HENRY PARK PRIMARY SCHOOL
P6 PRELIMINARY EXAMINATION 2006
SCIENCE
PRIMARY SIX
BOOKLET A

Name: _____ ( ) Class: P6_____

Index No:_____

30 Questions

60 Marks

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

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

READ AND FOLLOW INSTRUCTIONS CAREFULLY.

ANSWER ALL QUESTIONS.

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.**

1. The properties of materials A, B, C and D are given in the table shown below.

Materials	Allows light to pass through	Conducts electricity	Can be repelled by a magnet	Can be attracted by a magnet
A		√	√	√
B	√	√		
C		√		√
D	√			

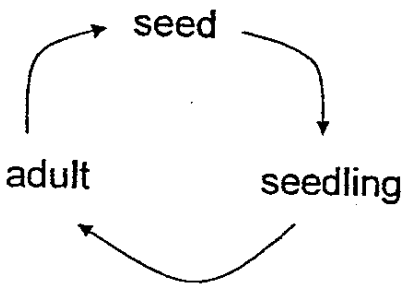
Which one of the following materials will be suitable for making the needle of a compass?

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

2 Which one of the following is a characteristic of both land and aquatic plants?

(1) All of them bear flowers.
(2) All of them grow towards sunlight.
(3) All of them store food in their roots.
(4) All of them use leaves to make food.

3 The diagram below shows the life cycle of a plant.



Which one of the following statements is **definitely true** about the plant?

(1) It will grow into a tree.
(2) It is a flowering plant.
(3) The seeds are dispersed by animals.
(4) It can be grown from other parts of the plant

4 Which of the following is made up of a single cell?

A a sperm
B an ovary
C a pollen grain
D an unfertilised egg

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

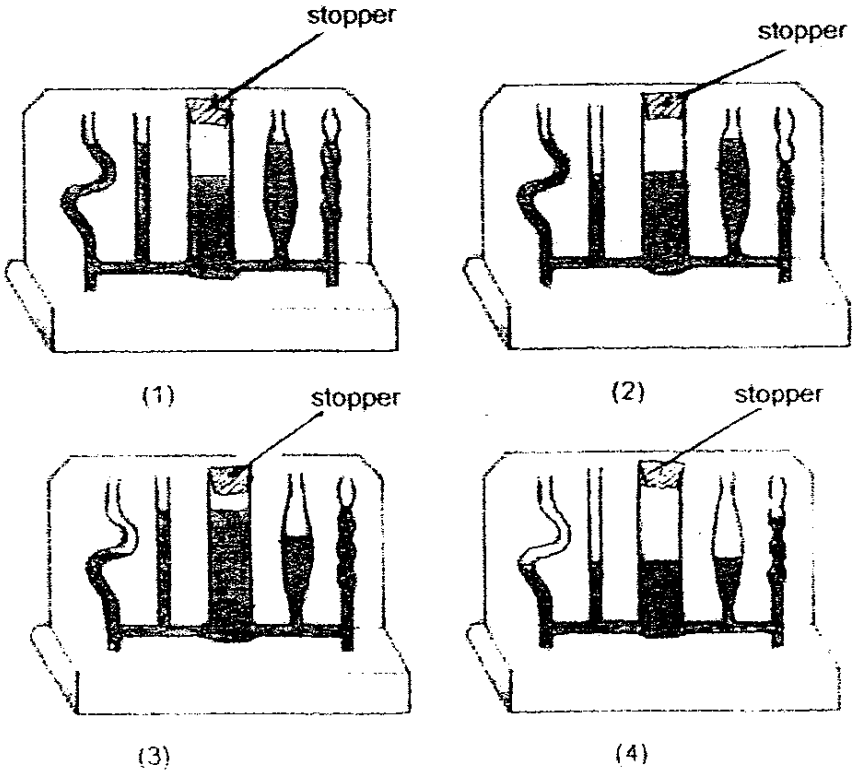
5 Farmer Cai wants to grow fruit trees from plant parts instead of growing them from seeds.

What is the advantage of growing fruit trees from plant parts instead of from seeds?

(1) The fruit will be sweeter than the parent plant.
(2) The fruit will have smaller seeds than the parent plant.
(3) The fruit will have the same quality as the parent plant.
(4) The fruit will take a shorter time to ripen than the parent plant.

6 A coloured liquid is poured into a communicating vessel which has a stopper covering the opening of the middle funnel.

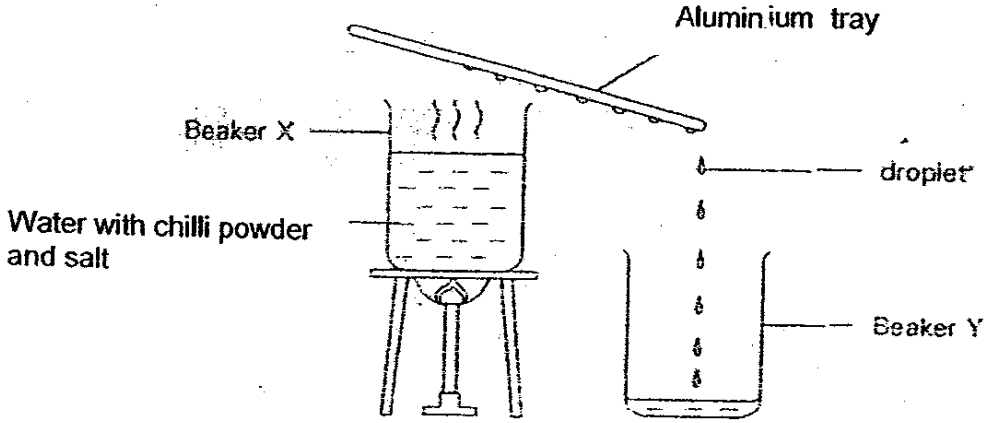
Which one of the diagrams shows how the liquid would have settled in the communication vessel ?



3

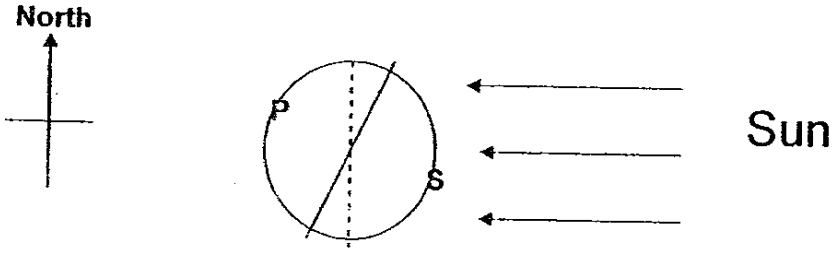
7 Beaker X contained some chilli powder, salt and water, all mixed together. The contents were heated until it boiled. An aluminium tray was then placed above Beaker X. The droplets that formed on the aluminium tray were collected in Beaker Y as shown in the diagram.

What would be the taste of the liquid in Beaker Y ?



(1) It would be salty.
(2) It would be spicy
(3) It would be tasteless.
(4) It would be spicy and salty.

8 The diagram below shows the positions of two towns, **P** and **S** , from two different countries .

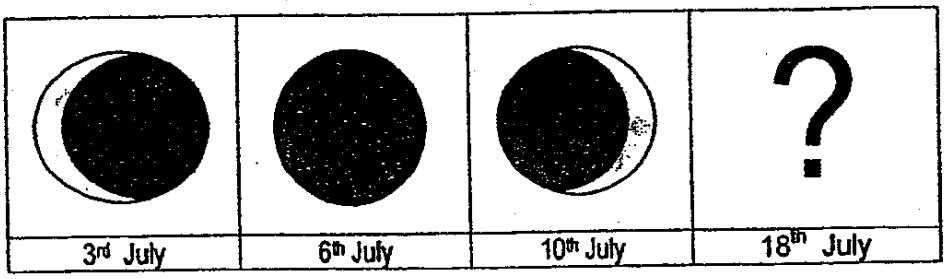


It is about 12 noon on 15 August 2006 in Town **S**. What time and date will it be in Town **P**?

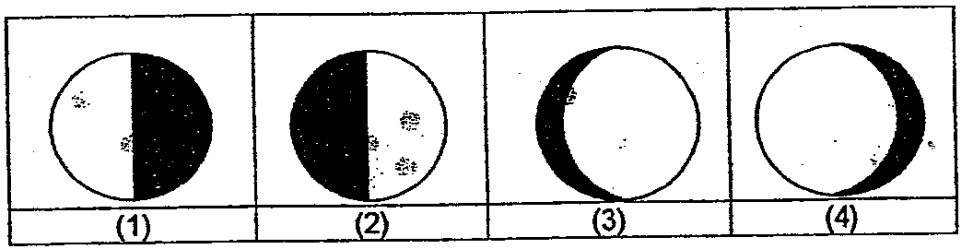
(1) About 6:00 am on 15 August 2006
(2) About midnight on 15 August 2006
(3) About 6:00 pm on 16 August 2006.
(4) About midnight on 16 August 2006.

4

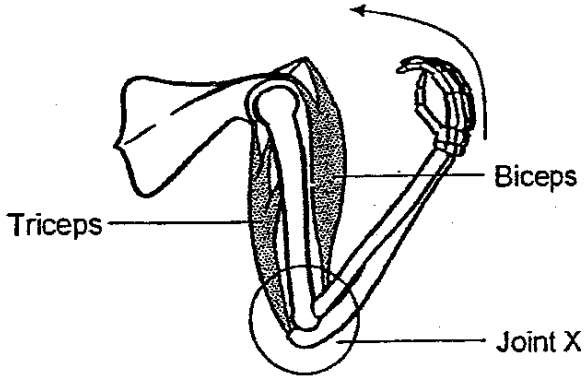
9 John noticed a crescent moon on 3rd July. He watched the moon on 4 nights and recorded the changes in the phases of the moon in the table below.



Which one of the following phases of the moon would he have seen on 18th July ?



10 The diagram below shows the bones and muscles involved when a man touches his shoulder.

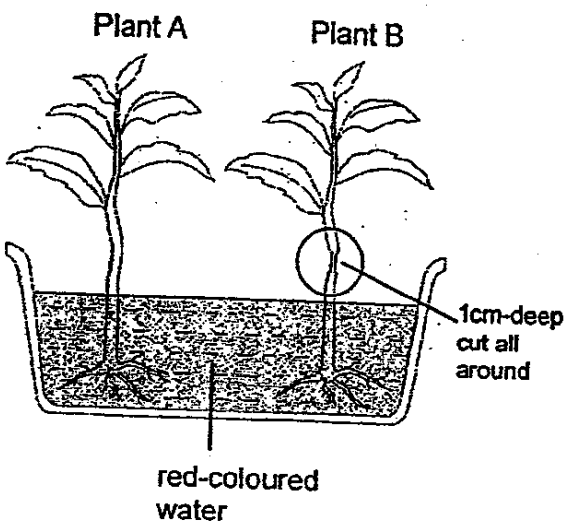


Which one of the following correctly shows the joint and the reactions of the muscles when the above action takes place?

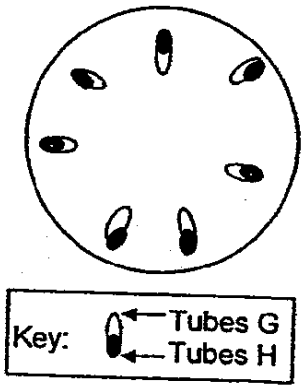
	Joint X	Biceps	Triceps
(1)	Hinge	Contracts	Relaxes
(2)	Hinge	Relaxes	Contracts
(3)	Ball and Socket	Contracts	Relaxes
(4)	Ball and Socket	Relaxes	Contracts

5

11. In an experiment shown below, Samy took two similar plants, Plant A and Plant B. He then cut 1cm deep around the stem of Plant B before placing both plants in a beaker of red-coloured water. After sometime, he found out that the leaves of Plant A turned reddish in colour but nothing happened to the leaves of Plant B.



Cross section of the stem



Study the cross-section of the stem which shows the different tubes.

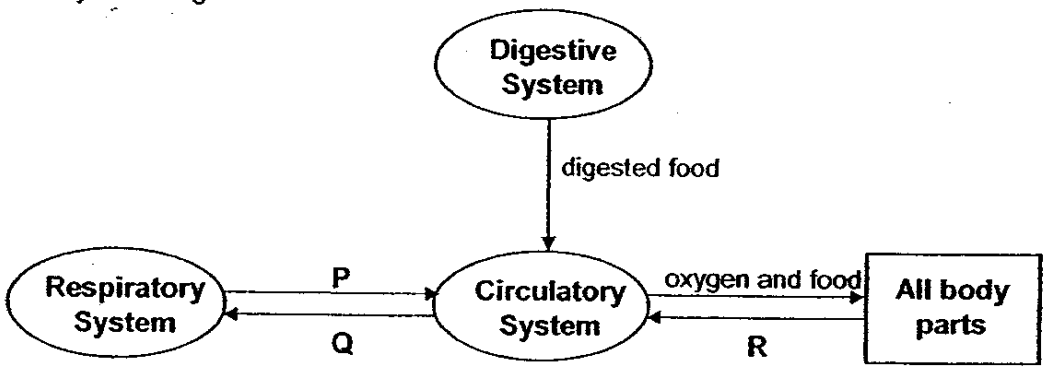
What can you conclude from Samy's experiment ?

A	The tubes led from the roots to the leaves.
B	Tubes G helped to transport water to the other parts of the plants.
C	Tubes H helped to transport water to the other parts of the plants.

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

6

12 The diagram below shows how the circulatory, digestive and respiratory systems in our body work together.



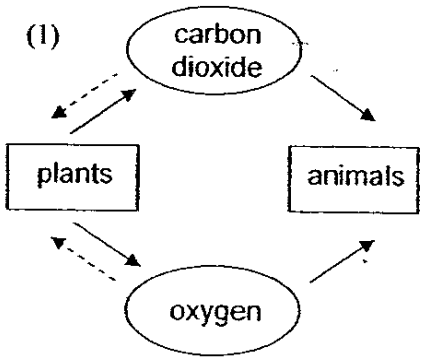
Which one of the following correctly shows the gases represented by P, Q and R?

	P	Q	R
(1)	carbon dioxide	oxygen	carbon dioxide
(2)	carbon dioxide	carbon dioxide	oxygen
(3)	oxygen	carbon dioxide	carbon dioxide
(4)	oxygen	carbon dioxide	oxygen

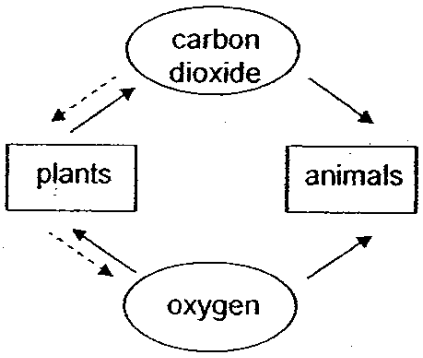
13 The diagrams below shows the exchange of gases during respiration and photosynthesis.

Which one of the following diagrams shows correctly the exchange of gases between living things and its surroundings during daylight?

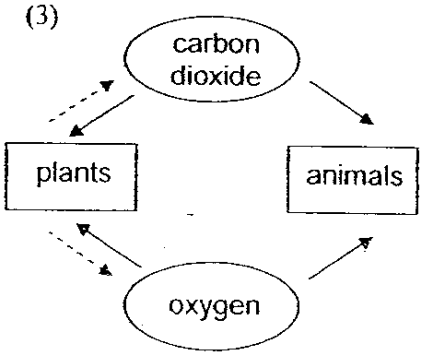
(1)



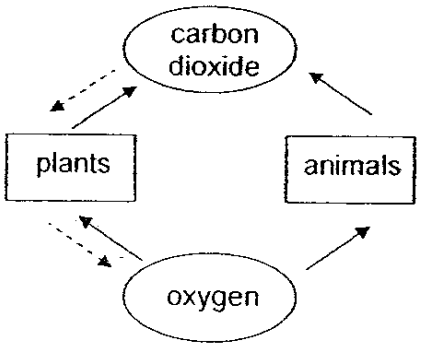
(2)



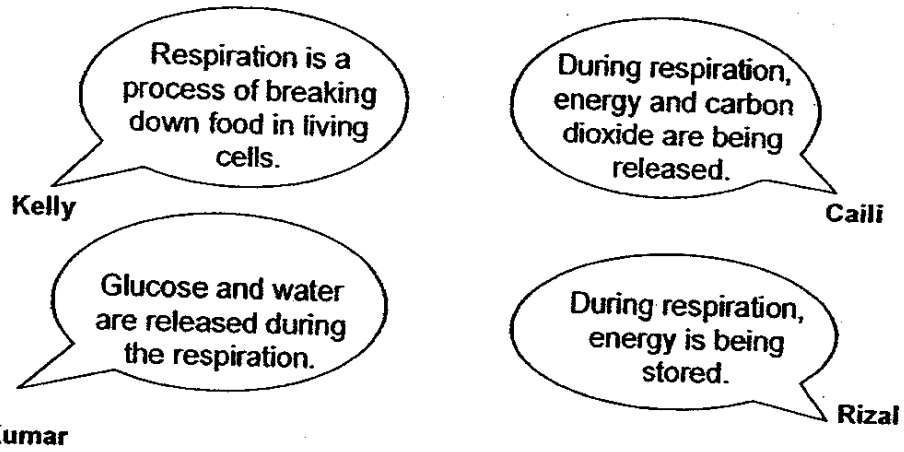
(3)



(4)



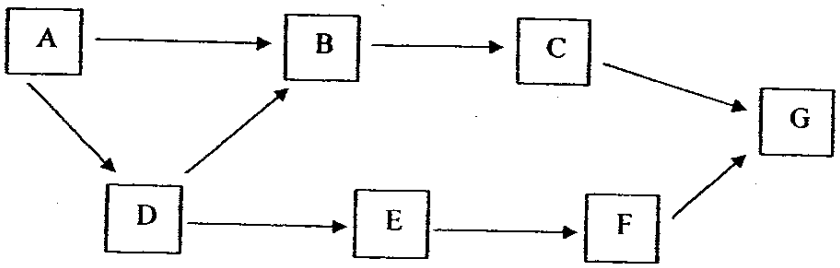
14 The children below are making some statements on the process of respiration.



Who have made incorrect statements about respiration?

(1) Kelly and Rizal
(2) Caili and Kumar
(3) Kumar and Rizal
(4) Kelly and Kumar

15 How many different complete food chains are there in the food web below?



(1) 2
(2) 3
(3) 4
(4) 5

16 Which of the following structural adaptations enable camels to live in hot deserts?

A long eyelashes to block out sand
B hump to store water
C large ears to remove excess body heat
D large padded feet so that it will not sink into the sand

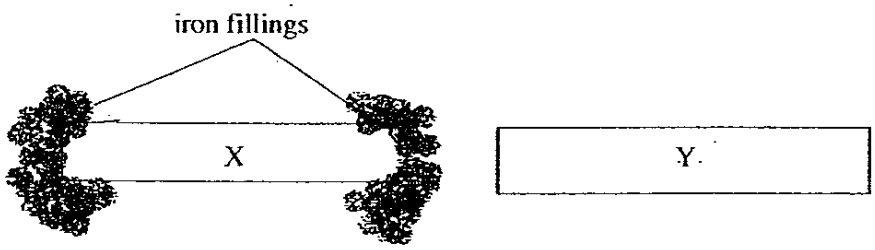
(1) A and D only
(2) B and C only
(3) B and D only
(4) A, C and D only

17 Which of the followings are **not** forms of telecommunication?

A conversation by string phones
B internet
C sms by phones
D drawings

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

18 The diagram below shows what happens when 2 objects, X and Y, being placed very close to each other on a piece of paper laced with iron filings.



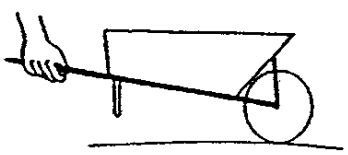
Which one of the following statements is/are definitely true?

A object X is a magnet
B object X is made of copper
C object Y is made of non-magnetic material
D object Y is made of magnetic material

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

19 Which one of the following simple machines requires the effort applied to move a greater distance than the load?

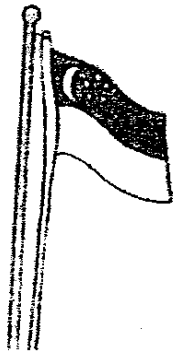
(1) wheelbarrow



(2) broom

(3) row-boat

(4) flag pole



1.0

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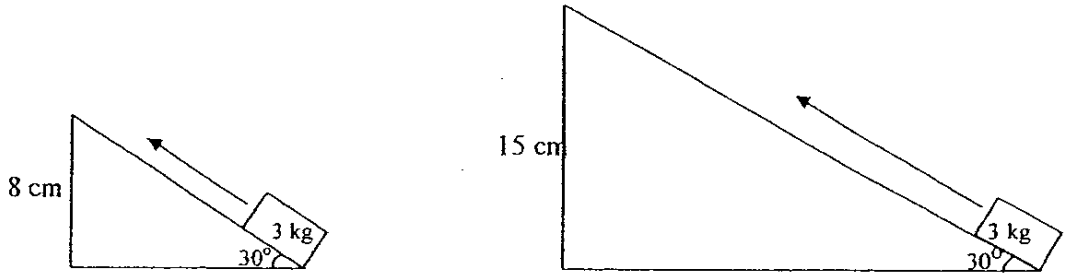


Setup A

Setup B

The diagram above shows setups A and B. The load in each setup is being pulled up to the top of the inclined plane of the same surface.

Which one of the following statements about the inclined plane system is **false**?

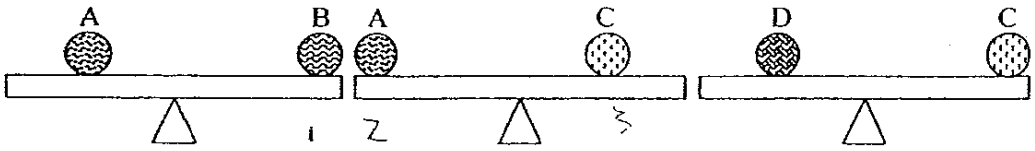
(1) The amount of effort used is the same for both setups A and B.

(2) The higher the load is moved up the inclined plane, the more heat is generated between the surfaces in contact.

(3) The load in setup B gains more gravitational potential energy at the top of the inclined plane than the load in setup A.

(4) More effort is used to pull the load in setup A than in setup B if they are to reach the top of the inclined plane at the same time

21 Balls A, B, C and D which are of the same size but made of different materials are balanced on 3 different levers as shown below.



Arrange the balls according to their weights in an ascending order if all the levers above are balanced.

(1) B, A, D, C

(2) B, A, C, D

(3) D, A, B, C

(4) D, C, A, B

Which one of the following effects about forces is true?

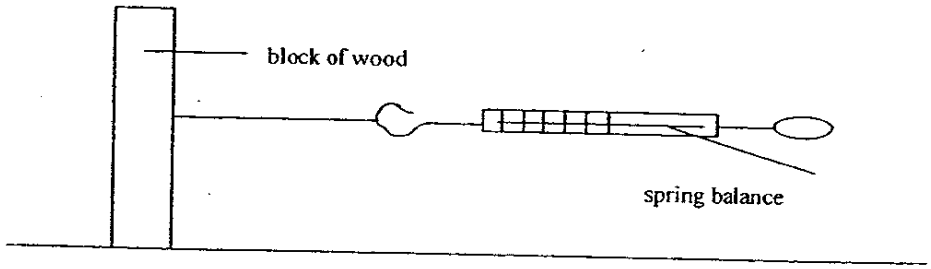
A Forces can change the mass of objects.
B Forces can change the position of objects.
C Forces can change the direction of moving objects.
D Forces can change the shapes of objects .

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

23 Jude wanted to find out if the size of surface area in contact with the table affects the amount of friction generated between them. He performed the experiment with apparatus as shown in setup A and setup B, keeping all other variables the same.

Setup A

Setup B



The table below shows the amount of effort used to move the blocks in both setups.

	1st attempt (N)	2nd attempt (N)	3rd attempt (N)	Average (N)
Setup A	0.42	0.43	0.43	0.427
Setup B	0.42	0.42	0.43	0.423

What conclusion can he make from his results?

(1) A smaller surface area in contact with the table produced a larger amount of friction.

(2) A smaller surface area in contact with the table produced a smaller amount of friction.

(3) The size of surface area in contact with the table did not affect the amount of friction generated

(4) The size of surface area in contact with the table affected the amount of friction generated randomly.

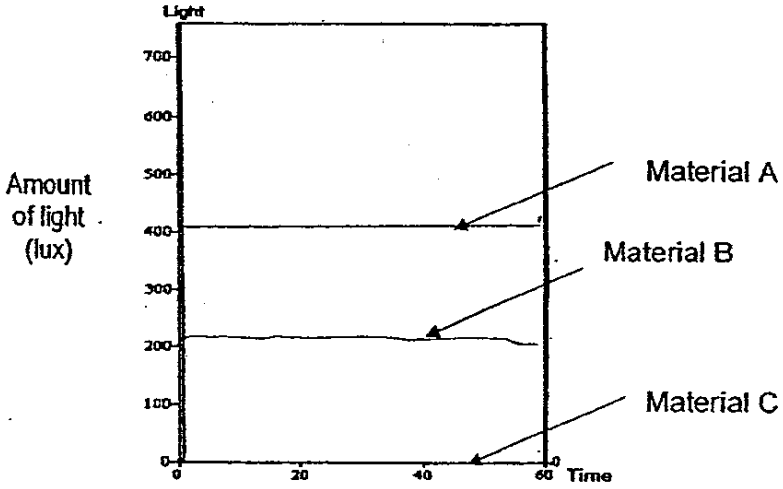
24 The table below shows the characteristics of mangoes produced by four trees.

Tree A	Tree B	Tree C	Tree D
small seeds	big seeds	small seeds	big seeds
sour	sour	sweet	sweet
juicy	not juicy	not juicy	juicy

Which 2 trees when cross-pollinated will most likely produce sweet mangoes?

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

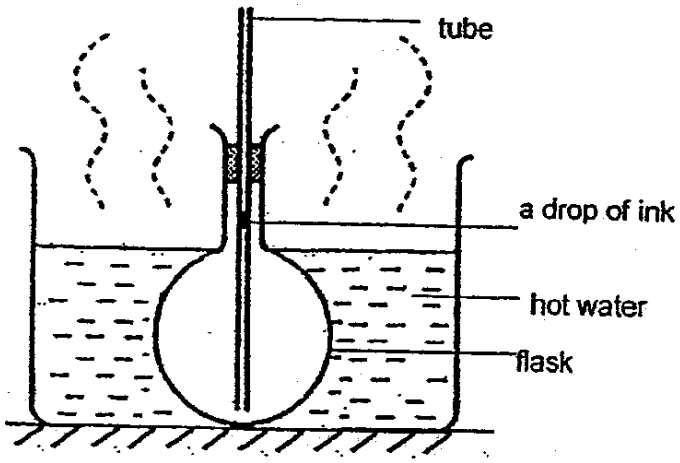
25 The graphs below were plotted using a datalogger to show the amount of light from the same light source passing through three different materials.



Which one of the following is most likely to be Material A, B and C?

	Material A	Material B	Material C
(1)	cardboard	tracing paper	glass
(2)	paper	clear plastic	ceramic
(3)	clear plastic	frosted glass	clay
(4)	ceramic	wood	tissue paper

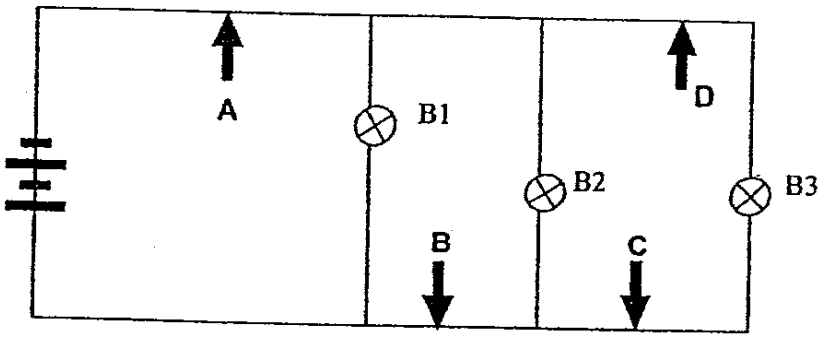
26 In the experiment below, when the flask was immersed in hot water, the drop of ink in the tube dropped slightly first before it rose.



What could have caused the ink to drop first before rising?

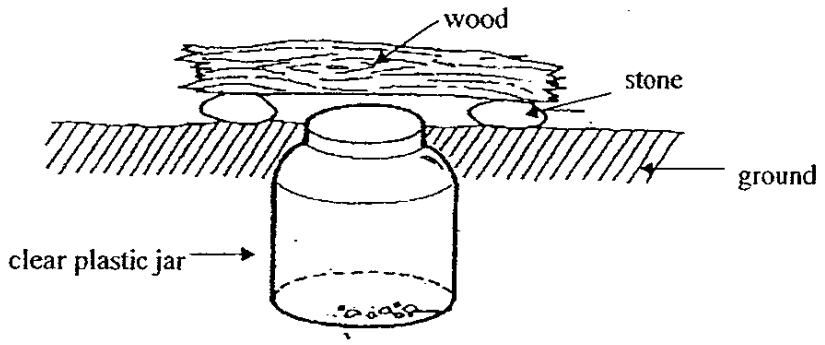
(1) The air in the flask expanded first followed by the flask.
(2) The flask expanded first followed by the air in the flask.
(3) The air in the flask expanded first followed by the water.
(4) The water expanded first followed by the air in the flask.

27 In the circuit below, where will you put the switch so that only one bulb will light up when the switch is opened?



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

28. Henry dug a hole in his garden and placed an open jar in it as shown above. He left the jar overnight and checked the jar the next morning. He found three animals in the jar .



Which of the following animals would Henry have found in the jar?

A ant
B aphid
C millipede
D cricket

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

29 In an experiment, a group of pupils wanted to find out whether chilli or tomato seeds would grow into seedlings faster. They put an equal number of chilli or tomato seeds in each pot A, B, C and D and watered them daily with equal amount of water.

They recorded what they did in the table below.

Pot	Type of seed	Type of soil	Place where pot was kept
A	chilli	sand	in the sunlight
B	chilli	garden soil	in the sunlight
C	tomato	garden soil	in the sunlight
D	tomato	garden soil	in the shade

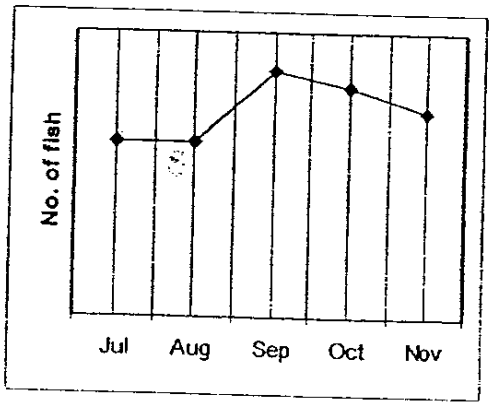
Based on the table, which 2 pots should the pupils compare in order to ensure a fair test?

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

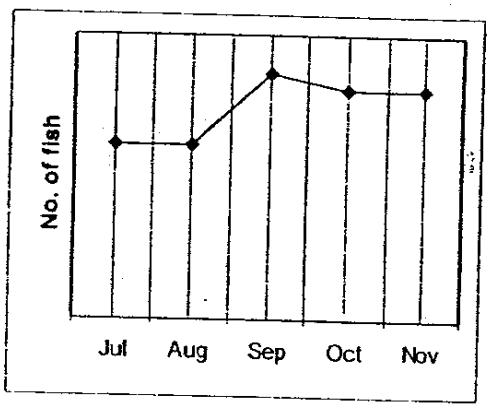
30 Peter kept a record of the number of births and deaths of the fish in his aquarium at the end of each month. His observations are shown in the following table.

August	There were no births and no deaths.
September	Rate of birth > rate of death.
October	Rate of birth < rate of death.
November	There were no births but a few fish died.

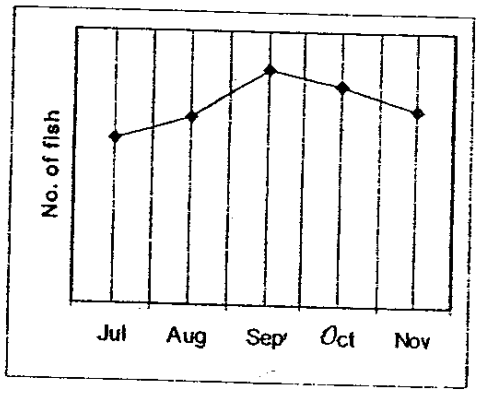
Which one of the following graphs correctly shows Peter's observations?



(1)



(2)



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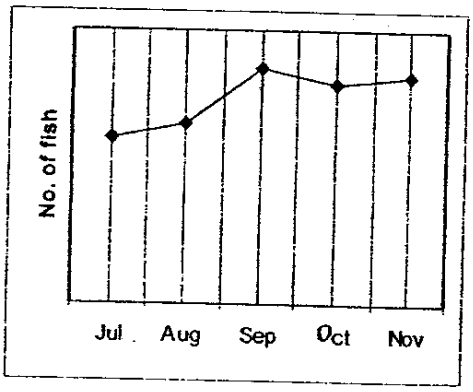


(4)

HENRY PARK PRIMARY SCHOOL
P6 PRELIMINARY EXAMINATION 2006
SCIENCE
PRIMARY SIX
BOOKLET B

Name:_____(20) Class: P6_____

Index No:_____

16 Questions
40 Marks

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

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

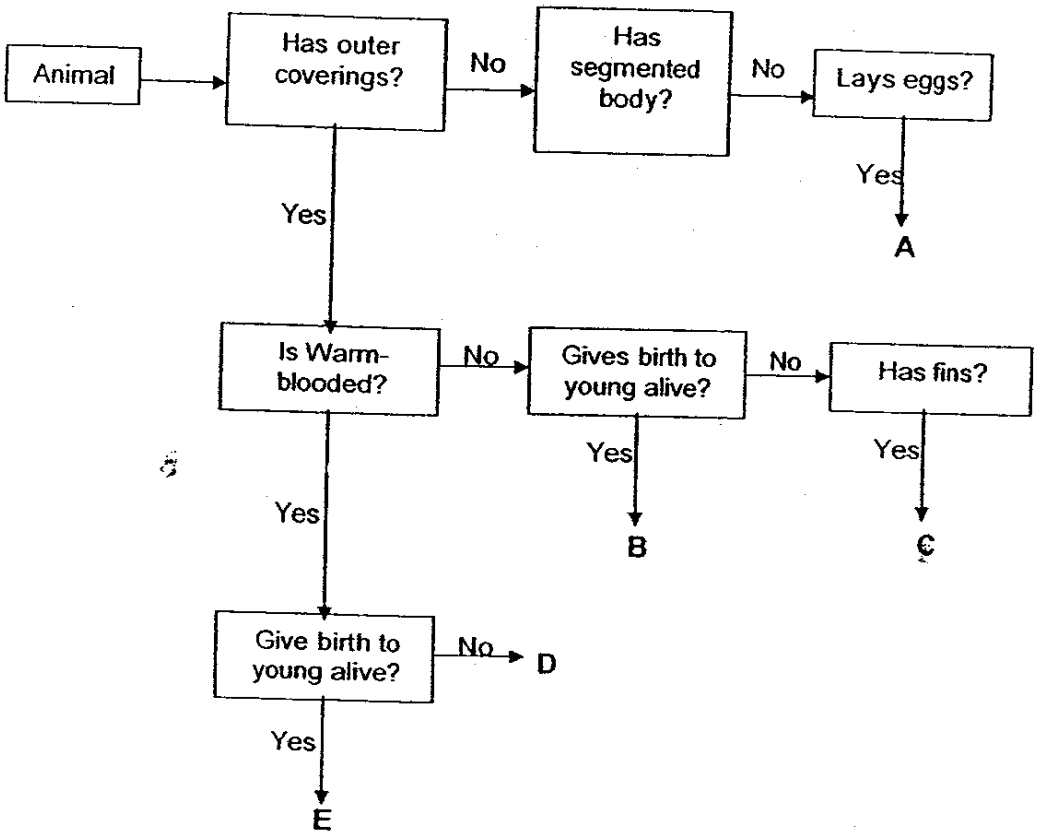
READ AND FOLLOW INSTRUCTIONS CAREFULLY.

ANSWER ALL QUESTIONS

PART 2 (40 marks)

Write your answers to questions 31 to 46 in the spaces given.

31. Study the flowchart below.



(a) Based on the flow chart above, state two physical features of animal C.[2]

(i) _____

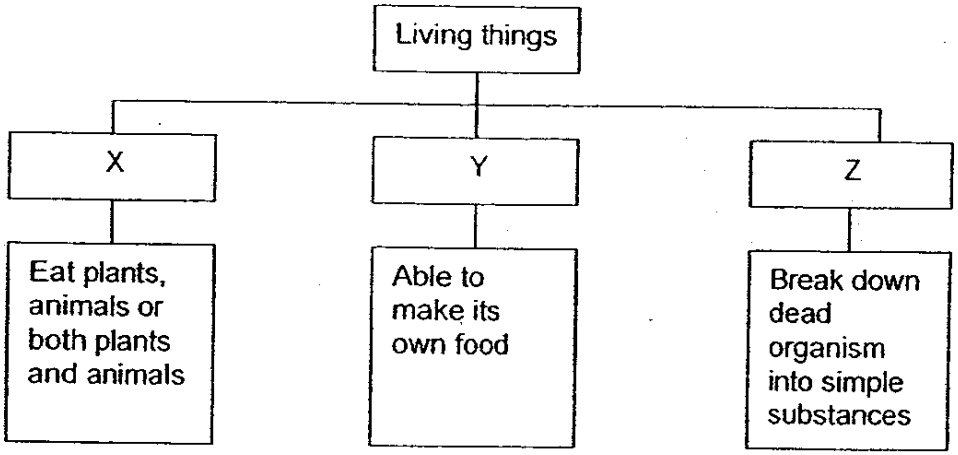
(ii) _____

(b) Which letter, **A, B, C, D** or **E** is most likely to represent a mammal that lays eggs ? [1]

_____

3

32



The classification chart above describes how living things obtain their food. What group of living things does each of the letter represent? [2]

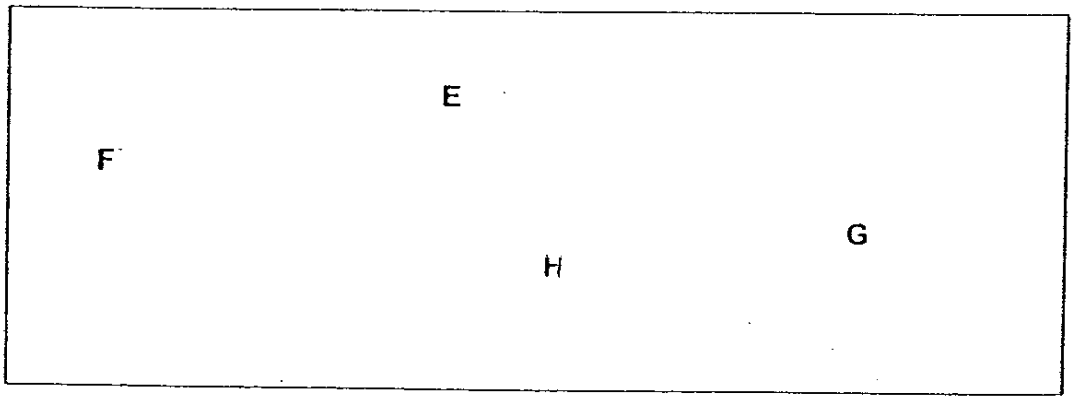
X _____ Y _____

Z _____

33 The alphabets below represent organisms in a food web.

(a) Draw the arrows to show the food relationship based on the information given in the table [1]

Organism	
E	feeds on G and H
F	is eaten by G
G	feeds on H
H	feeds on F



(b) Which organism is likely to be a plant ? _____ [1]

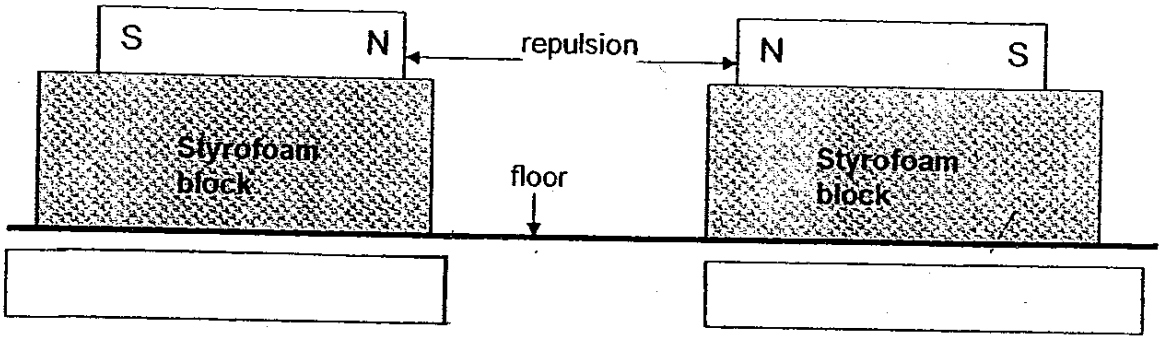
(c) W hich organism is likely to be an omnivore ? _____ [1]

5

18

19

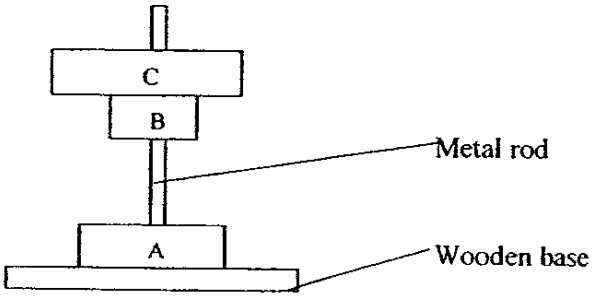
34



Two strong identical magnets are mounted on two styrofoam blocks as shown above. The north-pole of each magnet is facing each other such that the force of repulsion pushes the blocks away from each other.

On the same diagram, **draw 2 arrows in the boxes provided** to indicate the direction of frictional force that the floor exerts on both blocks. [2]

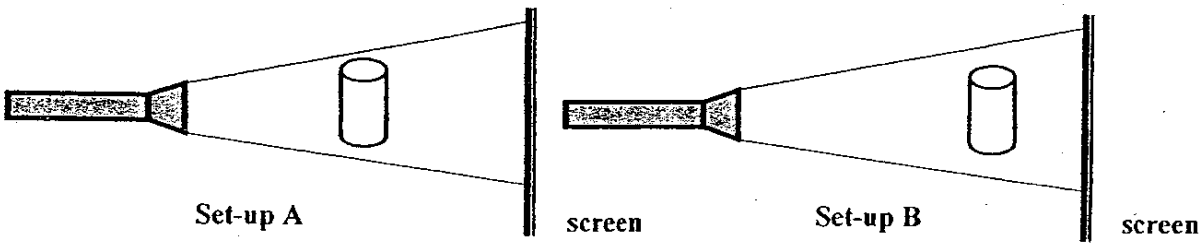
35 The diagram below shows what happens when 3 rings, A, B and C are slotted through a metal rod. The rings made of different materials.



Put a tick in the correct box for each statement. [2]

	Statements	True	False	Not possible to tell
a)	Object B is a magnet			
b)	Object A is a magnet			
c)	Object C is made of magnetic material			
d)	Object B is made of aluminium			

4



A cylinder is arranged in two different ways in front of a light source to cast two different shadows on the screen.

(a) How is the shadow formed in set-up A different from that formed in set-up B? [1]

_____

_____

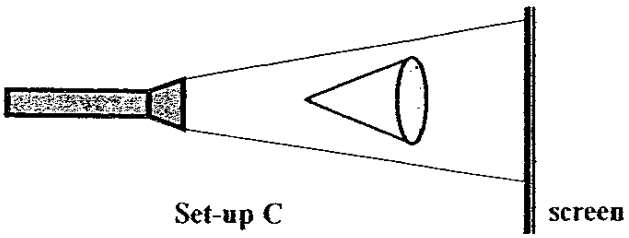
(b) Give a reason to your answer in (a). [1]

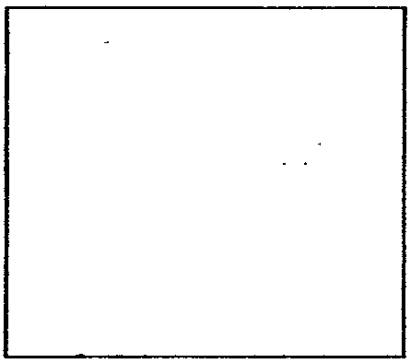
_____

_____

(c) Now study set-up C where a cone has been arranged to form a shadow on the screen.

Draw accurately in the box provided, the shadow formed in set-up C. [1]

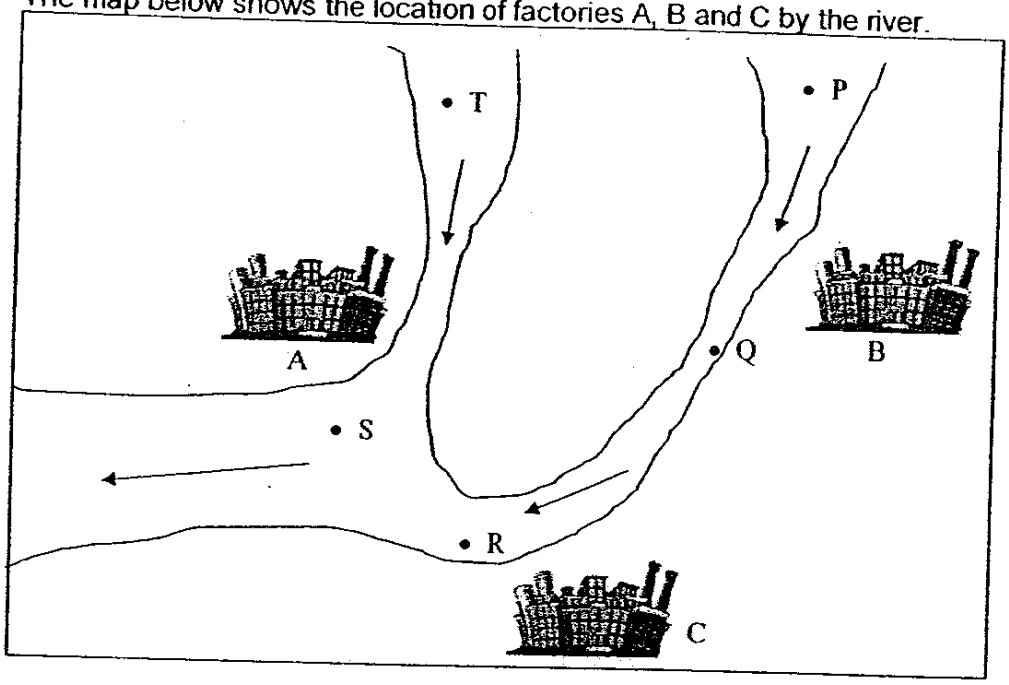




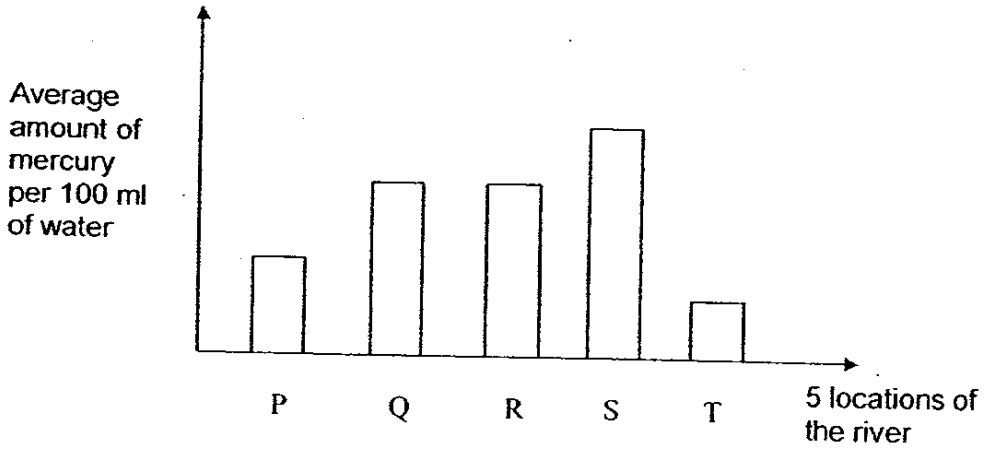
3

24

37 The map below shows the location of factories A, B and C by the river.



It is suspected that these factories discharge mercury waste into the river, and water samples have been collected from 5 locations of the river (P, Q, R, S and T) for analysis. Results obtained are plotted in the graph below.



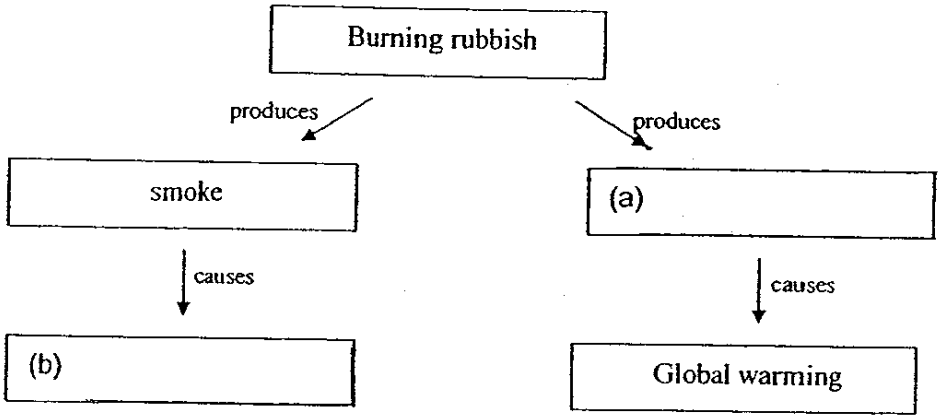
a) Suggest the safest location for fishing. Why? [1]

b) Based on the map and graph above, which factory A, B or C was the least likely to discharge mercury waste into the river? [1]

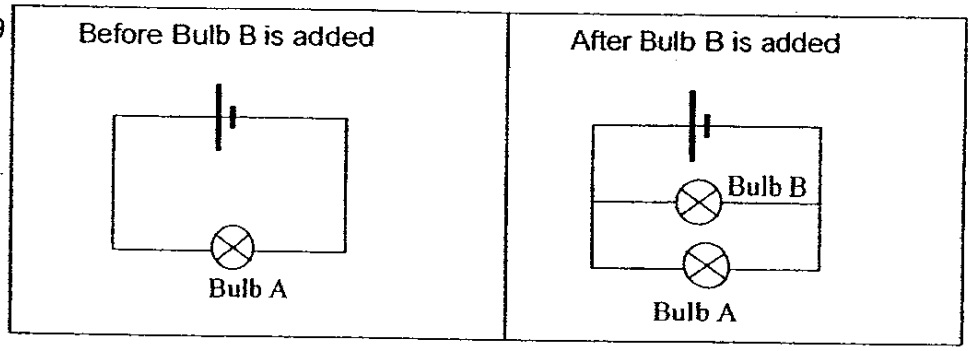
c) Explain your answer in part (b). [1]

3

38 Fill in the blanks with appropriate words. [2]



39



a) What will happen to the brightness of Bulb A if an identical Bulb B is added to the circuit as shown above?[1]

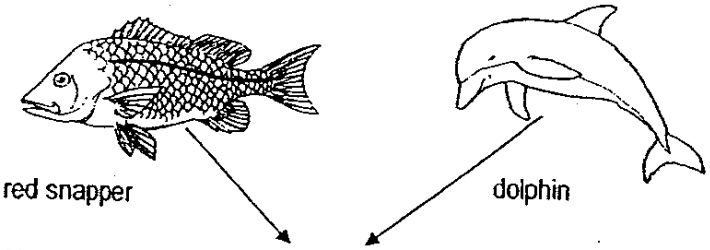
---

b) Draw another circuit diagram in the space below showing another way in which Bulb B can be added to Bulb A .[1]

4

23

40. The pictures below (not drawn to scale) show a red snapper and a dolphin. Compare them to show their similarity and differences.



red snapper

dolphin

How similar is the structural adaptation for life in the water ? (1m)

Red snapper

Dolphin

How different with regards to

Method of breathing [1]

How different with regards to

Body covering [1]

3

41 Mr Li carried out an experiment with cockroaches and 3 different brands of insecticide X, Y and Z.

a) He sprayed on equal amount of insecticide into 3 similar tanks, one for each brand of insecticide.
b) Next he put a batch of 20 adult cockroaches into each of the tanks.
c) Then, he covered the tanks for an hour.
d) At the end of the hour, he counted the number of cockroaches that were still alive.
e) He removed all the 20 cockroaches from the first batch.
f) He repeated steps **(b)** to **(e)** with two other batches of cockroaches.

The table below shows the number of cockroaches alive at the end of each hour

Tank with Insecticide	**Number of cockroaches still alive after**		
	First 1 hour 1st batch	Next 1 hour 2nd batch	Final 1 hour 3rd batch
X	0	0	14
Y	0	0	12
Z	0	9	15

(a) What was Mr Li trying to find out from his experiment? [1]

_____

_____

(b) Why did he have to wait for an hour before counting the cockroaches that were still alive? [1]

_____

_____

(c) Based on Mr Li's experiment, which brand of insecticide would you buy if you have cockroaches in your home? Explain why. [1]

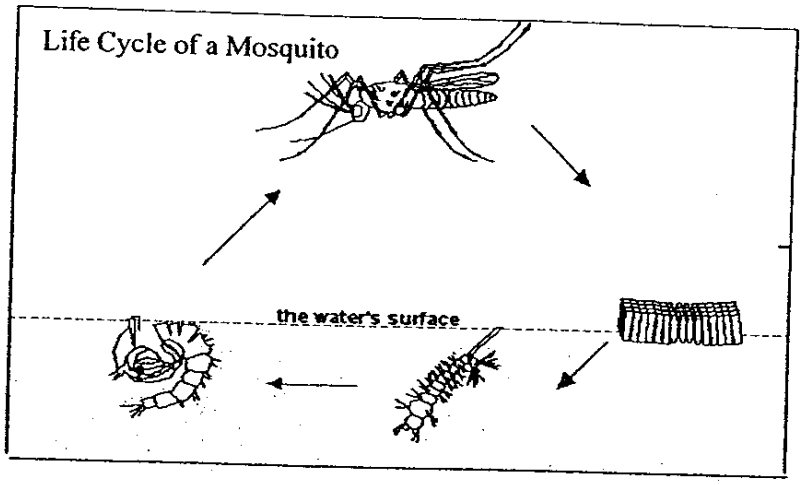
_____

_____

3

25

42 Mosquitoes are harmful animals that spread diseases to Man. The best way to get rid of them is to get rid of any stagnant water.



(a) Based on the diagram above, explain how getting rid of stagnant water prevent mosquitoes from breeding. [1]

(b) Kim Seng found some young of a mosquito in a cavity on the tree trunk of his favourite mango tree.

Suggest a practical method that Kim Seng could use to get rid of the young of the mosquito without cutting down the tree. [1]

(c) Explain how the method which you have suggested in (b) helps to prevent mosquito from breeding. [1]

3

26

43 The melting and boiling points of four different substances are shown below.

Substances	Temperature at which it melts	Temperature at which it boils
W	0°C	100°C
X	27°C	677°C
Y	38°C	688°C
Z	112°C	444°C

What will be the state of each of the substances at 105°C ? Put a tick (√) in the table below. [2]

Substances	Solid state	Liquid state	Gaseous State
W			
X			
Y			
Z			

44 Dave wanted to find out how the temperature of water affects the rate at which a sugar cube dissolved. He then set up his experiment as shown in the table below.

Beakers	No.of sugar cube	Temperature of water	Amount of water
A	1	40°C	300 ml
B	1	80°C	300 ml
C	2	40°C	300 ml
D	2	80°C	300 ml

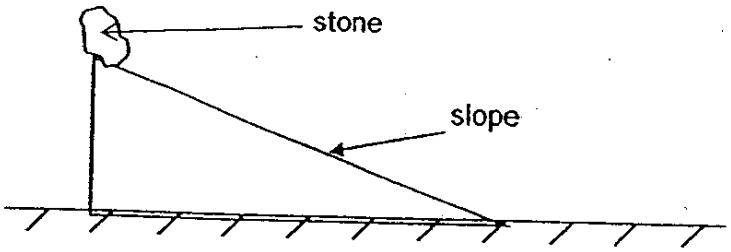
(a) What should he measure in order in order to see how the temperature of water affects the rate at which sugar cubes dissolve? [1]

(b) Which beakers should Dave compare? [1]

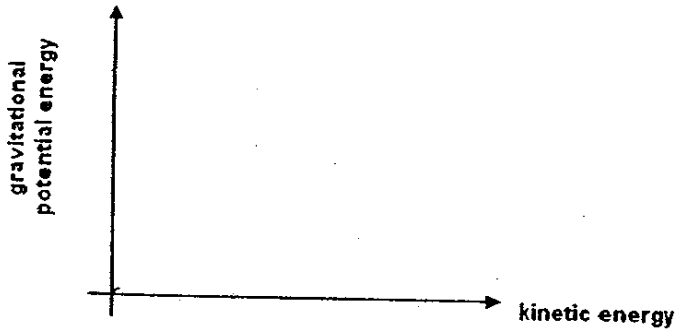
(c) What should Dave do to ensure that the results of his experiment are reliable? [1]

27

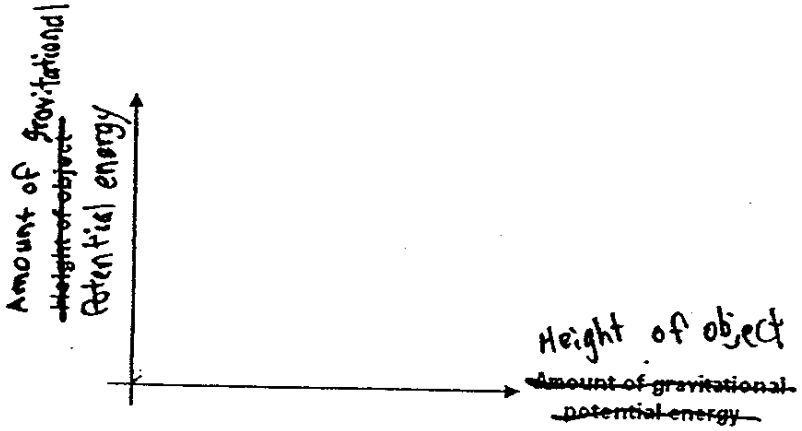
45. Look at the diagram below. A stone has been placed at the top of the slope.



(a) Draw in the graph below to show the correct change in gravitational potential energy and kinetic energy of the stone as it rolls down the slope to the floor.[1]



(b) If the stone is left to roll on slopes of different heights, draw in the graph below to show the **relationship** between the **position of the stone at different heights** and the **amount of gravitational potential energy the stone has.** [1]



2

28

46 After watching a video on the circulatory system of human beings, Betty compared the differences between the circulatory system of a human being and that of a plant. She wrote them down in a table in her Science journal as shown below.

Human Being	Plant
• Has an organ(heart) • Has blood vessels • _____ _____ _____ • _____ _____	• Does not have an organ • Has small tubes. • _____ _____ _____ • _____ _____

Complete the table by adding another difference that Betty would have written in the Science journal.[2]

2

29
end.

Henry Park Primary School

Primary 6 Science Preliminary Exams (2006)

(ANSWER KEY)

SECTION A : (60 MARKS)

Qn no.	Ans
1	1
2	2
3	2
4	3
5	3
6	1
7	3
8	2
9	3
10	1

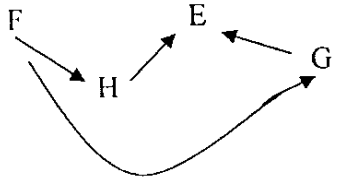
Qn no.	Ans
11	3
12	3
13	4
14	3
15	2
16	1
17	1
18	2
19	1
20	4

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

SECTION B (40 MARKS)

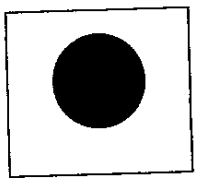
Qn No.	Answers
31a (i)	Animal C has outer coverings
(ii)	Animal C has fins
31b	D

32	X = Animals Y = Plants, Z = Decomposers

33a	
33b	F
33c	G

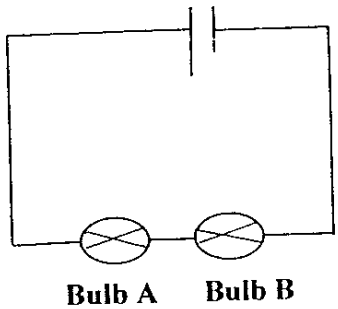
34	

Qn No.	Answers
35a	True
35b	True
35c	Not possible to tell
35d	False

36a	The shadow formed in set-up A would be bigger than the shadow in set-up B.
36b	The cylinder in set-up A is placed nearer to the light source than in set-up B, thus the shadow formed in set-up A is bigger
36c	

37a	Location T. It has the least average amount of mercury per 100ml of water compound to the rest.
37b	Factory C
37c	All other tested parts after factories A and B showed higher mercury content than before.

38a	Carbon dioxide
38b	Air pollution

39a	No change in brightness / still as bright as before
39b	

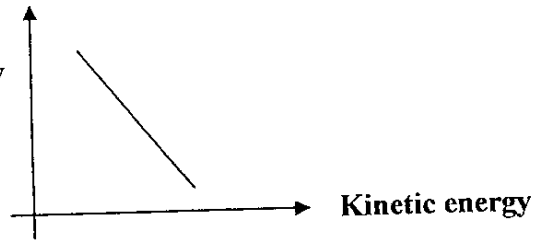
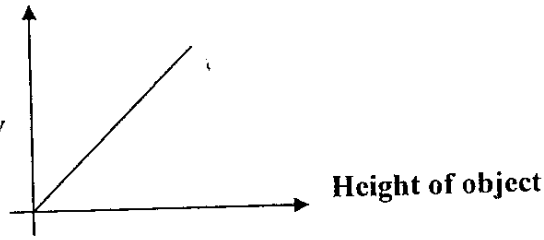
40	They both have fins
	Red Snapper : Gills, Scales
	Dolphin : Scales, Hairs

Qn No.	Answers
41a	He was trying to find out which insecticide can kill the most cockroaches
41b	He had to wait for the effect of the insecticide to take place.
41c	I would buy insecticide Y. It killed the most number of cockroaches among the insecticides in the same amount of time.

42a	As mosquitoes breed in stagnant water, they will not be able to survive in fresh water if all the stagnant water has been gotten rid of.
42b	Pour oil on the surface of the cavity.
42c	B filling the cavity with materials that do not allow water to collect will prevent mosquitoes from breeding.

43a	W = Gaseous State X = Liquid States Y = Liquid State Z = Solid State

44a	He should measure the time taken for the cube to dissolve.
44b	Dave should compare beakers A and B, beaker C with D
44c	Repeat the experiments a few times and take an advantage.

45a	
45b	

46a	Human Being	: Has a two-way circulatory system.
	Plant	: Has a one-way circulatory system.