

Name : \_\_\_\_\_ (     )

Class : Primary 6 \_\_\_\_\_

## CHIJ ST NICHOLAS GIRLS' SCHOOL



**Primary 6**

**Weighted Assessment 1**

**SCIENCE**

**BOOKLET A**

**Total Time for Booklets A and B: 50 minutes**

**15 questions**

**30 marks**

**Do not open this booklet until you are told to do so.  
Follow all instructions carefully.**

**This paper consists of 13 printed pages.**



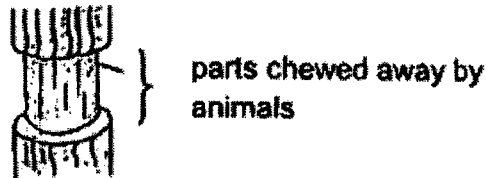
**Section A (15 x 2 marks = 30 marks)**

For each question from 1 to 15, 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 provided.

1. Which of the following incorrectly shows the difference between inhaled and exhaled air?

|     | Inhaled air                  | Exhaled air                  |
|-----|------------------------------|------------------------------|
| (1) | of lower temperature         | of higher temperature        |
| (2) | contains less water vapour   | contains more water vapour   |
| (3) | contains less carbon dioxide | contains more carbon dioxide |
| (4) | contains less oxygen         | contains more oxygen         |

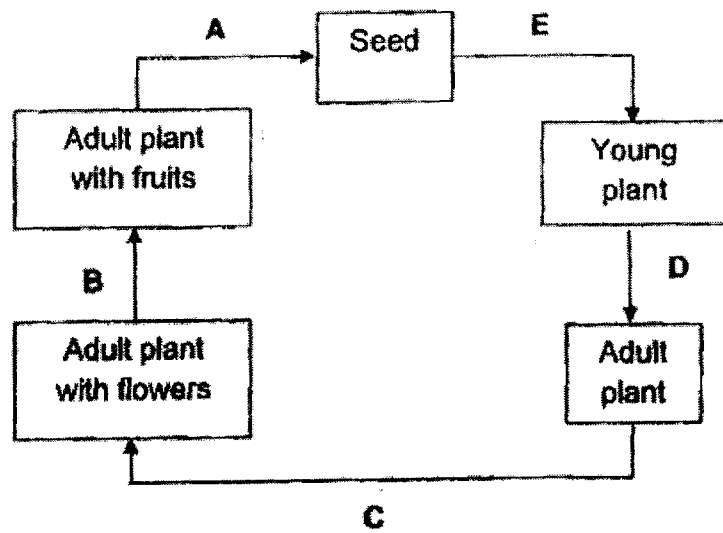
2. The diagram below shows the stem of a plant. Parts of the stem had been chewed off by some animals. As a result, the food-carrying tubes were removed.



It was observed that the plant died after four weeks. Which one of the following statements best explains this observation?

- (1) The animals ate the food made by the plant.
- (2) Food could not be transported from the leaves to the roots.
- (3) Food could not be transported from the roots to all parts of the plant.
- (4) Water and the mineral salts could not be transported from the roots to other parts of the plant.

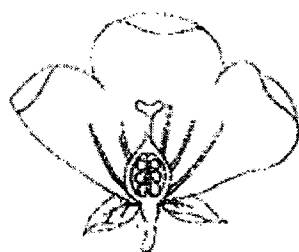
3. The diagram below shows the stages of development of a plant.



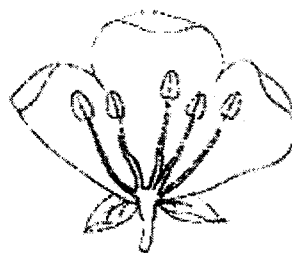
Which one of the following is correct?

|     | Fertilisation | Germination |
|-----|---------------|-------------|
| (1) | A             | D           |
| (2) | B             | E           |
| (3) | B             | D           |
| (4) | C             | E           |

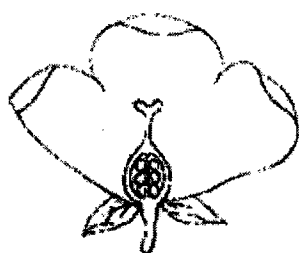
4. Karen removed some parts of 4 similar flowers from a plant as shown below.



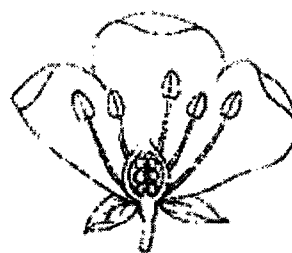
flower P



flower Q



flower R

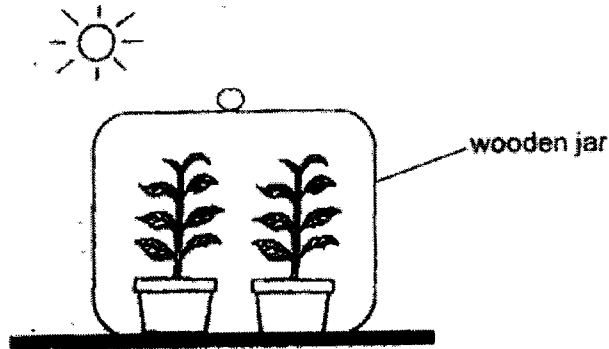


flower S

Which flowers will develop into a fruit?

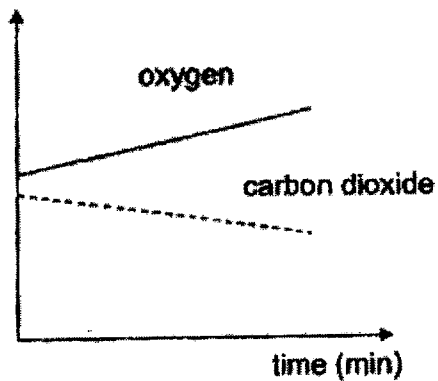
- (1) P and R only
- (2) Q and S only
- (3) P, R and S only
- (4) All the flowers

5. Two well-watered plants in a wooden jar are placed in the sun for several hours.

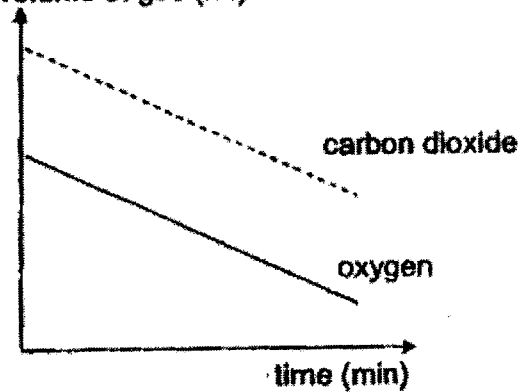


Which one of the following graphs shows the changes in the levels of carbon dioxide and oxygen in the wooden jar over a period of time?

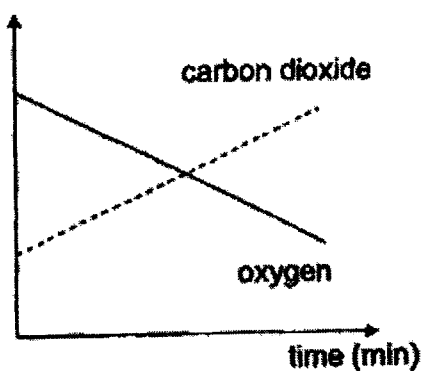
(1) volume of gas (ml)



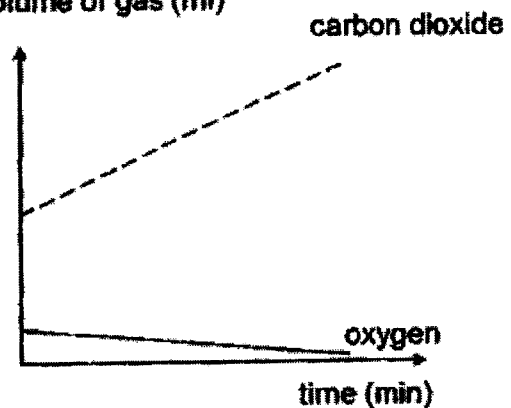
(2) volume of gas (ml)



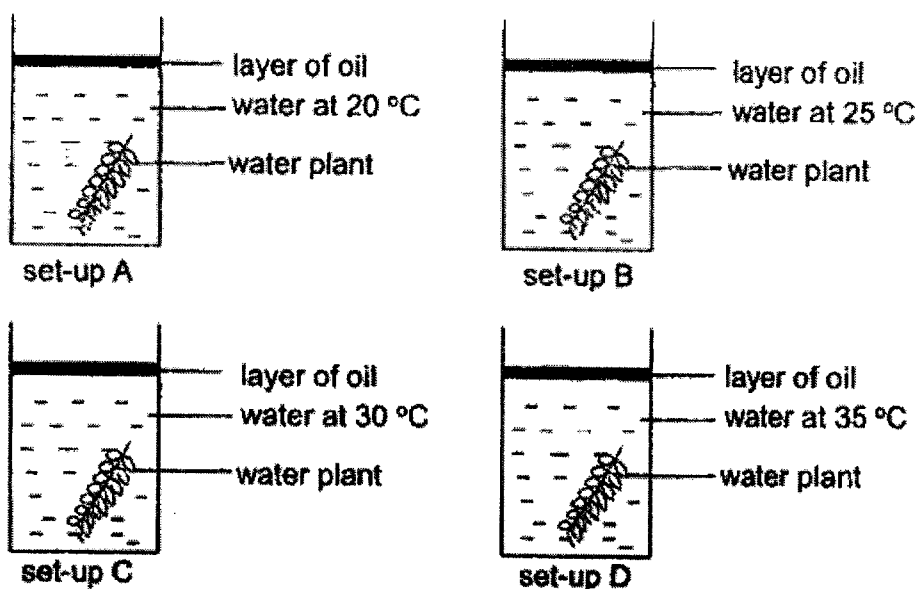
(3) volume of gas (ml)



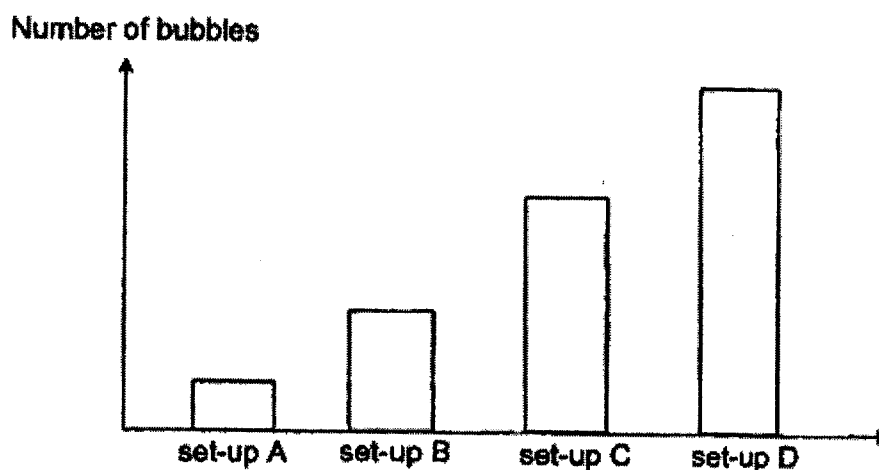
(4) volume of gas (ml)



6. Ryan sets up an experiment as shown below.



The graph below shows the number of bubbles produced by the plant for each set-up.

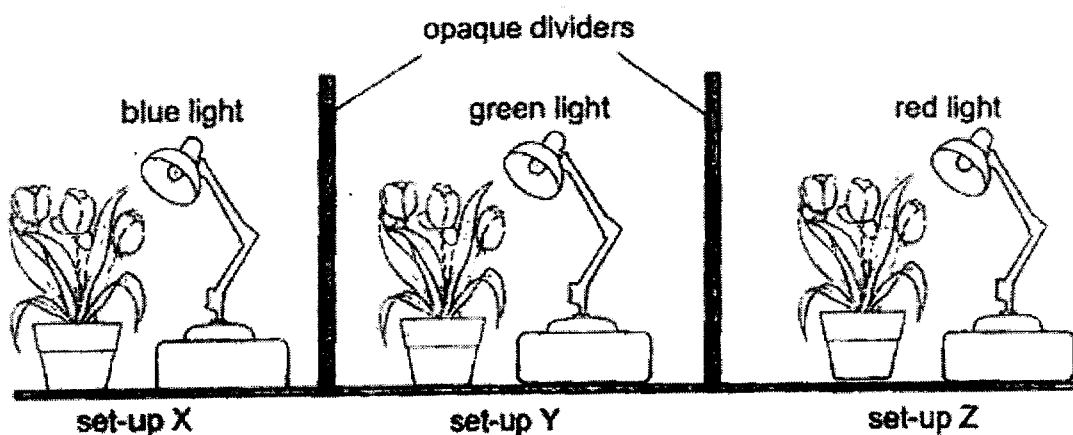


Based on graph above, what conclusion(s) can he draw from the experiment?

- A Temperature of water affects the rate of photosynthesis.
- B Photosynthesis cannot take place at temperature below 20 °C.
- C 35 °C is the best temperature for photosynthesis to take place.
- D The lower the temperature, the faster the rate of photosynthesis.

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

7. Danny sets up an experiment as shown below.



He uses similar plants in all the set-ups. The plants are given the same amount of water daily. Same amount of fertiliser is also given to the plants weekly.

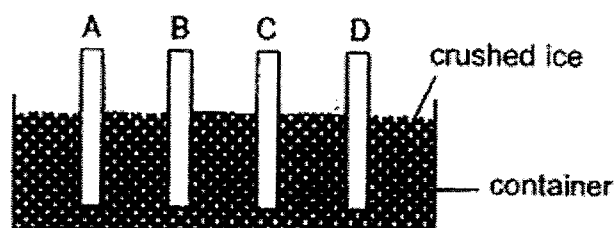
Which of the following is/are possible hypothesis/hypotheses for Danny's experiment?

- A The presence of light affects the growth of the plant.
- B The colour of the light affects the growth of the plant.
- C The amount of water affects the growth of the plant.
- D The presence of fertiliser affects the growth of the plant.

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



8. Salim carried out an investigation to find out how well different materials conduct heat. He used four similar rods A, B, C and D, made of different materials at room temperature to set up the experiment as shown below.



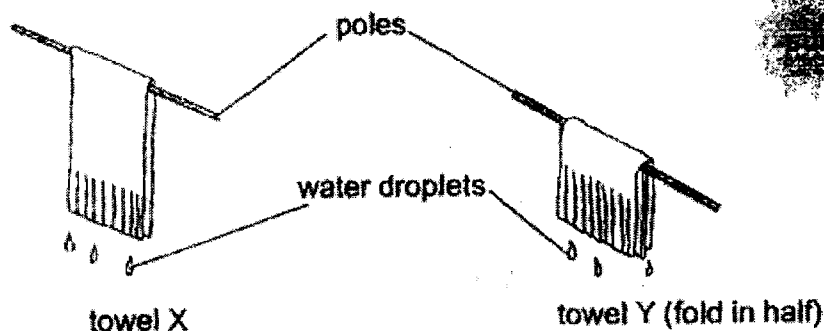
The table below shows the temperature of each rod after five minutes.

| Rod | Temperature ( °C ) |
|-----|--------------------|
| A   | 13                 |
| B   | 22                 |
| C   | 19                 |
| D   | 10                 |

Based on the results of his experiment, which one of the following statements is correct?

- (1) Rod A is made of metal.
- (2) Rod B is a better conductor of heat than rod A.
- (3) Rod C is a poorer conductor of heat than rod D.
- (4) Rod D is the best conductor of heat and electricity.

9. Two identical towels X and Y were soaked with the same amount of water and hung out to dry as shown below.

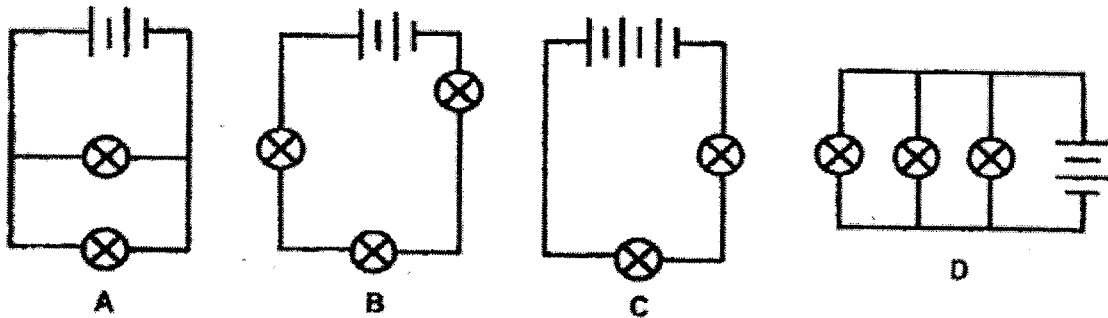


It was observed that after some time, towel X became dried completely while towel Y remained wet.

Which of the following explains this observation?

- (1) Towel X had less water evaporated.
  - (2) Towel X has a lower boiling point than towel Y.
  - (3) Towel X was exposed to more light than towel Y.
  - (4) Towel X had a greater exposed surface area to the surroundings.
10. Water is a precious natural resource. Which of the following is/are good practice(s) that help(s) to conserve water?
- A Use a hose to wash the car.
  - B Wash clothes on full load instead of half load.
  - C Turn off the tap when shampooing your hair.
  - D Use a mug to rinse your mouth when you brush your teeth.
- (1) A only
  - (2) B and D only
  - (3) C and D only
  - (4) B, C and D only

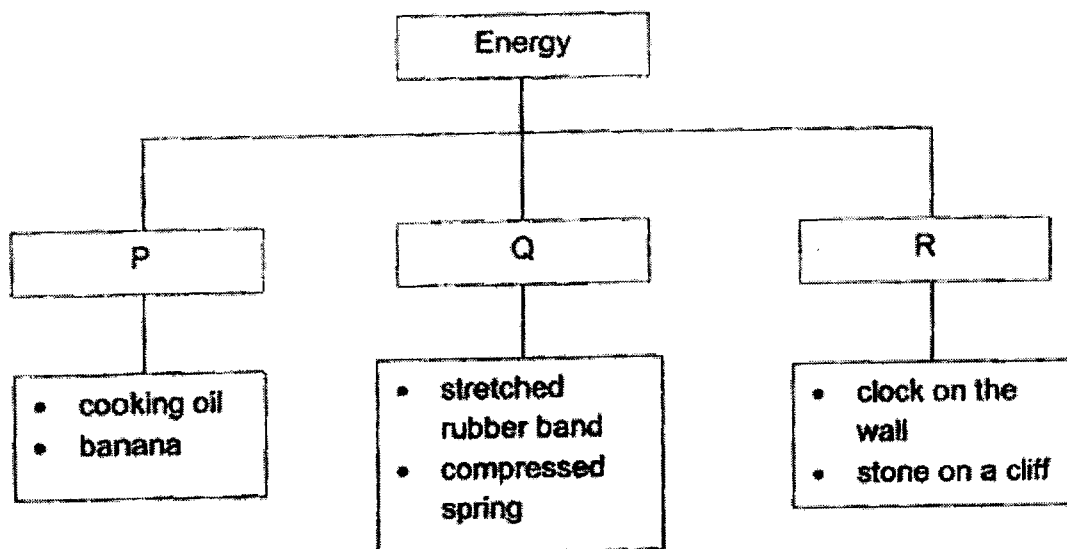
11. Jeremy wants to find out if the arrangement of bulbs will affect the length of time a bulb remains lit. He then sets up four circuits as shown below.



Which of the following two circuits should he use to ensure a fair test?

- (1) A and C
  - (2) A and D
  - (3) B and D
  - (4) C and D
12. Which of the following do not show the safe use of electricity?
- A Replacing exposed wire with a new one.
  - B Switching on an electrical supply with dry hands.
  - C Repairing the electrical appliances on your own when it is spoilt.
  - D Overloading many electrical appliances to one electrical outlet.
  - E Placing a screwdriver into an electrical outlet to insert a 2-pin plug.
- (1) A and B only
  - (2) A, B and E only
  - (3) B, D and E only
  - (4) C, D and E only

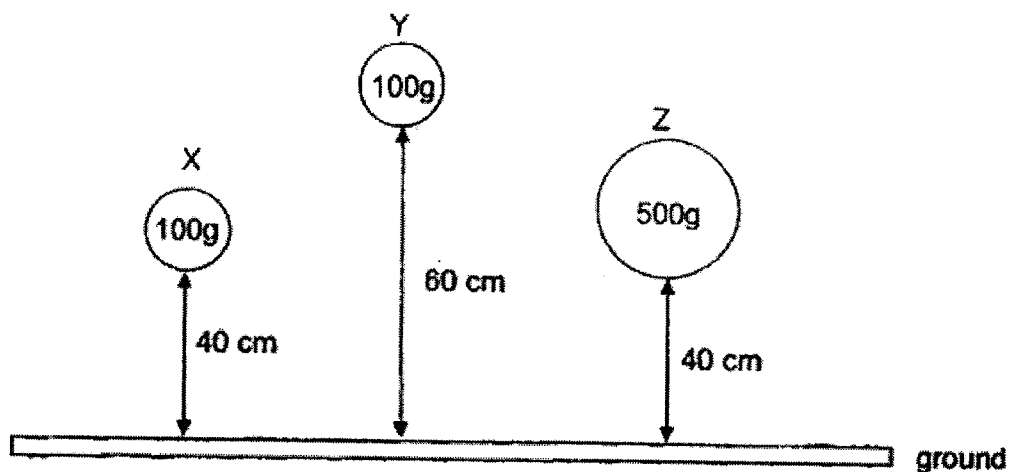
13. Study the classification chart below.



Which if the following are suitable headings for groups P, Q and R?

|     | P                              | Q                              | R                              |
|-----|--------------------------------|--------------------------------|--------------------------------|
| (1) | elastic potential energy       | gravitational potential energy | chemical potential energy      |
| (2) | chemical potential energy      | elastic potential energy       | gravitational potential energy |
| (3) | gravitational potential energy | elastic potential energy       | chemical potential energy      |
| (4) | elastic potential energy       | chemical potential energy      | gravitational potential energy |

14. Three balls of the same material X, Y and Z, were dropped from different heights as shown below.

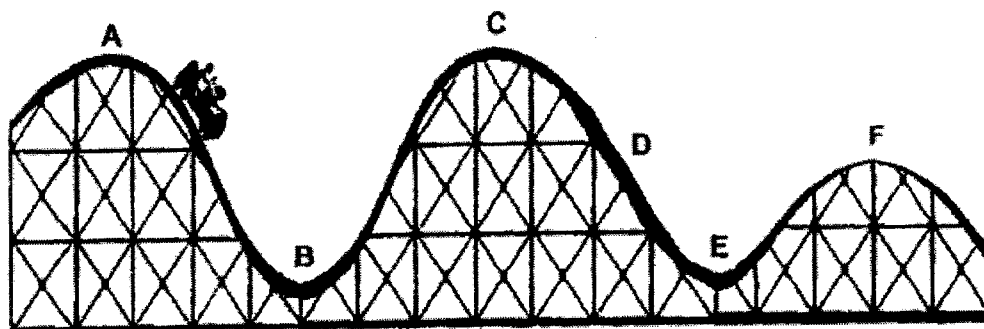


Which of the following statement(s) about the three balls in the diagram above is/are true?

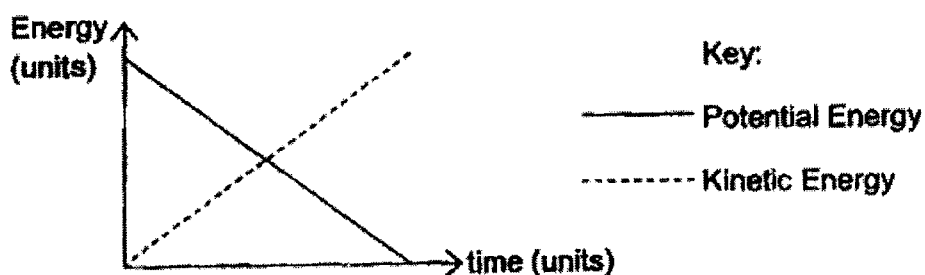
- A Ball X has more potential energy than Ball Y.
- B Ball Z has more potential energy than Ball X.
- C Balls X, Y and Z gain kinetic energy when they are dropped.
- D Ball X makes a louder sound when it hits the ground than Ball Z.

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

15. The diagram below shows part of a roller coaster track.



The graph below shows the changes in kinetic energy and gravitational potential energy of the roller coaster as it moves along certain parts of the track.



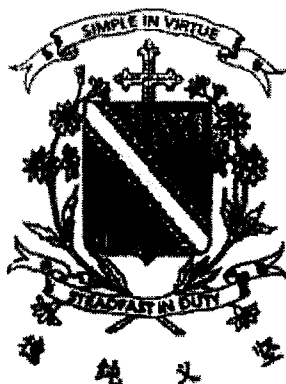
Which one of the following correctly identifies the parts of the track that the roller coaster moved along?

- (1) AB and BC
- (2) AB and CE
- (3) BC and EF
- (4) CD and EF

**END OF BOOKLET A**

Name : \_\_\_\_\_ (      )

Class : Primary 6 \_\_\_\_\_

**CHIJ ST NICHOLAS GIRLS' SCHOOL****Primary 6****Weighted Assessment 1****SCIENCE****BOOKLET B****Total Time for Booklets A and B: 50 minutes****5 questions  
14 marks**

**Do not open this booklet until you are told to do so.  
Follow all instructions carefully.  
Answer all questions.**

**This booklet consists of 6 printed pages.**

|                  |           |
|------------------|-----------|
| <b>Booklet A</b> | <b>30</b> |
| <b>Booklet B</b> | <b>14</b> |
| <b>Total</b>     | <b>44</b> |

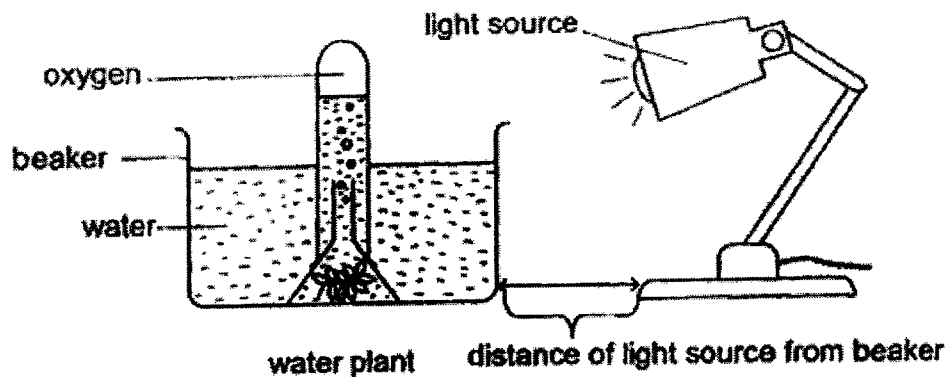
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**Parent's Signature/Date**

**Section B (14 marks)**

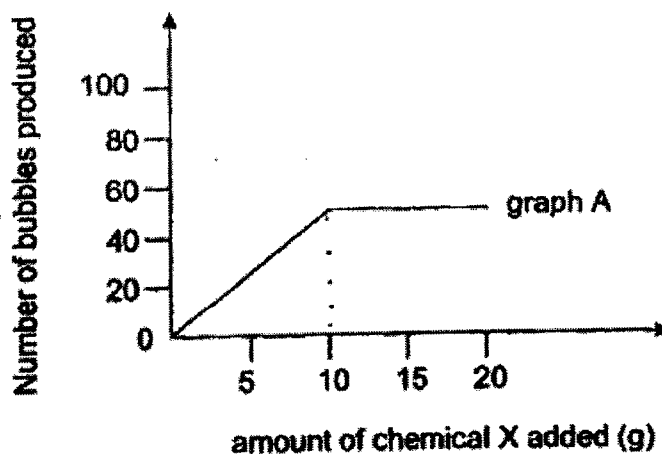
For questions 16 to 20, write your answers in this booklet. The number of marks available is shown in the brackets at the end of each question or part question.

16. John carried out an experiment as shown below. He counted and recorded the number of bubbles released by the plant for 5 minutes.



John then added 5g of chemical X, which slowly releases carbon dioxide into the water. He counted and recorded the number of bubbles released by the plant for 5 minutes. He repeated the above procedure by adding 5g of chemical X each time and recorded the results.

The graph below shows the results of his experiment.



- (a) What is the aim of his experiment? [1]

- (b) Based on the results, what is the relationship between the rate of photosynthesis and the amount of chemical X added to the water? [1]



- (c) Using the same set-up, materials and procedures, what can John do to increase the volume of oxygen gas collected in the test tube? Explain your answer.

[2]

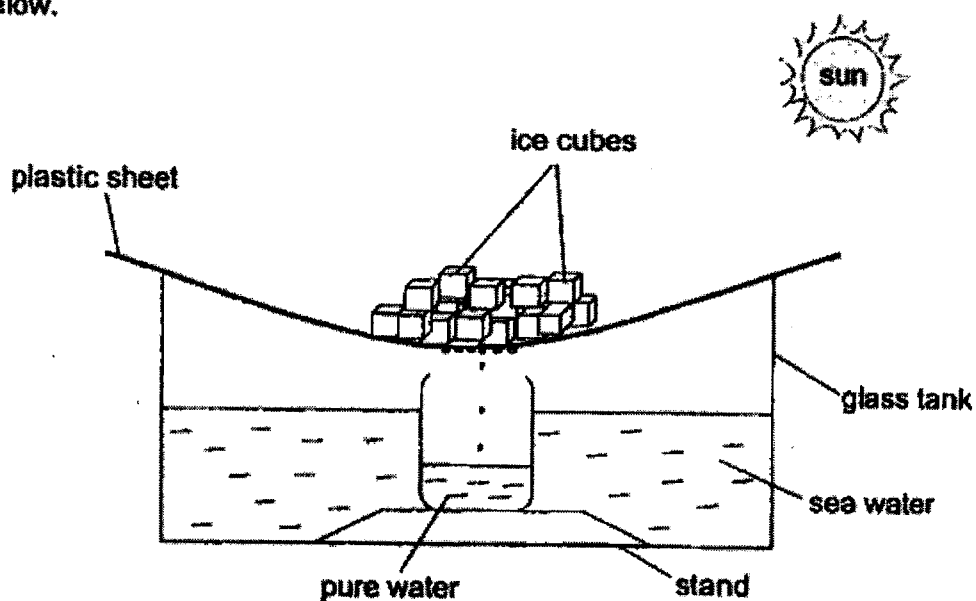
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17. Kai Wen wanted to obtain pure water from sea water by using the set-up shown below.



Explain how the pure water in the beaker is collected.

[2]

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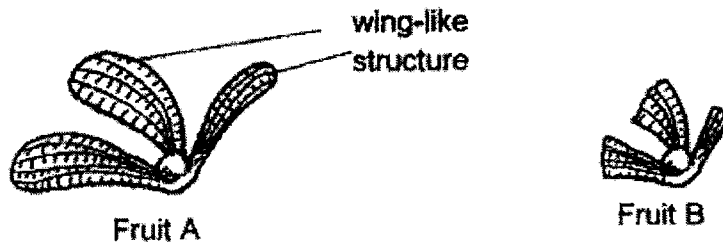
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18. The diagram below shows two similar shorea fruits A and B. Some parts of fruit B had been cut off.



Trina dropped the two shorea fruits from the same height and recorded the time they took to land on the ground. The table below shows two sets of readings from the experiment.

| Time taken for the fruit to land on the ground (seconds) |                     |                     |                     |         |
|--|---------------------|---------------------|---------------------|---------|
|  | 1 <sup>st</sup> try | 2 <sup>nd</sup> try | 3 <sup>rd</sup> try | Average |
| Set 1  | 2.3                 | 2.1                 | 2.2                 | 2.2     |
| Set 2  | 5.5                 | 6.5                 | 6.0                 | 6.0     |

- (a) Based on the results, which set of readings was recorded when fruit B was released? Explain your answer. [2]

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- (b) Why did Trina average the results of her experiment? [1]

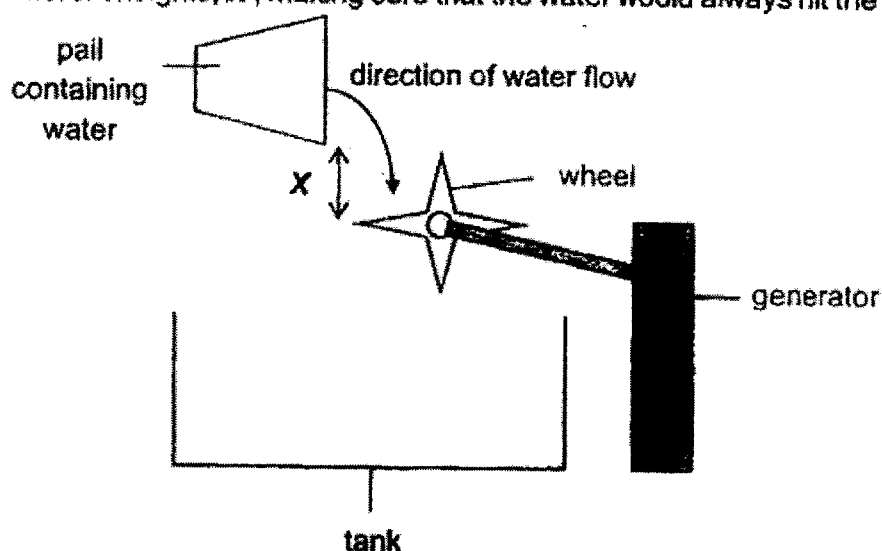
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19. Aman carried out an experiment as shown below. He poured some water into the tank from different heights,  $X$ , making sure that the water would always hit the wheel.

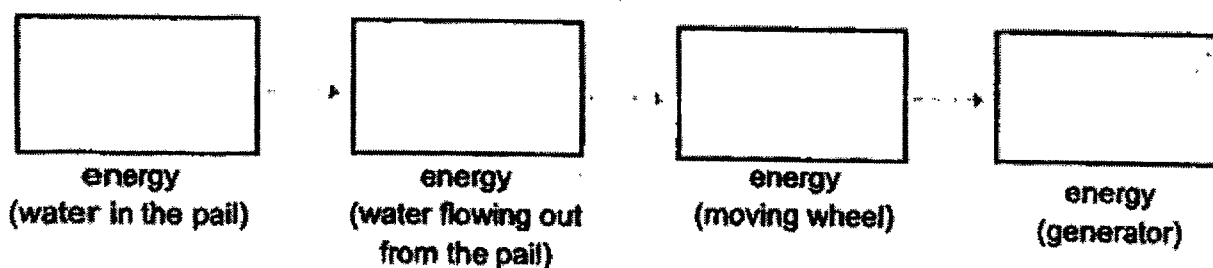


The table below shows the amount of energy generated each time he pours the same amount of water into the tank.

| Height $X$ (cm) | Electrical energy generated (units) |
|-----------------|-------------------------------------|
| 10              | 3                                   |
| 30              | 9                                   |
| 50              | 16                                  |
| 90              | 25                                  |

- (a) State the main energy conversion in Aman's experiment.

[1]



- (b) Aman repeated his experiment using twice the amount of water. Will the electrical energy generated increase, decrease or remain the same? Give a reason for your answer. [1]

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20. Matt placed a cup of hot coffee on a table in an air-conditioned room. He measured the temperature of the hot coffee at regular time intervals and recorded his results in the table below.

| Time (min) | Temperature ( °C ) |
|------------|--------------------|
| 0          | 90                 |
| 5          | 82                 |
| 10         | 73                 |
| 15         | 60                 |
| 20         | 51                 |
| 25         | 40                 |
| 30         | 35                 |
| 35         | 24                 |
| 40         | 24                 |
| 45         | 24                 |

- (a) Why did the temperature of the hot coffee change over time? [1]

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- (b) Based on the results of Matt's experiment, state the temperature of the room. [1]

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- (c) What could Matt have done if he had wanted to keep his cup of coffee hot for a longer period of time? [1]

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**END OF PAPER**



YEAR : 2023  
 LEVEL : PRIMARY 6  
 SCHOOL : CHIJ ST NICHOLAS GIRLS' SCHOOL (PRIMARY)  
 SUBJECT : SCIENCE  
 TERM : TERM 1 WEIGHTED ASSESSMENT

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

|     |    |  |
|-----|----|--|
| Q16 | a) | To find out if the number of X needed affects the number of bubbles produced by the plant.   |
|     | b) | As the amount of chemical X added increases up till 10g, the rate of photosynthesis increases.   |
|     | c) | To decrease the distance between the light source and the beaker. When the lamp is closer to the water plant, the light intensity increases, resulting in a higher rate of photosynthesis by the plant.                            |
| Q17 |    | The sea water would gain heat from the sun only the pure water vapour will then touch the cooler surface of the plastic sheet, lose heat and condense to form water droplets which will then drip into the beaker to be collected. |
| Q18 | a) | Set 1. The time the seed took to reach the ground is the shortest. B has a shorter wing – like structure, so it will stay afloat in the air for a shorter time.  |
|     | b) | To ensure that the results are more reliable.  |
| Q19 | a) | Gravitational Potential → Kinetic → Kinetic → Electrical   |
|     | b) | Increase. With more water, there is more Gravitational potential energy converted into more kinetic energy so the wheel would turn more times, generally more electrical energy in the generator.                                  |
| Q20 | a) | The hot coffee lost heat to the colder surrounding air, thus, it's temperature decreased over time.  |
|     | b) | 24°C   |
|     | c) | He could have used a poorer conductor of heat for the material of the cup.   |

