METHODIST GIRLS' SCHOOL

Founded in 1887

Weighted Assessment 2 2024
PRIMARY 6
SCIENCE

Total Time: 40 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: 30 April 2024

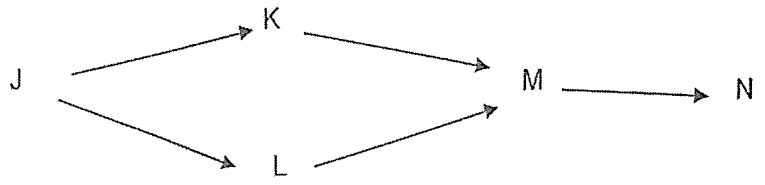
Parent's Signature:_____

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 The diagram shows a food web in a habitat. J, K, L, M and N represent different organisms.



Which of the following is true?

(1) N is a prey.

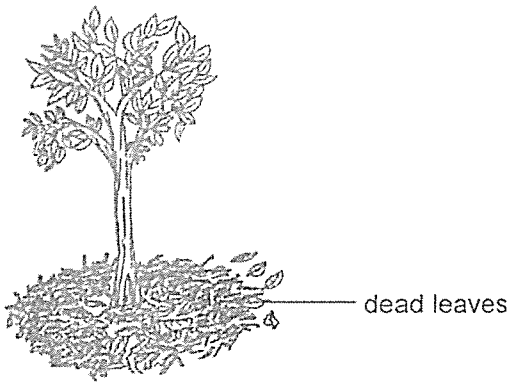
(2) K is a producer.

(3) L is both a prey and predator.

(4) M is both a prey and predator.

( )

2 A gardener placed some dead leaves under a tree as shown below.



Which of the following statements is not true about the dead leaves?

(1) They make food for the tree.

(2) They reduce the rate of evaporation of water from the soil.

(3) They provide a habitat for animals which prefer damp and dark environment.

(4) They produce nutrients which will be returned to the soil during decomposition.

( )

3 Mary counted the number of all organisms in her school pond and recorded her data in the following table.

	Plants			Animals		
	Elodea	Hydrilla	Duckweed	Frogs	Tadpoles	Water snails
Number of organisms	15	16	14	8	12	10

A There are three populations of animals.

B The elodea, hydrilla and duckweed form the pond community.

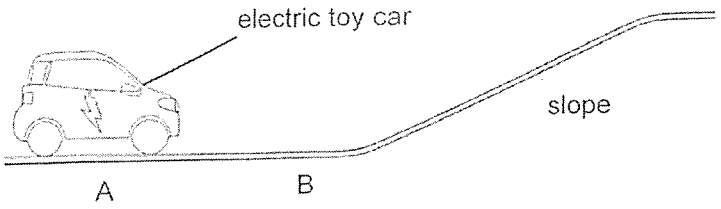
C The population size of elodea is less than that of the hydrilla.

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

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

( )

4 Study the diagram below.



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

(1) There is more gravitational force acting on the car as it moves up the slope.
(2) The car is going against gravitational force as the car travels up the slope.
(3) From A to B, the car is going in the same direction as the gravitational force.
(4) There is more frictional force between the wheels and the ground along the slope.

( )

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5 Melissa placed a magnet and a copper block on a slope as shown in diagram 1. After a while, it was observed that the copper block began to slide downwards a little as shown in diagram 2.

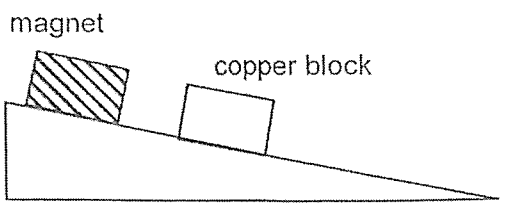


Diagram 1

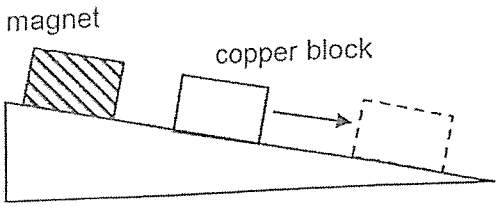


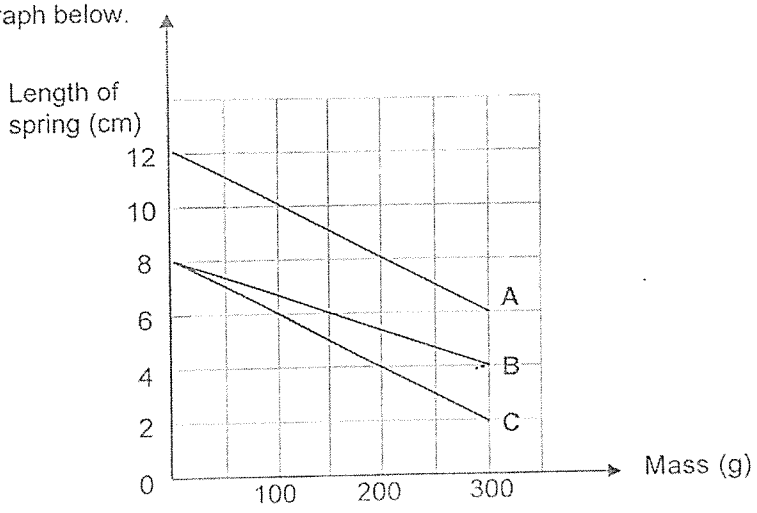
Diagram 2

Which force(s) acted on the copper block as it slid downwards?

	Frictional force	Gravitational force	Magnetic force of repulson
(1)	Yes	Yes	No
(2)	No	Yes	No
(3)	Yes	Yes	Yes
(4)	No	No	Yes

( )

6 Xiao Jie conducted an experiment on springs A, B and C. He placed various weights on top of the springs, one at a time, and recorded the length of the spring. His results are shown in the graph below.



Which of the following statements is correct?

(1) Spring B is longer than spring C.

(2) Spring A is as stiff as spring C.

(3) Spring B is less stiff than spring A.

(4) Spring C is compressed by 2 cm when 300 g is placed on top. ( )

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7 Timothy placed some balls on the table. He then used a stick to hit the white ball in the direction shown in diagram 1. Diagram 2 shows how the white ball travelled and the position of the black balls.

Diagram 1

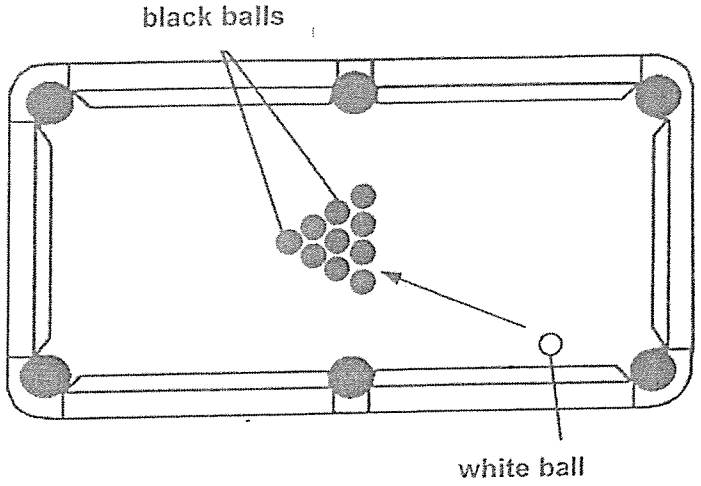
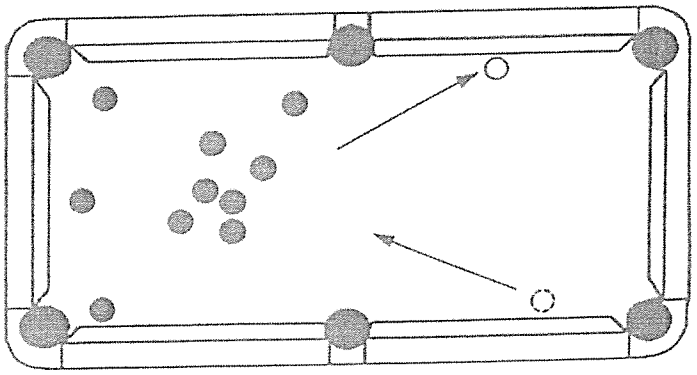


Diagram 2



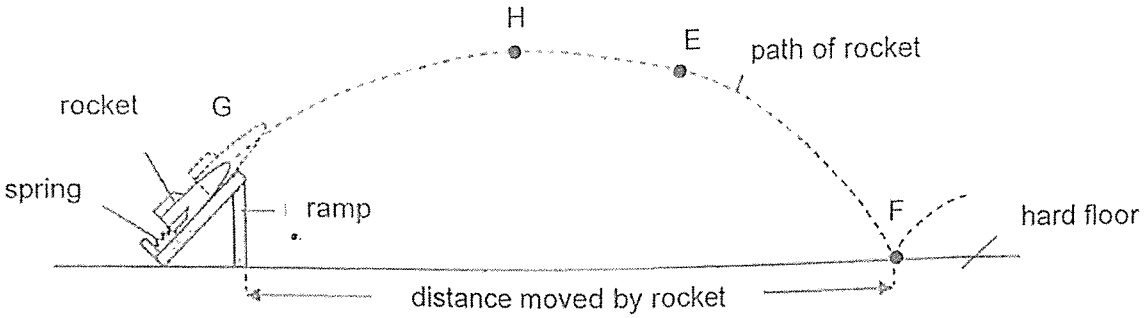
Which of the following shows (s) the effect(s) of forces acting on the balls above?

A. Move the stationary balls
B. Change the direction of moving balls
C. Change the shape of the moving balls

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

( )

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



Gravitational force acting on the rocket is _____.

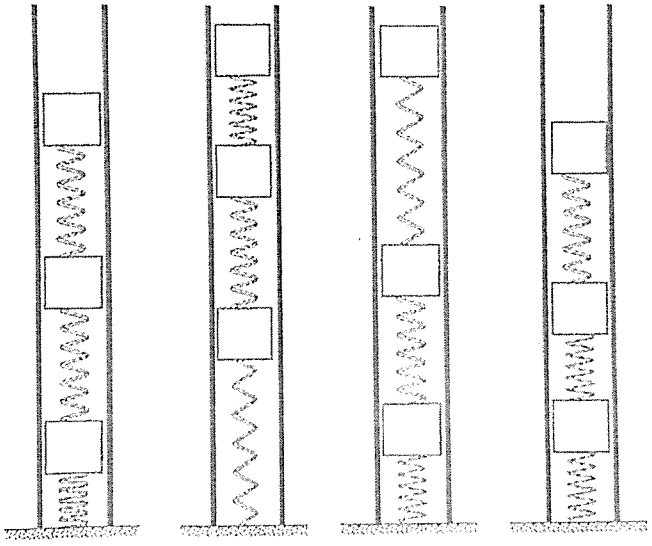
(1) zero at point G

(2) lowest at point F

(3) more at point E than at point F

(4) same throughout the path of rocket ( )

9 Henry placed a transparent pipe on the floor. In the pipe, there are three identical springs and three blocks of equal mass. Which of the following would Henry most likely observe about each spring and mass in the pipe?



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

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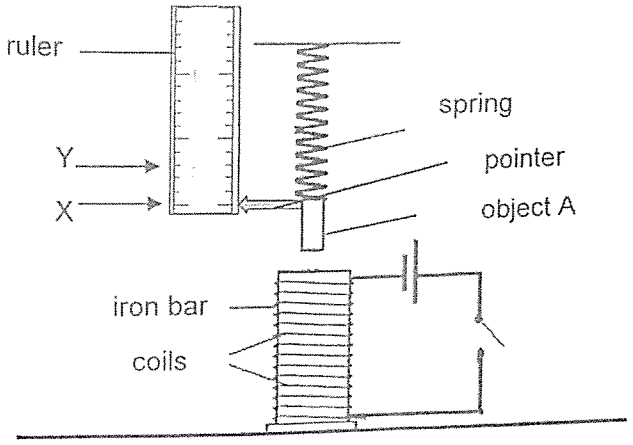
10 Noel prepared a set-up as shown below.



Before the switch was closed, the pointer was at X. He observed that the pointer was at Y when the switch was closed. Which of the following is correct if there are more coils around the iron bar?

	Object A	Position of the pointer
(1)	Steel bar	Below Y
(2)	Steel bar	Above Y
(3)	Magnet	Above Y
(4)	Magnet	Below Y

( )

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]

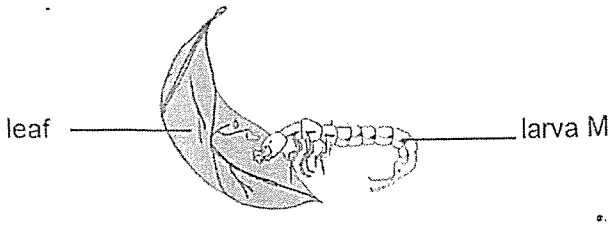
11 The table below shows the relationships among organisms A, B and C in a habitat.

Relationship	Organisms
Prey	A
Predator	B
Producer	C

(a) Construct a food chain based on the above relationships using organism A, B and C. [1]

(b) Organism X which feeds on organism B was introduced to the habitat. Explain why organism C decreased even though X did not feed on C. [2]

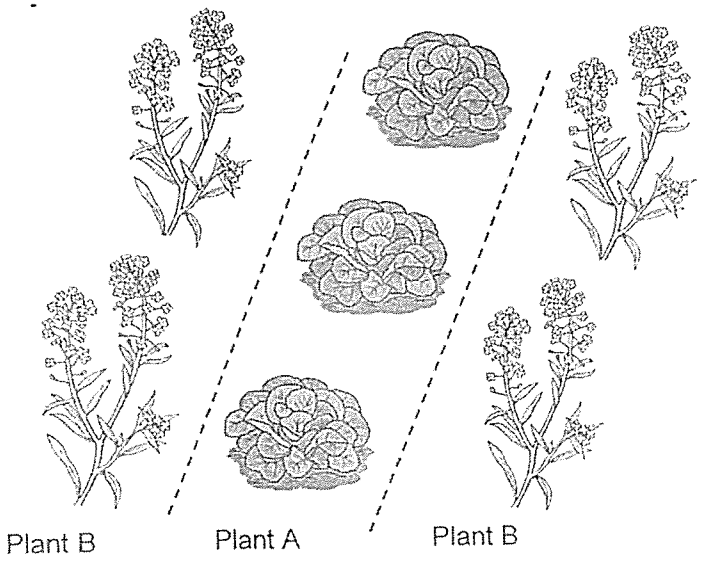
12 John saw larva M in his garden as shown below.



(a) Why does larva M need to eat leaves to survive? [1]

_____

John planted two different types of plant, A and B. He grew a row of plant A between two rows of plant B as shown below.



Study the food chain below.

Plant A ⟶ Insect P ⟶ Animal Q

(b) Plant B produces a sweet scent that animal Q likes. Explain how John can grow plant A without any pesticide to destroy insect P. [2]

_____

_____

_____

3

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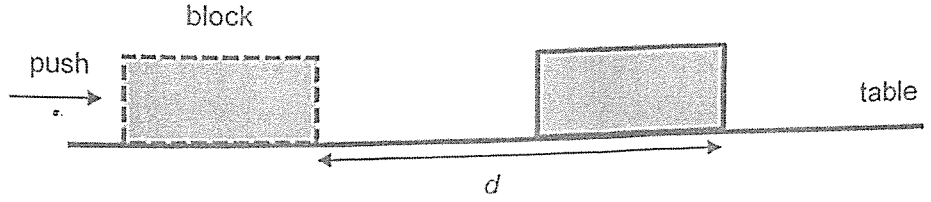
13 Jean placed a wooden block W on a table and applied a force to give the wooden block a push. The block moved forward and stopped at a distance *d* as shown.



Jean repeated the experiment with two other blocks X and Y. She used the same amount of force and recorded her results in the table below.

~~Metal~~ wooden block	Area of contact with table (cm^2)	Mass of the block (g)	Distance "*d*" (cm)
W	15	80	10
X	50	100	5
Y	15	100	5

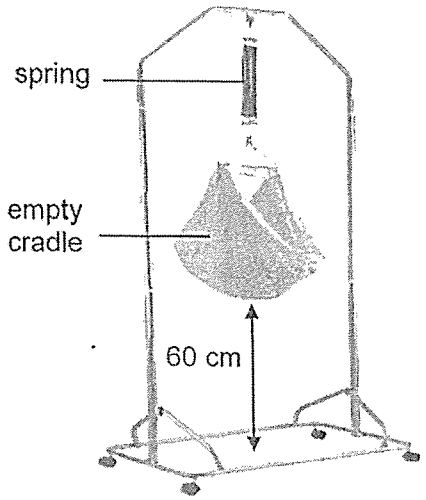
(a) Based on the above results, what is the relationship between the mass of the block and the amount of frictional force between the block and the table? [1]

(b) Besides changing the mass of the block, suggest what Jean could do to increase the distance "*d*" travelled by the block. [1]

(c) Jean concluded that surface area in contact with the table did not affect the distance travelled. Explain which two blocks she used to arrive at this conclusion. [2]

4

14 Amit wanted to find out which of the two springs, P or Q of the same length, is safer to be used for the baby cradle. He hung various weights one at a time and recorded the extension of the two springs in the table below.



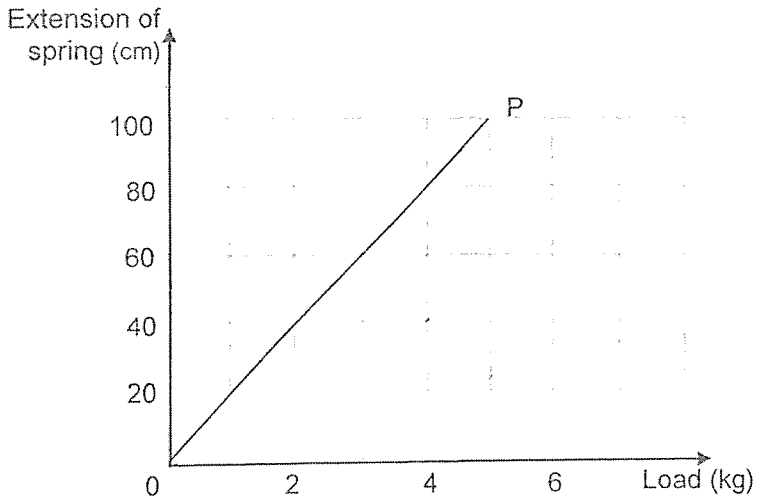
	Extension of spring (cm)	
Mass (kg)	P	Q
0	0	0
2	40	20
4	80	40

(a) State two main forces acting on the empty cradle. [2]

(i) _____

(ii) _____

(b) The extension of spring P was drawn as shown below. Based on the above results, draw the extension of spring Q on the same diagram. [1]



(c) Based on the above information, which spring P or Q, is more suitable to be used for the cradle if Amit's baby son weighs 4 kg? Explain for your choice. [2]

_____

_____

_____

5

End of Paper

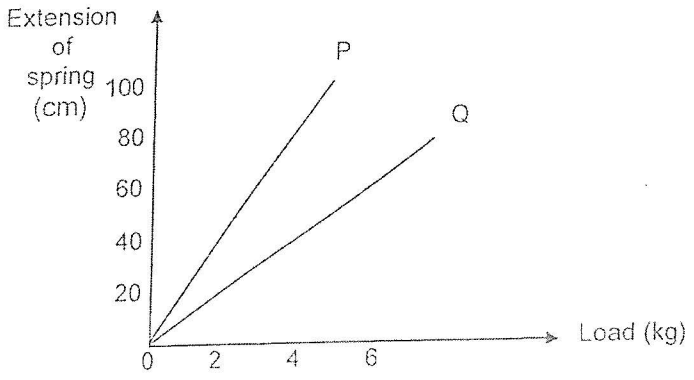
Methodist Girls' School (Primary)
Suggested Answer for P6 Weighted Assessment 2 2024

Section A:

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

No	Answer
6	2
7	2
8	4
9	3
10	3

Section B:

11(a)	C → A → B
11(b)	Organism X will feed on organism B, so the population of B will decrease. There will be fewer organism B to feed on organism A and the population of A will increase. Then there will be more organism A to feed on C, so the population of C will decrease.
12 (a)	Larva M needs to eat leaves because they provide it with energy to carry out activities.
12 (b)	Animal Q is attracted to the sweet scent of plant B. When insect P comes to feed on plant A, animal Q is just next to plant A and animal Q will eat up insect P which causes the population of Insect P to decrease.
13(a)	As the mass of the block increases, the amount of frictional force between the block and the table increases.
13(b)	Use a smoother surface of the block/ table. Add oil / water / lubricant on the table/ at the base of the block
13 (c)	Block X and Y. X and Y have the same mass but different surface area in contact with the table, yet the distance travelled is the same.
14(a)	Gravitational force and elastic spring force
14 (b)	
(c)	Spring Q. When 4 kg is loaded, spring Q extends less than 60 cm which is the distance between the cradle and the floor. Therefore, the cradle will not hit the floor.