



Maha Bodhi School  
2008 Semestral Assessment 1  
Science

Name : \_\_\_\_\_ ( )

Date : 8 May 2008

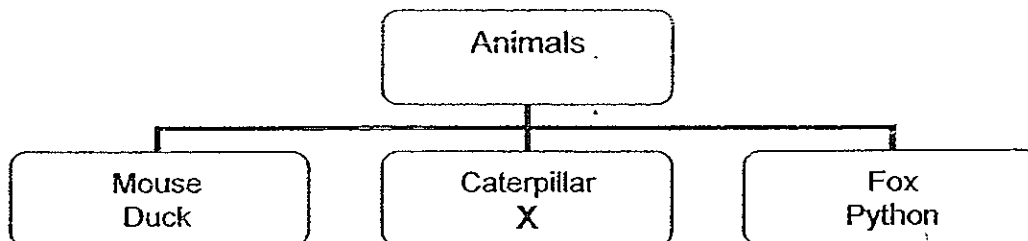
Class : Pr 6 ( )

Duration : 1 h 45 min ( Parts I & II )

**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 Mark Sheet (OMS).

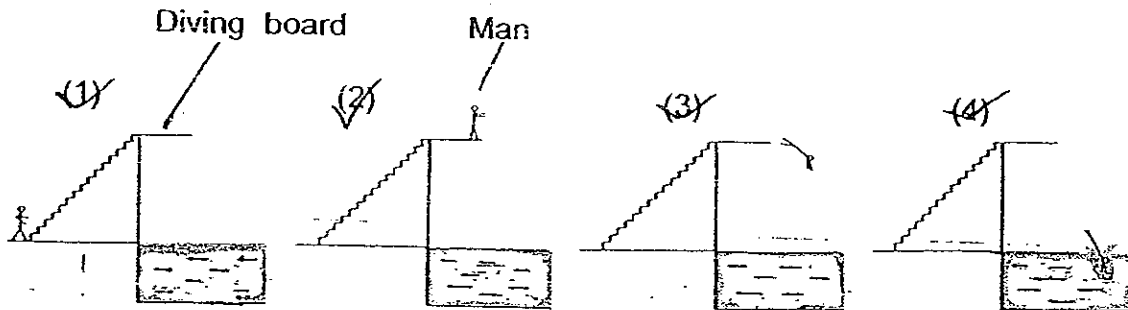
1. The animals below are classified according to the food they eat.



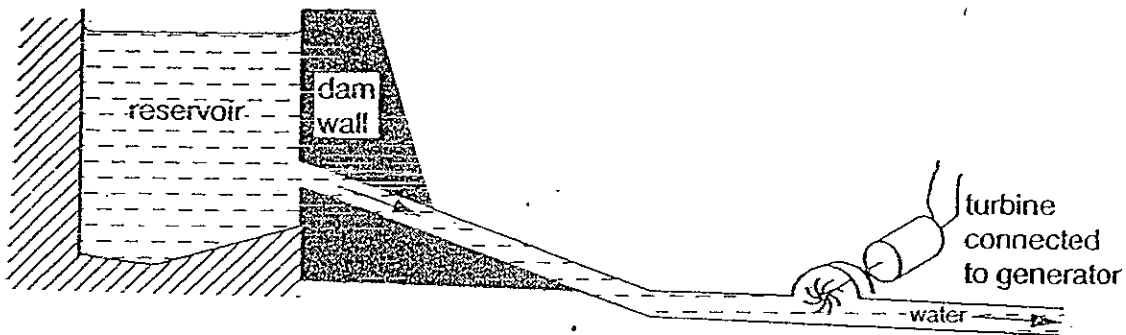
Study the information given in the table. Which one of the following statements about X is most likely to be true?

- (1) It cannot fly.  
 (2) It is an insect.  
 (3) It is a garden pest.  
 (4) It is not a predator.
2. Which one of the following groups of objects are obtained from things that were once alive?
- (1) Wire, tooth, hair, soil  
 (2) Bone, wood, glass, iron  
 (3) Leaf, ceramic, wool, sand  
 (4) Leather, paper, seed, cotton

3. The diagrams below show a diver climbing up some steps <sup>and</sup> jumping off a diving board. In which diagram does the diver have the most gravitational potential energy?

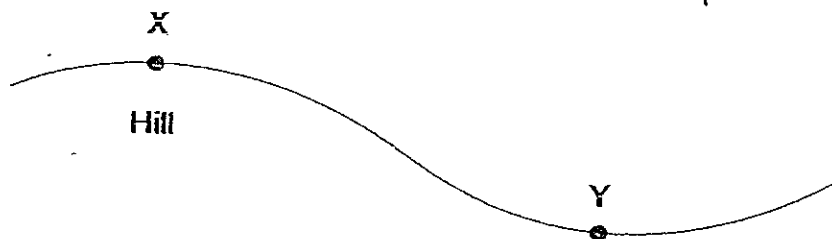


4. The diagram below shows the main parts of a hydroelectric power station.



What is the change of energy that occurs in the generator?

- (1) Chemical energy to electrical energy
  - (2) Electrical energy to heat energy
  - (3) Electrical energy to light energy
  - (4) Kinetic energy to electrical energy
5. A cyclist travels down a hill from point X without pedalling. The cyclist then applies his brakes and stops at point Y.



What are the energy changes that have taken place between X and Y?

- (1) Kinetic energy to heat energy to gravitational potential energy
- (2) Kinetic energy to gravitational potential energy to heat energy
- (3) Gravitational potential energy to heat energy to kinetic energy
- (4) Gravitational potential energy to kinetic energy to heat energy

6. Which one of the following processes could release geothermal energy?

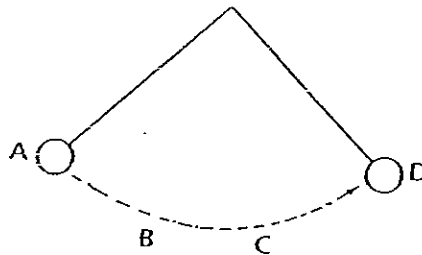
- (1) Drilling into the Earth's crust
- (2) Harnessing the power of waves
- (3) Harnessing wind using windmills
- (4) Splitting of uranium

7. Which of the following form(s) of energy would electrical energy convert to in a washing machine?

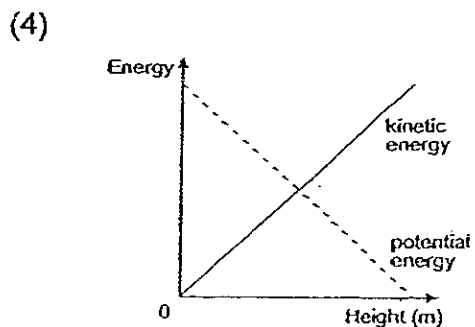
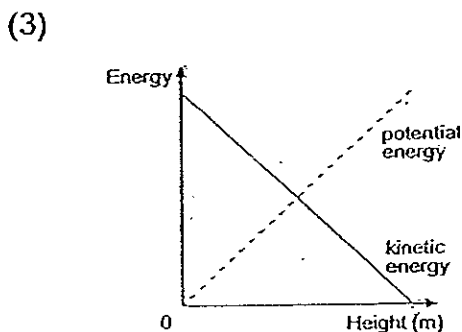
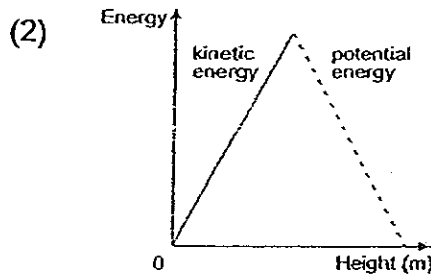
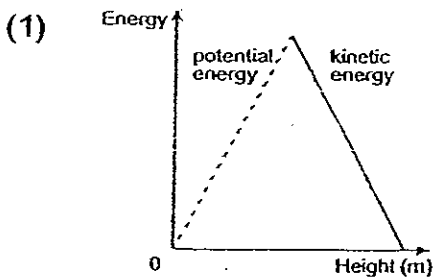
- A: Kinetic energy
- B: Sound energy
- C: Heat energy
- D: Light energy

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

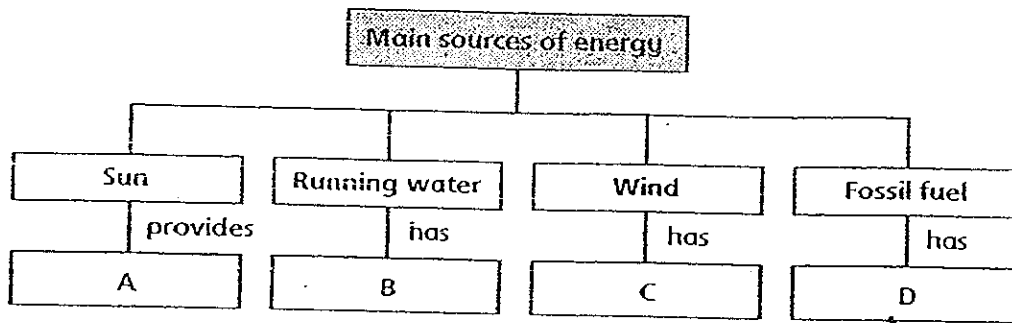
8. The diagram below shows a pendulum.



Which one of the following graphs shows the change in kinetic and potential energy as it swings from A to D?



9. Study the classification chart below.



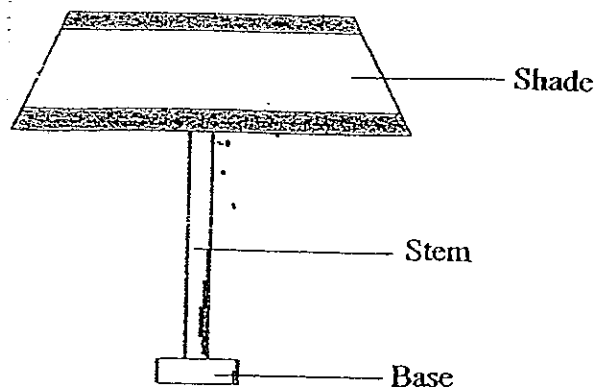
Which of the following is true about A, B, C and D?

	A	B	C	D
(1)	Heat and light energy	Sound energy	Heat energy	Light energy
(2)	Chemical energy	Potential energy	Potential energy	Heat and light energy
(3)	Heat and light energy	Kinetic energy	Kinetic energy	Chemical energy
(4)	Potential energy	Sound energy	Kinetic energy	Potential energy

10. Which one of the following statements about the effects of forces is not true?

- (1) A force can change the length of an object.
- (2) A force can change the mass of an object.
- (3) A force can change the shape of an object.
- (4) A force can change the speed of an object.

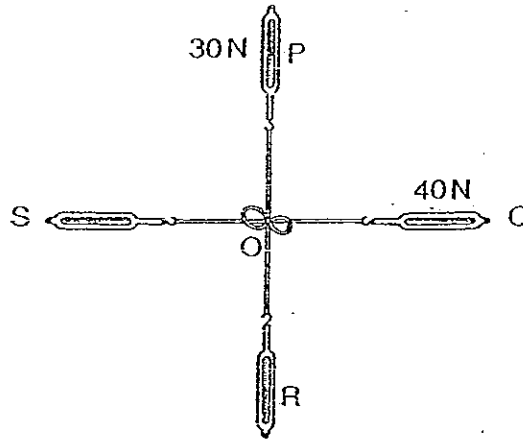
11. The table lamp in the diagram below is not very stable and topples over easily.



Which one of the following changes would make the lamp most stable?

- (1) A narrower base
- (2) A wider base
- (3) A thicker stem
- (4) A thinner stem

12. The diagram shows four spring balances joined together by pieces of string with a knot at O. The strings are at  $90^\circ$  to each other.

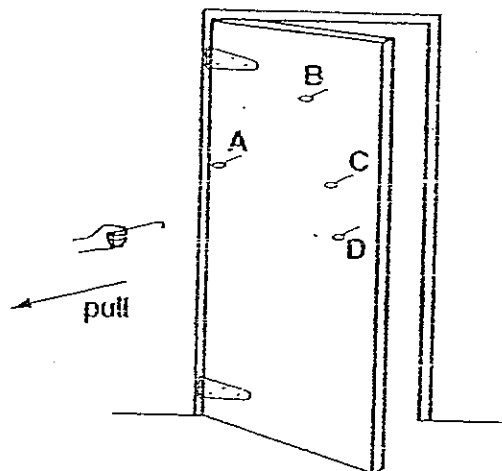


The knot O does not move and the readings on P and Q are as shown. What are the readings on R and S? (N for newtons)

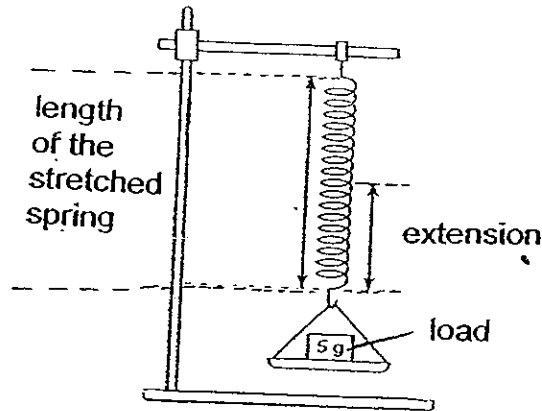
	R	S
(1)	0 N	70 N
(2)	30 N	40 N
(3)	40 N	30 N
(4)	70 N	0 N

13. Four rings are screwed into a door as shown. The door can be opened by putting a hook into one of the rings. Which ring should be used if you want to apply the smallest pulling force to open the door?

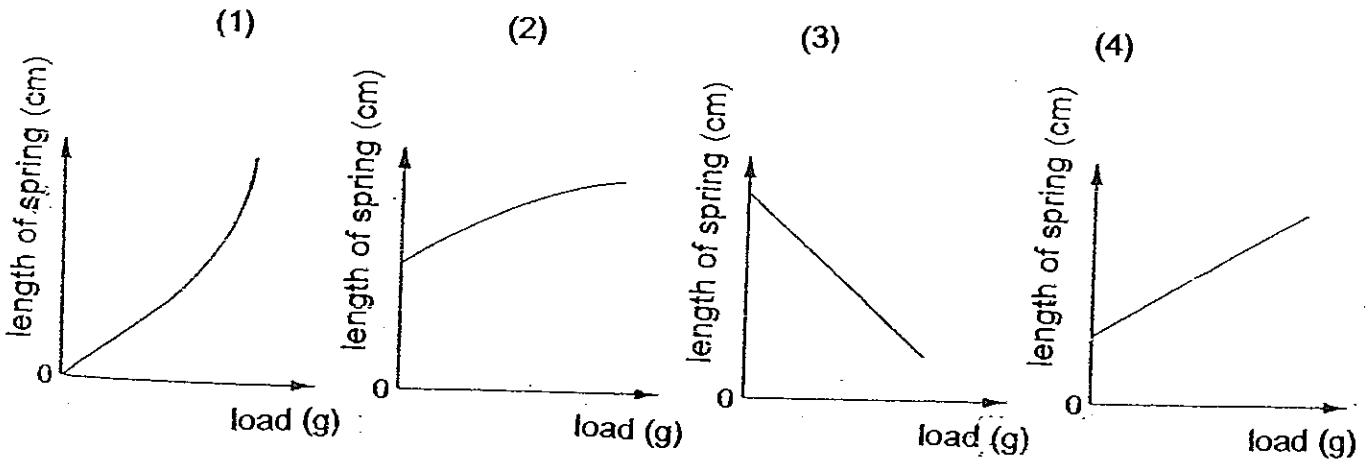
- (1) A  
(2) B  
(3) C  
(4) D



14. The length of the spring is measured as different loads are attached to it.



Which graph shows how the length of the spring changes with the load?



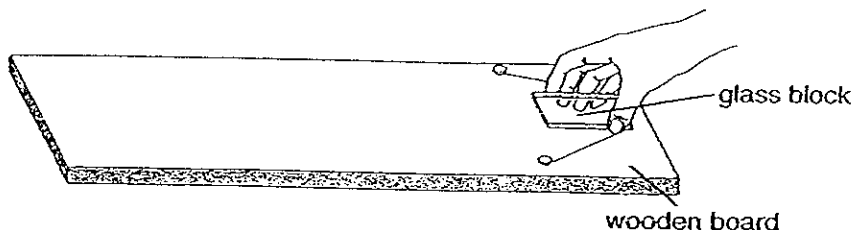
15. The table below shows the differences between clayey soil and sandy soil.

	Clayey soil	Sandy soil
A	No dead organisms.	Has many dead organisms.
B	Has tiny air spaces in between particles.	Has big air spaces in between particles.
C	Usually wet.	Usually dry.

Which of the differences listed above are true?

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

16. A glass block is made to move over a piece of wooden board as shown below.

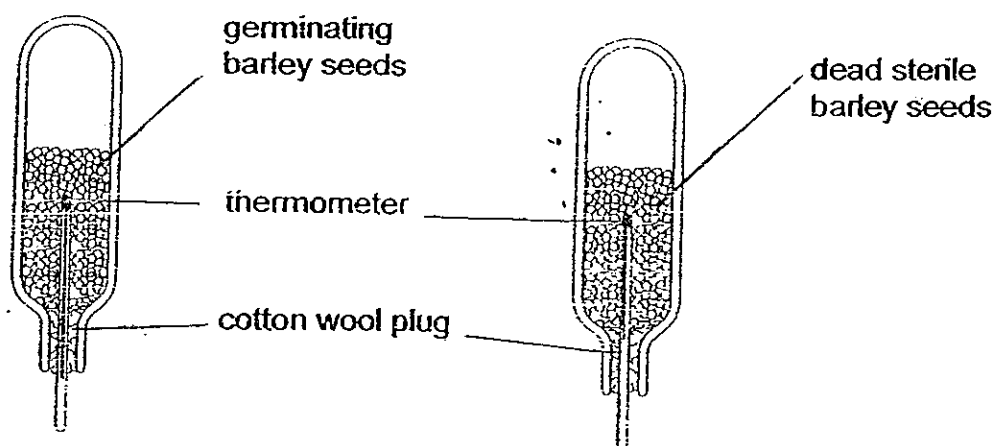


Four different liquids A, B, C and D are applied one at a time onto the surface of the wooden board. The table below shows the distance moved by the glass block when each liquid is applied.

Liquid	Distance moved (cm)
A	49
B	16
C	30
D	22

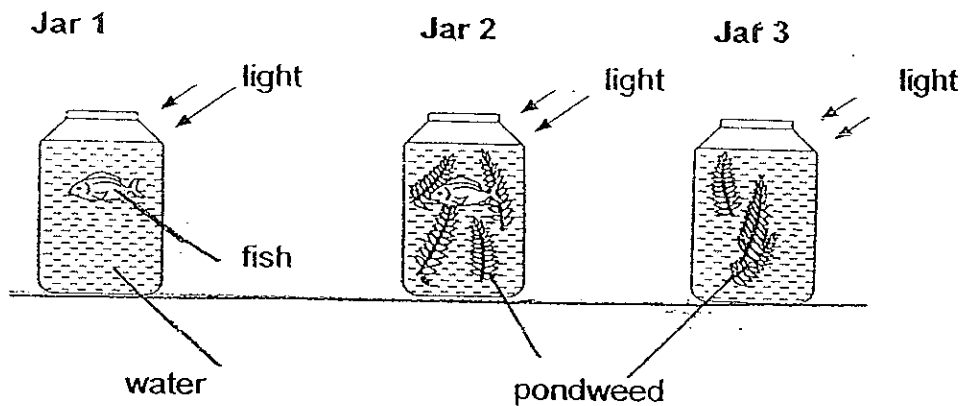
Which liquid reduces friction by the largest amount?

- (1) A  
 (2) B  
 (3) C  
 (4) D
17. The diagram shows two flasks set up to study respiration in barley seeds. The result of this experiment shows that respiration \_\_\_\_\_.



- (1) produces carbon dioxide  
 (2) releases heat energy  
 (3) requires glucose  
 (4) uses up oxygen

18. Three similar jars were set up as shown below.

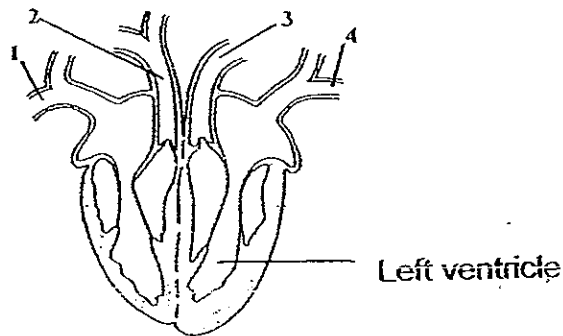


How would the concentration of dissolved carbon dioxide in the water of each jar change after four hours?

	Jar 1	Jar 2	Jar 3
(1)	decrease	increase	no change
(2)	increase	increase	increase
(3)	increase	no change	decrease
(4)	no change	decrease	decrease

19. The diagram shows the heart with its main blood vessels. Which two blood vessels carry oxygenated blood?

- (1) 1 and 2
- (2) 1 and 3
- (3) 2 and 4
- (4) 3 and 4

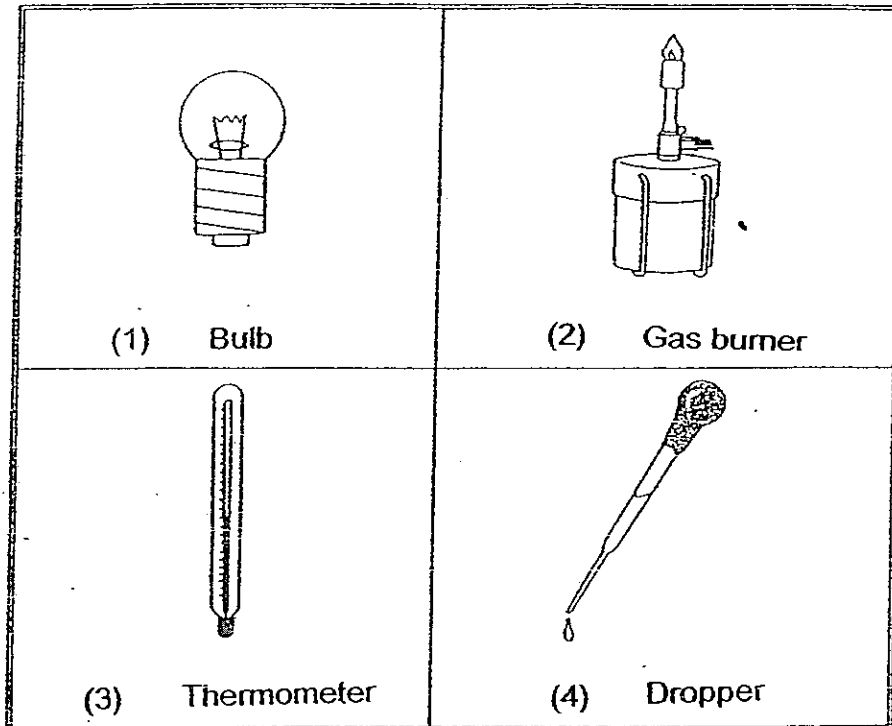


20. The table below shows the characteristics of four flowers, A, B, C and D. Which flower will have the highest chance of being pollinated successfully by insects?

	Flower	Pollen	Nectar	Stigma
(1)	A	Rough surface	No	Feathery
(2)	B	Smooth surface	Yes	Sticky
(3)	C	Rough surface	Yes	Sticky
(4)	D	Smooth surface	No	Feathery



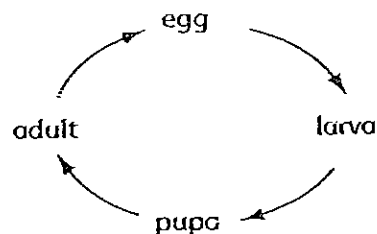
21. Things expand when heated. Which one of the equipment makes use of this property?



22. Which one of the following differences between inhaled and exhaled air is not correct?

	Inhaled air	Exhaled air
(1)	Contains more oxygen	Contains less oxygen
(2)	Has a lower temperature	Has a higher temperature
(3)	Has more carbon dioxide	Has less carbon dioxide
(4)	Contains less water vapour	Contains more water vapour

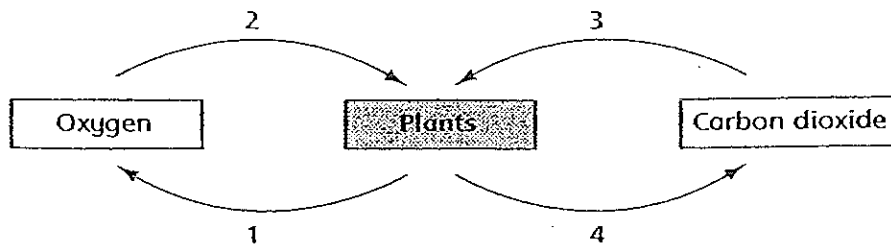
23. The diagram below shows a 4-stage life cycle.



Which one of the following animals does not reproduce in the same way?

- (1) moth
- (2) housefly
- (3) grasshopper
- (4) mealworm beetle

24. Study the diagram below.



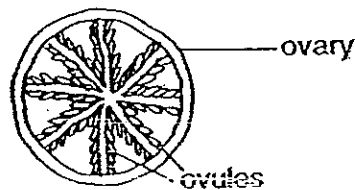
Which pair of arrows shows the correct exchange of gases during respiration?

- (1) 1 and 3
- (2) 1 and 4
- (3) 2 and 3
- (4) 2 and 4

25. Which of the following plants is **NOT** correctly matched to its reproductive part?

	Plant	Reproductive Part
(1)	Mould	Spore
(2)	Heliconia	Sucker
(3)	Sweet Potato	Root
(4)	Morning glory	stem

26. The diagram shows the cross-section of the ovary of a flower.



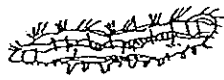
By looking at the diagram only, which one of the following statements is most likely to be **true** about the fruit that develops from this ovary?

- (1) It has many seeds.
- (2) It is a round fruit.
- (3) It has a thin skin and is fleshy.
- (4) It is juicy with inedible seeds.

27.



garden snail



caterpillar



aphid



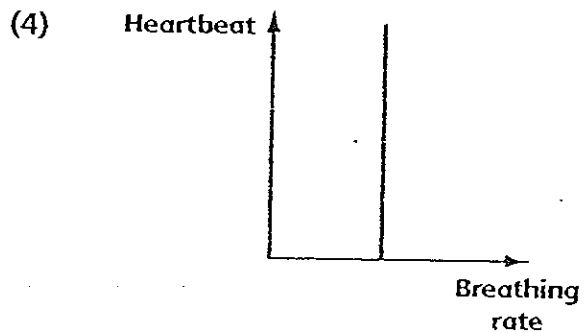
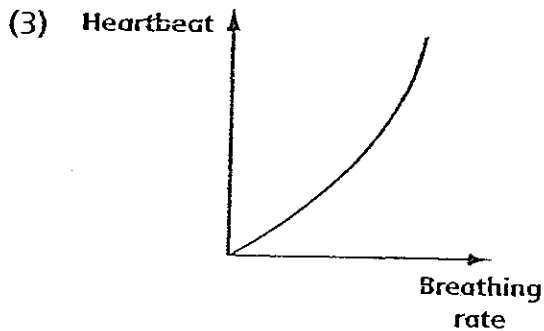
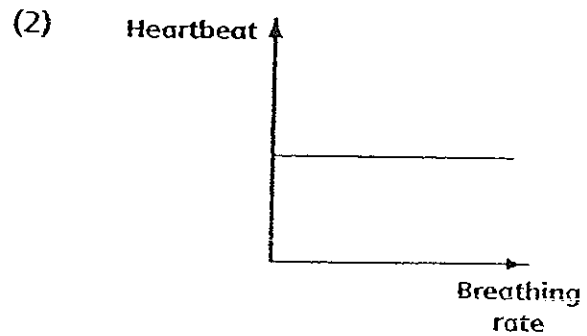
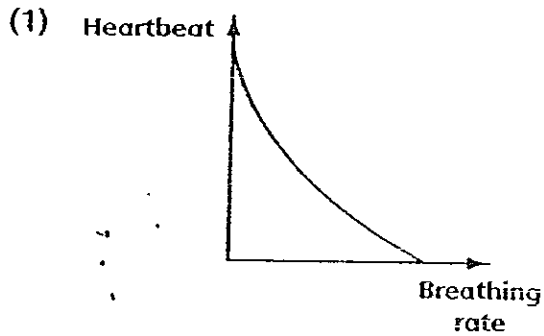
ladybird

The ladybird is different from the rest of the animals shown because it

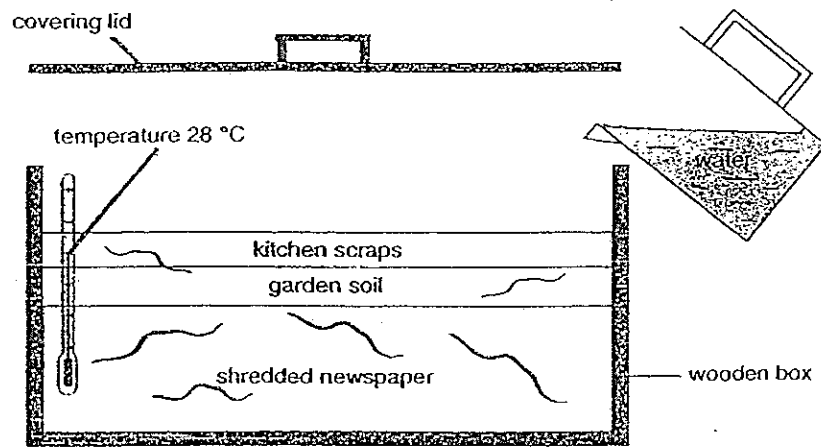
- A: sucks the juice of plants
- B: feeds on the leaves of plants
- C: helps to control the population of garden pests

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

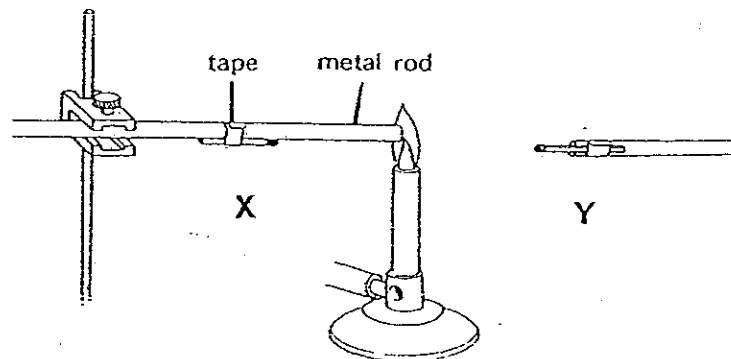
28. Which one of the following graphs correctly shows the relationship between our heartbeat and our breathing rate?



29. Six earthworms were placed into a wormery. After some time, most of the earthworms were found in the section of shredded newspaper. From the results of the experiment, what kind of environmental conditions do earthworms prefer?



- (1) Light, dry and warm
  - (2) Light, moist and cold
  - (3) Dark, moist and warm
  - (4) Dark, dry and cold
30. The diagram below shows an experiment that John has set-up. He observes that Match X lights up first.



What conclusion can John draw from his observation?

- (1) Air does not conduct heat.
- (2) Metal does not conduct heat.
- (3) Metal is a better conductor of heat than air.
- (4) Metal is a poorer conductor of heat than air.



Maha Bodhi School  
2008 Semestral Assessment J  
Science

Name : \_\_\_\_\_ ( )

Class : Pr 6 ( )

Duration : 1 h 45 min ( Parts I & II )

Date : 8 May 2008

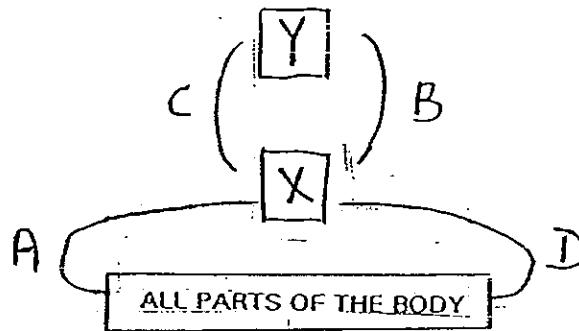
Parent's Signature : \_\_\_\_\_

Part I ( 60 marks )	
Part II ( 40 marks )	
CA1 ( 100 marks )	

**Part II: ( 40 marks )**

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

31. The diagram shows how our blood travels in the body. Arrows **A**, **B**, **C** and **D** represent the movement of blood. Boxes **X** and **Y** represent two organs.



- (a) Name the organs which **X** and **Y** represent.

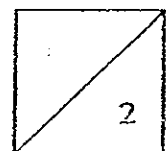
**X:** \_\_\_\_\_ **Y:** \_\_\_\_\_ [1]

- (b) Which two arrows should represent the movement of blood rich in carbon dioxide?

\_\_\_\_\_ [½]

- (c) Name the main organ where the digested food is absorbed into the blood.

\_\_\_\_\_ [½]



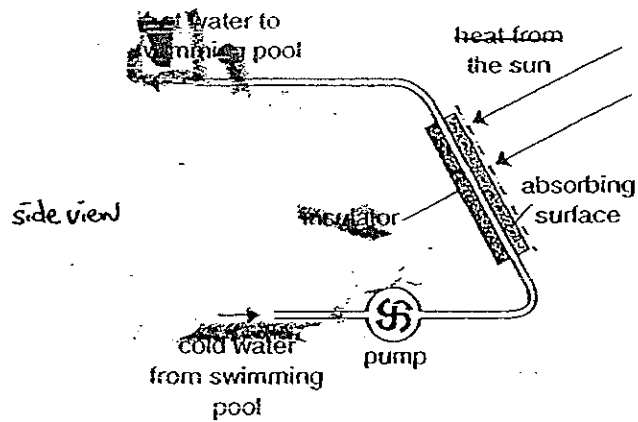
32. Fizal counted the number of trees in his school compound and recorded his findings in the table below.

Tree	Number
Yellow Cassia	8
Guava	5
Mango	4
Others	10

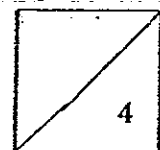
Based on the information given, tick (✓) the correct columns for each of the following statements. [2]

	Statement	True	False	Not possible to tell
(a)	The tree with the smallest population is the mango tree.			
(b)	There are at least two populations of trees bearing edible fruits.			
(c)	There are twice as many mango trees as yellow cassia trees.			
(d)	The guava trees bear more fruits than the mango trees.			

33. The water in a swimming pool is heated by solar panels. The side view of a solar panel is shown below.

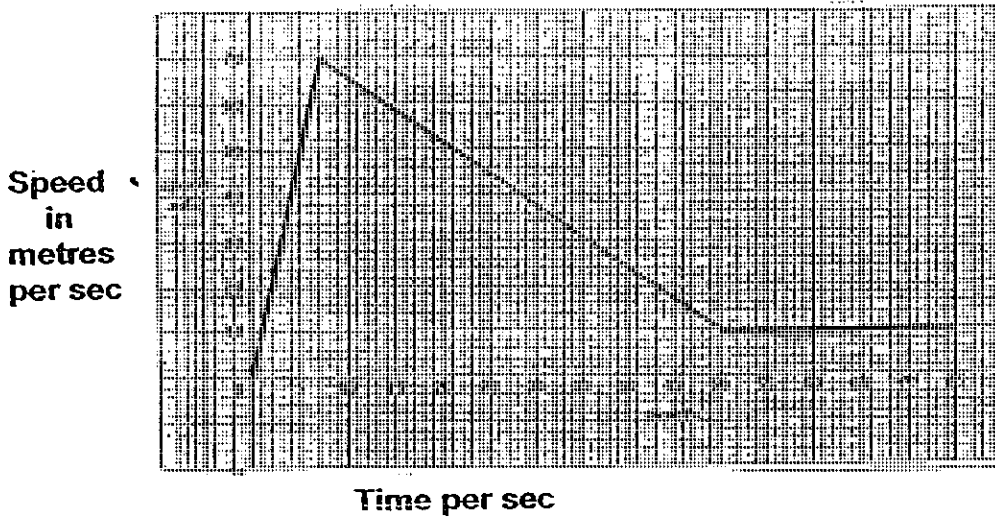


- (a) Describe the change in energy that takes place in the solar panel. [1]
- 
- (b) What do you think is the colour of the solar panel? Explain your answer. [1]
- 



34. A skydiver jumps from an aeroplane. He falls freely for a period of time and then opens his parachute.

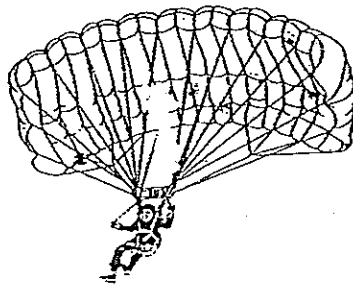
The following graph shows the speed of the skydiver as he descends.



- (a) When did the skydiver open his parachute? \_\_\_\_\_ [½]
- (b) What can you conclude about his speed between 50 and 75 seconds?

\_\_\_\_\_ [½]

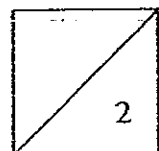
The diagram below shows the skydiver falling with his parachute open.









- (c) Name the force acting on the parachute that prevents the skydiver from falling too quickly.

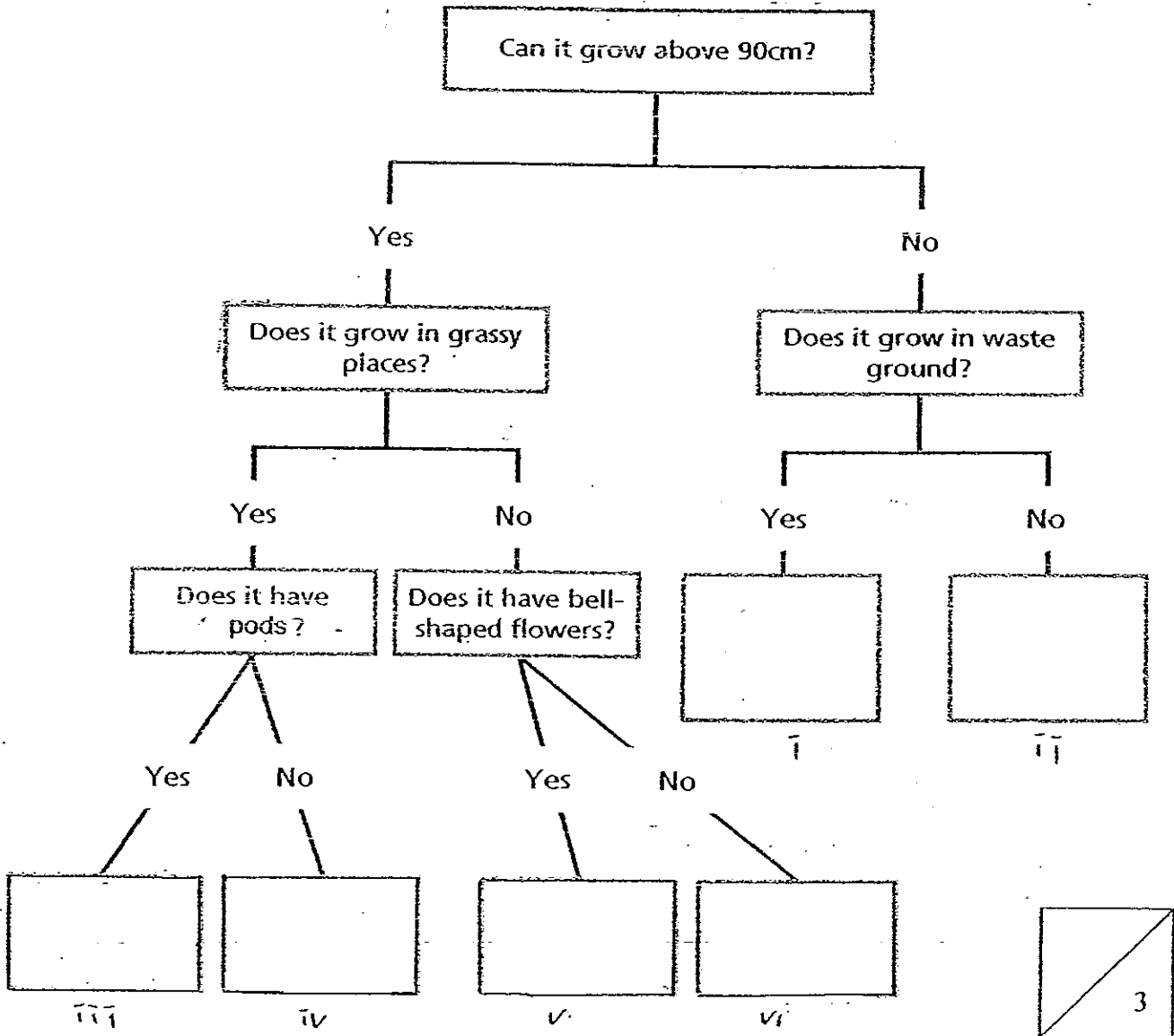
\_\_\_\_\_ [½]

- (d) Draw an arrow on the diagram above to show the direction of the force in (c) that acts on the parachute. [½]



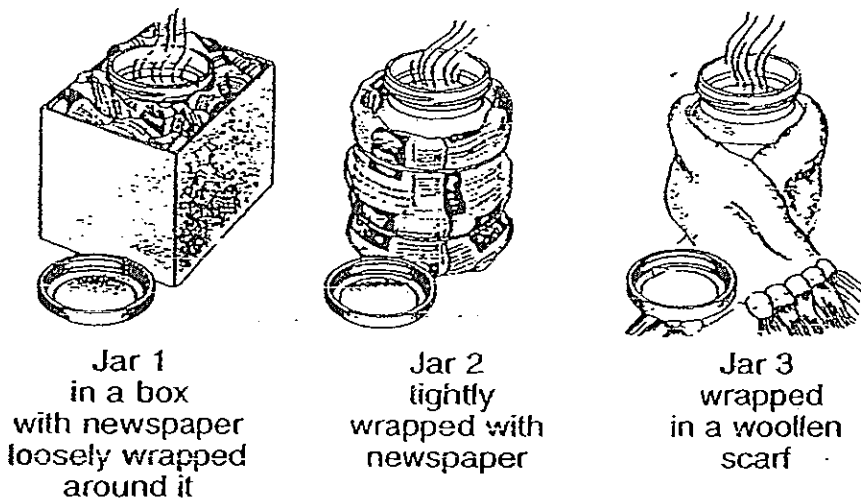
35. Study the flowers below closely and then use the key to name them.

Key					
					
<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>
5-125cm	30-100cm	60-200cm	10-50cm	50-150cm	20-80cm
Grows in hedgerows and grassy places	Grows in hedgerows and waste ground	Grows in grassy places and among bushes	Grows in woods, hedgerows and rocky places	Grows in wood clearings, heaths and rocky places	Grows in hedgerows, roadsides and waste ground

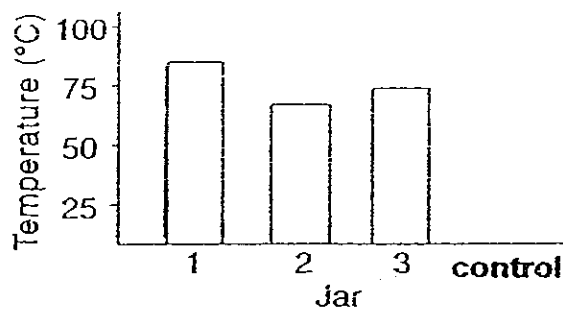




36. Michelle set up three jars to find out what condition is best for keeping water hot.



She filled each jar with hot water at 90° C and put the lids back on. The jars were then left on a table at room temperature. She measured the temperature of the jars after 30 minutes. The graph below shows the results of her experiment.



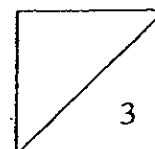
(a) From the graph, what is the best condition for keeping the water hot?

\_\_\_\_\_ [1]

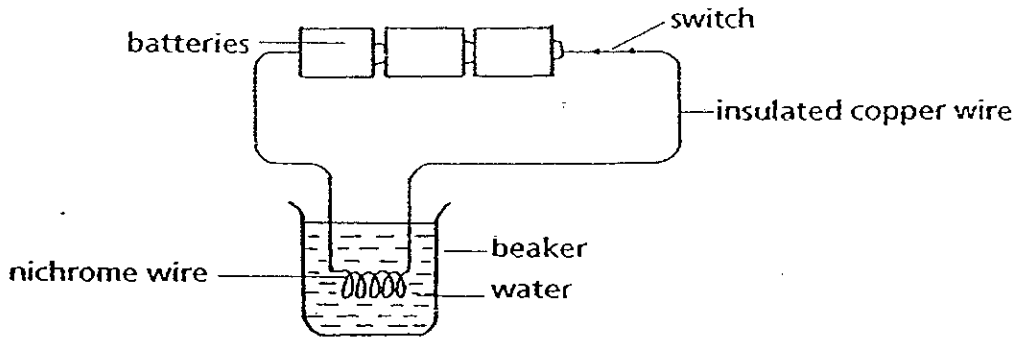
(b) Michelle's teacher says that she should have a control for her experiment. What should Michelle have for her control? [1]

\_\_\_\_\_  
 \_\_\_\_\_

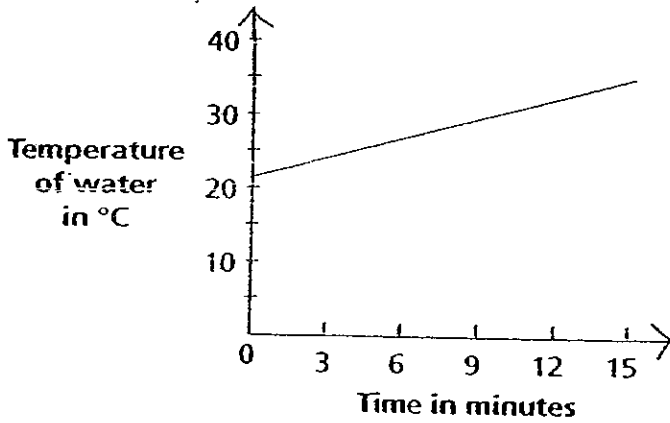
(c) Draw a bar graph on the graph above to show the result of her control. [1]



37.



May set up the experiment above and noted the temperature of the water every three minutes. She drew the line graph below to show the results.



(a) What form of energy caused the water to be heated up?

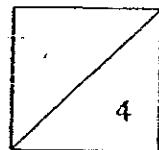
\_\_\_\_\_ [1]

(b) What was the energy source in the circuit?

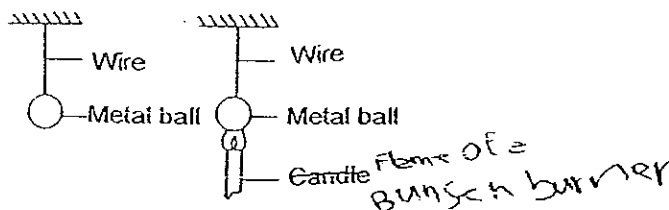
\_\_\_\_\_ [1]

(c) What change of energy had taken place in the nichrome wire when the switch was turned on?

\_\_\_\_\_ [2]



- 38 Jane set up an experiment using a metal ball suspended on a wire. She placed a lighted bunsen burner below the metal ball.



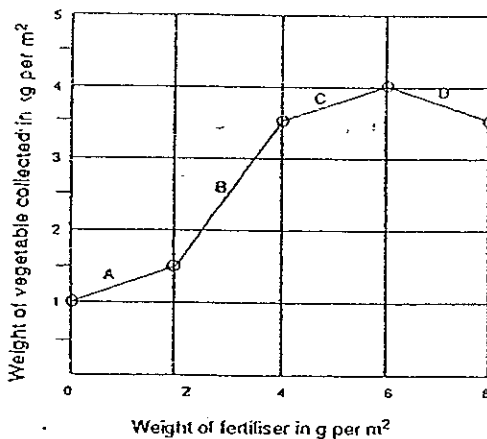
Some changes happen to the metal ball when the lighted bunsen burner is placed below it. Jane observed that the metal ball became red-hot after a while. State another possible change to the metal ball.

(a) \_\_\_\_\_ [1]

(b) What could you measure to show that the above change in (a) has happened?

\_\_\_\_\_ [1]

39. A farmer did an experiment to find out how a fertiliser affects the growth of a vegetable. He recorded the weight of the vegetable collected and the fertiliser added for every  $\text{m}^2$  of land. He plotted the results in the graph below.

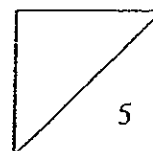


(a) How much fertiliser should the farmer use if he wants to get the greatest weight of the vegetable from one  $\text{m}^2$  of land?

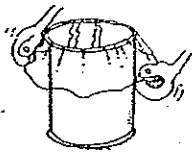
\_\_\_\_\_ [1]

(b) What effect does the fertiliser have on the vegetable as shown by part D on the graph?

\_\_\_\_\_ [2]



40. Jamie pulls a piece of plastic over the open end of a Milo tin. She puts a rubber band over the tin as shown. Then she sprinkles some salt on top of the plastic. She holds a small can close to the salt and taps the side of the small can with a ruler.



Step 1



Step 2



Step 3

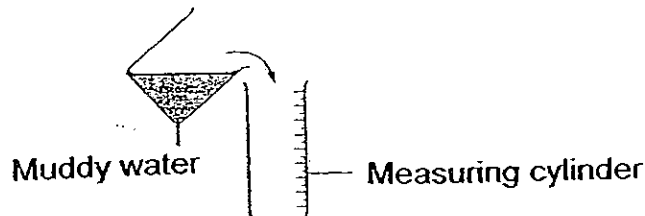
- (a) What will happen to the salt? Explain your answer.

\_\_\_\_\_ [2]

- (b) Next, she taps the side of the small can harder with the ruler and observes the salt again. What pattern would she notice between the strength she used to tap the can and her observation of the salt?

\_\_\_\_\_ [2]

41. Joe added water to a sample of soil, stirred and poured it into a measuring cylinder.

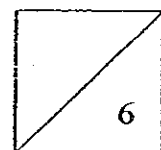


- (a) What would he observe in the measuring cylinder after a few days?

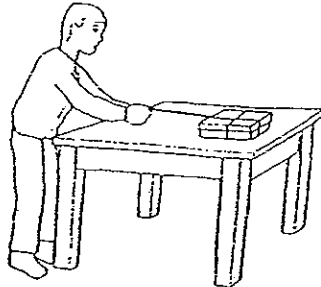
\_\_\_\_\_ [1]

- (b) Name the process by which he could separate water from the mixture.

\_\_\_\_\_ [1]



42. The diagram below shows a boy pulling a load of books across a table.



(a) Fill in the blank below with a correct word.

The boy has difficulty pulling the box because there is a \_\_\_\_\_ force between the books and the table. [½]

(b) What is another problem that this force in (a) may cause?

\_\_\_\_\_  
 \_\_\_\_\_ [½]

(c) Give one use of this force in our daily lives.

\_\_\_\_\_  
 \_\_\_\_\_ [½]

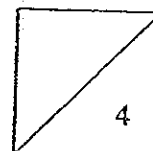
43. Plants that grow completely under water require sunlight to grow.

(a) Name two different conditions or factors that can affect the amount of light that these water plants get. [2]

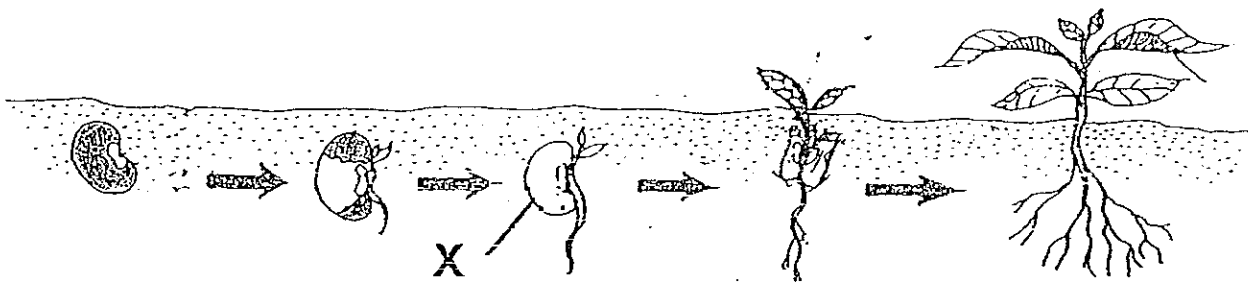
Condition / Factor 1	
Condition / Factor 2	

(b) Name a fully submerged plant.

\_\_\_\_\_ [½]



44. The pictures below show the different stages in the growth of a bean plant.



Stage A

Stage B

Stage C

Stage D

Stage E

(a) What do you think will happen if part X is removed at stage C?

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[½]

(b) Explain your answer in (a).

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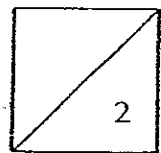
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[1]

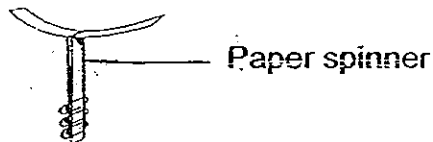
(c) At which stage can the seedling start to make its own food?

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[½]



45. Mattew carried out an investigation on falling paper spinners. He attached different numbers of paperclips to the paper spinners. He used similar paper spinners and similar paper clips. He dropped the spinners from the same height and measured the time it took for each one to drop to the ground.



- (a) List one other variable that he should keep the same in his investigation.

---



---

[1]

Number of paperclips attached to the spinner	Time taken to fall (s)			
	Reading 1	Reading 2	Reading 3	Reading 4
1	1.0	1.2	0.9	0.9
2	0.8	0.9	0.8	0.7
3	0.8	0.7	0.7	0.6
4	0.7	0.6	0.6	0.5
5	0.4	0.5	0.3	0.4

- (b) He recorded the results of his investigation in the table above. What is the relationship between the number of paper clips attached to the spinner and the time it takes to fall?

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[1]

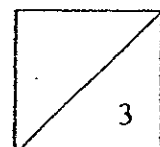
- (c) What would happen if he dropped each spinner from a greater height?

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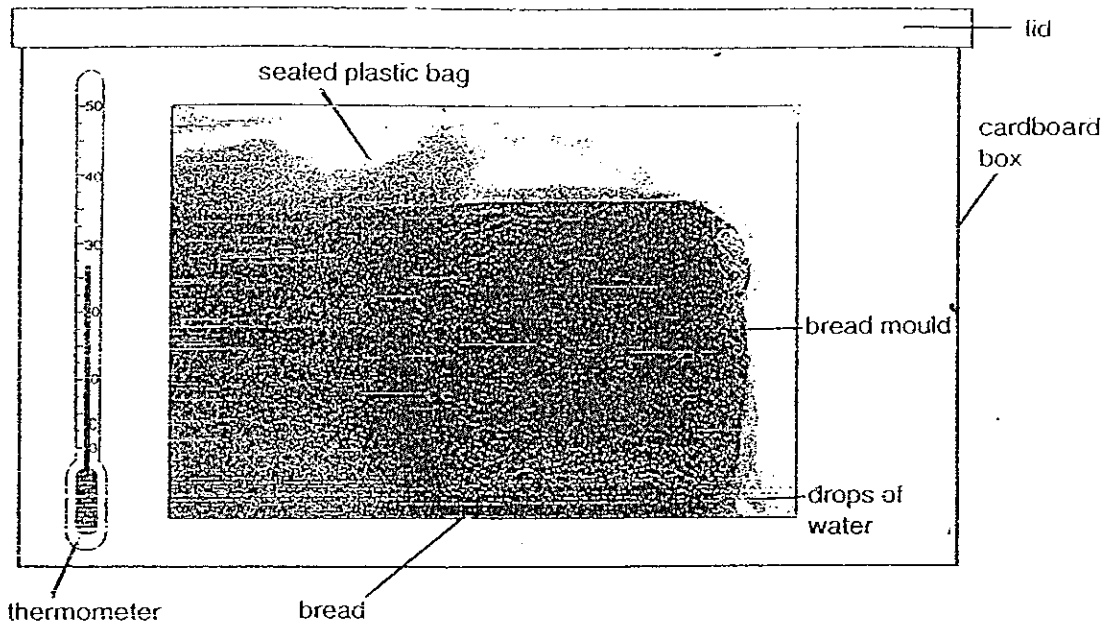


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[1]



46. Mould was found on a piece of bread inside a cardboard box.



(a) State the conditions necessary for the mould to grow.

\_\_\_\_\_

\_\_\_\_\_ [1]

(b) Mr Tan prepared another investigation using 2 similar set-ups under the same conditions.

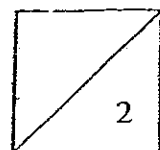
One set-up contained a slice of bread was treated with preservative and the other set-up contained a slice of bread without preservative.

What do you think is the aim of his investigation?

\_\_\_\_\_

\_\_\_\_\_ [1]

End of Paper





**Maha Bodhi Primary School**  
**Primary 6 Science SA1 Exams (2008)**

**Answer Keys**

Qo.	Ans
1	4
2	4
3	2
4	4
5	4
6	1
7	4
8	3
9	3
10	2

Qn no.	Ans
11	2
12	2
13	4
14	4
15	3
16	1
17	2
18	3
19	4
20	43

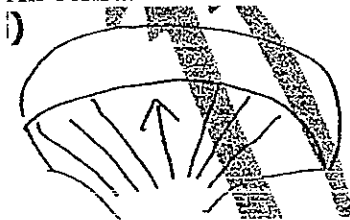
Qn no	Ans
21	3
22	3
23	3
24	4
25	4
26	1
27	2
28	3
29	3
30	3

31a. X : Heart    Y : lungs  
 31b. A and B  
 31c. Small intestine

32a. Not    (b) True  
 32c. False    (d) Not

33a. Solar energy is converted to heat energy.  
 33b. Black. Black coloured things absorb more heat than the other colours.

34a. 7 second  
 34b. He is keeping at a constant speed.  
 34c. Air resistance  
 34d.



35(i) F    (ii) D    (iii) A    (v) E    (vi) B

36a. Kept in a box with newspaper loosely wrapped around it.  
 36b. A Jar with hot water at 90°C  
 36c. After 30 mins

37a. Heat energy  
 37b. batteries  
 37c. Electrical energy is converted to heat energy.

- 38a. The metal ball would have become bigger in size.  
 38b. Use a metal ring. Before the experiment the ball can just slip through the ring. After the experiment, it cannot slip through the ring.
- 39a. 6g per m<sup>2</sup>  
 39b. This shows that the vegetable does not grow well.
- 40a. The salt moves due to the vibration in the air as a result of the sound produced.  
 40b. The greater strength she used to tap the can, the more salt will fly more.
- 41a. The mud will be formed layer by layer.  
 41b. Filtration.
- 42a. friction  
 42b. it may cause over heating  
 42c. To hold things more steadily without slipping off our hands.
- 43a(i). Overcrowding of floating plants  
 (ii) There is a layer of oil
- 44a The seedling will die  
 44b. The seedling depends on the seed leaves for food.  
 44c. Stage D
- 45a. How he dropped the spinner  
 45b. The more the number of paperclips attached to the spinner, the shorter it will take for the paper spinner to fall on the ground.  
 45c. It will take a longer for the spinner to drop on the ground
- 46a. Moist warmth and air  
 46b. To find out if preservative would affect growth of mould.