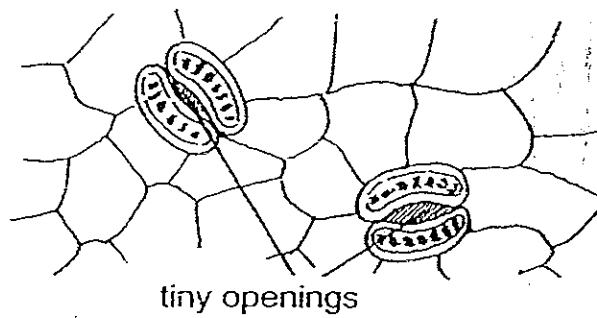
5. The diagram below shows a water container with a capacity of  $4000\text{ cm}^3$ . It contains  $1000\text{ cm}^3$  of water.



When the tap of the container is turned on and water flows out for a few seconds and then turned off,  $500\text{ cm}^3$  of water is collected in the bottle. What is the final volume of air in the container?

- (1)  $3\ 500\text{ cm}^3$
- (2)  $4\ 000\text{ cm}^3$
- (3)  $4\ 500\text{ cm}^3$
- (4)  $5\ 000\text{ cm}^3$

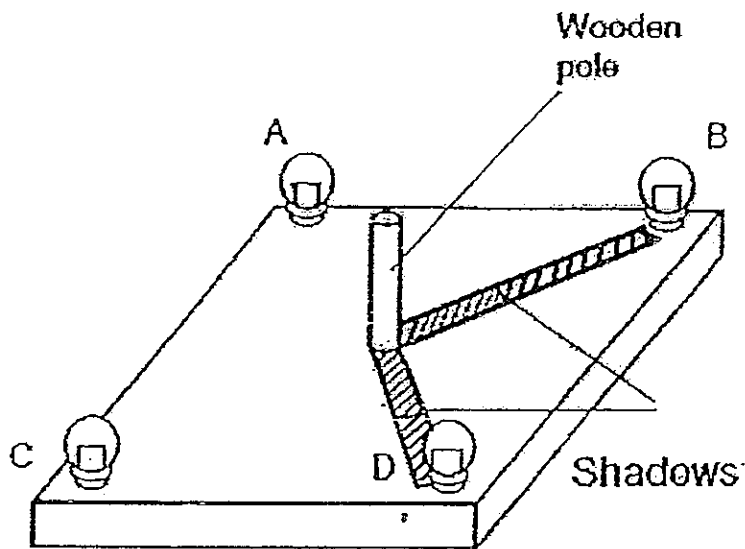
6. The diagram below shows tiny openings called stomata found on the under surface of leaves.



Which of the following are the functions of stomata?

- A They allow excess water vapour to escape.
  - B They help to trap sunlight for photosynthesis.
  - C They enable the exchange of gases to take place.
  - D They allow the movement of mineral salts in and out of the openings.
- (1) A and C only
- (2) B and D only
- (3) A, B and C only
- (4) B, C and D only

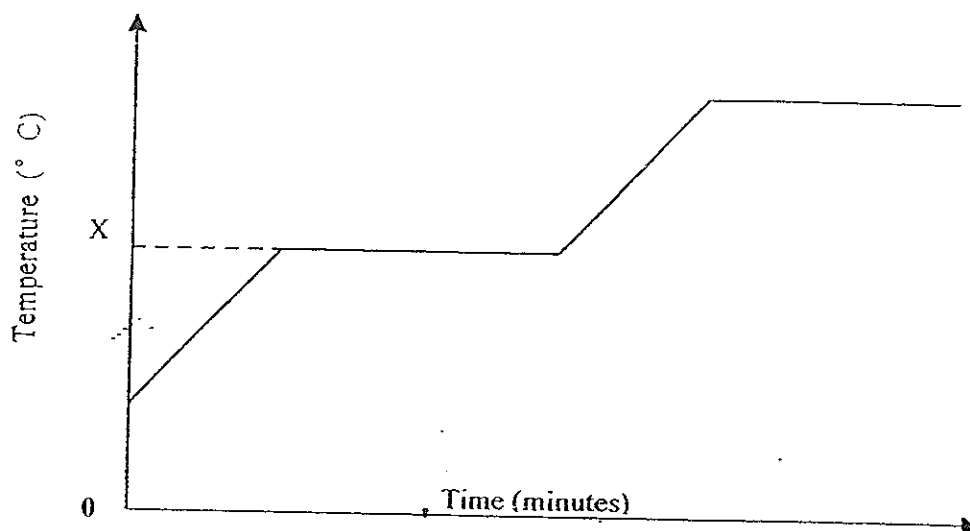
7. A wooden pole is placed in the middle of a square board.



Which of the bulbs have to be switched on at the same time so that the shadows of the wooden pole are formed as shown in the diagram above?

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

8. A piece of wax at room temperature was heated slowly in an evaporating dish. Its temperature was recorded at regular intervals and plotted in a graph as shown below.



Which one of the following statements correctly describes the temperature marked X?

- (1) X is the room temperature.
- (2) X is the boiling point of the wax.
- (3) X is the temperature at which all the wax change from the solid state to the liquid state.
- (4) X is the temperature at which all the wax change from the gaseous state to the liquid state.

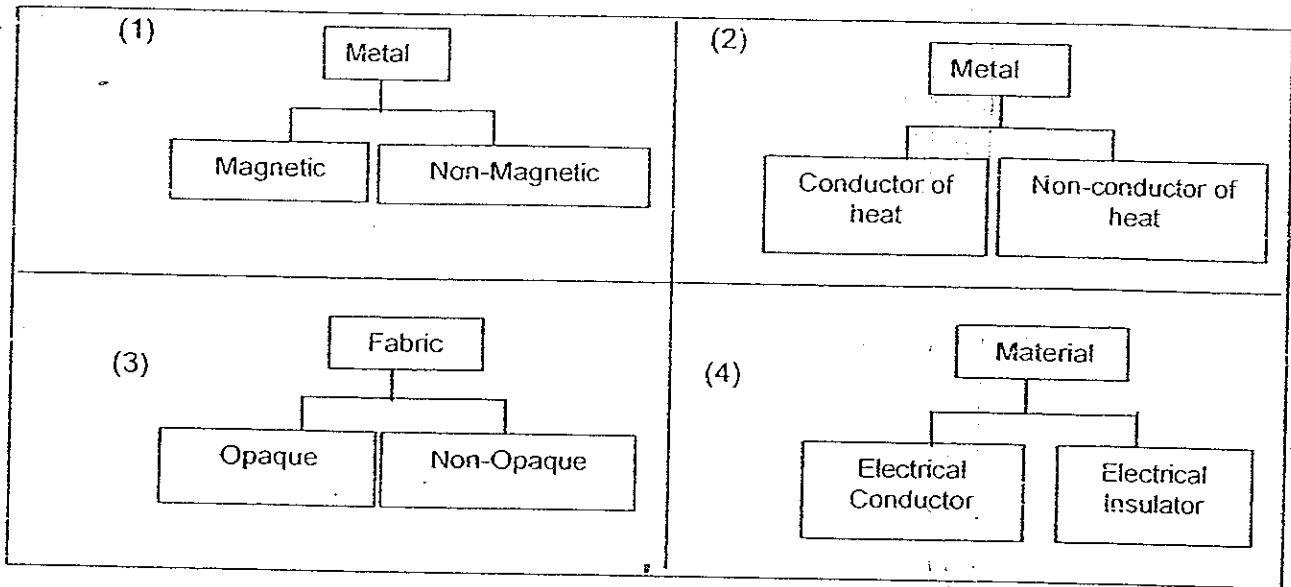


9. Flowers and Bees are interdependent on each other.  
Which one of the following best describes their relationship?

	Flower	Bee
(1)	The flower provides a resting place for the bee.	The bee fertilises the flower.
(2)	The flower provides nectar for the bee to feed on.	The bee pollinates the flower.
(3)	The flower provides nectar for the bee to feed on.	The bee fertilises the flower.
(4)	The flower provides a resting place for the bee.	The bee pollinates the flower.

10. Which one of the following statements best explains the occurrence of day and night?
- (1) The revolution of the Sun around the planets.
  - (2) The rotation of the Earth about its own axis.
  - (3) The revolution of the Earth around the Sun.
  - (4) The revolution of the moon around the Earth.
11. Which of the following traits can be passed down from one generation to the next?
- (1) Height, fingerprints and shapes of earlobes.
  - (2) Dimples, ability to roll tongue and length of fingernails.
  - (3) Colour blindness, length of hair and skin colour.
  - (4) Shape of earlobes, ability to roll tongue and colour blindness.

12. Which one of the following classification charts is incorrect?



13. Which one of the properties below is of the least importance in the making of a raincoat?

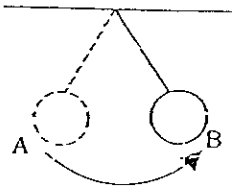
- (1) waterproof
- (2) transparent
- (3) flexible
- (4) light

14. The material used for a new toy does not break easily even when it is dropped from a great height. We say that this material is very \_\_\_\_\_.

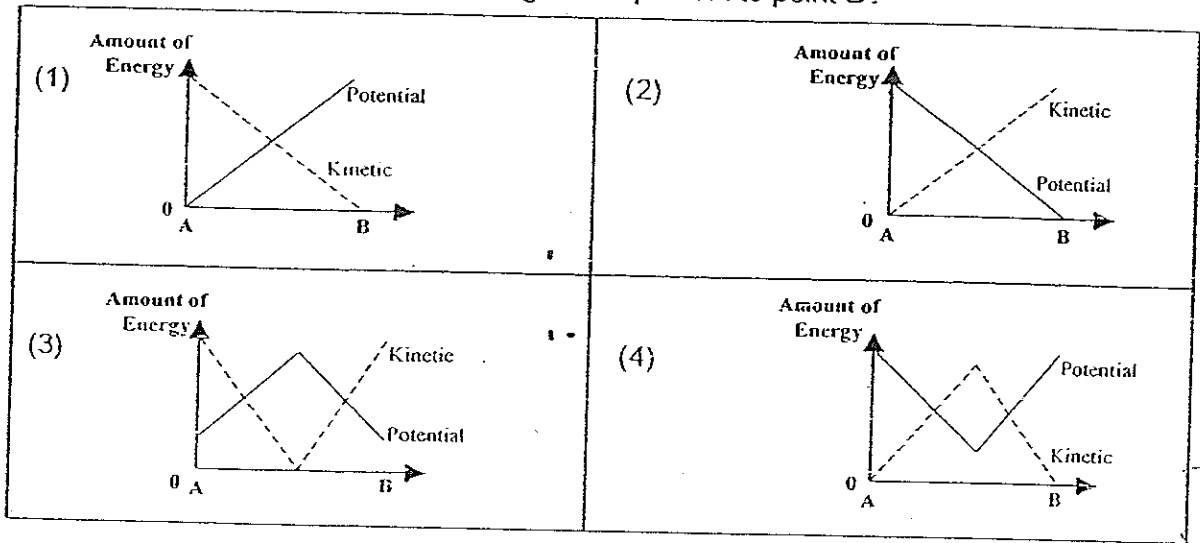
- (1) hard
- (2) strong
- (3) flexible
- (4) brittle

15. A professor discovered a new species. After studying it, he discovered that this new species is green in colour, depends on other organisms for food, and has a head and a body. Based on the characteristics observed, how would he best classify this new species?
- (1) Plant
  - (2) Mammal
  - (3) Animal
  - (4) Fungi
16. Birds Nest Fern is classified as a \_\_\_\_\_ because it \_\_\_\_\_.
- (1) fungus ..... reproduces by spores
  - (2) plant ..... is green in colour
  - (3) fungus ..... grows on trees
  - (4) plant ..... makes its own food
17. Objects thrown down from high buildings can injure people upon impact. This is largely due to its high \_\_\_\_\_ as it hits the person.
- (1) heat energy
  - (2) kinetic energy
  - (3) chemical potential energy
  - (4) gravitational potential energy

18. A suspended pendulum swings from point A to point B as shown in the diagram below.



Which one of the following graphs correctly shows how the potential energy and kinetic energy of the pendulum change from point A to point B?



19. "As the ball flew towards the goalkeeper like a rocket, he blocked it with both his hands and the ball dropped onto the ground. He then caught hold of the ball as the ball was still bouncing."

Which effects of force are illustrated from the above situation?

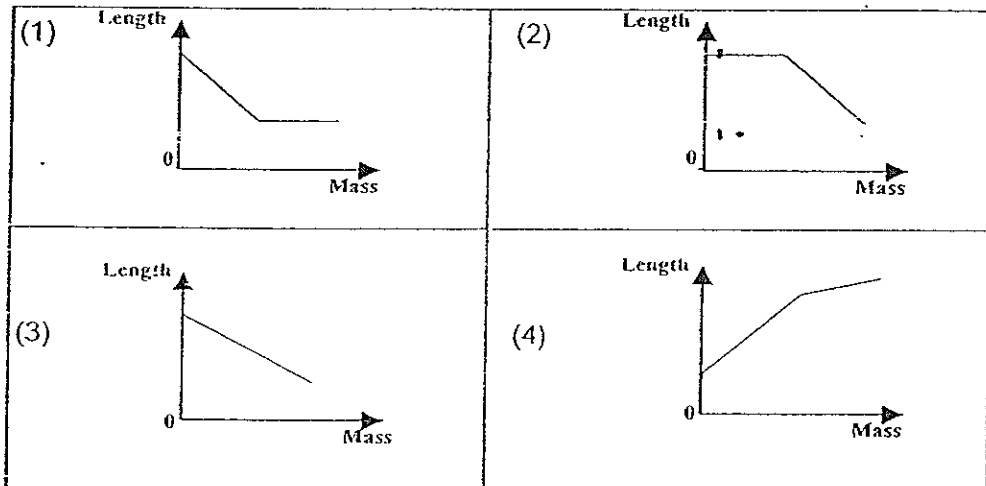
- A A force can make a stationary object move.
- B A force can change the speed of a moving object.
- C A force can change the direction of a moving object.
- D A force can stop a moving object.

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

20. Which one of the following actions is not an example of a pushing force?

- (1) typing
- (2) bowling
- (3) kicking a ball
- (4) raising a flag

21. Abraham conducted an investigation with a suspended spring. He added weights of different mass onto the spring. For every weight hung, he measured the length of the spring and plotted a graph between the length of spring and the amount of mass suspended. Which one of the following is likely to be the correct graph?

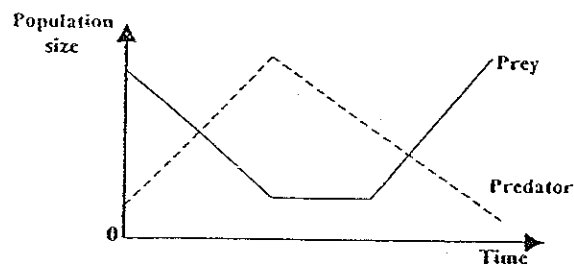


22. Which of the following object(s) do(es) not have any gravitational force acting on it?

- A A bird flying in the sky
- B A man lying on the floor
- C A balloon rising into the air

- (1) B only
- (2) A and C only
- (3) A and B only
- (4) None of the above

23. The graph below shows the population size of a predator and its prey living in a forest over a few years.



Which one of the statements below are we most sure of to be true based solely on the graph above?

- (1) The predator's population dropped because of deforestation.
  - (2) As the population of the predator increases, the population of the prey also increases.
  - (3) The population of the prey decreases initially, remains constant for some time and then starts to increase again.
  - (4) The population of the prey would continue to increase if the population of the predator increases.
24. A mountaineer made some observation as he climbed up a very high mountain. He recorded his observation in the table shown below.

Height of mountain (m)	Number of trees seen (estimation)
100	150
700	55
1800	18
3600	0

Based on the table above, which one of the following statements is a correct inference statement that could be made from the observations noted?

- (1) There are no trees found at the height of 3600m.
- (2) The flowers of the trees are brighter as they go higher above the mountain.
- (3) Most trees could not survive high up the mountain.
- (4) Trees higher up the mountain are shorter than those lower down the mountain.

25. Weeds are **small** unwanted plants growing in our gardens. It is important to remove these weeds so as to ensure that the plants we want to grow have sufficient \_\_\_\_\_.

- A water
- B nutrient
- C sunlight

- (1) A and B only
- (2) A and C only
- (3) B and C only
- (4) All of the above

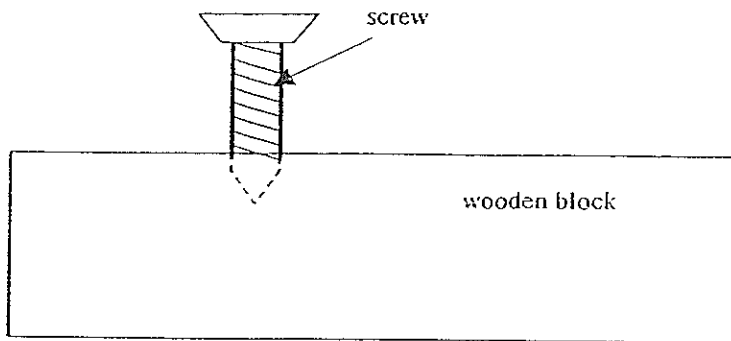
26. The table below shows the number of animals found in a community.

Animal	Number of animals found
Tadpole	12
Dragonfly	7
Frog	3
Guppy	5
Water Snail	6
Pond Skater	3

Which one of the conditions listed below will **least** affect the animals above **directly**?

- (1) Amount of light
- (2) Amount and type of water
- (3) Amount of oxygen / air present
- (4) Temperature of the environment

27. Study the diagram below carefully.



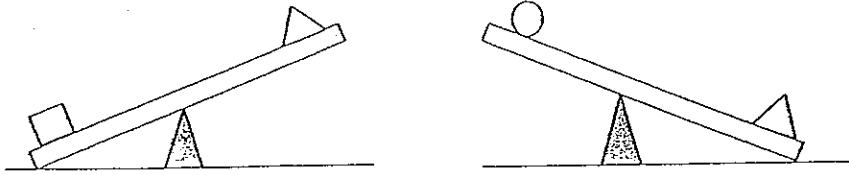
A boy attempted to turn the screw into the wooden block with his fingers. Which of the following simple machines were used in the whole process?

- A Lever
- B Pulley
- C Inclined Plane
- D Wheel and Axle

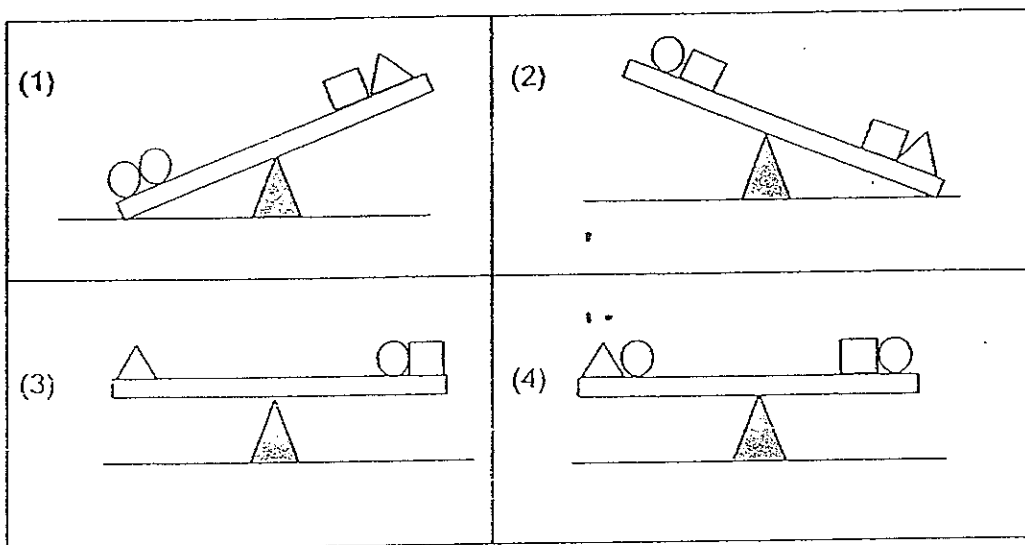
- (1) A and B only
- (2) C and D only
- (3) A and C only
- (4) B and D only



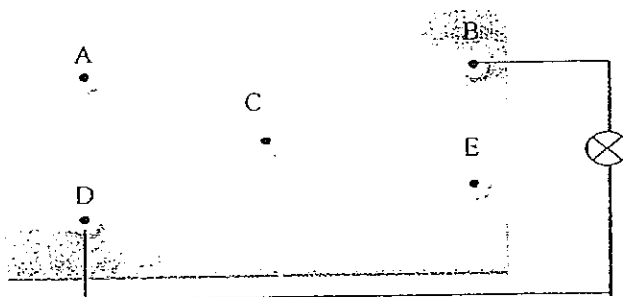
28. Study the 2 diagrams below carefully.



Based on the 2 diagrams above, which one of the following diagrams is most likely to be true?



29. The diagram below shows the front view of a circuit board.

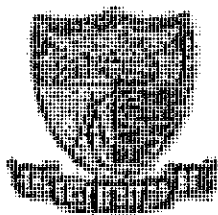


The points (A, B, C, D, E) are connected by some wires behind the circuit board. Which circuit points are connected if the bulb lights up.

- (1) AB and CD
- (2) AC and BC
- (3) BE and DE
- (4) CD and CE

30. Which one of the following statements about photosynthesis and respiration is the most accurate?
- (1) Plants only carry out photosynthesis in the day and only carry out respiration at night.
  - (2) Plants only carry out respiration in the day and only carry out photosynthesis at night.
  - (3) Plants can carry out photosynthesis when there is light but only carry out respiration at night.
  - (4) Plants can carry out photosynthesis when there is light but carry out respiration all the time.

End of Part I. Please go on to Part II.



Anglo-Chinese School (Primary)

P6 SCIENCE 2008

SA1 (MID-YEAR) EXAMINATION

BOOKLET B

Name: \_\_\_\_\_ (     )     Class: Primary 6 \_\_\_\_\_

Date: 9 May 2008

Duration of paper: 1h 45 min

	Maximum Marks	Marks Obtained
Section A / Booklet A	60	
Section B / Booklet B	40	
Total	100	

THIS BOOKLET CONTAINS 12 PAGES.

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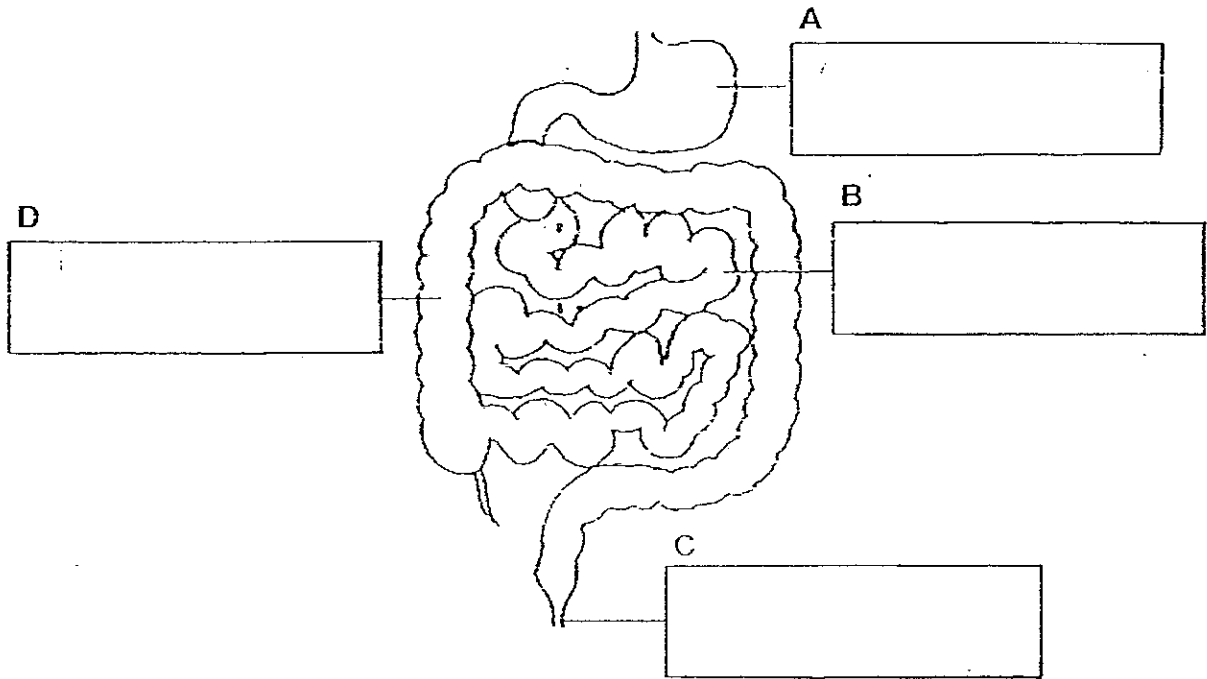
PART II

For questions 31 to 46, write your answers in this booklet.

The number of marks available is shown in brackets [ ] at the end of each question or part question. (40 marks)

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31. The diagram below shows part of the human digestive system.



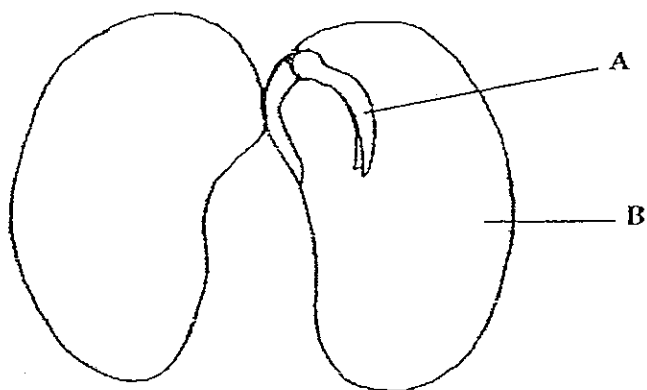
(a) Identify the parts, A, B, C and D. [2]

(b) What is the main function of part B? [1]

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32. The diagram below shows the cross-section of the seed of a bean plant.



(a) Name the labelled part, A.

A - \_\_\_\_\_ [1]

(b) What is the function of part B during germination? [1]

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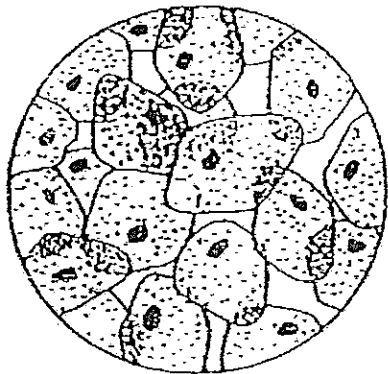


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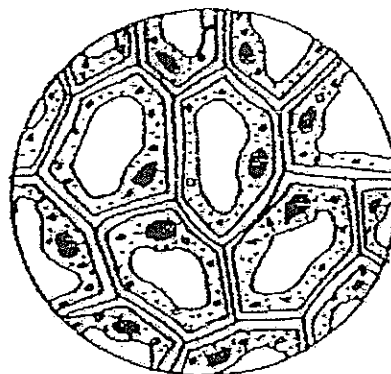
(c) Tick the factors that are required for the germination of the seed. [1]

Factors	Put a '✓' if it is one of the factors required for germination
Water	
Warmth	
Food	
Light energy	

33. Some pupils observed two groups of cells under a microscope. The diagram below shows what they observed.



A



B

(a) Which group of cells, A or B, come from a plant? [1]

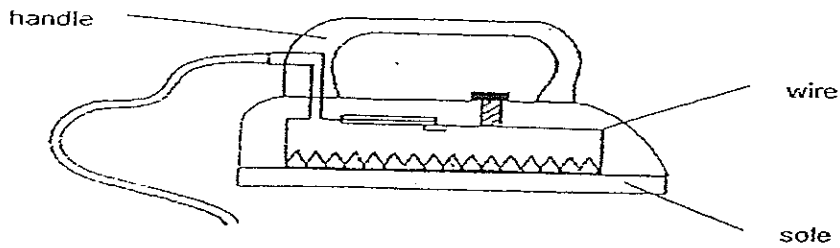
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(b) Give a reason to justify your answer in part (a). [1]

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34. The diagram shows the parts of an electric iron.



(a) Suggest a type of metal that is commonly used for the sole. Give a reason for your answer. [1]

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(b) Suggest a suitable material for the handle. Give a reason for your answer. [1]

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35. Nathan was engaged in the following activities:

A game of rugby
A peaceful sleep
A leisurely walk home

(a) During which of the activities listed above, would he most likely to have the: [1]

(i) Slowest heart beat

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(ii) Fastest heart beat

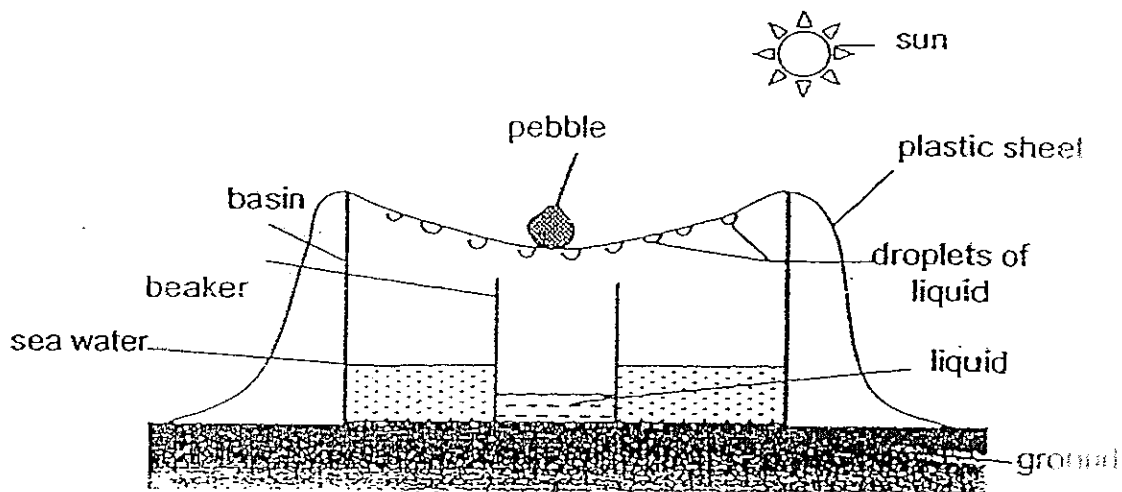
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(b) Explain your answer in (a) part ii. [2]

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36. An empty glass beaker was placed in a basin containing some sea water. The basin was completely covered with a plastic sheet and then put in the sun.



After some time, droplets of liquid were formed on the plastic sheet and some of it was collected in the empty beaker.

- (a) Describe the colour and taste of the liquid in the beaker. [1]

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- (b) Explain how the liquid droplets were formed on the plastic sheet. [2]

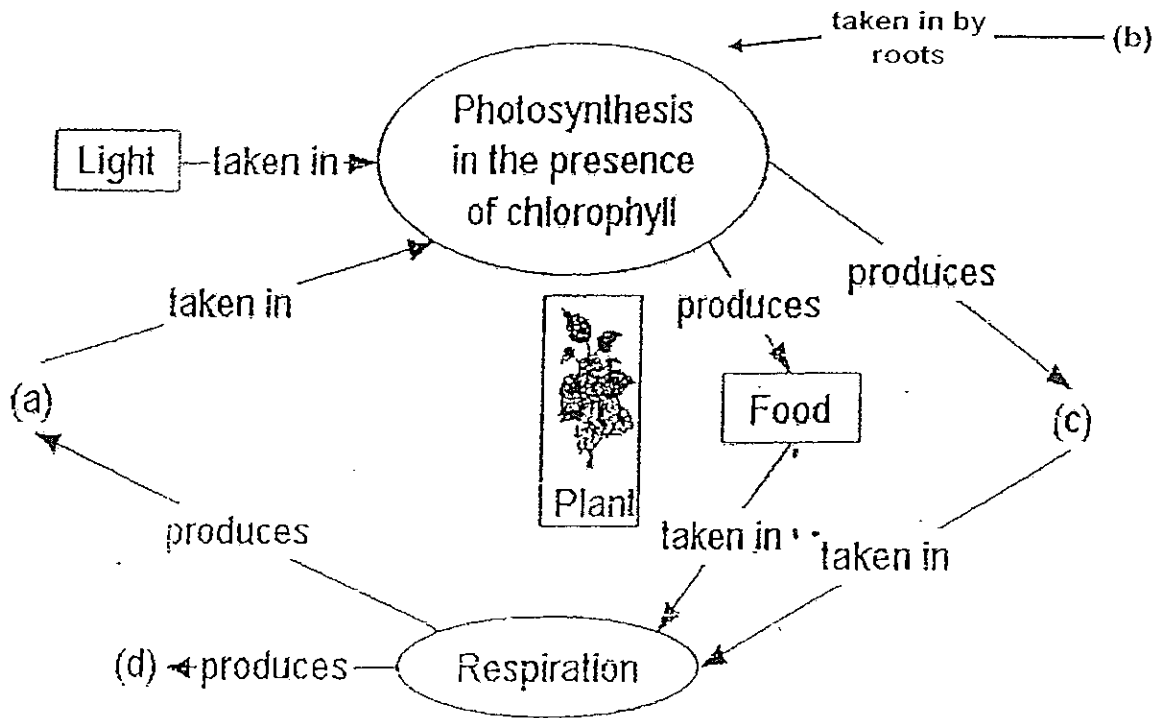
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37. The diagram below describes the process of photosynthesis and respiration in plants.



Write the words that best represent (a), (b), (c) and (d).

[2]

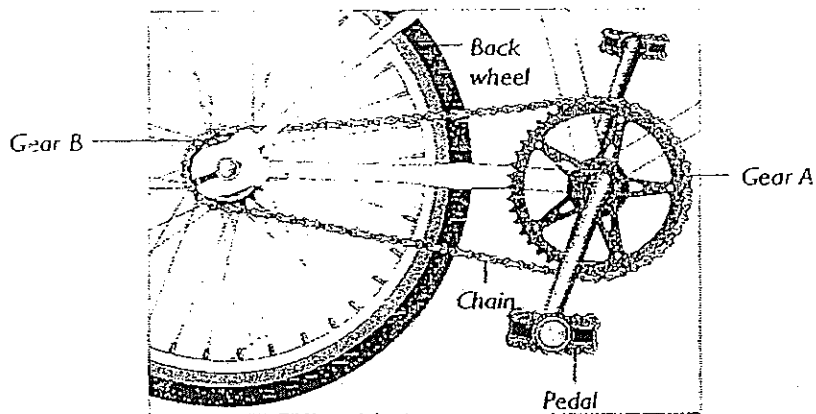
(a) \_\_\_\_\_

(b) \_\_\_\_\_

(c) \_\_\_\_\_

(d) \_\_\_\_\_

38. The diagram below shows the gears of a bicycle that is linked by a chain.



(a) If gear A move in a clockwise direction, in which direction will gear B move? [1]

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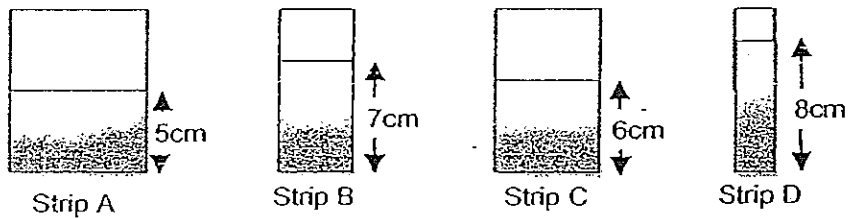
(b) How does the relative sizes of the two gears affects the eventual / final speed of movement of the back wheel? [2]

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39. Selina conducted an investigation to find out which strip of fabric could absorb the most amount of water in a given duration. She dipped the 4 strips of fabric of different materials into 4 beakers of coloured water. She ensured that the strips are of equal lengths. She then recorded the level of coloured water, which appeared on the strips as shown below.



- (a) Is the investigation a fair one? Explain your answer. [1]

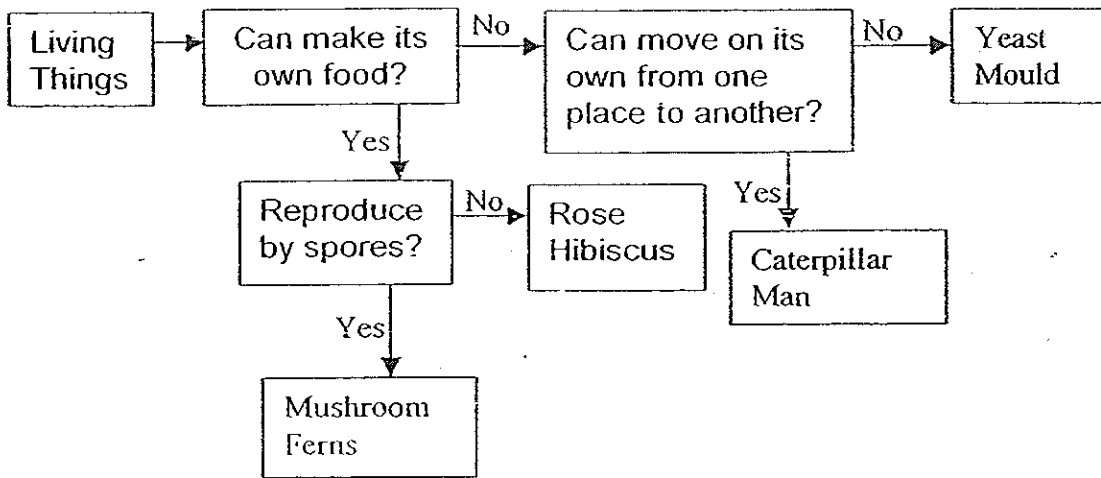
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- (b) If Selina wants to choose one of the 4 materials to make a towel, should she choose the one which absorbs the most water or the one which absorbs the least water? [1]

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40. Study the classification flowchart below carefully.



Which one of the above organisms has been classified **wrongly**? Explain your answer. [2]

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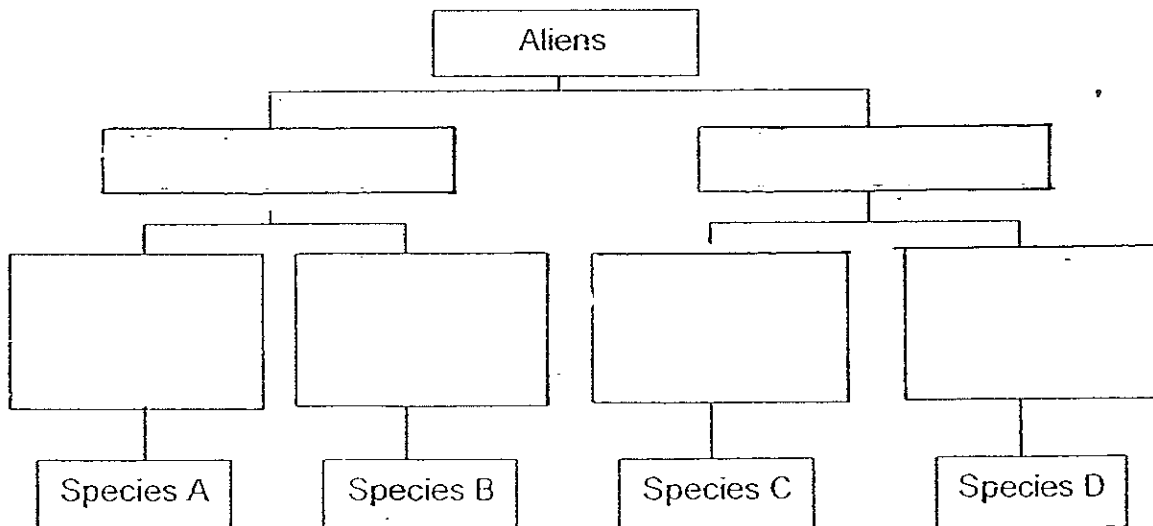


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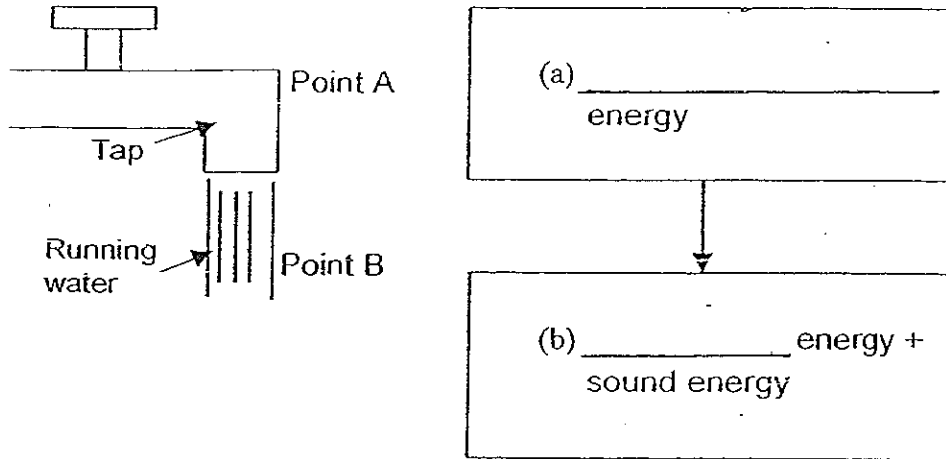
41. A group of aliens were classified into the 4 boxes in the classification table below based on their physical characteristics.

Species	Description
A	3 blue eyes, 4 limbs, pointed ears
B	2 red eyes, 4 limbs, round ears
C	3 red eyes, 2 limbs, round ears
D	2 blue eyes, 2 limbs, pointed ears

Based on the information given above, fill in all the empty boxes in the classification chart below with suitable headings. [2]



42. (a) The diagram below shows water flowing out from a tap. Fill in the blanks in the boxes below to show the conversion of energy of the water from Point A to Point B. [1]



- (b) Fill in the blanks with suitable word(s). [2]

In an alarm clock, the \_\_\_\_\_ energy of the batteries is converted to \_\_\_\_\_ energy. This energy is then converted to other forms of energy like \_\_\_\_\_ light and \_\_\_\_\_ energy which are useful for the alarm clock to work.

43. The LTA department conducted an experiment with 3 similar cars. They made the cars travel at different speeds and measured the amount of force found in each car when the cars crashed against a wall.

- (a) Write down the aim of the experiment. [1]

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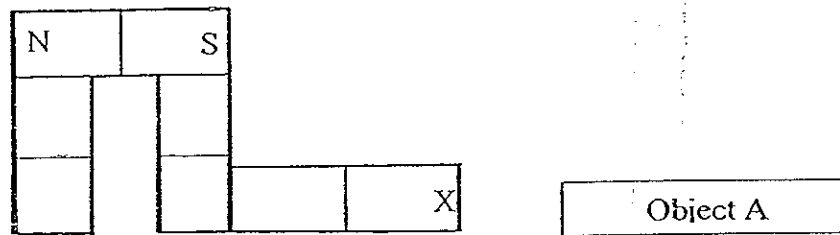
- (b) Other than using similar cars, what is another variable that must be kept constant. [1]

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44. The diagram below shows 4 bar magnets attracted together thus:



(a) Name the pole which is marked X in the diagram. [1]

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(b) Object A was brought near to the pole marked X and it was attracted to the magnet. From the above observation, can we conclude that Object A is another magnet? Explain your answer. [2]

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45. (a) Jose wanted to find out if the water from different ponds affects the survival of fishes in it. In the table below, help Jose tick (✓) the variables that should be kept constant in the set-up of his experiment. [1]

Amount of water	
Type of water	
Number of fish	
Type of fish	
Temperature of water	

(b) Sarah placed a potted plant in a wooden cupboard for a few days without watering it. She placed a similar potted plant under the sunlight and watered it everyday. After a few weeks, the plant in the cupboard died while the other plant exposed to sunlight grew healthily. Sarah concluded that plants need both sunlight and water to grow.

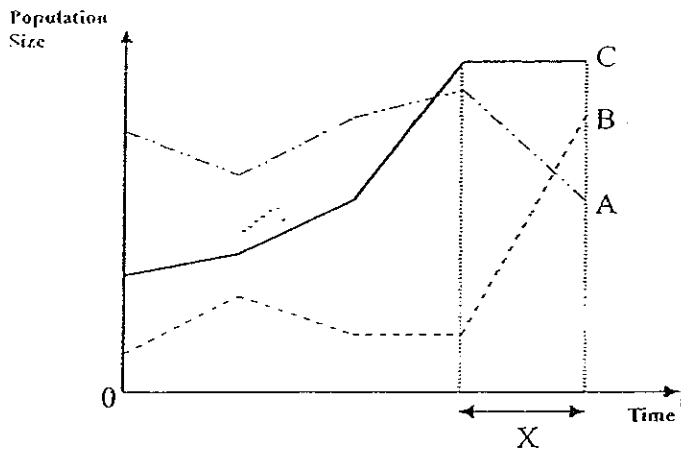
Based on the above information, do you think Sarah has conducted a fair test? Give a reason to support your answer. [2]

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- 46 The graph below shows the changes in the population size of 3 organisms A, B and C.



- (a) Based on the graph above, which two organisms (A, B, C) were most likely having conditions that were not affecting them negatively to a large extent? [1]
- \_\_\_\_\_
- \_\_\_\_\_
- (b) Observe the population size of organism C in the above graph. What can you conclude about the population size of organism C for the time period indicated by X in the graph above? Suggest a reason for your answer. Hint : Explain in terms of the birth rate and death rate of the organism.[1]
- \_\_\_\_\_
- \_\_\_\_\_

END OF PAPER. PLEASE CHECK ALL YOUR ANSWERS.

**ACS Primary School**  
**Primary 6 Science SA1 (2008)**

*Answers Key*

Qn no.	Ans
1	3
2	2
3	1
4	2
5	1
6	1
7	2
8	3
9	2
10	2

Qn no.	Ans
11	4
12	2
13	2
14	2
15	3
16	4
17	2
18	4
19	2
20	4

Qn no.	Ans
21	4
22	4
23	3
24	3
25	1
26	1
27	2
28	2
29	3
30	4

- 31a. A : stomach B : small intestine C : auns D : large intestine  
 31b. It is allow the digested food to pass through the blood vessels to all parts of the body.
- 32a. shoot  
 32b. It is allow the bean plant to have food.  
 32c. Water, warmth, food.
- 33a. Cell B.  
 33b. It has cell wall that gives the plant a regular shape.
- 34a. Steel. It is a good conductor of heat.  
 34b. Plastic. It is a non-conductor of electricity.
- 35a(i). A peaceful sleep  
 (ii). A game of rugby.
- 35b. A game of rugby requires more energy. Hence the heart faster to pump blood faster to supply muscles with more food and oxygen so that more energy can be produced.
- 36a. It will be colourless and it will be tasteless.  
 36b. The heat from the sun causes the water to evaporate so the liquid droplets were formed on the cooler surface of plastic sheet.
- 37(a). Carbon dioxide (b) water  
 (c). Oxygen (d) energy
- 38a. Gear B will more in a clockwise direction.  
 38b. The more the turns in gear A, there will be even more turns in gear B than gear A, hence the bicycle will more faster.
- 39a. No. The strips are not in the same size.  
 39b. She should choose the towel that absorbs the most water.



40. Mushroom. Mushroom cannot make its own food.
41. Have 4 limbs Have 2 limbs  
 A : Has pointed ears B : Has round ears  
 C : Has round ears D : Has pointed ears
- 42a. Gravitational potential  
 42b. Chemical potential, electrical, kinetic, sound
- 43a. To find out if the different speed the cars travels affect the amount of force found in each car when the cars crashed against a wall.  
 43b. Similar walls.
- 44a. South pole.  
 44b. No. We can conclude that object A is confirmed to be a magnet if it is able to repel the bar magnet.
- 45a. Amount of water.  
 Number of fish.  
 Type of fish.  
 Temperature of water.  
 45b. It was not a fair test as there 2 variables changed sunlight and water.
- 46a. C and B.  
 46b. The birth rate and death rate are equal.