Rosyth School
First Continual Assessment for 2006
SCIENCE
Primary 6

Total 50

Name: _____ Marks:

Class: Pr _____ Register No. _____ Duration: 1 h 15 min

Date: 1/3/06 Parent's Signature: _____

Instructions to Pupils:

1. Do not open the booklet until you are told to do so.
2. Follow all instructions carefully.
3. This paper consists of 2 sections, Section A and Section B.
4. For questions 1 to 15 in Section A, shade the correct ovals on the Optical Answer Sheet (OAS) provided using a 2B pencil.
5. For questions 16 to 23, give your answers in the spaces provided in Section B.

	Maximum	Marks Obtained
Booklet A	30 marks	
Booklet B	20 marks	
Total	50 marks	

* This booklet consists of 23 pages . (pg. 1 to 23)

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Section A (30 MARKS)

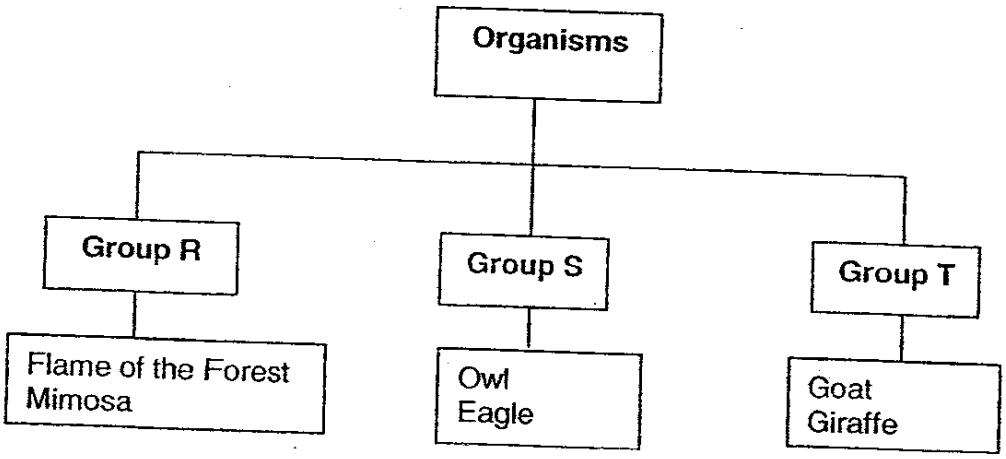
For each question from 1 to 15, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). **Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.**

1. What are the characteristics of all birds?

A: They can fly.
B: They lay eggs.
C: They have feathers.
D: They are herbivores.

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

2. Study the classification chart carefully. Mina classified 6 organisms into 3 groups.



How did Mina group the 6 organisms?

A: According to their movement
B: According to their nutrition
C: According to their method of reproduction

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

(Go to the next page)

2

3. The table below contains some information about five planets.

Planets	Surface	Number of moons	Distance from Sun (millions of km)	Speed around Sun (km/s)
Earth	Made of solid	1	30	150
Mercury	Made of solid	0	48	58
Jupiter	Made of gas	15	13	778
Neptune	Made of gas	6	5	4496
Pluto	Made of solid	1	5	5946

Paul and John then grouped these planets in the tables as shown below.

Paul's Table

Group A	Group B
Earth	Jupiter
Mercury	Neptune
Pluto	

John's Table

Group A	Group B
Earth	Pluto
Mercury	Neptune
Jupiter	

What characteristics did Paul and John use to group these planets?

	Paul's Table	John's Table
(1)	Surface	Number of moons
(2)	Speed around the Sun	Distance from the Sun
(3)	Speed around the Sun	Number of moons
(4)	Surface	Distance from the Sun

(Go to the next page)

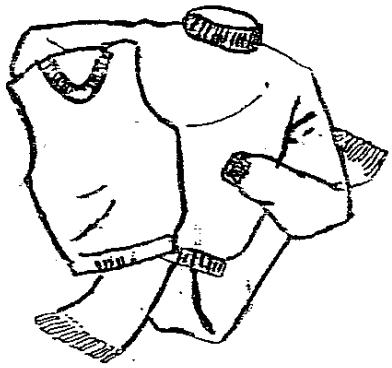
4. Martin set up an experiment to find out the effect of heat on the rate of evaporation. He conducted the experiment with 3 types of materials of the same exposed surface area. The results are recorded in the table below.

Types of materials	Place where the material is hung	Time taken to dry up
Woollen cloth	In the kitchen	125mins
Silk cloth	At the balcony	85mins
Cotton cloth	In the open field	25mins

However, his father concluded that the experiment conducted was not a fair one. Which one of the following suggestions should he adopt to ensure a fair test?

(1) Use the same material and hang them in different places
(2) Use the same material and hang them in the same place
(3) Use the different materials and hang them in different places
(4) Use the different materials and hang them in same place

5. Study the picture below carefully.



What characteristics of the above woollen clothing help to keep us warm on cold days?

A: They are soft and stretchable.
B: They are made of things that were once alive.
C: They slow down heat loss from our body to the surrounding air.
D: They trap air which is a poor conductor of heat.

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

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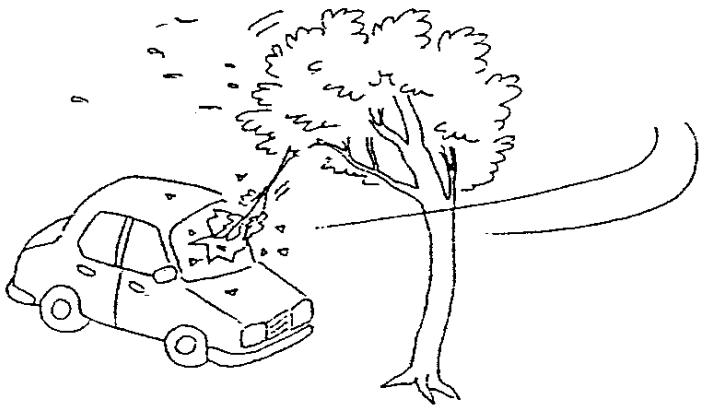
4

6. Mr Tan was driving a car along a road. Suddenly, a strong gust of wind caused a tree branch to break. The branch fell onto the windscreen of his car as shown below.



Which of the following possess potential energy in the above situation?

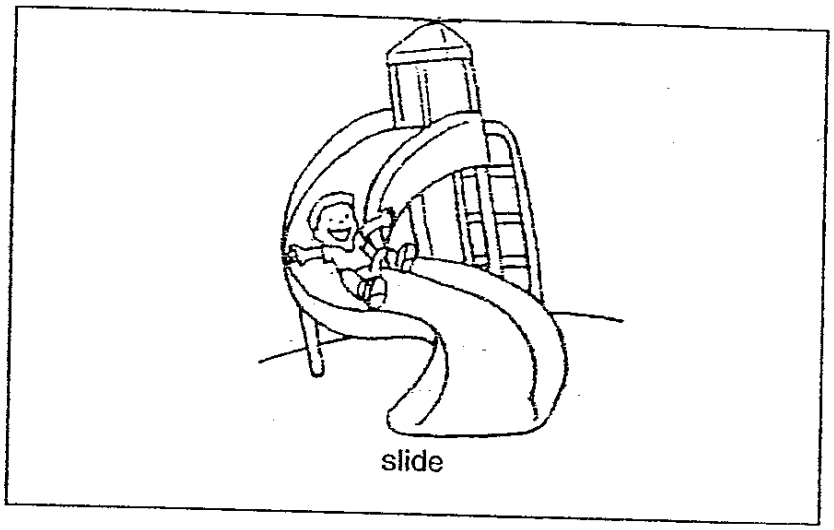
A: Wind
B: Moving Car
C: Falling Branch
D: Shattered Windscreen

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

(Go to the next page)

5

7. Refer to the picture below. Andrew moved down the slide from the top and landed on the ground with a loud thud.



Which of the following is the correct energy conversion for the above situation?

(1) Chemical energy → Heat energy + Sound energy

(2) Potential energy → Kinetic energy + Heat energy + Sound energy

(3) Potential energy → Kinetic energy → Heat energy + Sound energy

(4) Chemical energy → Potential energy → Heat energy + Sound energy

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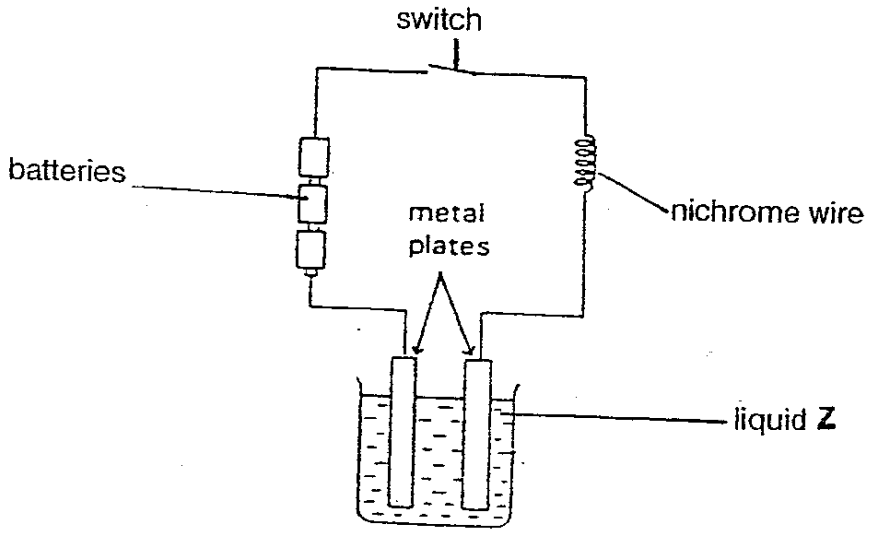
8. Alfred set up an experiment as shown in the diagram below. When the circuit was closed , he observed that the nichrome wire was red hot.



Which of the following are possible deductions that can be derived from his observation?

A: Heat energy can pass through liquid Z.
B: Electrical energy can pass through liquid Z.
C: The greater the number of batteries, the hotter the nichrome wire.
D: Electrical energy in the circuit is converted to heat energy and light energy in nichrome wire.

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

9. Which of the following are sources of energy?

A: Coal
B: Tides
C: Battery
D: Windmill

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

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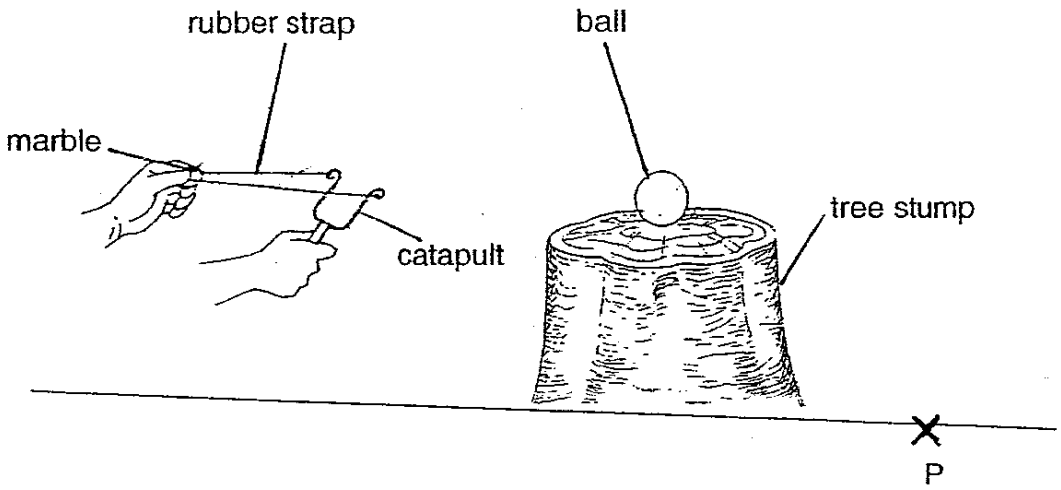
10. Abdul stretched the rubber strap on his catapult and aimed a marble at a ball placed on a tree stump as shown below.



When he released the marble, it hit the ball and the ball fell from the tree stump and landed on point P.

Which of the following changes can make the ball land at a distance further than point P?

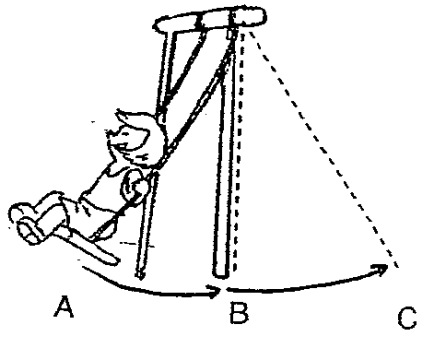
A: Use a heavier marble.
B: Use a longer rubber strap.
C: Stretch the rubber strap further.
D: Place the ball on a higher tree stump.

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

(Go to the next page)

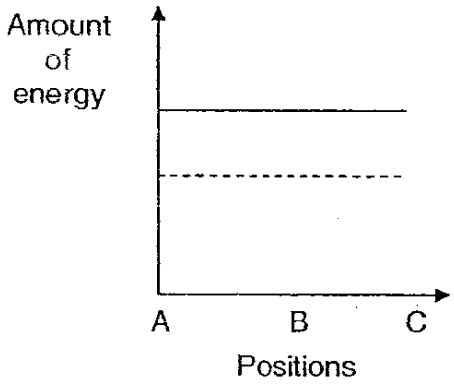
8

11. Melissa was playing on a swing as shown below. As she swung from position A, she moved past position B to position C.

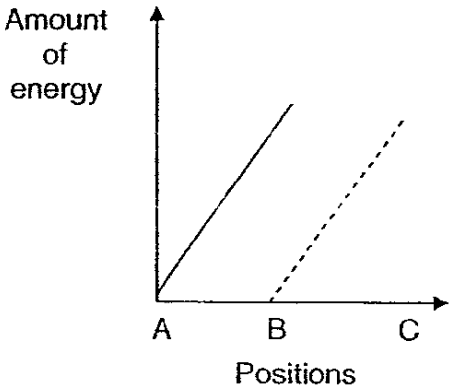


Which one of the following graphs shows the change of potential energy and kinetic energy of the swing as it moved from positions A to C?

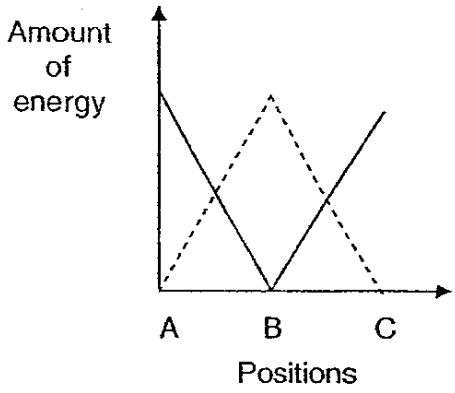
(1)



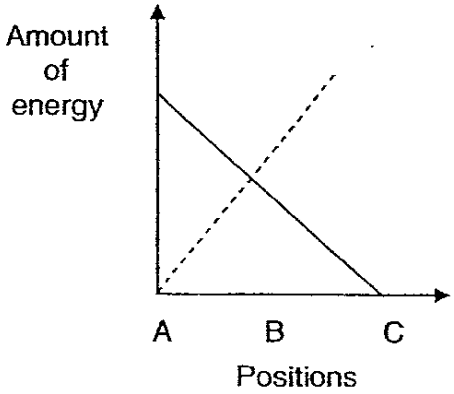
(2)



(3)



(4)



Legend:
_____ Potential energy
---------- Kinetic energy

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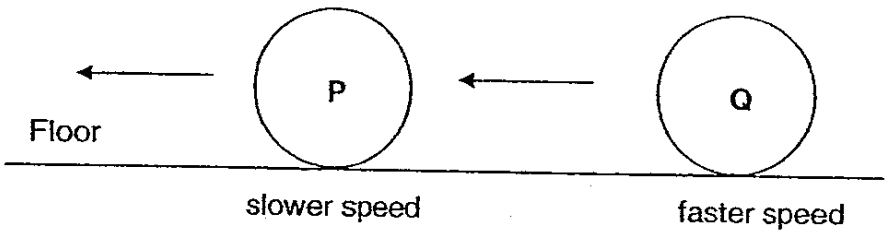
9

12. The diagram below shows two identical snooker balls, P and Q, moving over the floor at different speed. The balls moved in the direction as indicated by the arrows.



What will happen to Ball P when Ball Q hits it?

A: Ball P will continue to move in the same direction.
B: Ball P will come to a stop immediately.
C: Ball P will move faster.
D: Ball P will move in the opposite direction.

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

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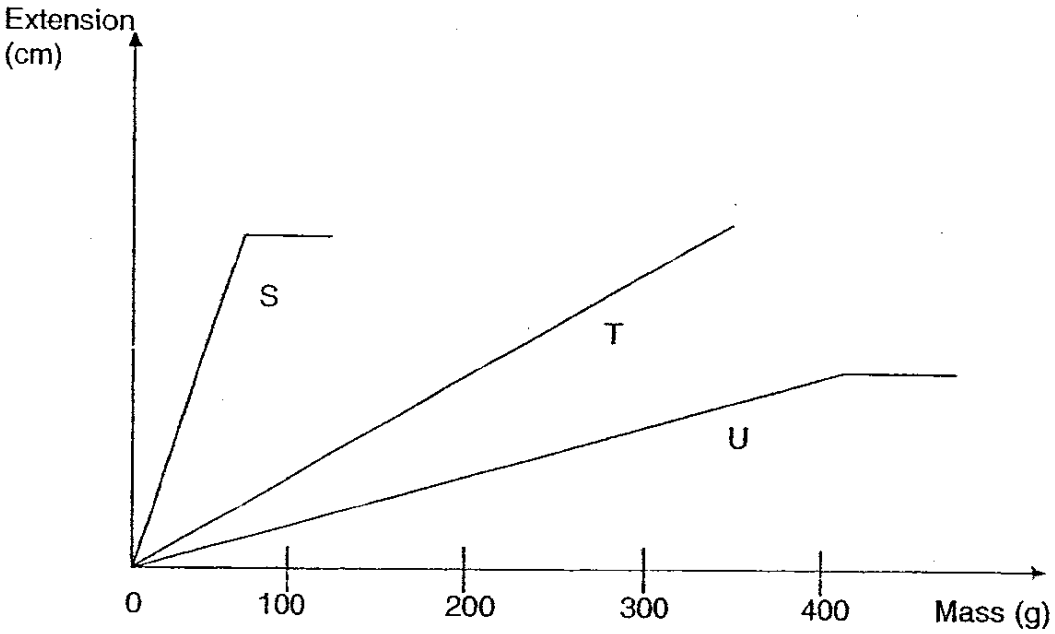
13. The graph below shows the extensions of three different types of spring S, T and U when different weights are hung to each spring.



Which springs could be used to weigh an object of mass 300g?

(1) S and T only
(2) S and U only
(3) T and U only
(4) S, T and U

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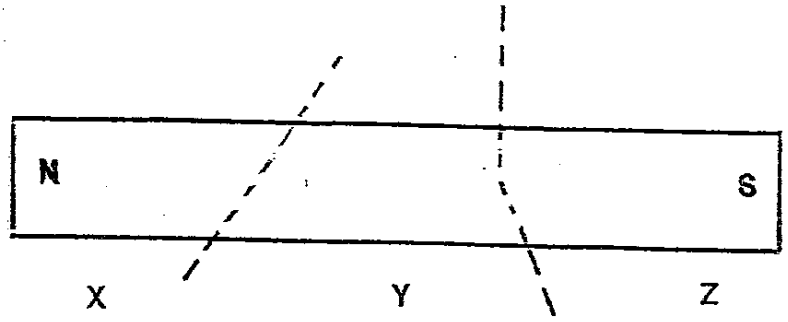
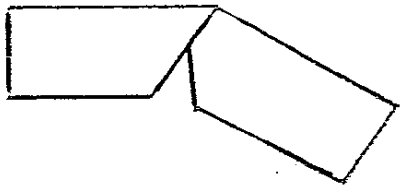
14. Devi broke a bar magnet into 3 pieces, X, Y and Z as shown by the dotted lines below.



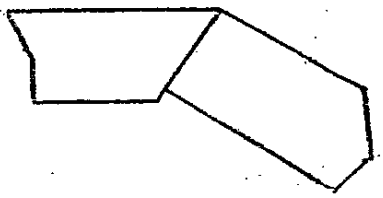
Which one of the following is **not** possible when 2 pieces of the magnets are brought together?

(1)



(2)

(3)



(4)

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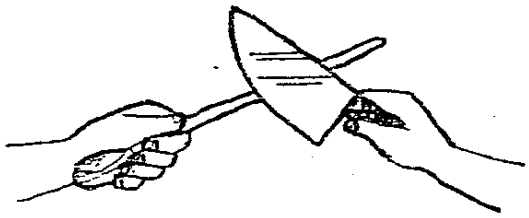
15. In the kitchen, Veronica saw her mother sharpening her chopper as shown below.



Which of the following aspects of friction help her mother to do her work?

A: Friction prevents the chopper from slipping out of her hand.
B: Friction acts in the opposite direction to motion.
C: Friction causes the surfaces in contact to wear away.
D: Friction produces heat energy.

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

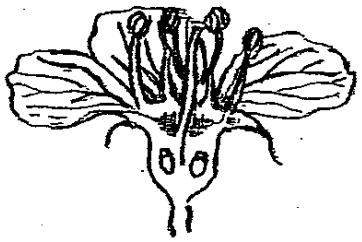
End of Section A

/3

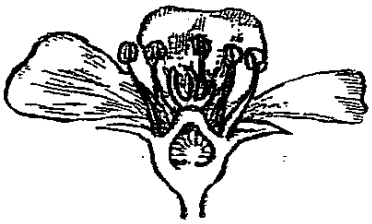
Section B (20 MARKS)

For questions 16 to 23, write your answers in this booklet.

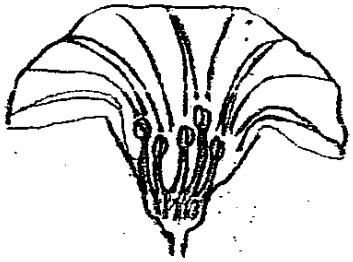
16. Study the cross-sections of 6 different flowers below carefully.



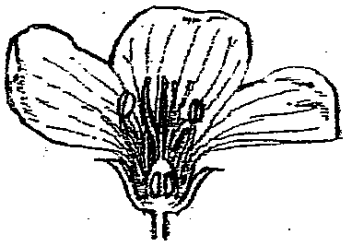
R



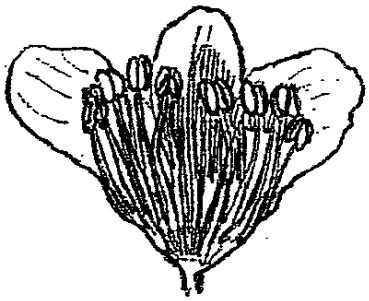
S



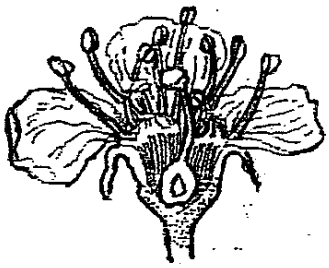
T



U



V



W

(Question 16 continues on the next page)

Based on the pictures on pg. 13, the flowers R to W are classified into two Groups, A and B, as shown in the table below.

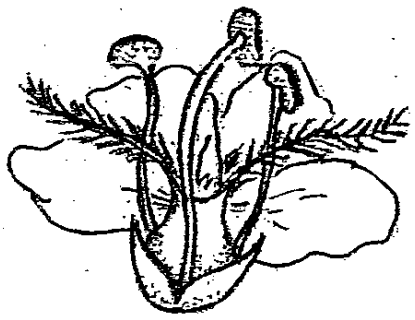
Group A	Group B
R	S
T	W
U	
V	

a) How are the flowers in Group A different from the flowers in Group B? (1m)

_____

_____

b) Study Flower X as shown below.



X

i) Name the agent for pollination. (1m)

_____

ii) Give a reason for ~~your answer~~ (1m)

_____

_____

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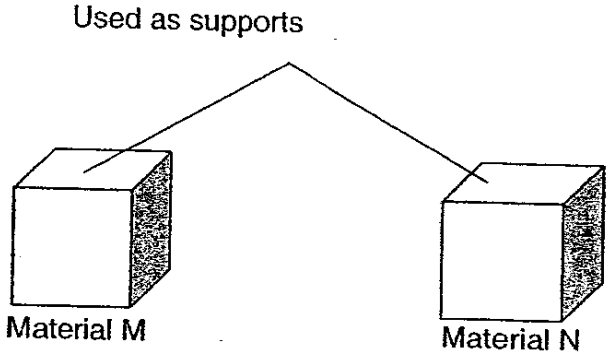
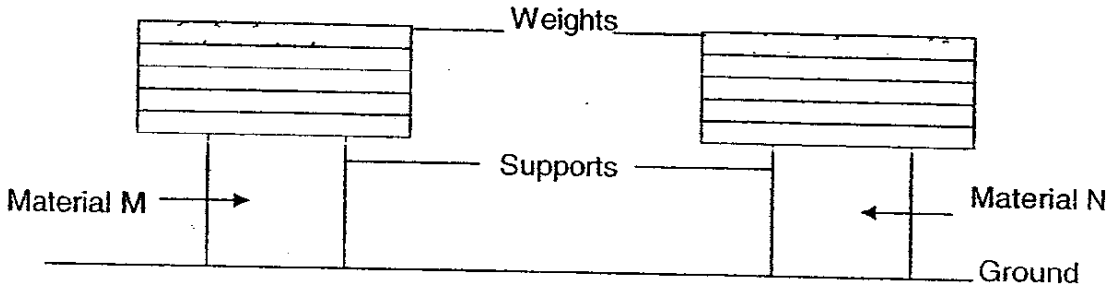
17. Azman conducted an experiment to find out the strength of two different materials, M and N. He made 2 similar solid shapes using the two materials as shown below.



Then he used them as supports and placed weights on them until one of the supports gave way.



a) Name 2 variables that should be kept constant in this experiment. (1m)

_____

_____

(Question 17 continues on the next page)

16

b) What is the relationship between the material of the supports and the weights it could support? (1m)

_____

_____

c) If Azman were to change the colour of the materials used to make the supports, would it affect the results of his experiment? (1m)

_____

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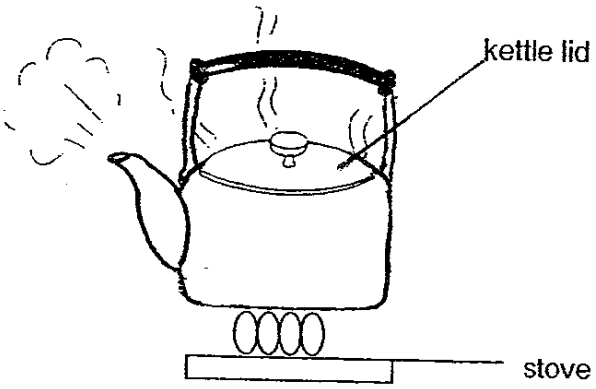
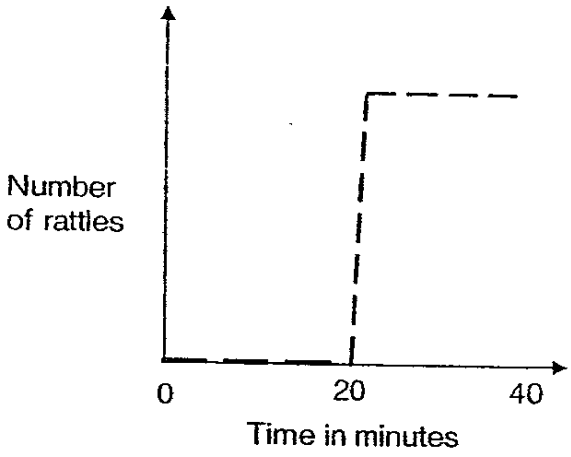
/ 7

18. A kettle of water was put over a flame on a stove as shown below.



The number of times the kettle lid rattled was measured over a period of time. The result was used to plot a graph as shown below.



a) What would you do if you want the kettle lid to begin rattling before 20 minutes? (1m)

_____

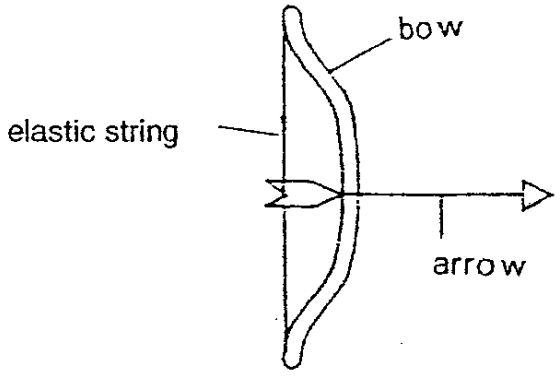
b) Explain why your action in (a) made the kettle lid to begin rattling before 20 minutes. (1m)

_____

_____

(Go to the next page)

19. Jasmine had a bow and arrow as shown below.



Using the bow and arrow, she wanted to investigate the relationship between elastic potential energy and kinetic energy.

a) Which variable should Jasmine change for the above investigation? (1m)

_____

_____

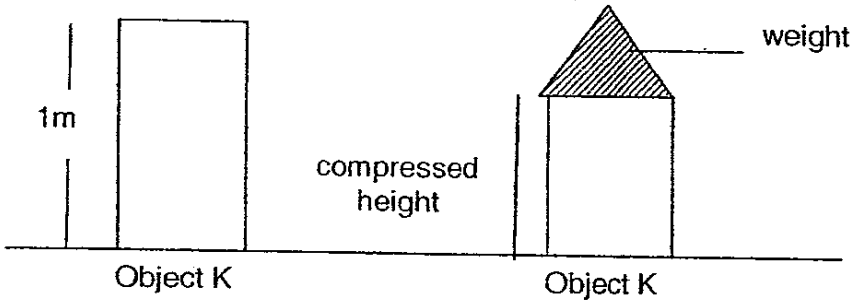
b) What measurement must she take to show that elastic potential energy has been converted to kinetic energy? (1m)

_____

(Go to the next page)

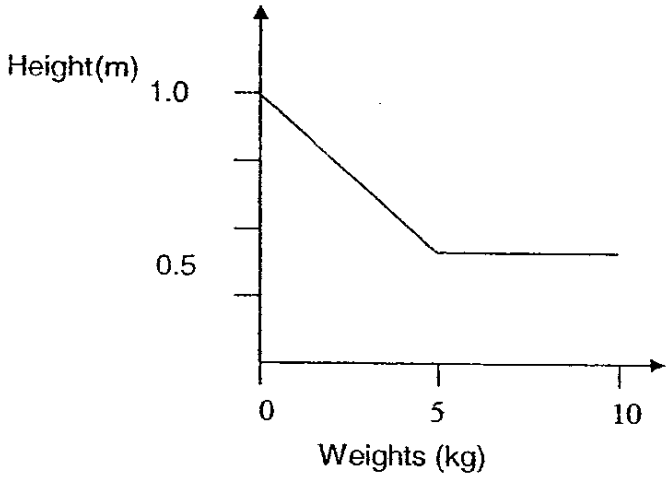
19

20. David placed a weight on an object K of 1 m high. He measured the compressed height of the object when a weight is placed on top of it as shown below.



When he removed the weight, Object K returned to its original height. He repeated the experiment with different weights.

He used the results to a plot a graph as shown below.



a) What is the relationship between the weights and the height of the object K? (2m)

_____

_____

(Question 20 continues on the next page)

20

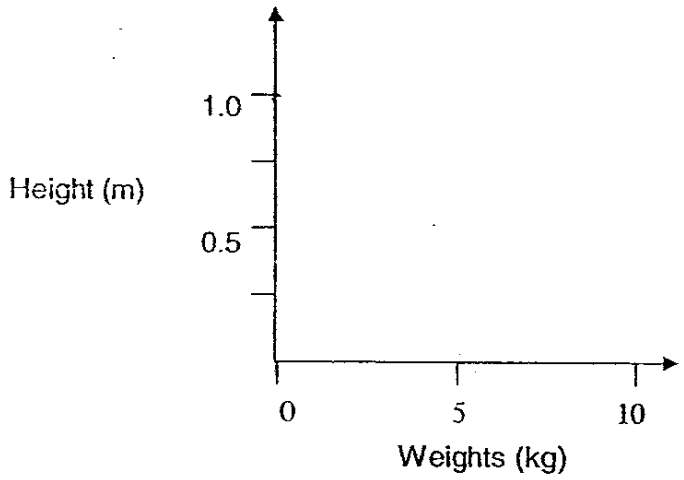
b) State the conversion of energy from the weight to the object K by completing the blanks below. (1m)

_____ energy in weight is converted to

_____ energy in object K which is converted to

_____ energy in the object K.

c) David replaced object K with object M of 1m high and repeated the above experiment. Object M is hard and solid. It is also not flexible and elastic. Plot a graph below to show the relationship between the weights and the height of the object M. (1m)



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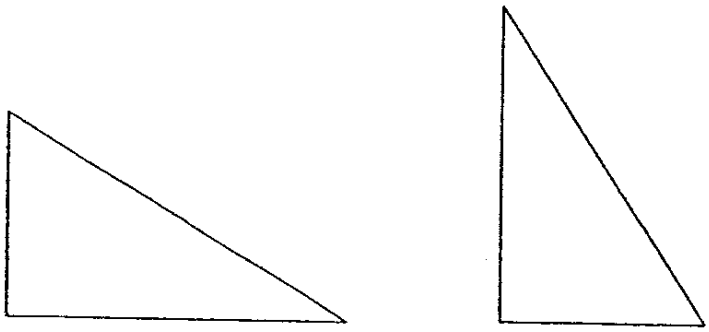
21

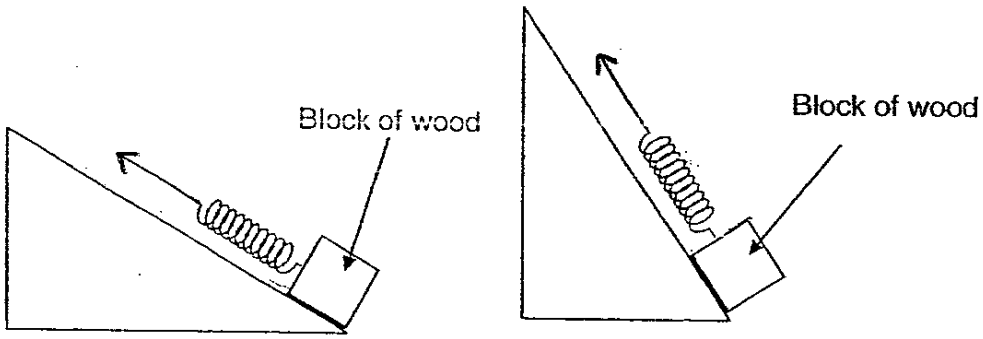
21. Mary had two ramps, P and Q, as shown below.



Ramp P Ramp Q

She predicted that more force would be needed for a block of wood to be pulled up on Ramp Q than Ramp P. She decided to carry out an experiment to confirm her prediction.

A spring was attached to a block of wood. Then the block was pulled up, one at a time , to the top of each of the two ramps as shown below.



Ramp P Ramp Q

a) What observation can confirm Mary's prediction in the above experiment? (1m)

_____

_____

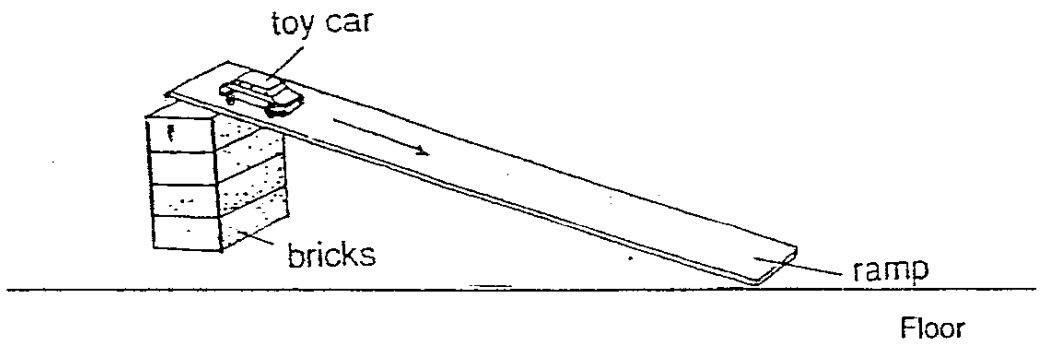
b) What should she do to decrease the force needed to pull the block up? (1m)

_____

(Go to the next page)

22. Shanthi wanted to investigate whether the height of a ramp will affect the distance travelled by a toy along the floor.

She carried out an experiment using a ramp and a toy car as shown below.



The following steps were carried out:

Step 1 : She let the toy car roll down from the top of the ramp three times.

Step 2: She calculated the average distance the toy car travelled along the floor.

Step 3: She raised the height of the same ramp and then repeated steps 1 and 2.

a) Why did she use the same ramp to ensure a fair experiment? (1m)

_____

_____

b) She recorded and tabulated the results as shown below

Height of the ramp	Average distance (cm)
4 bricks	45
8 bricks	68

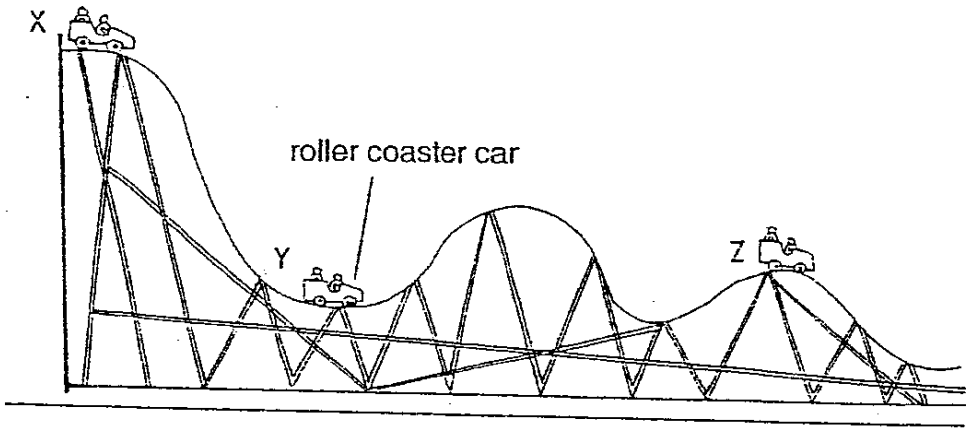
Based on the results above, what conclusion can she make? (1m)

_____

_____

(Go to the next page)

23. A roller coaster car moves along the slope as shown below.



a) Will the amount of kinetic energy in the roller coaster car at Y be more or less if the slope surface is rougher? (1m)

_____

b) Give a reason for your answer in (a)? (1m)

_____

_____

End of Paper

Rosyth Primary School

Primary 6 Science CA1 Exams (2006)

(ANSWER KEY)

SECTION A : (30 MARKS)

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

SECTION B (20 MARKS)

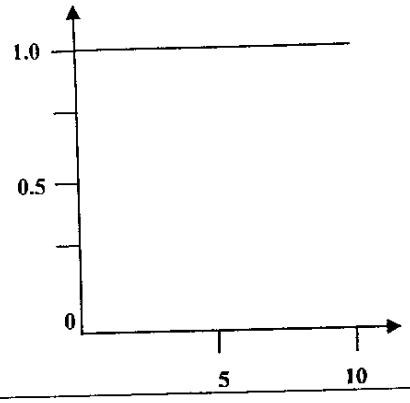
Qn No.	Answers
16a	Group A has only male parts, Group B has both male and female parts.
16b (i)	Wind
(ii)	Stigma has feathery branches for catching pollen.

17a	The mass of the weights, the number of weights.
17b.	The stronger the material of the supports the more the number of weights it can supports.
17c.	No.

18a.	Turn the flame hotter
18b.	The flame will boil the water earlier so the kettle lid will begin rattling before 20 minutes.

19a.	The length of the elastic spring being pulled.
19b.	The distance moved by the arrow.

20a	As the weights increased the compressed height increased but after 5kg the height remained constant.
20b.	Gravitational potential
	Kinetic
	Elastic potential

Qn No.	Answers
21a	The spring when ramp Q is extended more than on P.
21b.	Put rollers under the block.
21c.	

22a	If she had changed the camp, the other ramp would be either rougher or smoother causing the toy car to go shorter or longer.
22b.	The greater the height of the ramp, the greater the average distance.

23a	Less
23b.	As the surface is rougher, kinetic energy of the car will be converted to more heat energy due to more friction.