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ANGLO-CHINESE SCHOOL (JUNIOR)  
ANGLO-CHINESE SCHOOL (PRIMARY)

*DAZ*

PSLE PRELIMINARY EXAMINATION 2004

SCIENCE

BOOKLET A

NAME : \_\_\_\_\_ ( ) CLASS : P6. \_\_\_\_\_

DATE : 26<sup>TH</sup> August 2004

Total Time For Booklets A and B : 1 hour 45 minutes

INSTRUCTIONS TO CANDIDATES

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

Follow all instructions carefully.

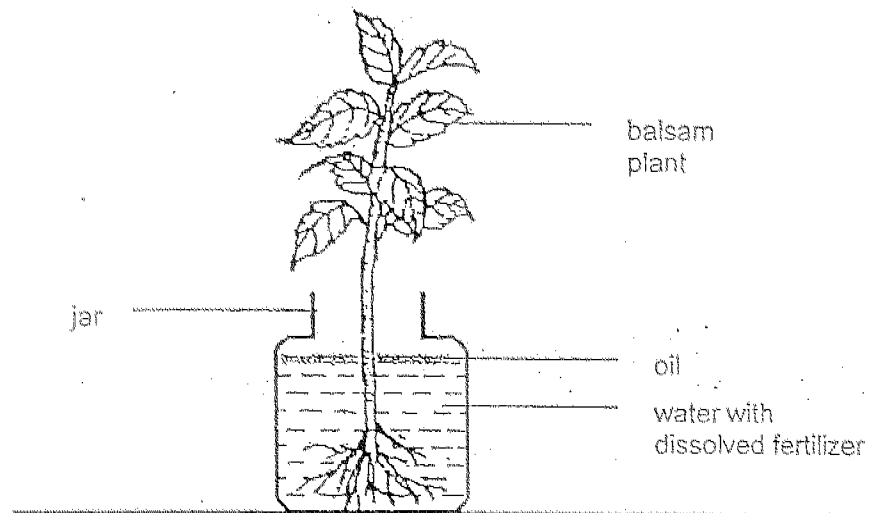
Answer all questions.

PART 1

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.

(30 X 2 marks)

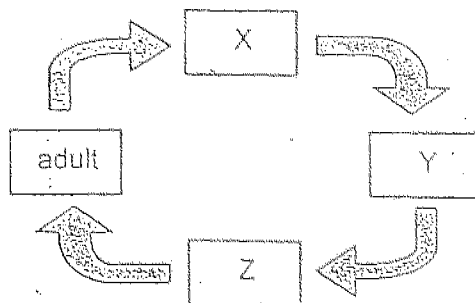
- 1 1 gram of fertilizer is added to 500 ml of water in a jar. The water is stirred until all the fertilizer is dissolved. Then a balsam plant is placed into the jar as shown in the diagram below.



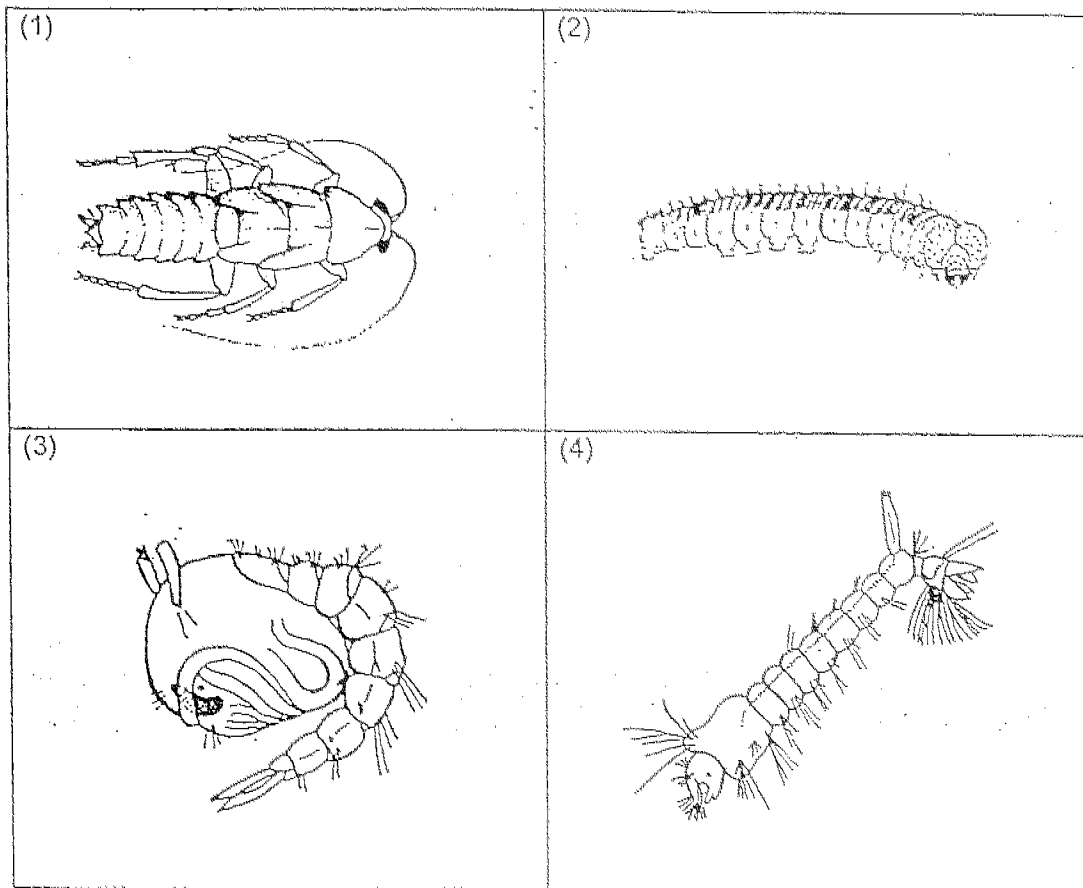
What will be the volume of the water and the mass of fertilizer in the jar after a few days?

	Volume of water left (ml)	Mass of fertilizer (g)
(1)	500	1
(2)	500	less than 1
(3)	less than 500	1
(4)	less than 500	less than 1

2 The diagram below shows the stages in the life cycle of a certain insect.



Which one of the following young animals is at stage Z?

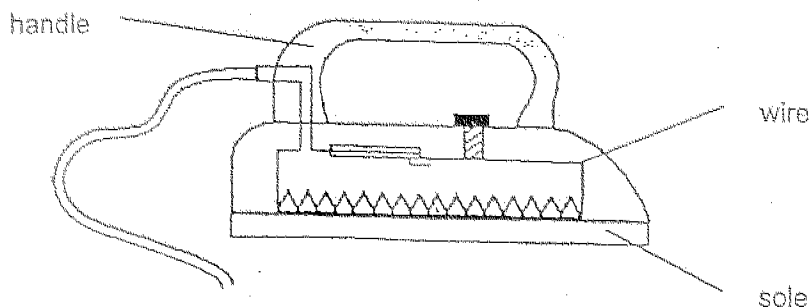


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3 The heels of Mrs Lee's shoes left scratches on the parquet floor. This shows that the heels of the shoes are \_\_\_\_\_ than the parquet.

- (1) harder
- (2) rougher
- (3) less fragile
- (4) more flexible

4 The diagram below shows three parts of an electric iron.

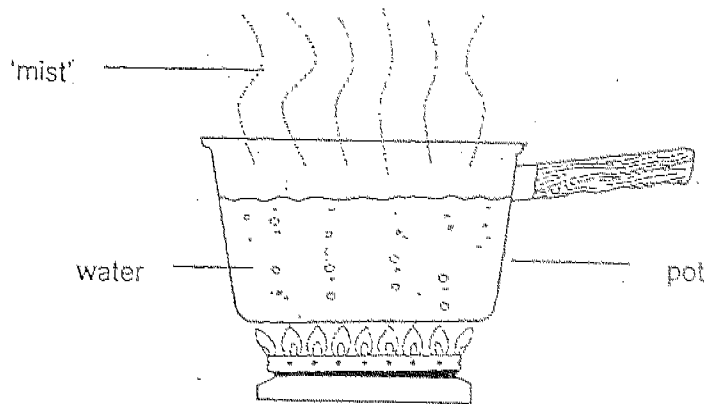


Which one of the following best describes the property of the material that makes it suitable for making each of the three parts?

	Handle	Sole	Wire
(1)	poor conductor of heat	good conductor of heat	good conductor of electricity
(2)	poor conductor of heat	good conductor of electricity	good conductor of heat
(3)	poor conductor of electricity	good conductor of heat	good conductor of electricity
(4)	poor conductor of electricity	good conductor of electricity	good conductor of heat

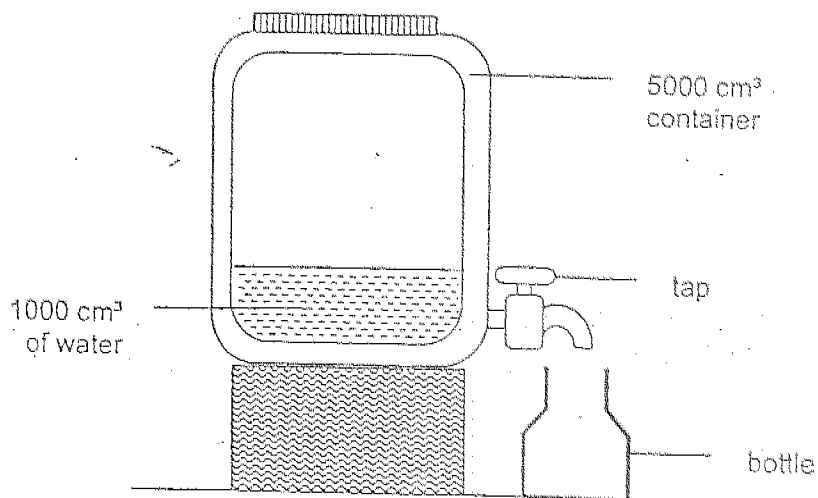
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- 5 When water boils in a pot, we can see a "mist".



What is this "mist"?

- (1) steam
  - (2) oxygen
  - (3) water vapour
  - (4) water droplets
- 6 The diagram below shows a portable water container holding  $1000 \text{ cm}^3$  of water. The capacity of the container is  $5000 \text{ cm}^3$ .



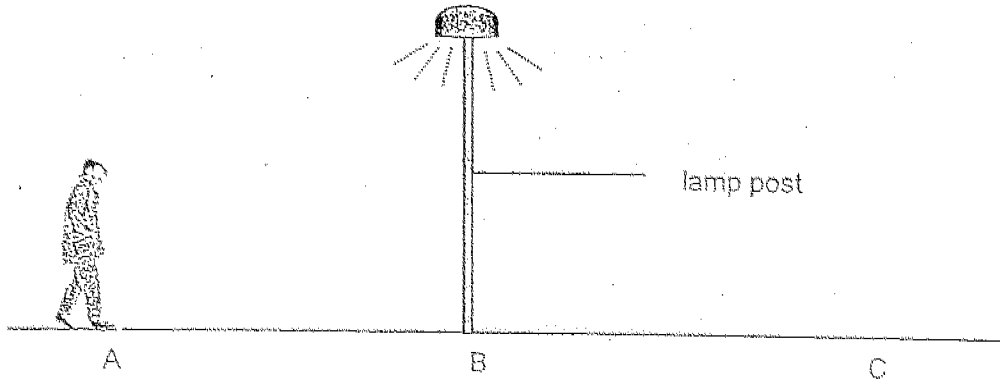
When the tap of the container is turned on and off,  $500 \text{ cm}^3$  of water is collected in the bottle. What is the final volume of air in the container?

- (1)  $3500 \text{ cm}^3$
- (2)  $4000 \text{ cm}^3$
- (3)  $4500 \text{ cm}^3$
- (4)  $5000 \text{ cm}^3$

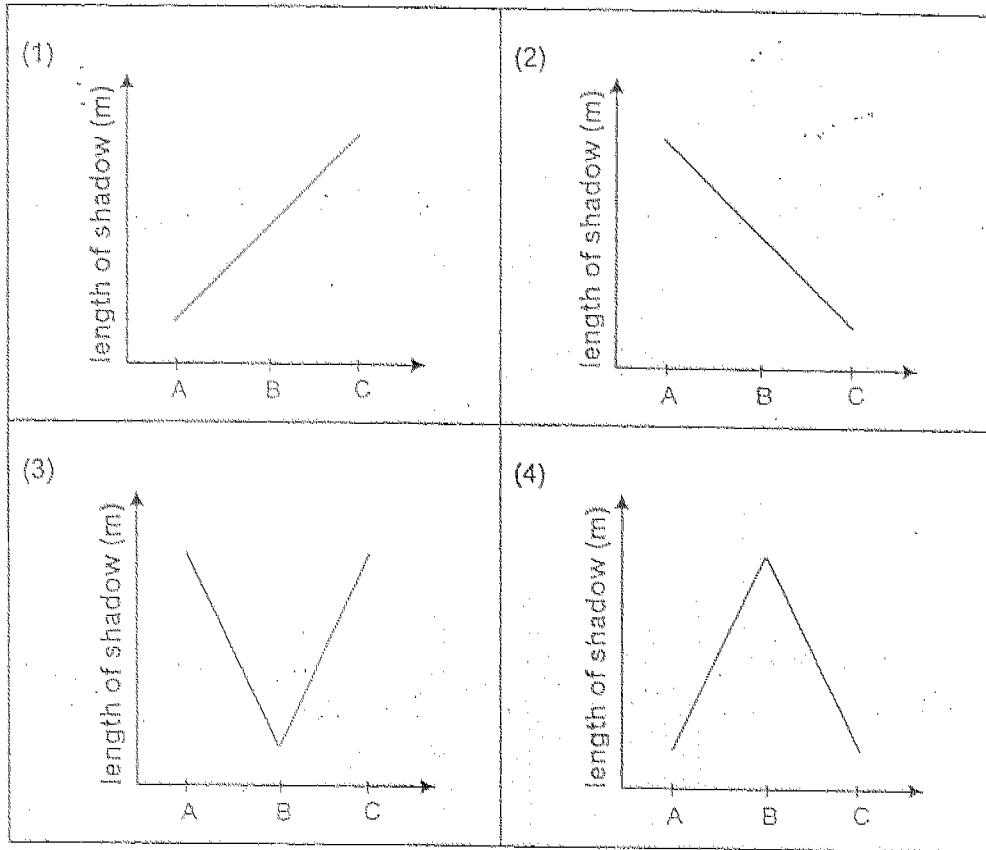
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7

One dark night, Mr Aru walked from A to C, passing a lamp post at B.

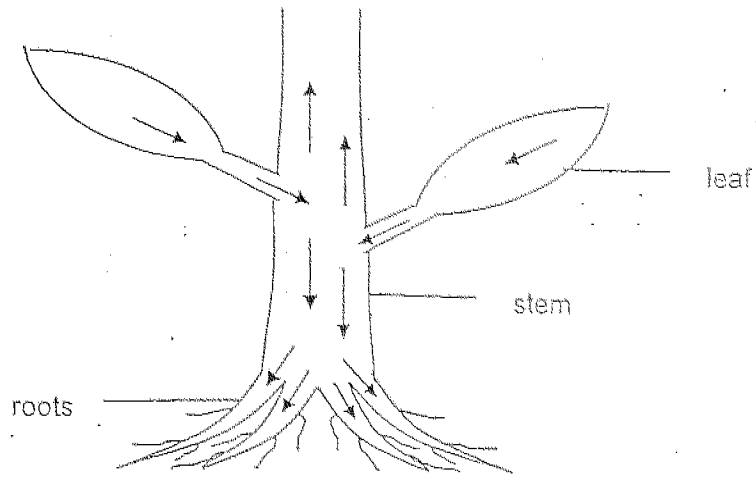


If the only light source nearby was the lamp post, which one of the graphs below shows how the length of his shadow changes from A to C?



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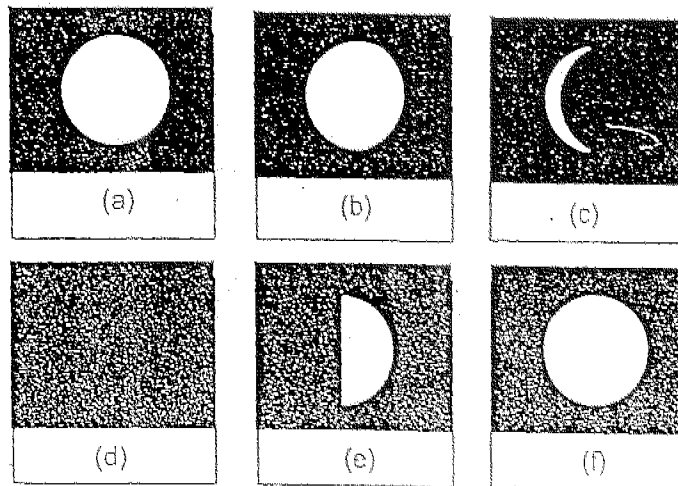
8



The arrows in the diagram above show the path taken by \_\_\_\_\_ in a plant.

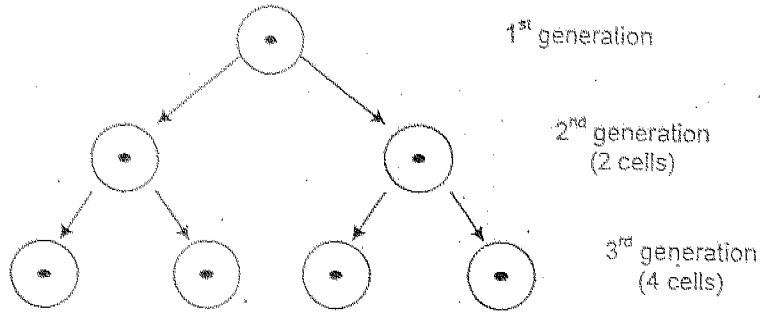
- (1) sugar
- (2) water
- (3) mineral salts
- (4) carbon dioxide

9

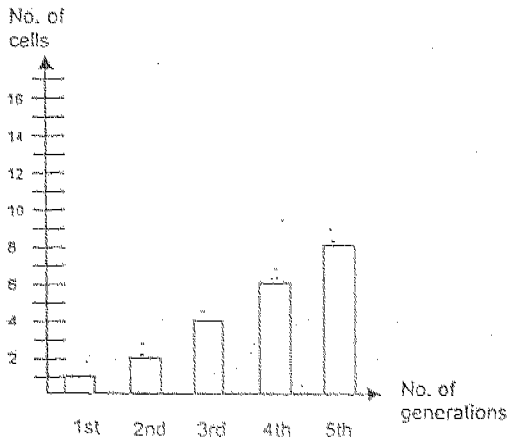


Henry observed that the moon appeared to change its shape every night. He decided to record the dates of these changes in his book. Which of the following sets of dates would correspond to the shapes as drawn in the diagram?

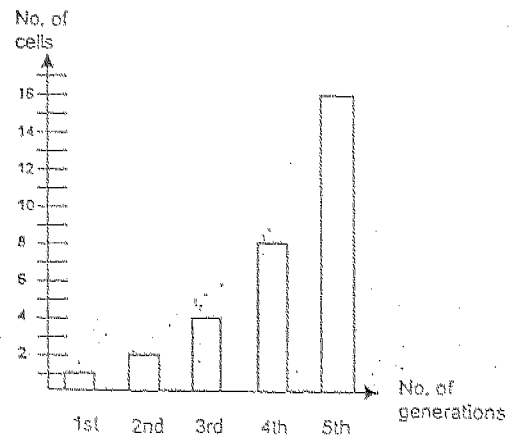
	(a)	(b)	(c)	(d)	(e)	(f)
(1)	15 Jan	22 Jan	27 Jan	29 Jan	2 Feb	15 Feb
(2)	15 Jan	18 Jan	27 Jan	2 Feb	6 Feb	15 Feb
(3)	15 Jan	18 Jan	21 Jan	2 Feb	9 Feb	15 Feb



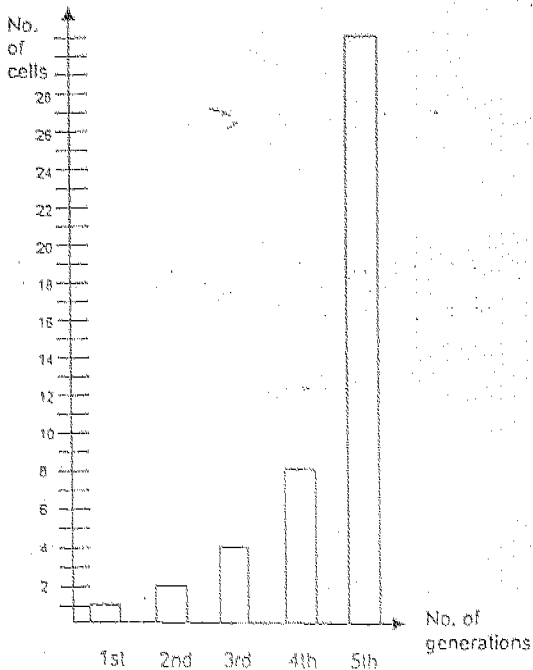
Which of the following bar graphs best represents the cell division process above?



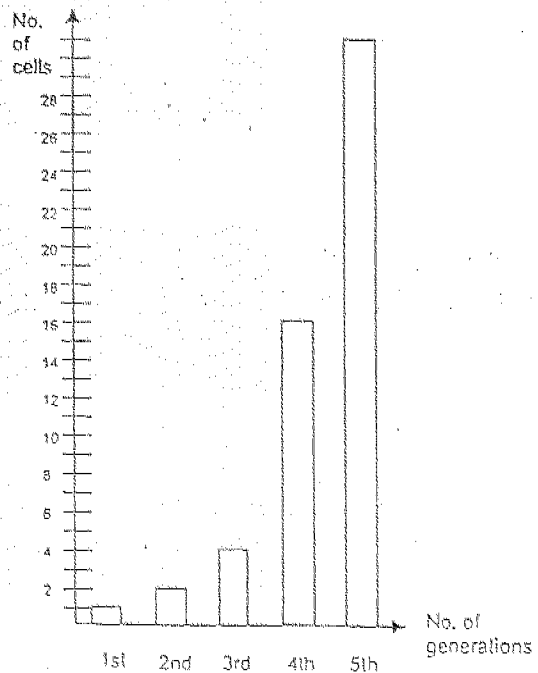
(1)



(2)



(3)



(4)

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- 11 Mr and Mrs Tan have the following features.

	Hair	Eyes	Ears	Nails
Mr Tan	Straight	Black	Detached	Short
Mrs Tan	Curly	Hazel	Detached	Short

They have four children and the table below contains their description.

	Hair	Eyes	Ears	Nails
Amie	Straight	Hazel	Detached	Short
Daniel	Curly	Hazel	Detached	Short
Thomas	Curly	Black	Attached	Short
Victor	Straight	Black	Detached	Long

One of the children is adopted. Who is most likely to be the adopted child?

- (1) Amie
- (2) Daniel
- (3) Thomas
- (4) Victor

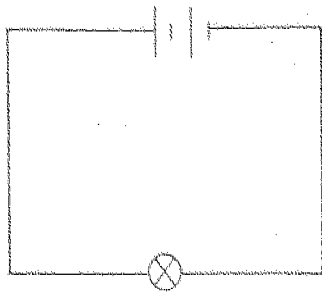
- 12 The table below shows some readings of 4 different simple machines.

	Simple Machine A	Simple Machine B	Simple Machine C	Simple Machine D
Load (kg)	20	20	20	20
Effort (kg)	5	10	40	60
Distance travelled by load (m)	5	5	10	15
Distance travelled by effort (m)	20	10	5	5

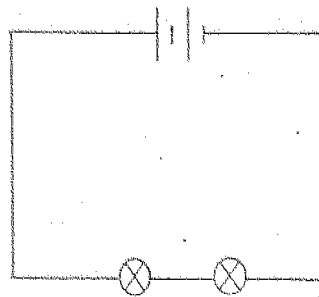
Which simple machine would you use if you want to complete your work fastest?

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

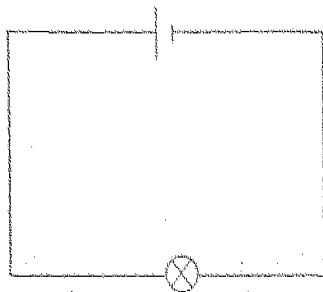
- 13 Kenny wants to find out how the number of dry cells will affect the brightness of a bulb. Which 2 of the set-ups should he use?



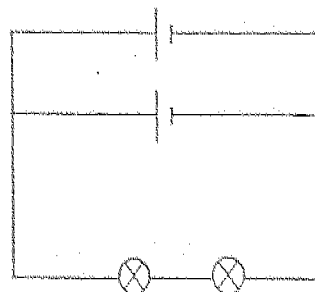
Set-up A



Set-up B



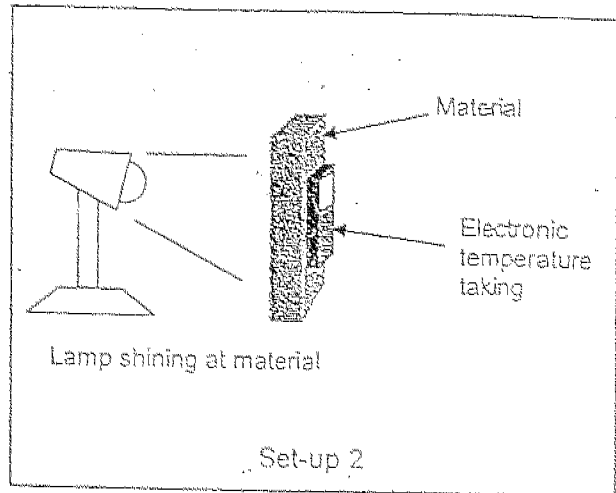
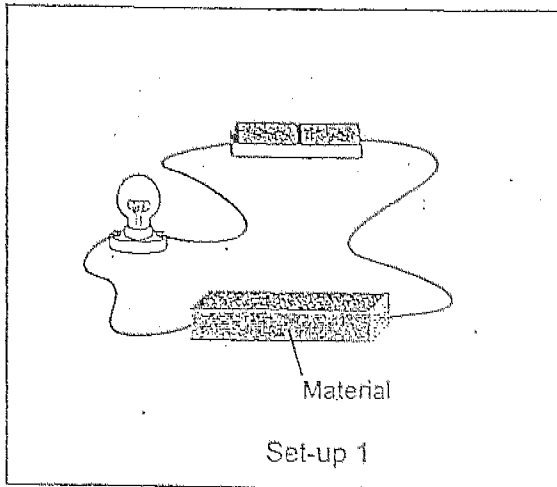
Set-up C



Set-up D

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

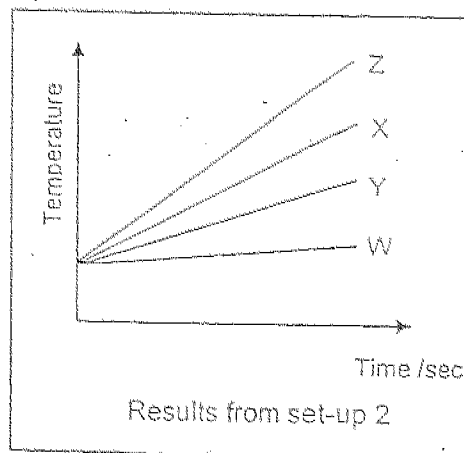
- 14 Freist conducted two experiments with materials W, X, Y and Z. Study the two set-ups carefully.



He recorded his findings in the table and graph for set-up 1 and 2 respectively.

Material	Brightness of the bulb
W	No light
X	Bright
Y	Dim
Z	Very bright

Results from set-up 1



What conclusion can he draw from the above data?

- (1) All the materials are good conductors of heat regardless of whether they can conduct electricity.
- (2) The longer the material takes to heat up, the better the material is for conducting electricity
- (3) Materials that are good conductors of electricity are usually good conductors of heat.
- (4) There is no relationship between the two sets of data.

15. The table below shows the performance schedule of the dolphins at the zoo from 7<sup>th</sup> to the 13<sup>th</sup> June 2004.

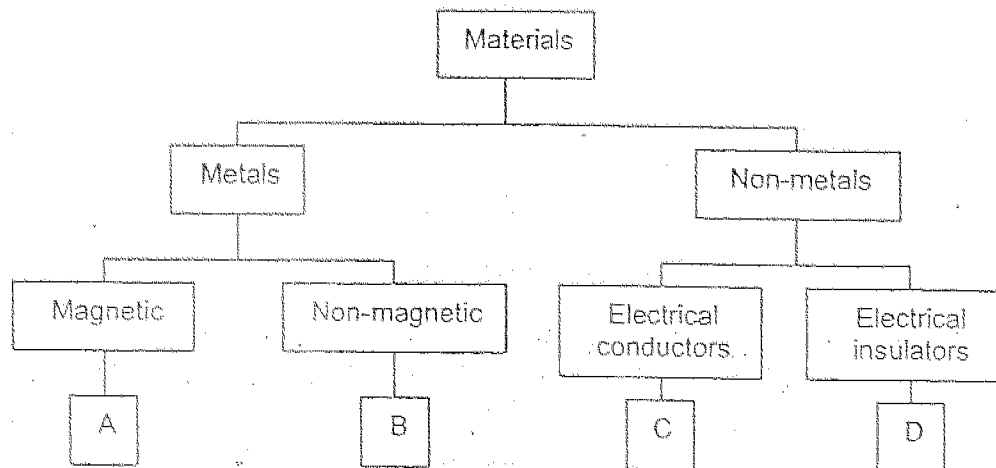
	7 Jun (Mon)	8 Jun (Tue)	9 Jun (Wed)	10 Jun (Thu)	11 Jun (Fri)	12 Jun (Sat)	13 Jun (Sun)
No. of shows	0	2	2	2	3	6	5

A trainer took note of the food intake of his dolphins over that week. His data is shown in the table below.

	7 Jun (Mon)	8 Jun (Tue)	9 Jun (Wed)	10 Jun (Thu)	11 Jun (Fri)	12 Jun (Sat)	13 Jun (Sun)
No. of fishes eaten	35	50	50	50	60	75	70

What conclusion can the trainer make from the schedule and data?



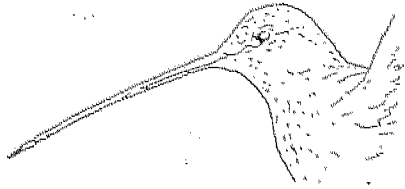

- (1) Dolphins like to eat fish.
  - (2) Dolphins need energy to perform.
  - (3) Dolphins do not need energy when there is no performance.
  - (4) As the number of performances increases, the food intake increases.
16. The chart shows the classification of some materials.



Which of the following materials are B and C?

	B	C
(1)	nickel	copper
(2)	iron	ceramic
(3)	aluminium	glass
(4)	copper	carbon

- 17 Birds have different types of beaks to help them survive in the environment. Study the table carefully.

Type of Beak	Example of Bird	Function
A		To scoop fish out of water
B		To peck the ground for insects
C		To draw nectar from flowers
D		To crush hard seeds and nuts

Which beak(s) has /have been correctly matched to its/their function(s)?

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

18. Four objects A, B, C and D are hung on a pole above the ground, using strings of different length. The table shows the mass of each object and its distance from the ground.

Object	Mass (kg)	Distance from ground (cm)
A	5	80
B	10	140
C	8	50
D	5	100

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

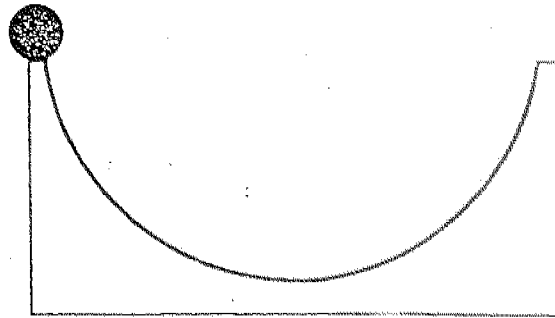
- (1) Object B possesses the least potential energy.
  - (2) Object C possesses the most potential energy.
  - (3) Object A has more potential energy than Object D.
  - (4) Object C possesses less potential energy than Object B.
19. Eugene collected samples of water from different ponds and recorded his findings in the table below:

Water Sample	Clarity	Smell	Number of Organisms
Pond A	Murky	Musty	Many
Pond B	Clear	Odourless	Few
Pond C	Murky	Musty	Few
Pond D	Clear	Odourless	None

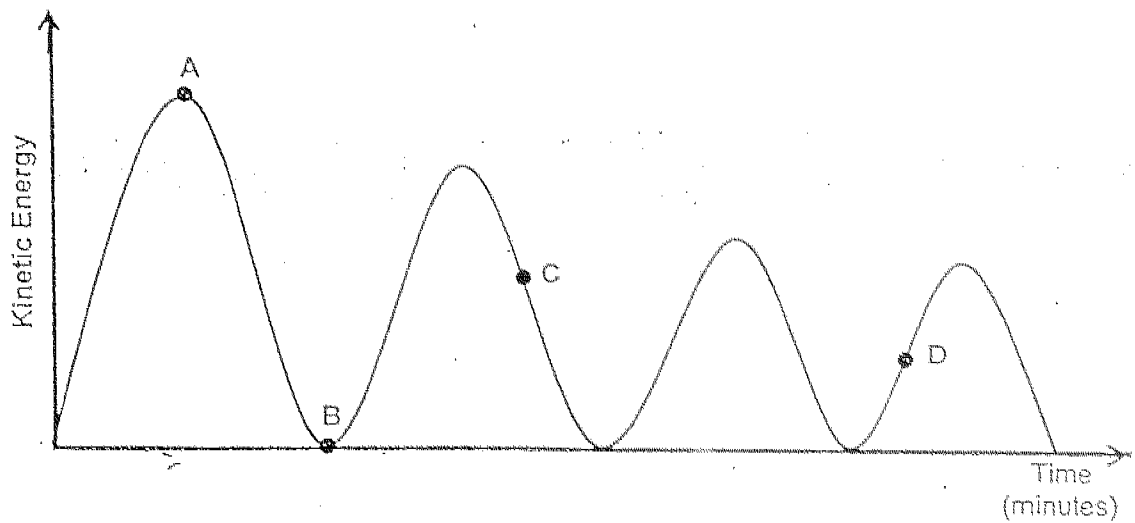
Which of the following conclusions cannot be derived from his findings?

- (1) Clear water can sustain aquatic life.
  - (2) Odourless water can sustain aquatic life.
  - (3) Murky and musty water can sustain aquatic life.
  - (4) Water must be both clear and odourless to sustain aquatic life.
20. Which of the following measures can help to reduce air pollution?
- A Use of windmills.
  - B Use of solar cells.
  - C Use of insecticides and pesticides.
  - D Use of hydro electric power station.

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



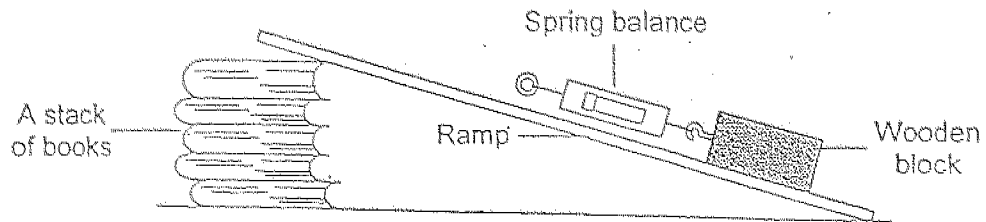
A marble was released on the curved slope shown above. As the ball moved, its kinetic energy was calculated and plotted on the graph below.



Which point on the graph represents the kinetic energy of the marble when it was at the bottom of the slope?

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

- 22 Ben wanted to find out whether the surface of an inclined plane affects the amount of force needed to move an object up the inclined plane. He set up the experiment as shown below.



To make sure the test is fair, which of the following must he keep the same?

- A Mass of wooden block
  - B Length of the ramp used
  - C Material used for the ramp
  - D Height of the stack of books
- (1) B and C only  
(2) A, B and D only  
(3) A, C and D only  
(4) A, B, C and D
- 23 Which one of the following statements is true about the Bird's Nest Fern?
- (1) It is a flowering plant that can make its own food.
  - (2) It is a non-flowering plant that reproduces by spores.
  - (3) It is a fungus that feeds on the tree which it stays on.
  - (4) It cannot photosynthesize as it does not have chlorophyll.
- 24 Which one of the following factors is the least likely to cause a significant decrease in the number of fish in a lake?
- (1) Excessive rainfall
  - (2) Excessive fishing activities
  - (3) Increased acidity of the water
  - (4) Increased amounts of pollutants



25 Which of the following animals is correctly matched to its behavioural adaptation?

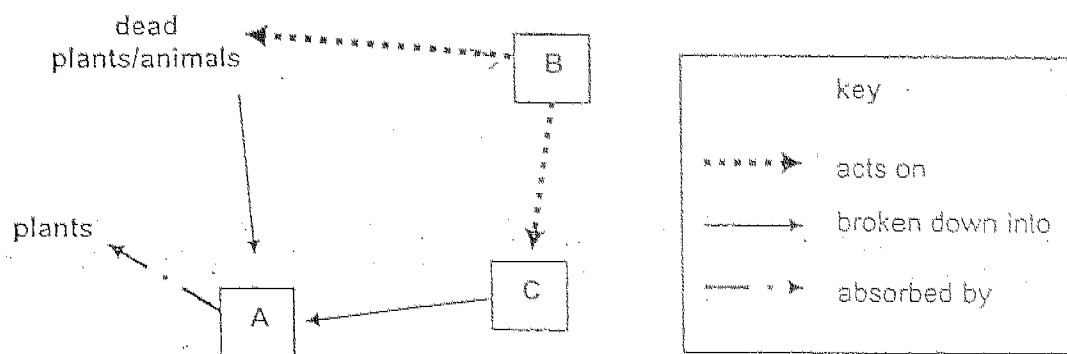
	Animal	Behavioural Adaptation
(1)	Bat	Wings that enable them to fly
(2)	Millipede	Curl into a tiny ball when touched
(3)	Polar bear	Thick white fur to keep it warm
(4)	Fennec fox	Big and long ears to cool itself

26 Which of the following are negative effects of deforestation on the environment?

- A Destruction of the ozone layer
- B Erosion of the top layer of soil
- C Increase in carbon dioxide level

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

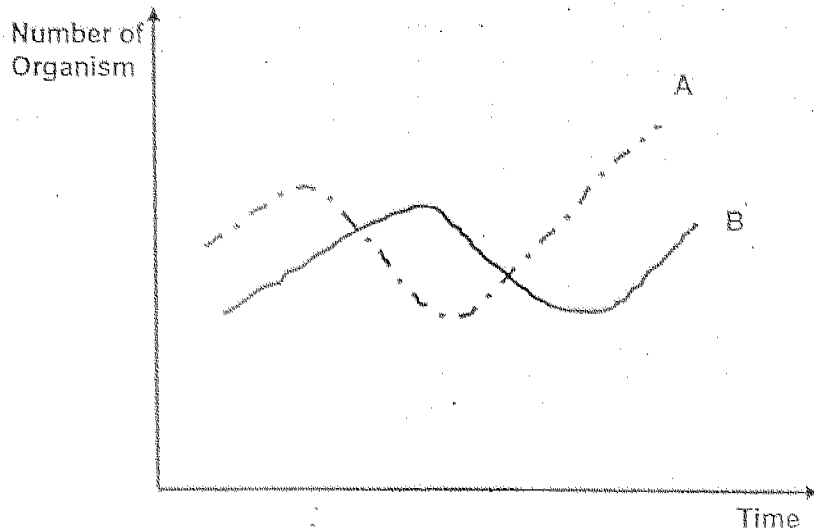
27 Decomposers enrich the soil with nutrients for the plants. The diagram below shows how decomposers act on various organic matter and change them into simple substances.



What do the letters A, B and C represent?

	A	B	C
(1)	carbon dioxide	predators	nutrients
(2)	water	fungi	nutrients
(3)	mineral salts	scavengers	animal waste
(4)	mineral salts	bacteria	animal waste

- 28 The graph below shows the change in population of two animals A and B from the same food chain living in the pond.



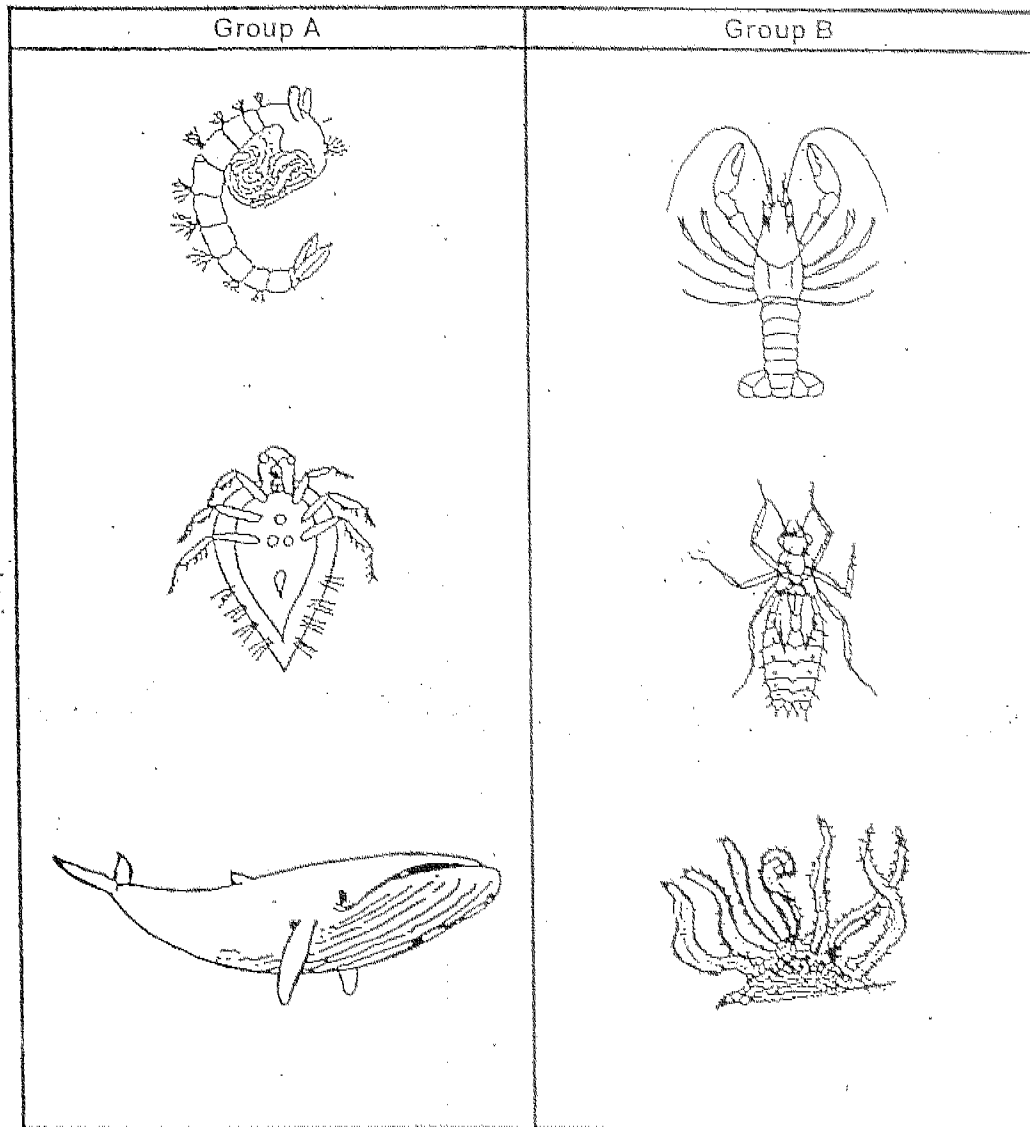
Which of the following statement(s) can be deduced from the graph?

- A Organism B is bigger in size than organism A.
- B Organism A can move faster than organism B.
- C Organism A is likely to be the prey of organism B.
- D Organism B controls the population of organism A.

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

- 29 Technology has brought about new materials that make life better for everyone. Which one of the following materials has not been correctly paired with its usage.

	Man-made Materials	Usage
(1)	Brass	Electrical wires
(2)	Ceramic	Protective tiles for space shuttle
(3)	Steel	Cutlery and cooking utensils
(4)	Plastic	Food containers and carriers



The animals shown above have adaptations which enable them to breathe in aquatic conditions.

The animals in Group A are different from those in Group B because they

- (1) can hold their breaths for long periods
- (2) breathe in dissolved oxygen from the water
- (3) take in oxygen from the air above the water
- (4) trap air bubbles and carry their own supply of oxygen

## PART II

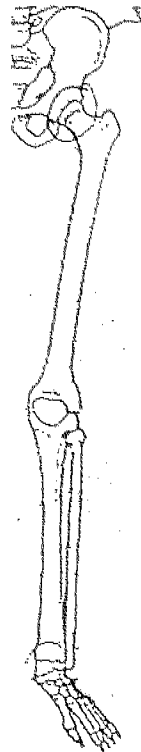
For questions 31 to 46, write your answers in this booklet.

The number of marks available is shown in brackets [ ] at the end of each question or part question.

(40 marks)

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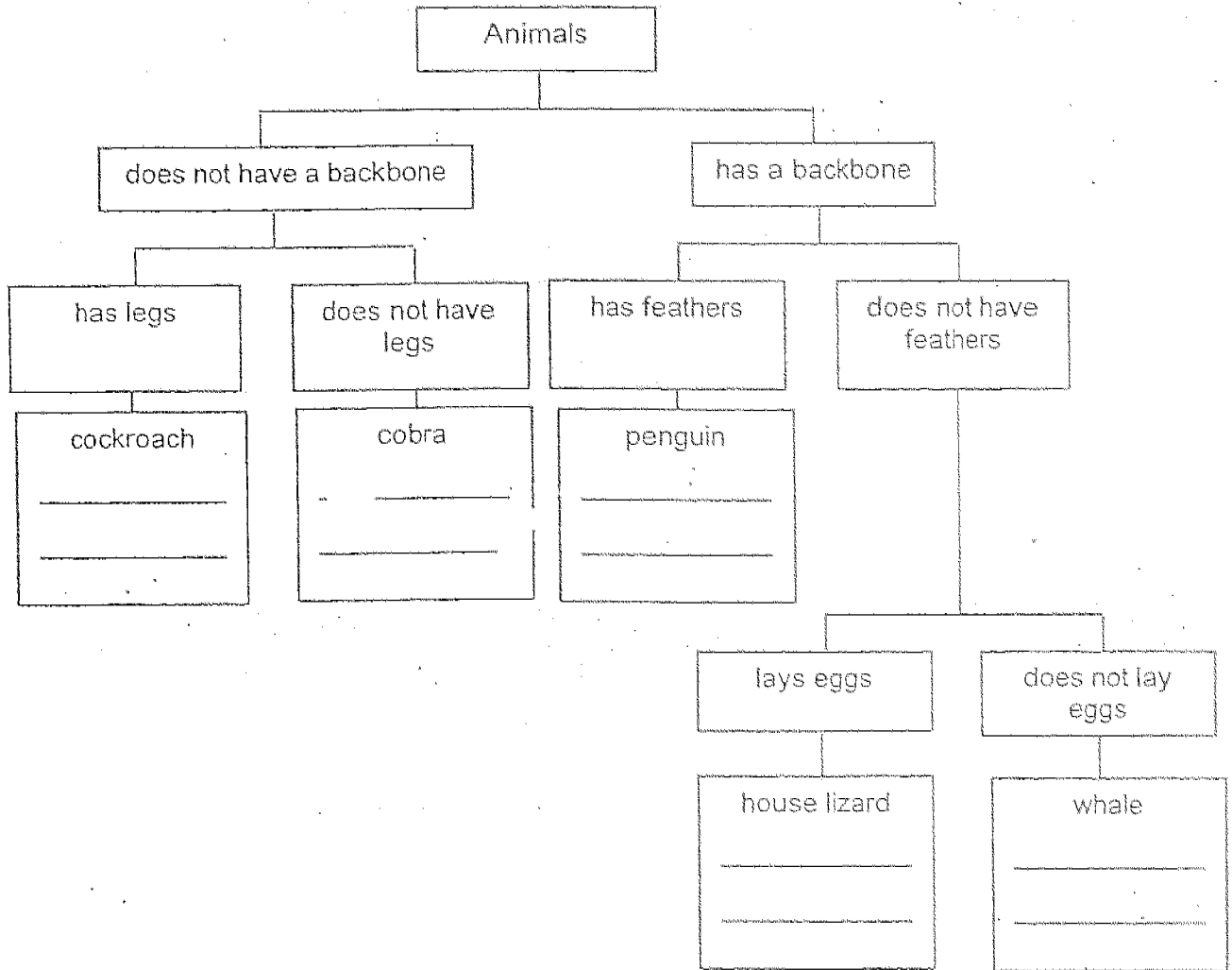
- 31 The diagram below shows the skeletal system of the human leg.



- (a) What other part of the leg, not shown in the diagram, enables the leg to bend or straighten? [1]
- 

- (b) In the diagram above, circle the joint, which moves in a way most similar to that of the shoulder joint. [1]

32 Study the classification chart below.

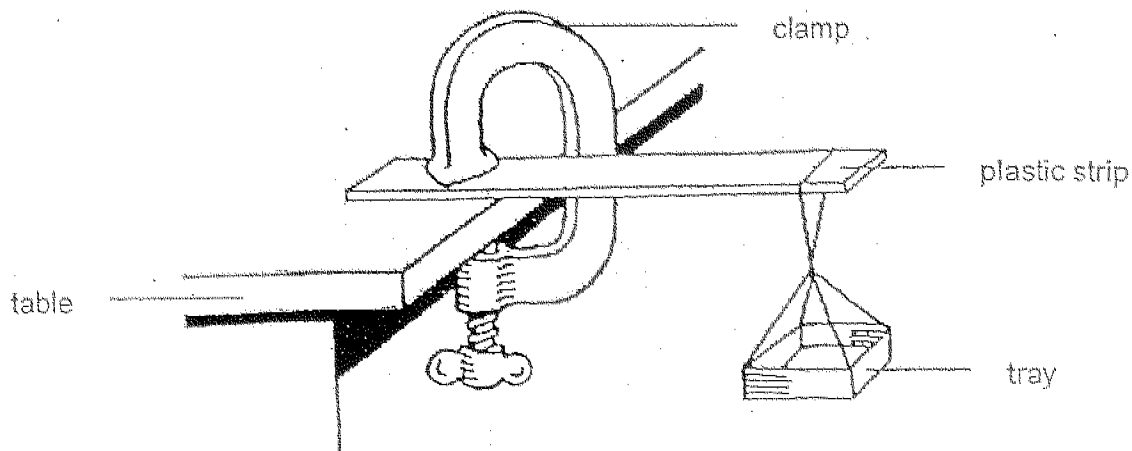


(a) One animal in the chart has been classified wrongly. Name the animal and state the characteristic that is wrong. [1]

(b) Put "dolphin" and "earthworm" in the above classification chart. [1]

33

Mary used the set-up below to investigate the flexibility of 2 different types of plastic, A and B. She clamped one end of each type of plastic strip on top of a ~~bench~~ <sup>table</sup> and hung a tray over the other end.



- (a) At the end of the experiment, she concluded that A was more flexible than B. What results did she get to enable her to reach such a conclusion? [2]

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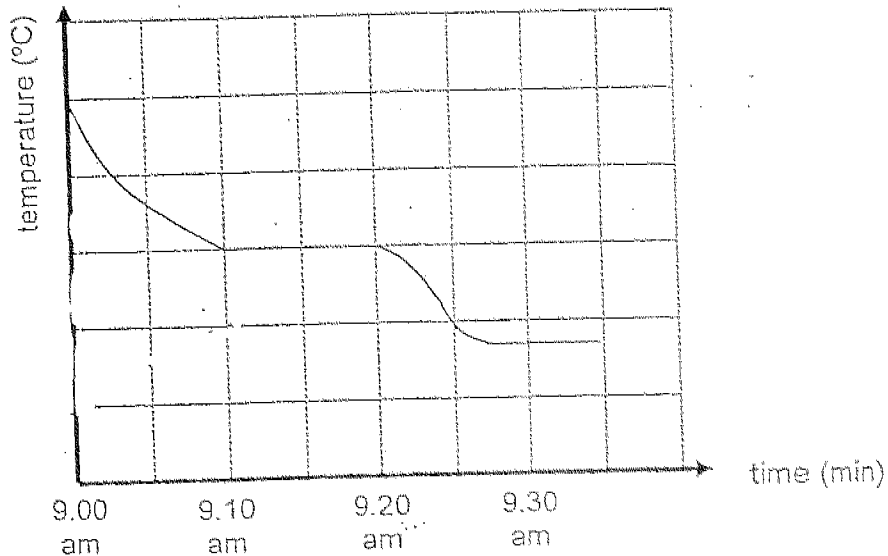
- (b) How would the results in (a) be affected if the plastic strips were moved closer to the table? [1]

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34

Some wax was heated until it melted. The liquid wax was then left to cool in a room and its temperature over a period of time of time was plotted as shown in the graph below.



(a) What is happening to the wax between 9.10 am and 9.20 am? [1]

(b) Mark a cross (X) on the temperature axis to show the temperature of the room. [1]

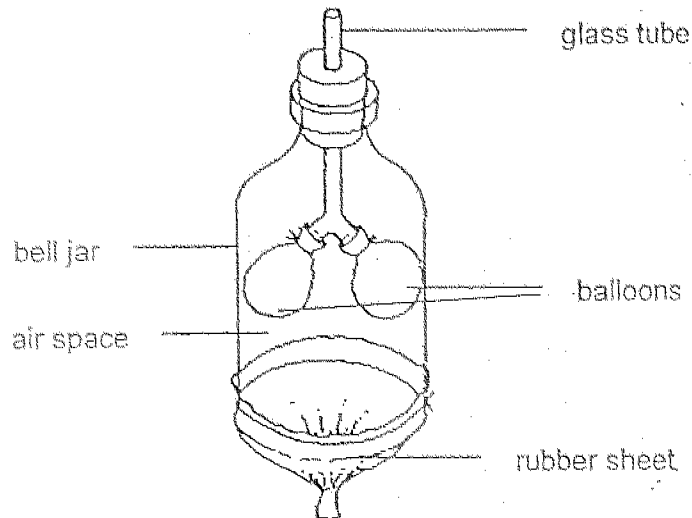
(c) Put a tick (✓) in the appropriate box below to show if the wax was gaining or losing heat during the following periods of time. [1]

Time (am)	Gaining Heat	Losing Heat	Neither Gaining Nor Losing Heat
9.00 – 9.10			
9.10 – 9.20			

35 Complete the passage by filling each blank with a suitable word. [2]

A thermometer is an instrument used for measuring \_\_\_\_\_. The two liquids commonly used in a thermometer are alcohol and \_\_\_\_\_. The part that holds the liquid in the thermometer is the \_\_\_\_\_. When this part is cooled, the liquid in it will lose heat and \_\_\_\_\_. This will cause

The diagram below shows a model of the respiratory system.



- (a) The table below shows the parts of the model and the parts of the respiratory system they represent. Fill in the missing information. [1]

Parts of the model	Parts of the respiratory system
glass tube	
	lungs
rubber sheet	diaphragm

- (b) Write down one difference between the blood entering the lungs and the blood leaving the lungs? [1]

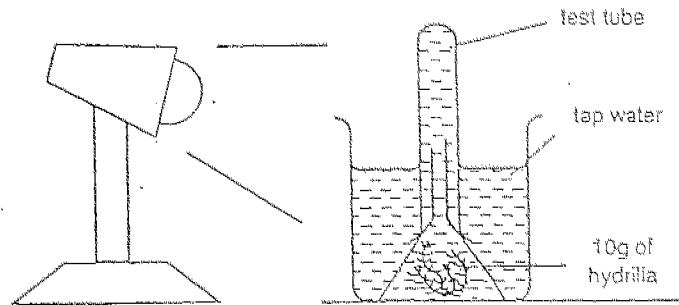
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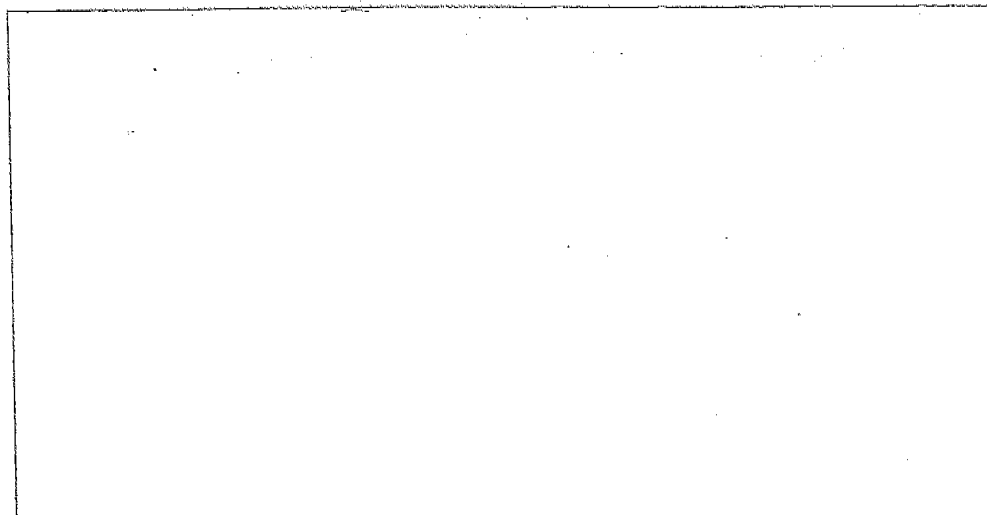
- 37 Reuben set up an experiment in a dark room as shown in the diagram below. After some time, he noticed that oxygen bubbles were collected at the top of the test tube. At the end of five hours, he measured the amount of oxygen produced by the hydrilla. He did this by noting the height of the air column in the test tube. He repeated the above procedures twice, each time with a different coloured light bulb.



- (a) What is the variable changed in this experiment? [1]

- (b) What is the aim of Reuben's experiment? [1]

- (c) Draw and label a control set-up needed for this experiment. [2]



38 The table below shows the statistics of our Solar System.

Planet	Distance from the sun (km)	No. of days taken for one revolution	Length of Day (in Earth days or hours)
Mercury	57,900,000	88	59 days
Venus	108,200,000	224	243 days
Earth	149,600,000	365	24 hours
Mars	228,000,000	686	24.6 hours
Jupiter	778,400,000	4329	9.8 hours
Saturn	1,427,000,000	10753	10.2 hours
Uranus	2,869,300,000	30660	15.5 hours
Neptune	4,497,000,000	60152	15.8 hours
Pluto	5,913,700,000	90411	6.4 days

- (a) What inference can you make about the distance of the planets from the sun and the number of days taken for them to make one revolution? [1]

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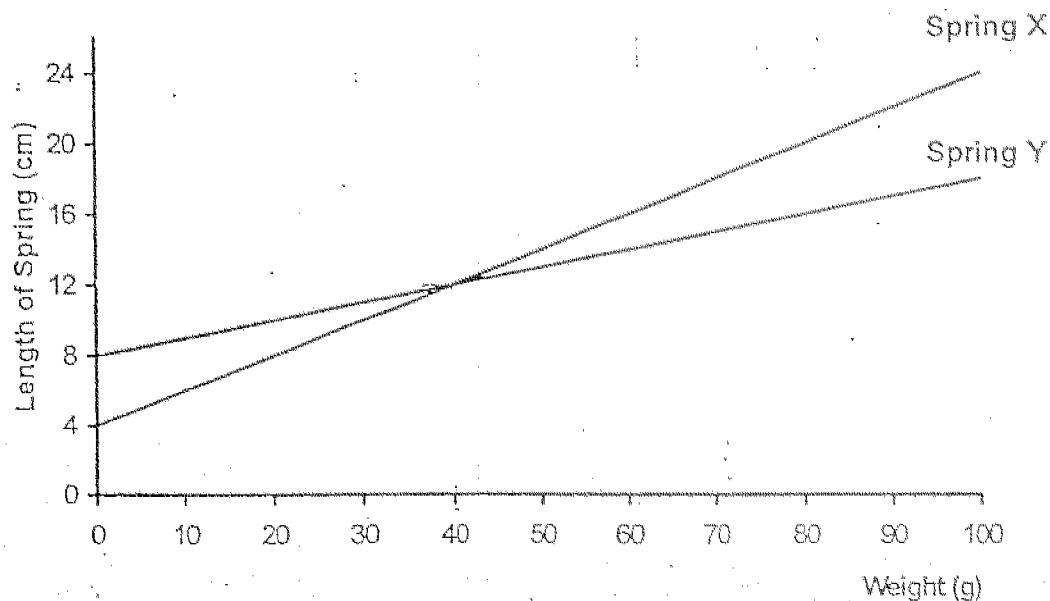
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- (b) What inference can you make about the number of days taken for the planets to make one revolution and their length of day? [1]

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- 39 Joel was given spring X and Mark was given spring Y. They had to find out the length of each of their springs when different weights were hung on it. The graph below shows the results.



- (a) What weight was hung on each of the springs when they were of identical lengths? [½]

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- (b) Which is the more elastic spring? [½]

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- (c) Explain your answer to (b). [1]

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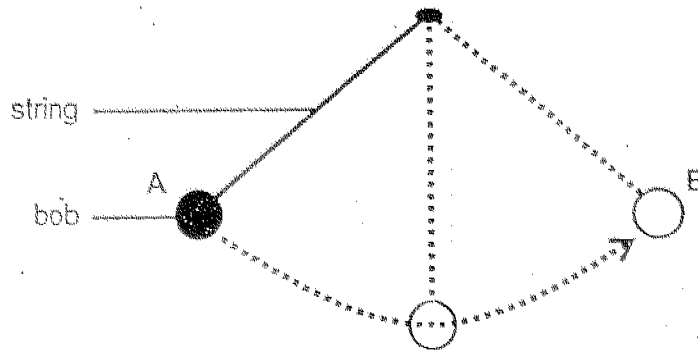


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- 40 A group of pupils carried out an activity to find out how long it would take for a pendulum to swing from A to B and back to A again. They repeated the experiment with strings of different lengths and bobs of different weights. The table below shows the results of their experiment.



Length of String (cm)	Time taken to complete 10 swings (seconds)		
	bob weighing 50 g	bob weighing 200 g	bob weighing 250 g
35	12.1	12.1	12.1
65	16.2	16.2	16.2
100	20.1	20.1	20.1
145	23.7	23.7	23.7

- (a) What affects the speed at which the pendulum swings? [1]

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- (b) What must be done so that the pendulum completes 10 swings in less than 12.1 seconds? [1]

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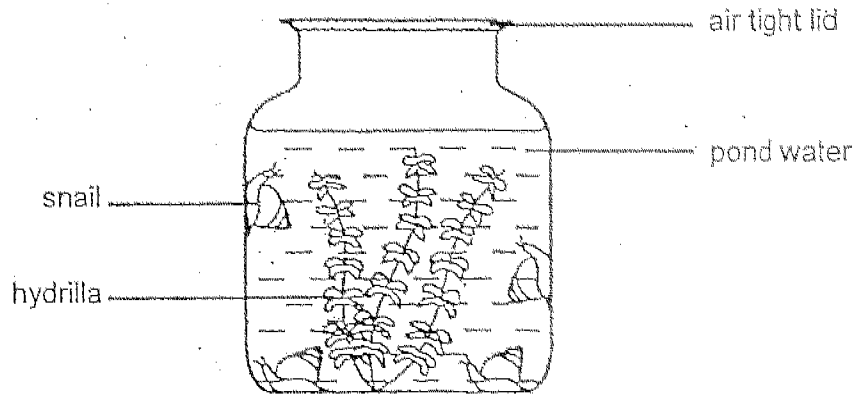


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- 41 Jonathan put four water snails and some hydrilla plants in a jar of pond water. He then sealed the jar and left it near an open window.



After a week, Jonathan observed that all the organisms in the jar were alive.

- (a) Explain the two ways in which the snails help the hydrilla to survive. [2]

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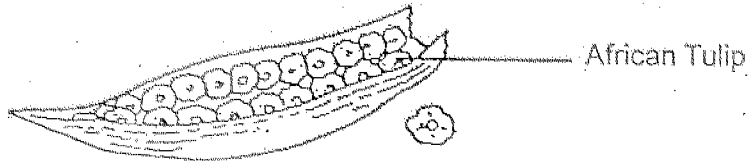
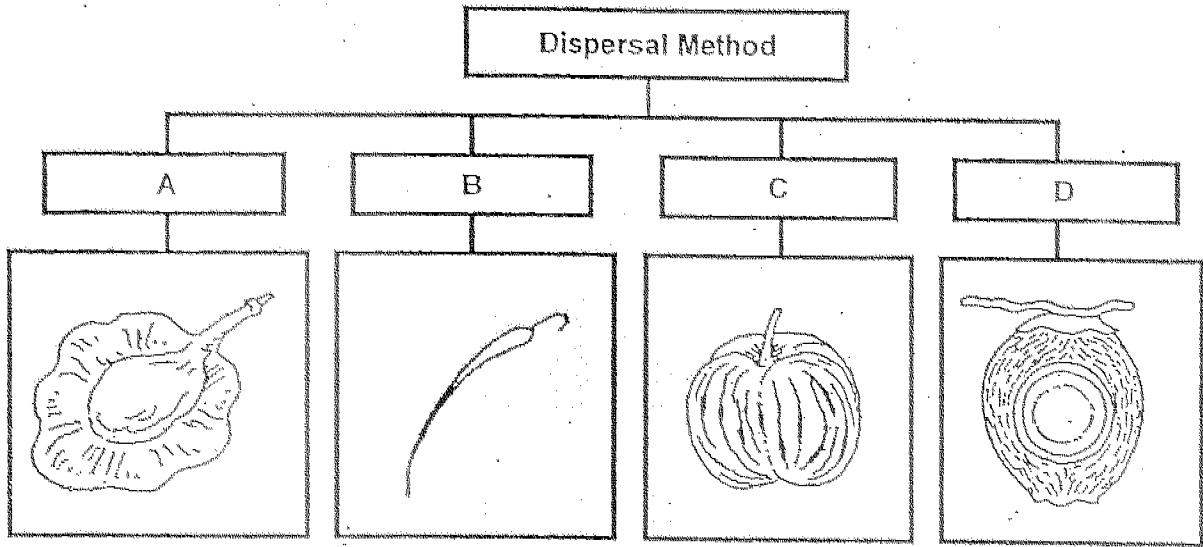
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- (b) Explain the two ways in which the hydrilla helps the snails to survive. [2]

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The table below shows how some fruits can be classified.



(a) The fruit shown above can be classified under two groups (A, B, C or/and D). Which are they? [1]

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(b) State two adaptations that the seed of the African Tulip has for dispersal. [1]

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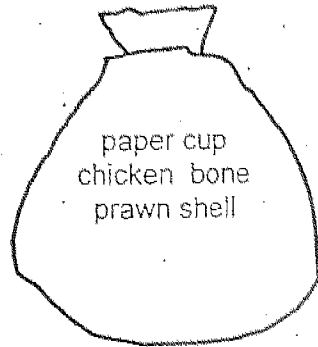


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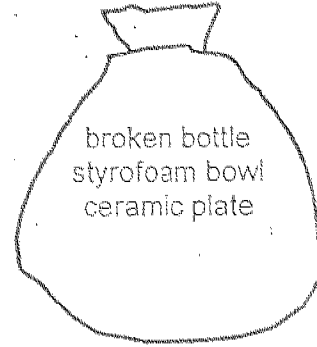


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- 43 In her effort to be environmentally friendly, Mrs Ang separated some household waste into 2 bags.



Bag A



Bag B

- (a) What property of materials did she use to separate them into two groups? [1]

Things in Bag A are \_\_\_\_\_

Things in Bag B are \_\_\_\_\_

- (b) In which bag would she dispose of some wooden chopsticks? Why? [1]

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- 44 Rajan prepared some dough using flour, sugar and water and shaped them into 3 rectangular lumps. In one of the lumps, he added yeast and in another lump, he added butter. He left the lumps in a warm place for 1 hour. Measurements of their heights were taken before and after the period and recorded in the table below.

		Lump A	Lump B	Lump C
Height (cm)	Before	50	50	50
	After	55	45	50

- (a) In which of the lumps (A, B or C) had the yeast been added? [1]

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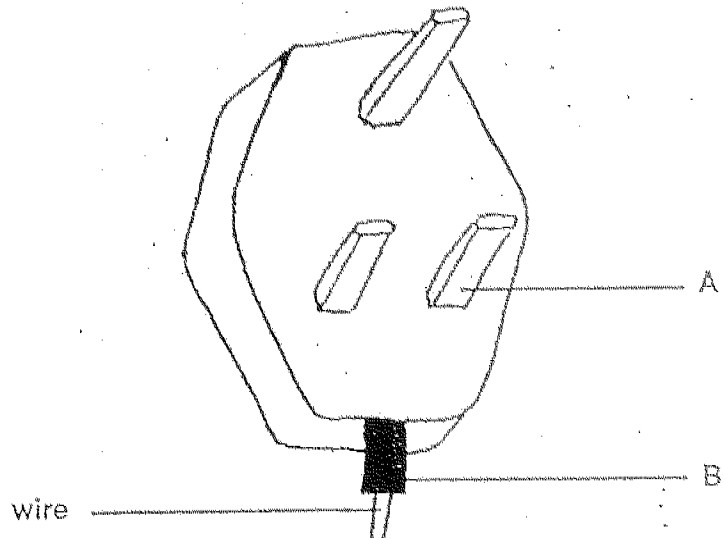
- (b) What happened to the yeast when it interacted with the water and sugar in the warm conditions? [1]

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45 Look at the picture of a three pin plug.



(a) Name the material that is used to make A and B. [1]

A is made of \_\_\_\_\_

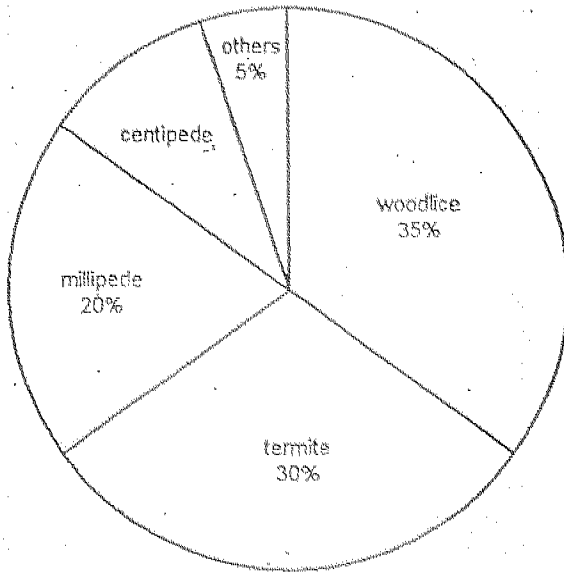
B is made of \_\_\_\_\_

(b) What property does material A have that makes it suitable for its function? [1]

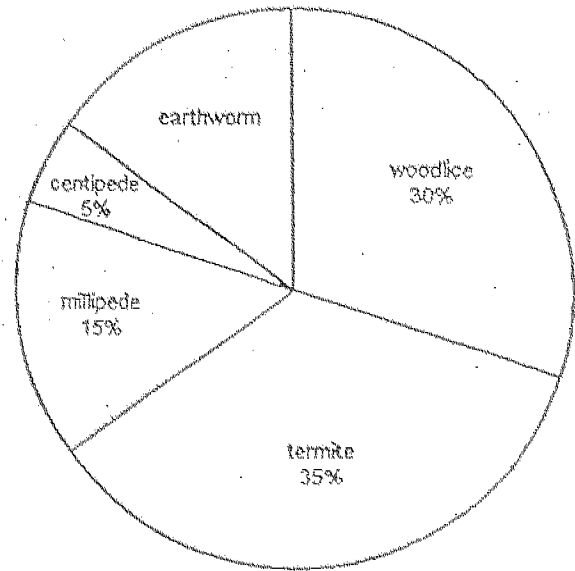
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46 The pie charts below show the percentage of animals in two leaf litter communities. The pie charts are not drawn to scale.



Leaf Litter A



Leaf Litter B

(a) Study the charts and state whether the statements that follow are True (T), False (F) or Not Possible to Tell (N). Complete the table by filling in T, F or N. [2]

(i)	In leaf litter A, there are three times as many termites as centipedes.	
(ii)	Leaf litter A has fewer centipedes than leaf litter B.	
(iii)	The biggest population of animals in leaf litter B is the woodlice.	
(iv)	There are more types of animals in leaf litter B than A.	

(b) Which animal is the predator in the leaf litter B? [1]

\_\_\_\_\_

(c) Why does the temperature within the leaf litter not change very much during the day? [1]

\_\_\_\_\_

\_\_\_\_\_

ANGLO CHINESE SCHOOL (JUNIOR)  
 ANGLO CHINESE SCHOOL (PRIMARY)  
 PSLE PRELIMINARY EXAMINATION 2004  
 SCIENCE

SIA 2

PRIMARY SIX

01. 4	11. 3	21. 1
02. 3	12. (4)	22. 2
03. 1	13. 1	23. 2
04. 1	14. 3	24. 1
05. (4)	15. 4	25. 2
06. 3	16. 4	26. 3
07. 3	17. 2	27. 4
08. 1	18. 4	28. 1 (3)
09. 4	19. 4	29. 1
10. 2	20. 3	30. 3

31) a) muscles

32) a) Cobra. Does not have a backbone.

b)



b) ----- earthworm -----

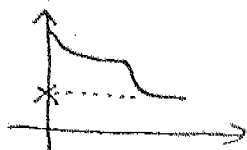
----- dolphin

33) a) Plastic strip A bent more than plastic strip B when the same weight was added.

b) The plastic strips would not bend that much and would be difficult to get a result.

34) a) It was becoming a solid

b)



c) Losing heat

Losing heat

35) temperatures

mercury

bulb

contract

36) a) windpipe

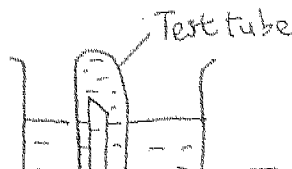
balloons

b) The blood entering the lungs has more carbon dioxide and the blood leaving the lungs has less carbon dioxide.

37) a) The different coloured light bulbs.

c)

b) It was to find out if different coloured



oxygen produced by the hydrilla.

- 38) a) As the distance of the planets from the sun increases, the number of days taken for them to make one revolution also increases.
- b) They have no relationship.
- 39) a) The weight was 40 g.
- b) Spring X,
- c) Spring X extended more than Spring Y when the same weight was hung on them.
- 40) a) The length of the spring affects the speed at which the pendulum swings.
- b) Reduce the length of the string until it is less than 35 cm.
- 41) a) It exhaled carbon dioxide for the plant to make food. Its waste acted as nutrients for the plant.
- b) It provided the snails with oxygen during photosynthesis, which the snails used for respiration.
- It provided the snails with food.
- 42) a) A and C
- b) It has a hard pod to split open and its seeds are small and light.
- Light and thin seeds and wing-like structure.
- 43) a) biodegradable  
non-biodegradable
- b) She would dispose it in A. It is biodegradable and can be broken down into simpler substances for plants to grow.
- 44) a) Lump A
- b) It reproduced and multiplied.
- 45) a) brass  
plastic
- b) It is a good conductor of electricity.
- 46) a) i) T      ii) N      iii) F      iv) F
- b) Centipede
- c) The leaf acts as an insulator of heat.