METHODIST GIRLS' SCHOOL

Founded in 1887

Weighted Assessment 1 2024
PRIMARY 6
SCIENCE

Total Time: 45 minutes

INSTRUCTIONS TO CANDIDATES
Do not turn over this page until you are told to do so.
Follow all instructions carefully.
Answer all questions.

Name:_____ ( )

Class: Primary 6._____

Date: 20 February 2024

Parent's Signature: _____

Section A	20
Section B	15
Total	35

This booklet consists of 10 printed pages including this page.

For each question from 1 to 10, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Write your answer in the bracket provided. [20 marks]

1 Which of the following about how the organisms get their energy is **not** true?

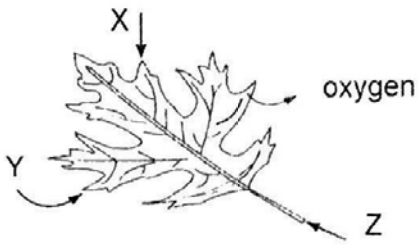
(1) All animals get their energy from the sun indirectly.

(2) All animals depend on the plant indirectly for energy.

(3) Some animals depend on the plant directly for energy.

(4) All plants depend on the sun directly for energy to make its own food.

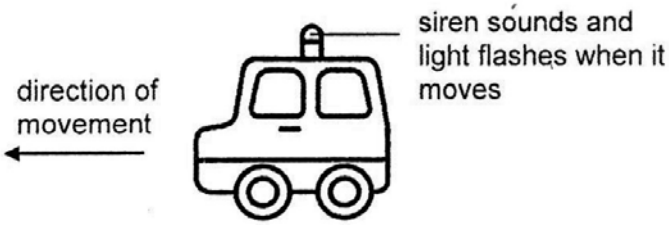
2 The diagram below shows a green leaf carrying out photosynthesis.



Which of the following represent the correct substances taken in and given out by the leaf during photosynthesis?

	Substance X	Substance Y	Substance Z
(1)	water	light	chlorophyll
(2)	water	carbon dioxide	light
(3)	light	carbon dioxide	water
(4)	light	water	carbon dioxide

3 The following toy car is battery-operated.



Which of the following shows the correct energy conversions of the toy car when it is switched on?

(1) Electrical energy → kinetic energy

(2) Electrical energy → kinetic + light → sound energy

(3) Chemical potential energy → electrical energy → kinetic + light energy

(4) Chemical potential energy → electrical energy → kinetic + light + sound energy

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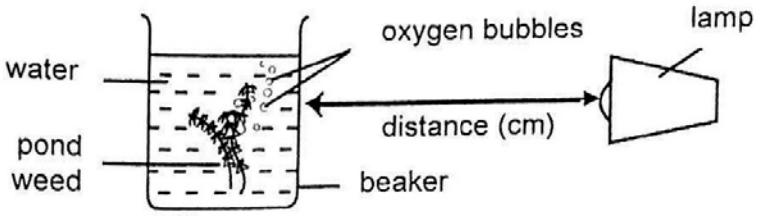
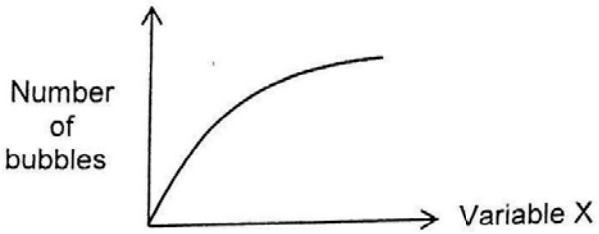
4 John wanted to investigate the factor affecting the rate of photosynthesis using the following set-up.



He recorded his results in the graph as shown below.



Which of the following is likely variable X that John was testing?

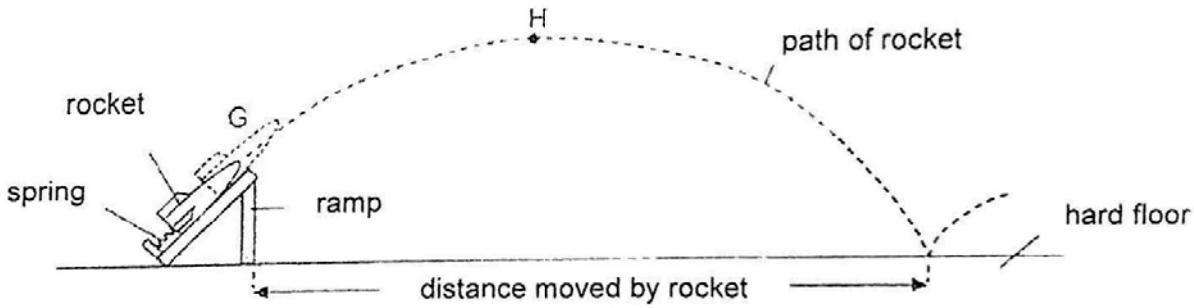
(1) Amount of light

(2) Amount of sugar

(3) Amount of oxygen

(4) Distance between the beaker and the lamp

5 Alif compressed a spring to launch a toy rocket in a room as shown. There was no wind.



Which is/are the main form(s) of energy of the rocket at H?

(1) Kinetic energy only

(2) Gravitational potential energy only

(3) Kinetic energy and sound energy

(4) Gravitational potential energy and kinetic energy

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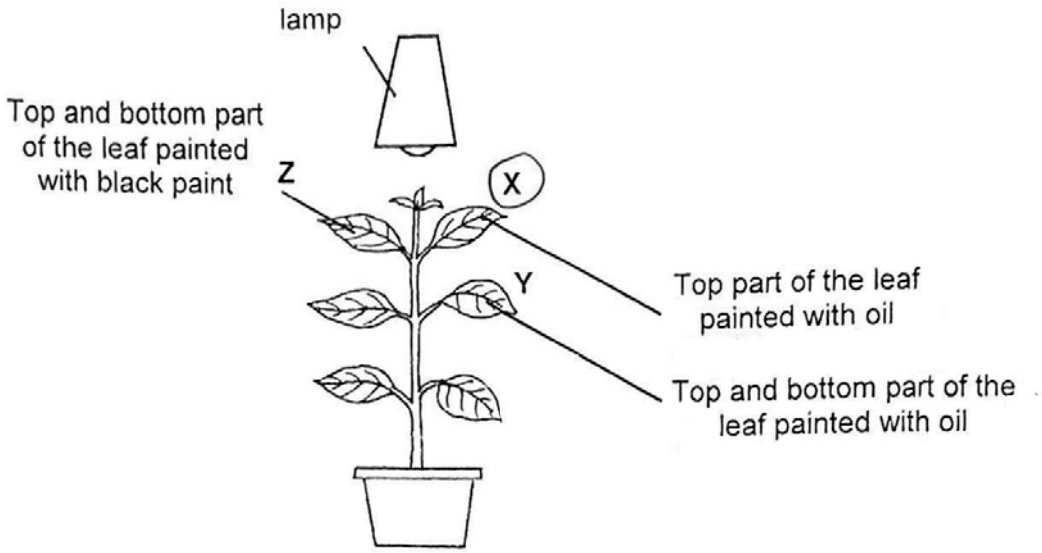
6 Anne painted leaf X, Y and Z as shown below and placed the plant under the lamp for few hours.



Anne removed the 3 leaves, X, Y and Z from the plant and dropped an equal amount of iodine solution onto each leaf.

On which leaf or leaves would the iodine turn dark blue?

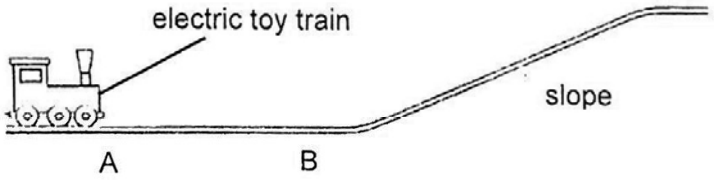
(1) X only

(2) X and Y only

(3) Y and Z only

(4) None of the above

7 Study the diagram below.



The electric toy train moved easily from A to B but moved up the slope slowly.
Which of the following is the likely reason?

(1) From A to B, all kinetic energy is converted to potential energy.

(2) From A to B, some potential energy is converted to kinetic energy.

(3) Along the slope, all potential energy is converted to kinetic energy.

(4) Along the slope, some kinetic energy is converted to potential energy

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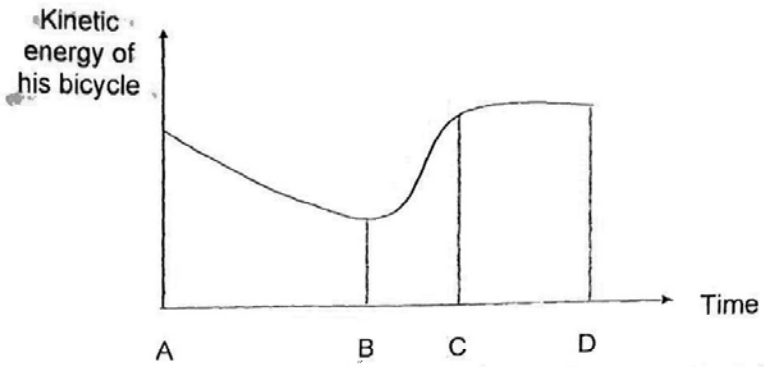
8 Joshua was cycling and the graph below shows the amount of kinetic energy that his bicycle had.



Which of the following statements is true about what happens from B to C in the graph above?

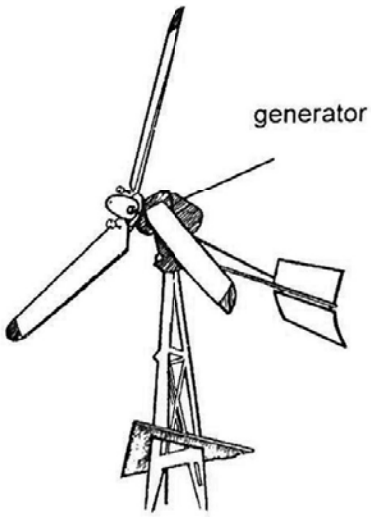
(1) The boy was cycling slower.

(2) The boy was cycling up a slope.

(3) The boy was cycling down a slope.

(4) The boy was cycling on a rough pavement.

9 The diagram below shows part of a wind turbine.



Which of the following is **not** correct about the wind turbine?

(1) More electricity is generated when the turbine turns faster.

(2) The speed of the wind affects the amount of electricity produced.

(3) Potential energy in wind is converted to kinetic energy in the turbine.

(4) Using wind turbine to produce electricity does not pollute the environment.

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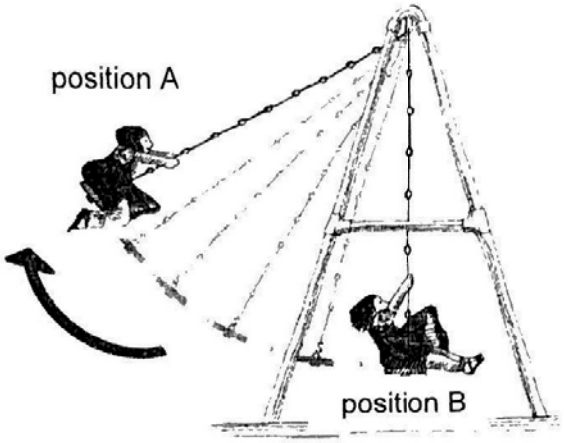
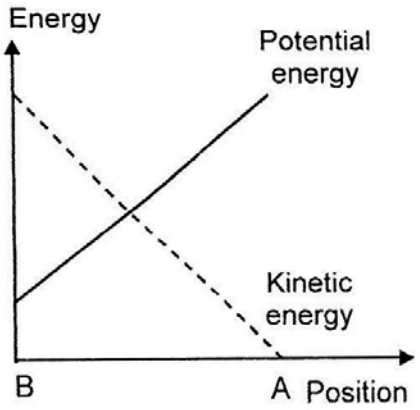
10 The diagram below shows a child on a swing.

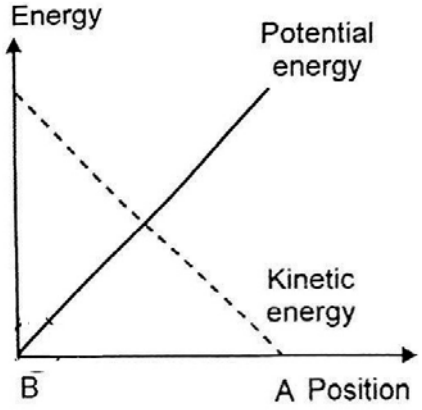


Which of the following graphs show the changes in the gravitational potential energy and the kinetic energy of the swing as it moved from B to A?

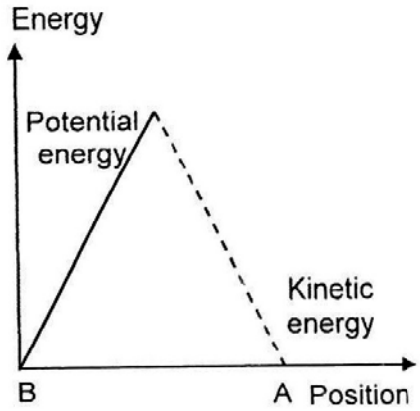
(1)



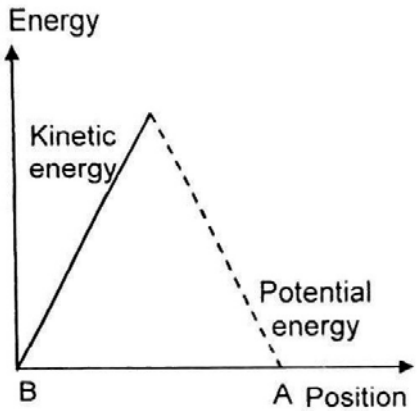
(2)



(3)



(4)



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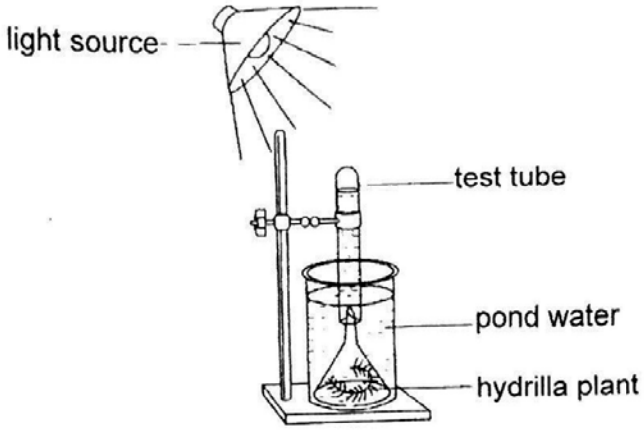
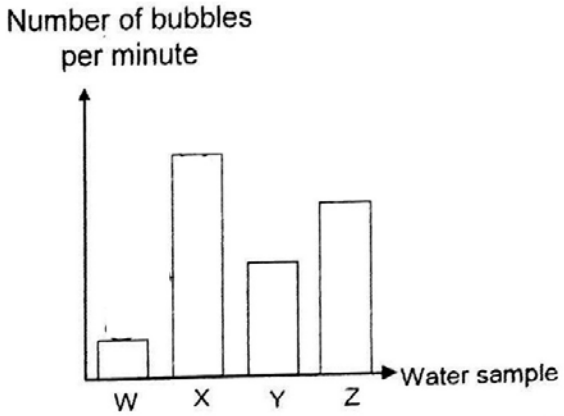
For questions 11 to 14, write your answers in the spaces provided. The number of marks available is shown in brackets [ ] at the end of each question or part question.

[15 marks]

11 Yirong set up an experiment to find out if the amount of pollutants in water affects the rate of photosynthesis of hydrilla as shown in the diagram below. He used 600 ml of water from four different ponds, W, X, Y and Z and recorded the number of bubbles released per minute for each water sample.





(a) What do the bubbles contain? [1]

(b) Based on the results above, arrange the pond water, W, X, Y and Z from the least to the most polluted. [1]

Pond Water			
Least polluted →			Most polluted

(c) How does the amount of pollutants in the pond water affect the rate of photosynthesis? Explain your answer. [2]

(d) Suggest a control set-up for the above experiment.

5

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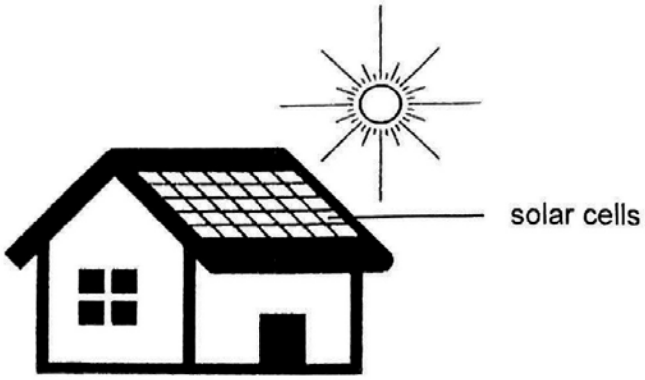
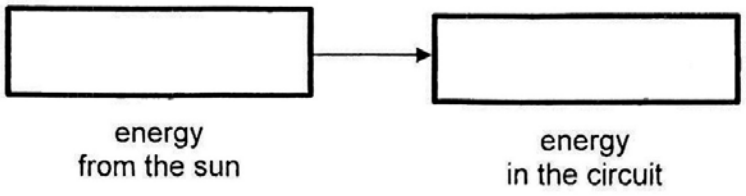
12 The diagram below shows a house with a solar power system to produce electricity during daytime.



(a) Fill in the boxes to show the energy changes in the solar power system during daytime. [1]



(b) State one advantage of using solar energy. [1]

_____

_____

2

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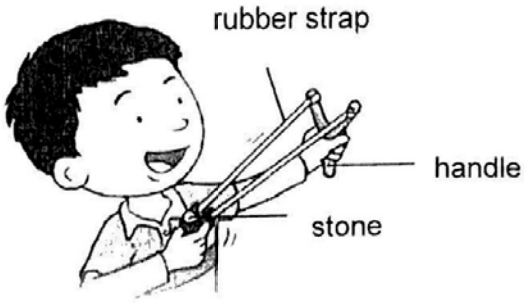
13 Timothy pulled a rubber strap W of a catapult. When he released the strap, the stone shot forward. He then measured the distance of the stone travelled.



He then repeated his experiment with rubber straps X and Y. They are of the same length but different types of rubber. The table below shows the results of his experiment.

Rubber strap	Distance travelled by the stone (cm)
W	40
X	20
Y	30

(a) Based on the above results, which rubber strap, W, X or Y, has the most elastic potential energy? Explain your answer. [1]

_____

_____

(b) For each rubber strap, explain why Timothy has to pull the rubber strap to the same distance to ensure a fair test. [2]

_____

_____

_____

3

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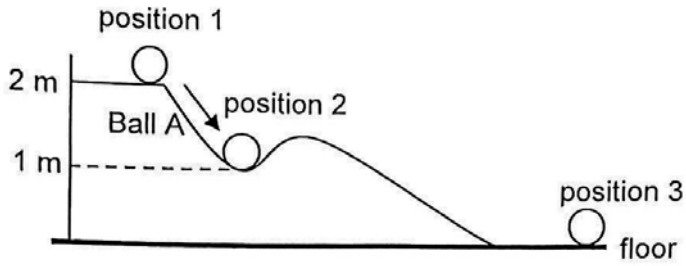
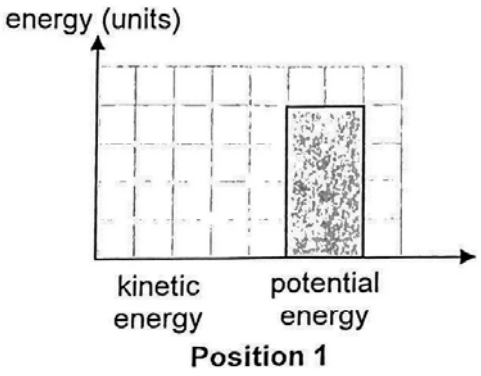
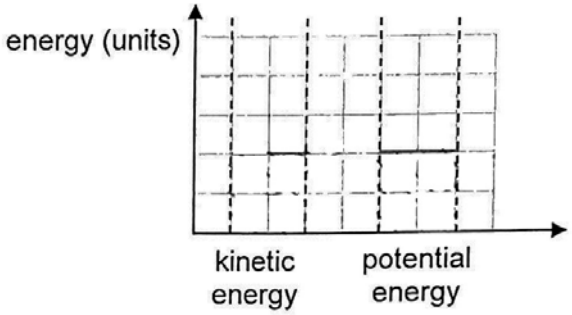
14 Ball A, at rest, was released from position 1 at 2 meters in height as shown below. It rolled past position 2 and stopped moving when it reached position 3. The amount of different types of energy ball A possessed at position 1 was drawn in the following graph.





(a) Draw on following graph to show the different types of energy ball A possessed at position 2. [2]



(b) A heavier ball B was used and released at the same height as ball A. Explain how it would affect the speed and distance travelled by ball B. [2]

(c) Give reason why ball A stopped at position 3. [1]

End of Paper

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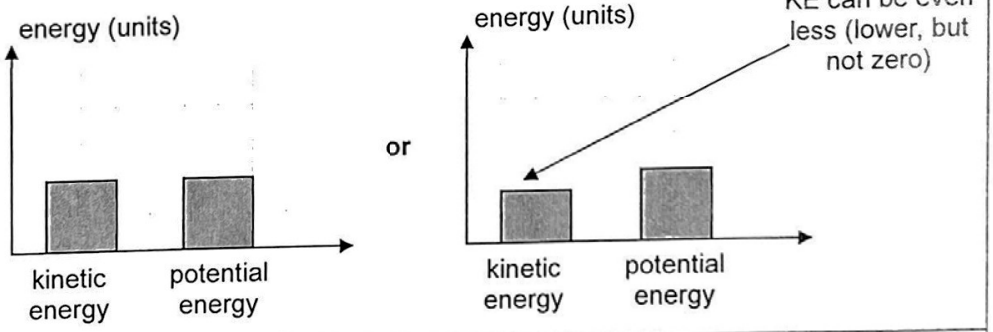
Methodist Girls' School (Primary)
2024 P6 Weighted Assessment 1 Suggested Answers

Section A:

No	Answer
1	2
2	3
3	4
4	1
5	4

No	Answer
6	1
7	4
8	3
9	3
10	1

Section B:

11 (a)	Oxygen
(b)	X→ Z →Y →W (most polluted)
(c)	As the amount of pollutants in the pond water increases (decreases), the rate of photosynthesis decreases (increases) because water allows less (more) light to pass through so that the leaves of the plant would trap less (more) light to carry out photosynthesis and produce less (more) bubbles.
(d)	A similar set-up with tap water
12 (a)	Light → electrical
(b)	Solar energy will not run out.
13 (a)	W. Using rubber strap W, the distance travelled by the stone is the furthest as rubber strap W has the most elastic potential energy to be converted to most kinetic energy in the stone.
(b)	The distance travelled by the stone will be only affected by the type of rubber straps, but not by the distance he pulled.
14 (a)	
(b)	Heavier ball will have more gravitational potential energy which will be converted to more kinetic energy of the ball. Then the ball will roll down faster and travel further.
(c)	All kinetic energy is converted to heat and sound energy.