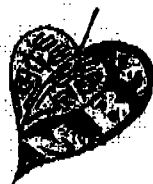


SAT



MAHA BODHI SCHOOL
2005 SEMESTRAL ASSESSMENT 1
PRIMARY 6 SCIENCE

Name: _____ ()

Date: 12 May 2005

Class: Primary 6 ()

BOOKLET A

30 Questions

60 marks

Total Time for Booklets A & B: 1 h 45 min

Instructions to Candidates

Do not open this booklet until you are told to do so.

Follow all instructions carefully.

Check all the pages carefully to make sure that all the questions are in order.

Answer all the questions.

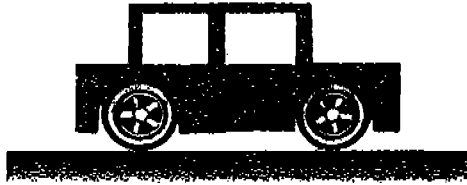
If a question is difficult, go on to the next one. Do not waste time.

This booklet consists of 14 pages.

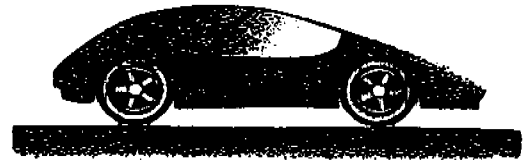
PART I (60 marks)

For each question 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 (OAS).

1. Compare the two diagrams below.



X



Y

Why do racing cars like the one shown in diagram Y have streamlined body shape?

- (A) To make the car move faster.
- (B) To make the car look smarter.
- (C) To help reduce friction between the moving car and air.

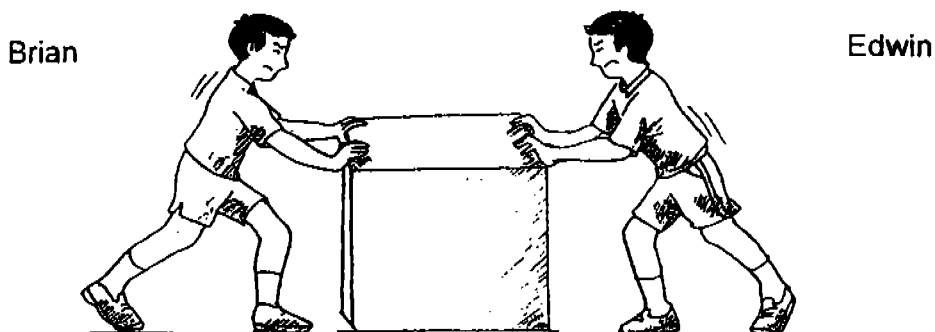
- (1) A only
- (2) B only
- (3) A and C only
- (4) B and C only

2. Which of the following statements about forces is/are true?

- (A) We cannot see a force but we can feel or observe its effect.
- (B) All simple machines enable a smaller force to overcome a larger force.
- (C) A force is required to maintain the same speed and direction of a moving object.

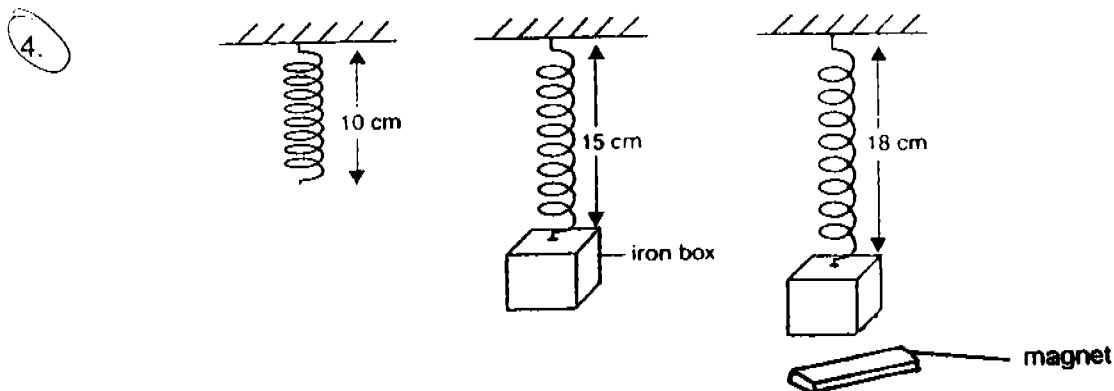
- (1) B only
- (2) A and C only
- (3) B and C only
- (4) All of the above

- 3 When Brian pushed a box alone, the box moved in the direction of the push. However, when Edwin and Brian pushed the box from opposite sides as shown in the diagram below, the box did not move.



Which of the following statement(s) explain(s) why the box did not move?

- (A) The force of gravity acting on the box increased when the boys pushed the box.
 (B) The frictional force between the floor and the box increased when the boys pushed the box.
 (C) The force applied by Edwin is equal to the force applied by Brian.
- (1) A only
 (2) B only
 (3) C only
 (4) B and C only



Which type(s) of forces cause(s) the spring to extend in the diagram above?

- (A) Elastic force exerted by the spring.
 (B) Magnetic force acting on the iron box.
 (C) Gravitational force acting on the iron box.
 (D) Frictional force acting between the iron box and the magnet.
- (1) B only
 (2) B and C only
 (3) A, B and C only
 (4) A, C and D only

5. The clown fish seek protection among the sea anemones in the ocean. What could possibly cause the decline in the population of clown fish?

- (A) The water was polluted.
- (B) There is no food for the clown fish.
- (C) The number of predators of clownfish increased.
- (D) The population of sea anemones declined due to disease.

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

6. Tasmin collected some aquatic samples at the Singapore Botanic Gardens. She identified the organisms and classified them in the table below.

Aquatic Animals	Aquatic Plants
Frog Tadpole Damsel fly Dragonfly Frog eggs Water boatman Dragonfly nymph	Arrowhead Cabomba Duckweed Lotus Water hyacinth Water moss fern

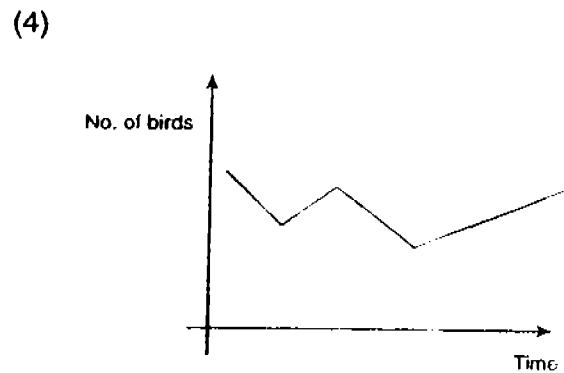
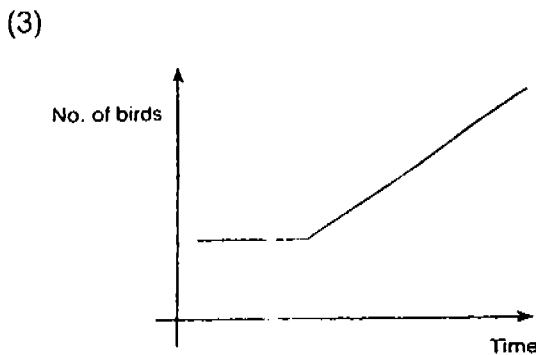
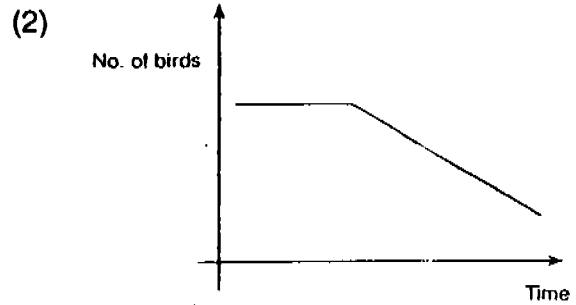
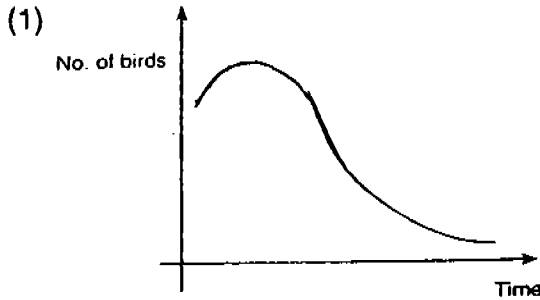
How many populations of organisms did she collect altogether?

- (1) 10
- (2) 11
- (3) 12
- (4) 13

7. In cities like Bangkok and Beijing, air pollution is a serious problem. Which one of the following actions is the best way to reduce the level of air pollution in the two cities?

- (1) Build multi-storey car parks with car lifts.
- (2) Charge a high fee during peak hours for cars on the road.
- (3) Only cars that use leaded petrol are allowed to enter the city.
- (4) Reduce the number of cars entering the city by encouraging the use of public transport.

8. In 1984, a vessel carrying mercury collided with a fishing vessel at the eastern coast of Japan. Environmentalists were concerned with the food chains due to the high concentration of mercury in the sea. Which one of the following graphs shows the most likely changes to the population of kingfisher that fed on the fish at the coast?



9. We cannot depend solely on fossil fuel as the source of energy to generate electricity because fossil fuel _____.

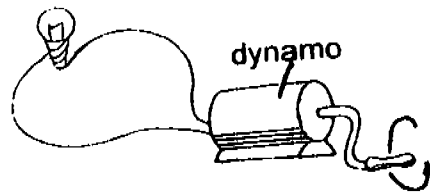
- (1) is very expensive
- (2) is a non-renewable resource
- (3) when burnt causes land pollution
- (4) is too heavy and bulky for easy transportation

10. Where does Samuel get his energy from?



- (1) From the sun
- (2) From the soil
- (3) From the food he eats
- (4) From the spade he uses

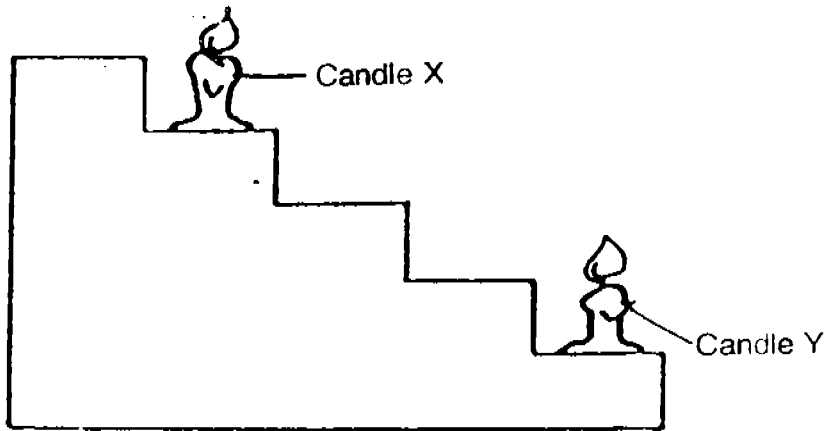
11. A dynamo is connected to a light bulb as shown below. By turning the handle of the dynamo, electricity will be generated and the bulb will light up.



What will happen to the bulb when the handle is turned faster?

- (1) It will become dimmer.
- (2) It will become brighter.
- (3) It will remain as bright as before.
- (4) It will light up brightly for a short while and become dimmer.

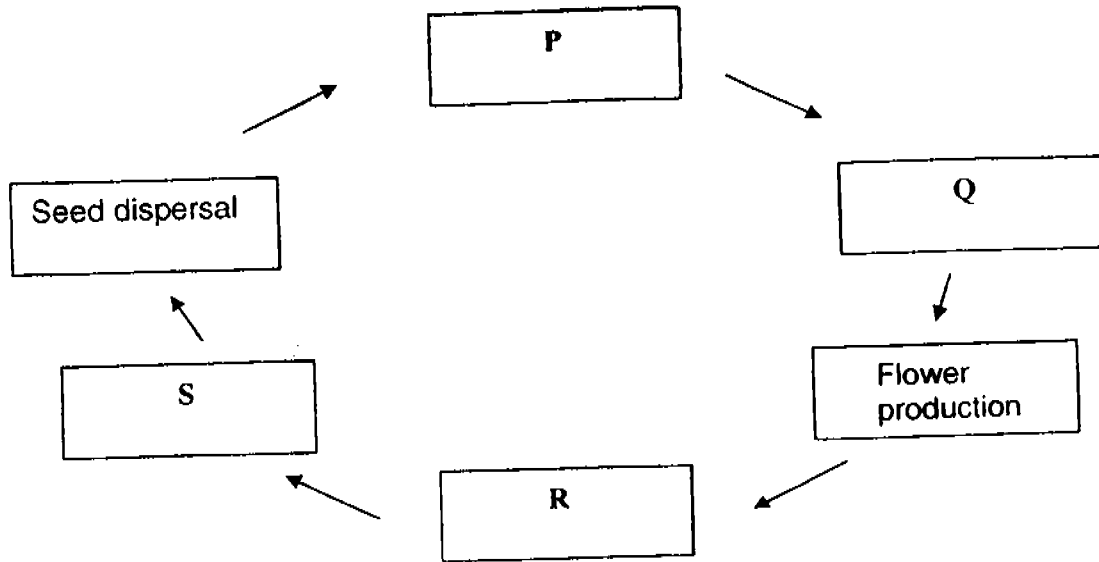
12.



Candle X has more _____ energy than Candle Y.

- (1) gravitational
- (2) gravitational potential
- (3) heat
- (4) movement

13.



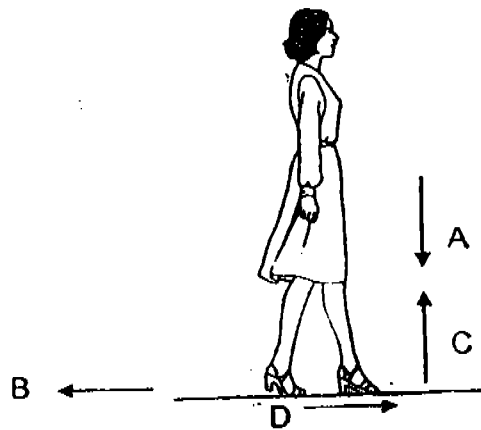
The diagram above shows the processes that a plant undergoes at different stages of its life cycle.
What do P, Q, R and S represent?

	P	Q	R	S
(1)	Germination	Growth	Pollination	Fertilisation
(2)	Growth	Pollination	Germination	Fertilisation
(3)	Pollination	Germination	Fertilisation	Growth
(4)	Germination	Fertilisation	Growth	Pollination

14.

We need friction for walking. To put a foot forward, we push the other foot backwards on the ground. The friction between our shoe and the ground acts in the opposite direction and prevents our foot from slipping. Thus we move forward.
In the diagram below, which arrow represents friction acting between the shoe and the ground?

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



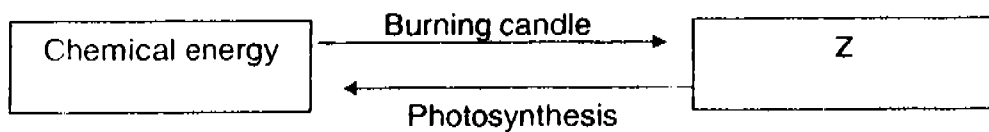
15. Joe and Chloe wanted to know if the paper used to make paper towels is the most absorbent kind of paper. They carried out the experiment using six different types of paper. They dipped each type of paper into water and then squeezed the water out into a measuring cylinder.

What should they do to make sure their test was fair?

- (A) Use pieces of paper of exactly the same size.
- (B) Apply an equal amount of force to squeeze the paper.
- (C) Soak each piece of paper for the same length of time.
- (D) Let each paper drip for the same length of time before squeezing it.
- (E) Test each type of paper three times and record the average volume of water squeezed out.

- (1) A, C and E
- (2) B, D and E
- (3) A, B, C and D
- (4) All of the above

16.



The diagram above shows an example of energy conversion.

'Z' stands for _____

- (1) Chemical energy
- (2) Heat energy
- (3) Kinetic energy
- (4) Light energy

17. Jasper and his friends were investigating falling paper spinners. They wondered if attaching different number of paperclips would make a difference to the time they took to reach the ground. They dropped the spinners from the same height and measured the time it took for each one to reach the ground.

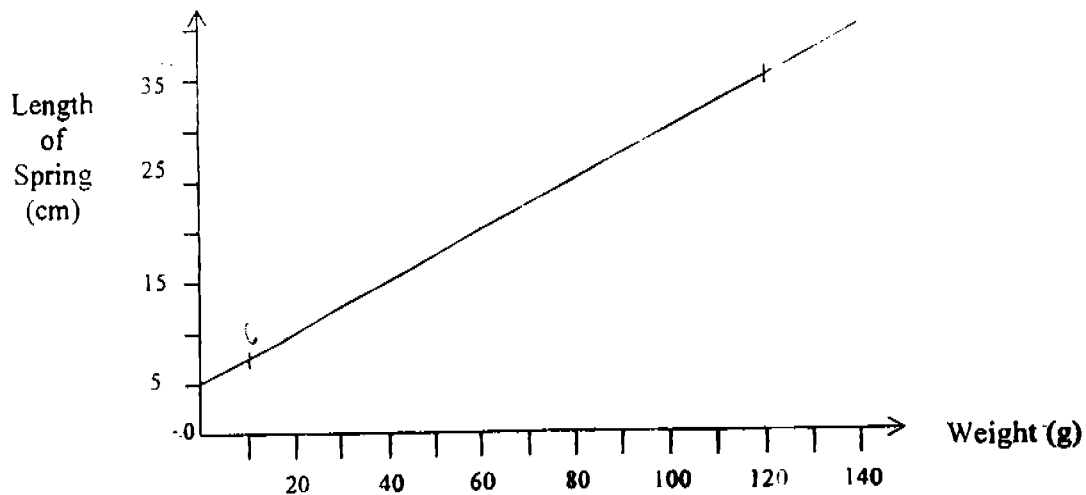
Their results are recorded in the table below.

Number of paperclips attached	Time taken for spinner to reach the ground (s)			
	1 st Try	2 nd Try	3 rd Try	Average
1	1.0	1.1	0.9	1.0
2	1.0	0.9	0.8	0.9
3	0.8	0.7	0.9	0.8
4	0.7	0.6	0.8	0.7
5	0.4	0.5	0.3	0.4

Based on the above table, which conclusion is not correct?

- (1) The heavier spinners hit the ground first.
- (2) The time taken for the paper spinner to fall would decrease as the height increases.
- (3) The time taken for a paper spinner to fall to the ground decreases as more paperclips are added.
- (4) The more paperclips that are attached to the paper spinner, the faster it falls to the ground.

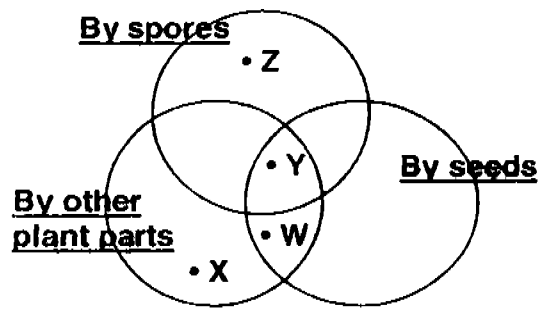
18. The graph below shows the length of the spring when different weights are attached to it.



What is the extension of the spring when a weight of 120 g is attached to it?

- (1) 25.5 cm
- (2) 30 cm
- (3) 35 cm
- (4) 40 cm

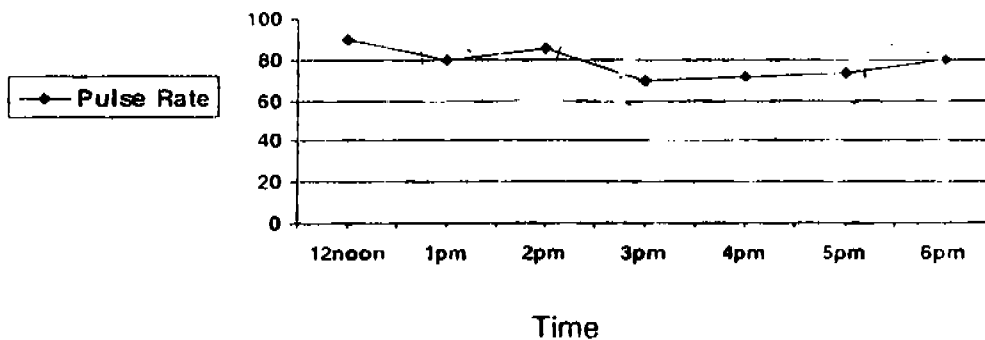
19.



The Venn diagram above shows the different methods used by plants to reproduce. 'Orchid' is best represented by _____

- (1) W
- (2) X
- (3) Y
- (4) Z

20.



The graph above shows the average pulse rate of a ten-year-old girl. What was she most likely doing from 3.00 p.m. to 5.00 p.m.?

- (1) She was reading a book.
- (2) She was having swimming lessons.
- (3) She was jogging in the park.
- (4) She was playing hopscotch with her friend.

21. The diagrams below show how blood travels in our body.

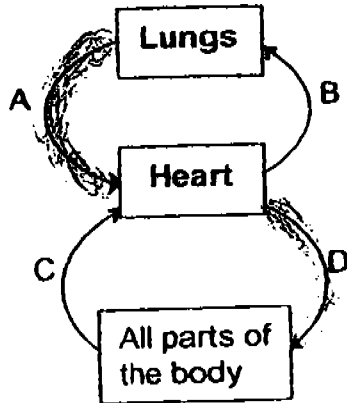


Diagram 1

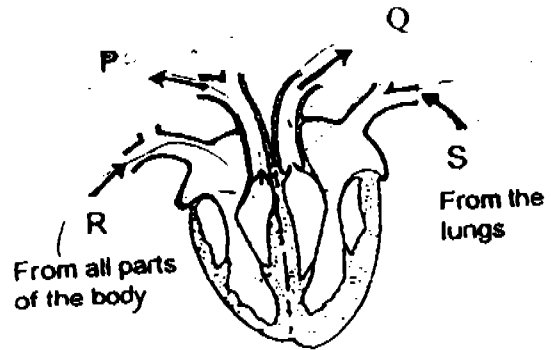


Diagram 2

Which 2 arrows of Diagram 1 can be matched to R and Q of the heart in Diagram 2?

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

22. John jotted down the important facts involved in a particular process.

- Uses food
- Uses oxygen
- Produces carbon dioxide
- Produces water vapour
- Produces energy
- Takes place all the time

This process is _____

- (1) Breathing
- (2) Photosynthesis
- (3) Respiration
- (4) Transpiration

23. The period of time the young of an animal takes to develop inside the mother's body is called its gestation period.

Animal	Gestation Period (weeks)	Average Weight of Newborn (kg)
A	3	0.04
B	9	0.35
C	40	3.5
D	96	100

From the table above, we can conclude that _____.

- (1) C represents a human
 (2) the heavier an animal is at birth, the shorter its gestation period
 (3) the size of the animal is not affected by its gestation period
 (4) as the animals grow bigger, their gestation periods increase

24. Jack and Jill want to find out whether glass or metal is a better conductor of heat. They fill a glass and a metal container with an equal amount of hot water. To carry out their experiment, what other materials do they need?

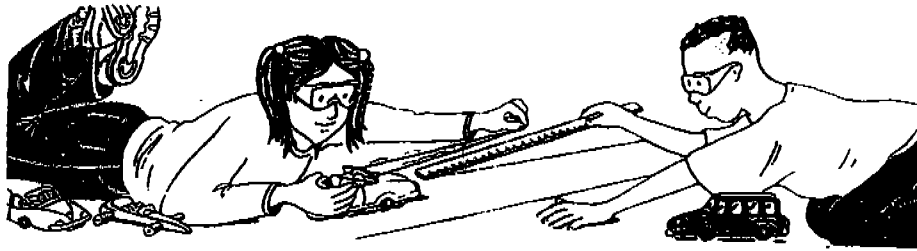
- (A) A stopwatch
 (B) Two thermometers
 (C) Some ice cubes

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

25. Study the table below.
 Which one of the following organs and its function does not match?

	Organ	Function
(1)	Large intestine	Absorption of soluble food into the blood
(2)	Gullet	Movement of food into the stomach
(3)	Stomach	Mixing of food with digestive juices
(4)	Mouth	Chewing of food into small pieces

26.



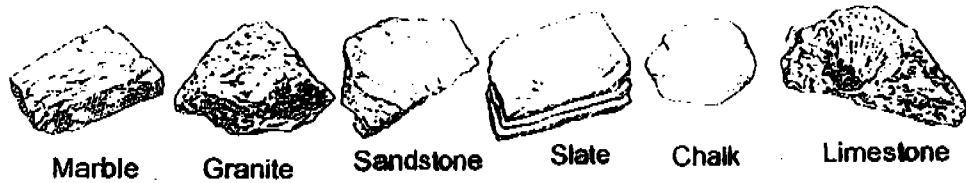
Sue and Nick thought that the more an elastic band was stretched, the more force it would exert in launching an object. They wanted to investigate their idea with some reliable measurements which they recorded as shown below.

Amount of stretch added to the elastic band (cm)	Distance travelled by car (cm)
2	25
5	30
8	50
10	45
12	95
15	160

The result for 10 cm of stretch to the elastic band does not fit the pattern. What may have gone wrong to produce that result?

- (A) A different car was used.
 - (B) The car may have gone over an uneven surface.
 - (C) The stretch on the elastic band could have been measured wrongly.
-
- (1) A only
 - (2) B only
 - (3) B and C only
 - (4) All of the above

27. The diagrams below show some rocks that are used in buildings.



The table shows some of their properties.

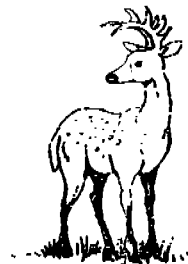
Types of Rock	Hard	Soft	Attacked by acid	Splits into flat sheets
Marble				
Granite				
Sandstone				
Slate				
Chalk				
Limestone				

Which of the following statements are true?

- (A) Granite would make the toughest buildings.
- (B) Acid rain attacks limestone and wears it away.
- (C) Sandstone and chalk are soft rocks and may collapse.
- (D) Slate splits into flat sheets so it is good for covering roofs.

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

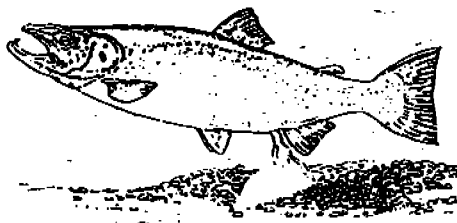
28. How are the two animals below alike?



- (A) They feed on other animals.
- (B) They have hair on their bodies.
- (C) They give birth to their young.
- (D) They have a constant body temperature.

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

29.

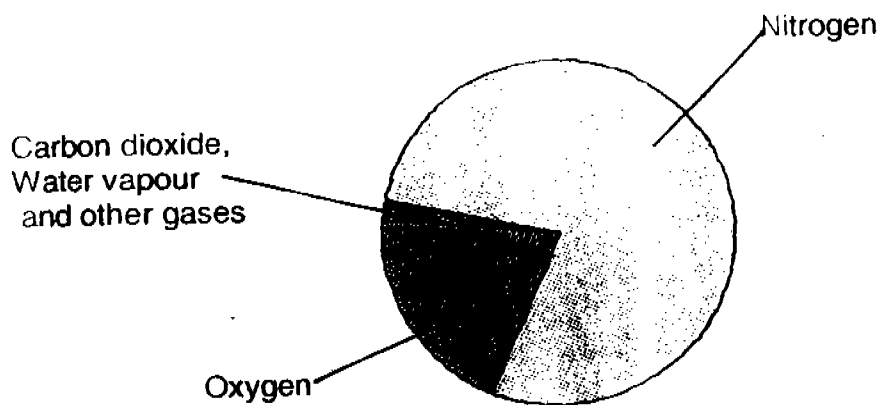


The picture above shows a male salmon fertilising a female's eggs by squirting a milky substance over them.

Which of the following statements are true?

- (A) This is called external fertilisation and the substance contains sperms.
 - (B) This is called internal fertilisation and the substance contains sperms.
 - (C) Many eggs are laid because some may be destroyed under unfavourable conditions.
 - (D) Many eggs are laid because some may be eaten by other creatures in the sea.
- (1) A and D only
(2) B and C only
(3) A, C and D only
(4) B, C and D only

30.



Look at the pie chart above. Each section represents the amount of the different types of gases in the air.

Below are four statements about the chart. Which one of them is impossible for us to tell?

- (1) Air consists of at least three kinds of gases.
- (2) There is more oxygen than carbon dioxide in the air.
- (3) There is an equal amount of carbon dioxide and water vapour in the air.
- (4) There is more nitrogen than oxygen and carbon dioxide combined together.

END of PART I



MAHA BODHI SCHOOL
2005 SEMESTRAL ASSESSMENT 1
PRIMARY 6 SCIENCE

Name: _____ ()

Date: 12 May 2005

Class: Primary 6 ()

BOOKLET B

16 Questions

40 marks

Total Time for Booklets A & B: 1 h 45 min

Instructions to Candidates

Do not open this booklet until you are told to do so.

Follow all instructions carefully.

Check all the pages carefully to make sure that all the questions are in order.

Answer all the questions.

If a question is difficult, go on to the next one. Do not waste time.

This booklet consists of 11 pages.

	Max. Marks	Actual Marks
Booklet A	60	
Booklet B	40	
Total	100	
Parent's Signature		

PART II (40 marks)

Write your answers to questions 31 to 46 in this booklet.

31. The diagram below shows a floating aquatic plant.



(a) **Label** a plant part which makes it afloat.

[1]

(b) Explain how the part in (a) helps to keep the plant afloat.

(c) State 2 reasons why this aquatic plant is important to some aquatic animals found in the pond.

(i)

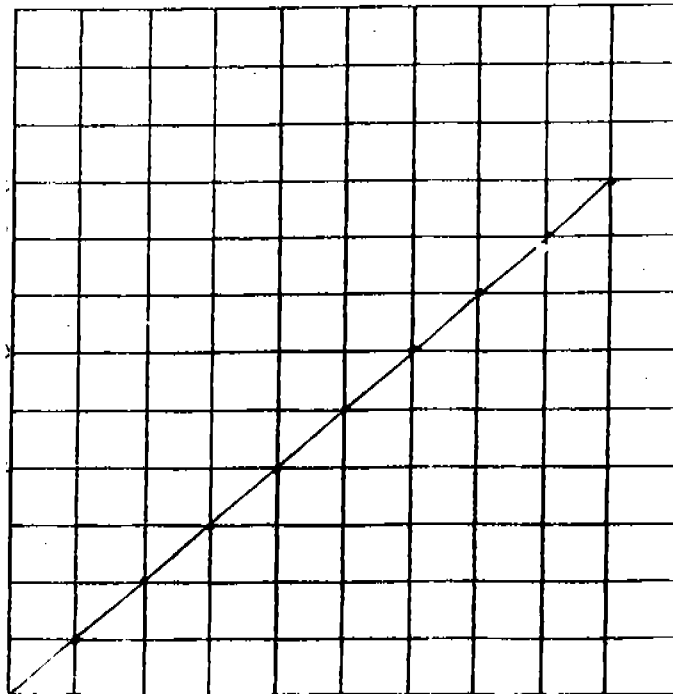
(ii)

32. An experiment was carried out to find how the length of the string affects the number of swings made by a pendulum.

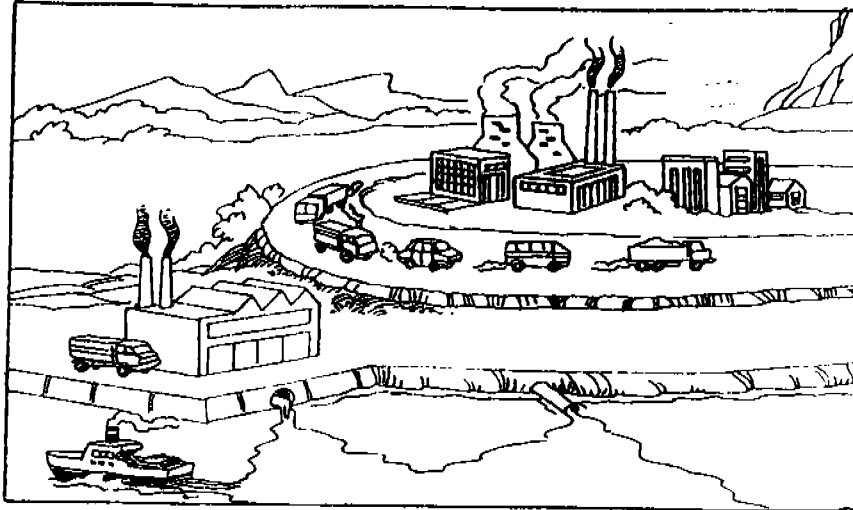
The results are shown below.

Length of string (cm)	Number of swings in one minute			Average number of swings in one minute
	1 st Reading	2 nd Reading	3 rd Reading	
10	91	88	91	
30	73	71	66	
50	49	53	48	
70	32	28	30	
90	9	8	13	

- (a) Calculate the average number of swings for each length of the string used. [2]
- (b) Using your answers and the information given in (a), plot a graph in the grid below. Label the axes. [2]

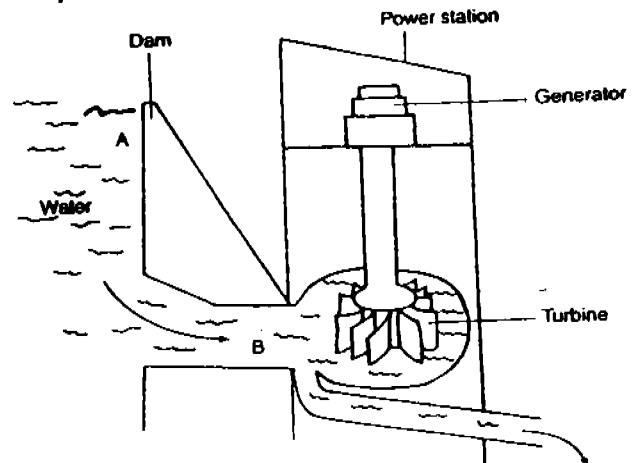


33. The diagram below show an industrial town in Northern Thailand.



Type of Pollutant	Example	Possible Effect of Pollutant
Water		
Air		

34. The diagram below shows a hydro-electric power station.

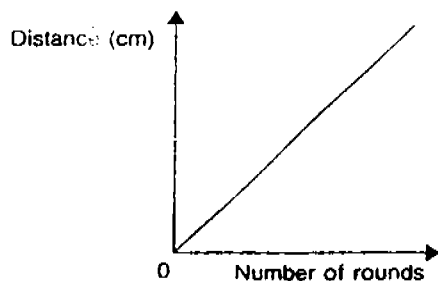


State the forms of energy of

- (i) the water at A: _____
- (ii) the water at B: _____
- (iii) the turbine: _____
- (iv) the generator: _____

[2]

35. The line graph below shows the number of turns the key of a toy is wound and the distance the toy moves when the key unwinds.



toy

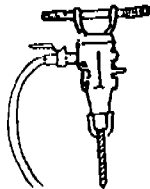
(a) What is the relationship between the number of turns the key of the toy is wound and the distance the toy moves?

(b) Explain why the key unwinds as the car moves.

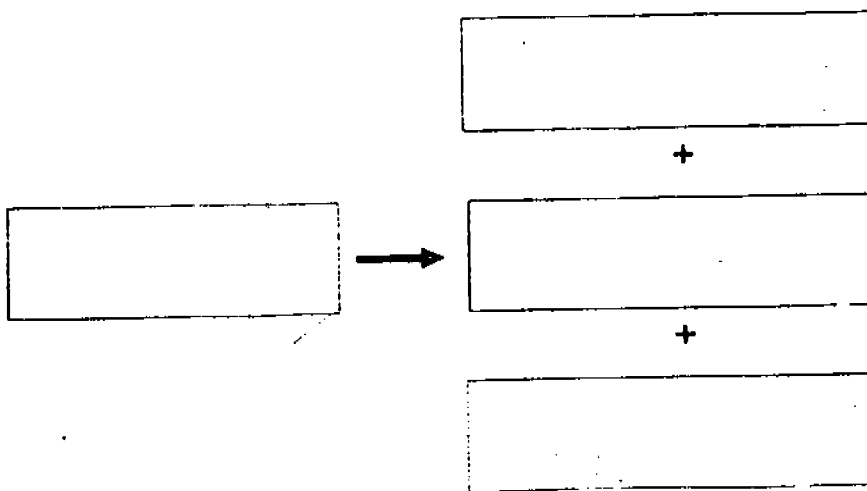
36. Using a classification table, classify the following organisms into 3 groups based on their habitat. [3]

Water stick insect -	Love grass -	Hydrilla -
Arrowhead -	Earthworm -	Praying mantis -
Snail -	Bee -	Caterpillar -
Starfish	Backswimmer -	Crab

37. A drill is filled with compressed air. Driven by the compressed air, it spins and drills a hole.



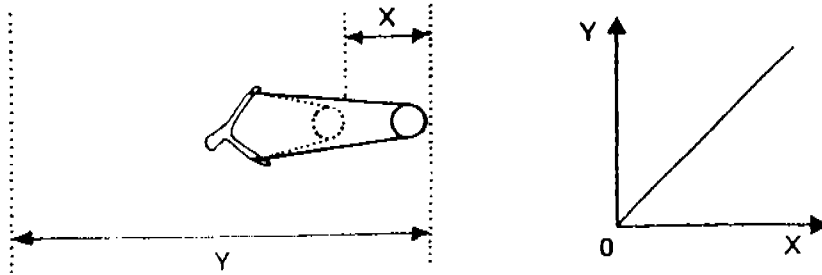
Describe the energy conversion when the drill is drilling a hole in the wall.



[2]

38. Javan carried out an experiment to investigate the energy possessed by a catapult when it was stretched.

He measured the distance the catapult was being stretched (X) and the distance travelled by the pebble which was shot out from the catapult (Y). He repeated the experiment several times by stretching the catapult to different lengths.



He plotted his results on the graph as shown above.

(a) What energy did the catapult have when it was being stretched?

_____ [1]

(b) Explain the energy conversion involved when the stretched catapult was released.

(c) State a possible conclusion from the line graph.

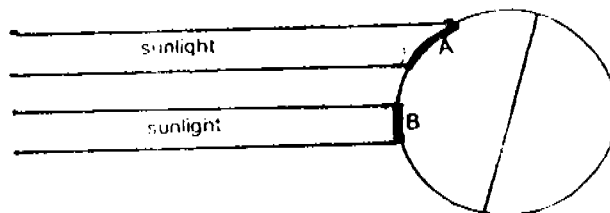
39. Mrs Goh tried to drag a cardboard box containing books from the library to her classroom.

(a) Suggest one way in which she can do so with less effort.

(b) Give an explanation for your suggestion.

[1]

40. The diagram below shows how sunlight shines on the Earth.



The countries on the part of the Earth marked B are much hotter than the countries on the part marked A.

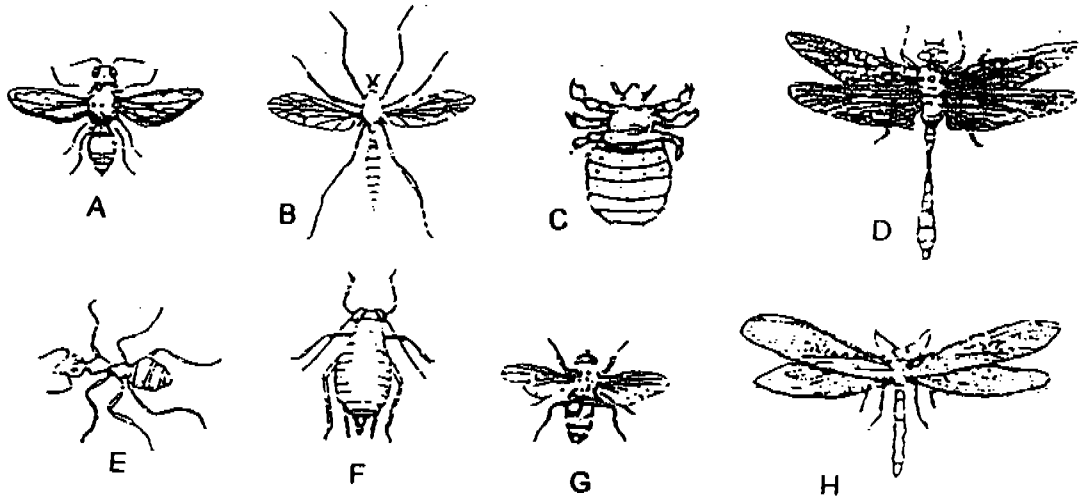
Give 2 reasons why this is this so.

(i)

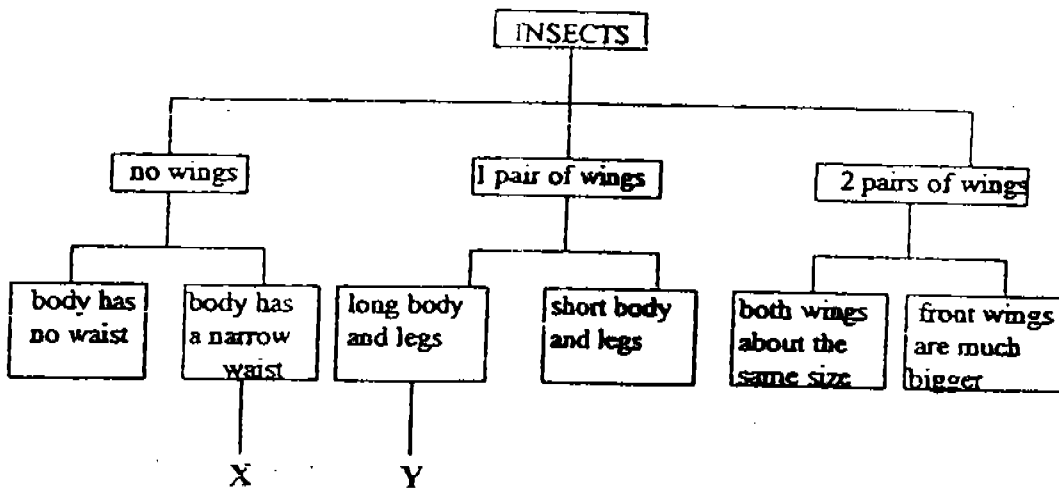
(ii)

[2]

41. Study the diagrams of insects A to H below.

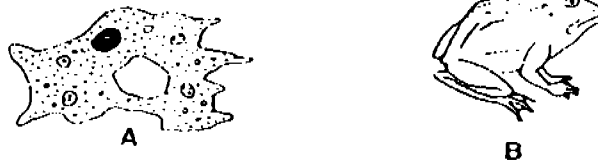


These insects can be grouped according to the classification table below.



- (a) Which insects have no wings? _____ [½]
- (b) Which insects have two pairs of wings? _____ [½]
- (c) Which letter represents Insect X? _____ [½]
- (d) Which letter represents Insect Y? _____ [½]

42.



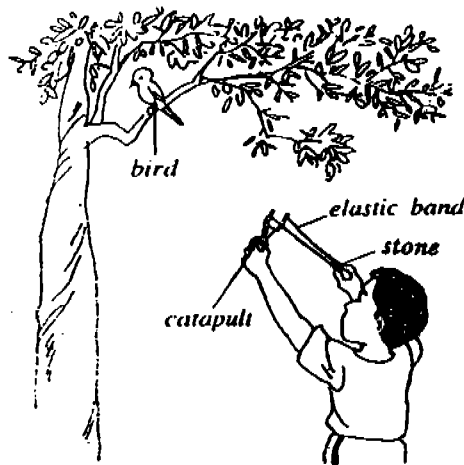
(a) Look at the two organisms shown above and complete the given table.

Organism	Type of Reproduction
A	
B	

[1]

(b) Explain how their method of reproduction is different.

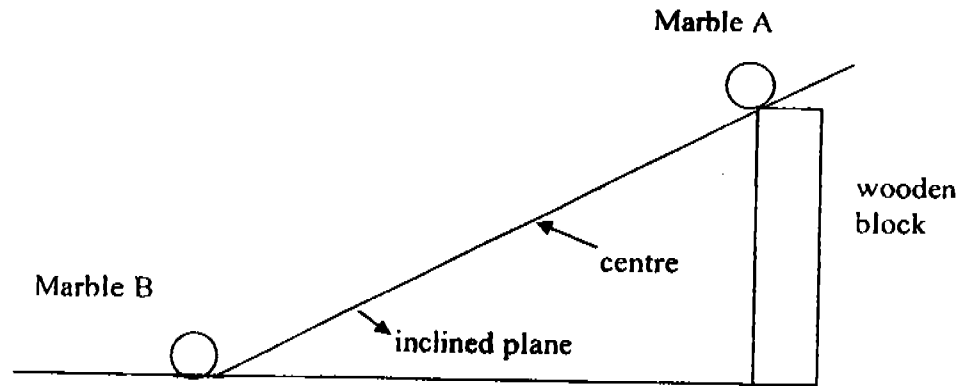
43. The diagram below shows a stone being released from a catapult.



The force of impact on the target made by the stone when the elastic band is released depends on some factors. One of these is the size and weight of the stone. Name 2 other factors.

- (i) _____
- (ii) _____

44.



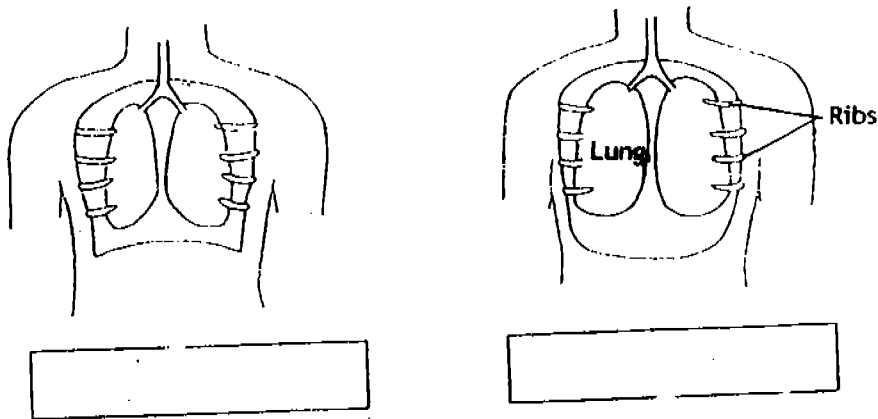
In the experiment above, when Marble A is released, it rolls down an inclined plane and hits Marble B of the same size and weight. Marble B moves a distance of 10 cm.

- (a) What is the energy change that has taken place?

_____ [1]

- (b) If the wooden block is moved to the centre of the plane and the experiment is repeated with marble A at the same starting point, will Marble B move more or less than 10 cm? Why?

45. When we inhale, the diaphragm contracts and flattens. At the same time, the ribs move up and outwards thus increasing the chest cavity. When we exhale, the diaphragm relaxes and arches upwards. The ribs move down and inwards thus the chest cavity becomes smaller.



Look at the two diagrams above.
Write 'Inhalation' and 'Exhalation' in the boxes provided.

[1]

46. The blood is made up of plasma, white blood cells, red blood cells and platelets. Read the information below to identify the different parts:

(i)		They are disc shaped.
(ii)		They are larger than the red ones and help to fight germs in the body.
(iii)		It is made of water, nutrients and waste materials.
(iv)		They are smaller than blood cells. They help the blood to clot and heal wounds.

[2]

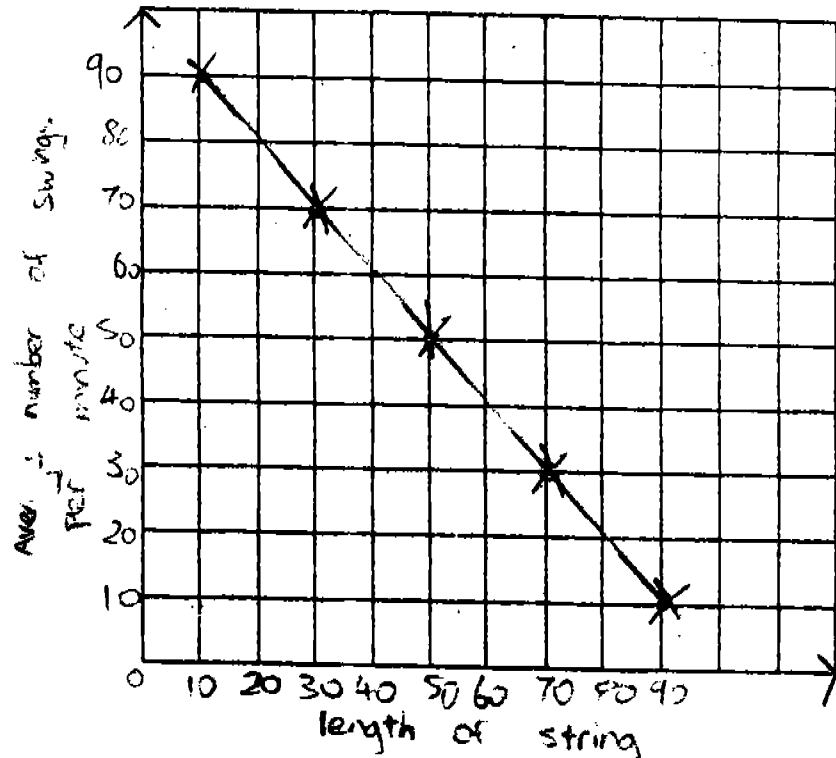
END OF PAPER

MAHA BODHI SCHOOL
2005 SEMESTRAL ASSESSMENT 1
PRIMARY 6
SCIENCE

- 1) 3
- 2) 2
- 3) 2
- 4) 3
- 5) 4
- 6) 1
- 7) 4
- 8) 1
- 9) 2
- 10) 3
- 11) 2
- 12) 2
- 13) 1
- 14) 4
- 15) 3
- 16) 4
- 17) 2
- 18) 2
- 19) 1
- 20) 1
- 21) 3
- 22) 3
- 23) 1
- 24) 2
- 25) 1
- 26) 4
- 27) 4
- 28) 3
- 29) 3
- 30) 1
- 31) the roots

- b) There are air spaces inside to keep it afloat
- c) i) It gives them shade
ii) It provides them with oxygen.

32) 90



b)

33) oil spills aquatic animals will die

dust breathing problem

34) i) Gravitational potential energy

ii) Kinetic energy

iii) kinetic energy

iv) electrical energy

35) a) When the number of turns the key is wound increases, the distance moved by the toy car increases.

36) Garden community	pond community	sea-side community
caterpillar	hydrilla	starfish
bee	backswimmer	crab
snail	water stick insect.	
love grass		
earthworm	arrowhead	
praying mantis		

37) kinetic energy
potential energy
sould energy
heat energy

38) a) Potential energy

- b) The potential energy of the stretched catapult was transferred to the pebble and changed into kinetic energy. The pebble may hit another object/drop to the ground producing sound and heat energy.
- c) When the distance the catapult was being stretched increases, the distance travelled by the pebble which was shot out from the catapult increases.

39) a) Put the rollers to the cardboard box.

- b) The rollers reduce the friction by reducing the area of contact with the floor.

40) i) B is the nearest to the sun.

ii) B is further than A

41) a) C, E, F

b) D, H

c) E

d) B

42) a) Asexual

Sexual

- b) The organism A needs only one parent to reproduce but organism B needs two parents to reproduce, a male and a female.

43) i) The distance between the catapult and the bird.

ii) The distance between the elastic band is stretched.

44) a) potential energy --- kinetic energy

- b) It will move more than 10 cm. When the wooden block placed at the middle of the plane, the height of the ramp increases, causing marble A to have more potential energy.

produced, causing the impact on marble B to be much greater when hit. Hence it moves further and faster.

45) Exhalation Inhalation

46) i) red blood cells

 ii) white blood cells

 iii) plasma

 iv) platelets.