南洋小學

NANYANG PRIMARY SCHOOL

PRIMARY 6 SCIENCE

Preliminary Examination

2008

BOOKLET A

Date : 21 August 2008

Duration : 1 h 45 min

Name : _____ ( )

Class: Primary _____ ( )

Marks Scored:

Booklet A :		60
Booklet B :		40
Total :		100

Parent's signature: .....

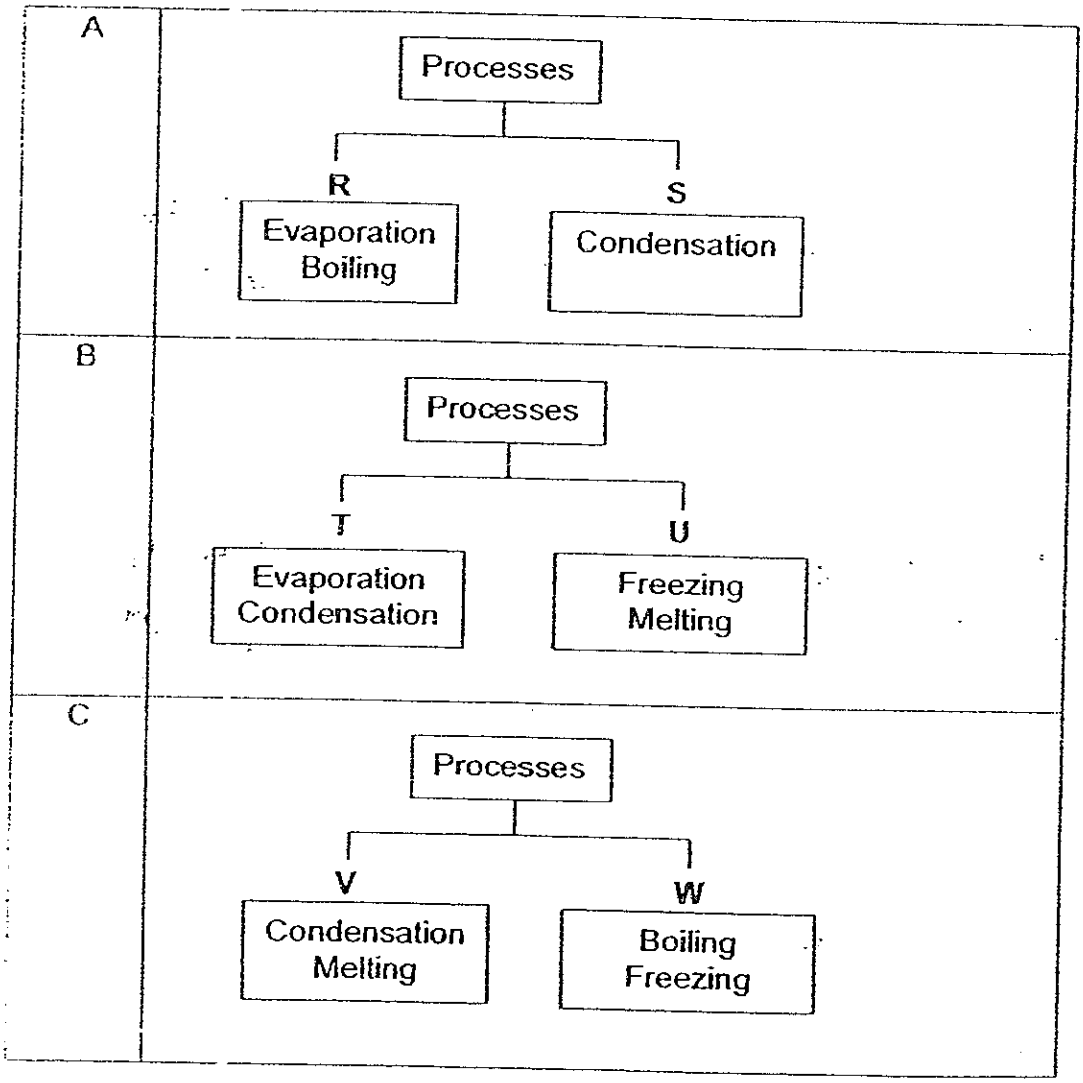
DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
FOLLOW ALL INSTRUCTIONS CAREFULLY.

Booklet A consists of 24 printed pages.

Section A (30 x 2 marks = 60 marks)

For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). **Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet provided.**

1 The following classification charts classify processes which involve the same changes in states of water. The processes were classified into different groups, R, S, T, U, V and W.



Which of the following classification charts show(s) processes that are classified correctly?

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

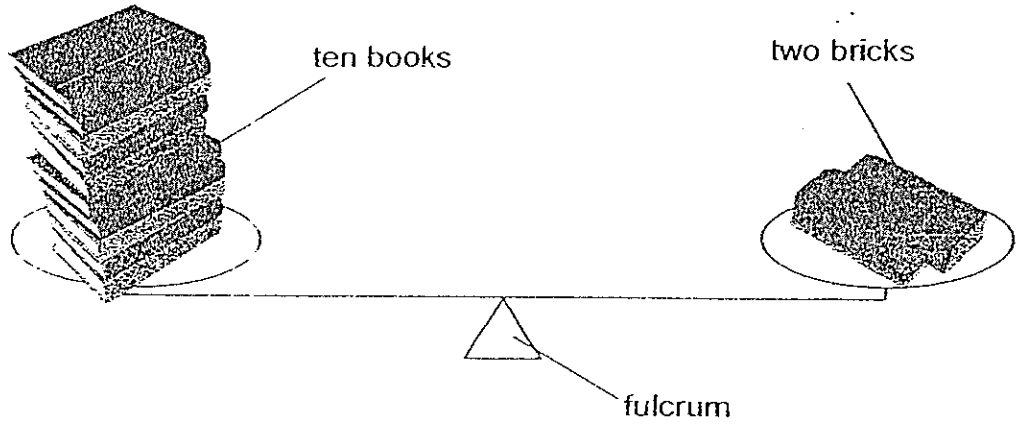
2 Xing Hui was given five objects as listed below.

- raincoat
- cooking pot
- magnifying lens
- rubber band
- floor tile

She grouped the objects into two groups, A and B. Group A has three objects and Group B has two objects. Which one of the following properties did she use to group the objects?

(1) Magnetic property
(2) Flexibility
(3) Heat conductivity
(4) Electrical conductivity

3 Two identical bricks can balance ten identical books on a beam balance with a fixed fulcrum as shown below.



Which one of the following statements is incorrect?

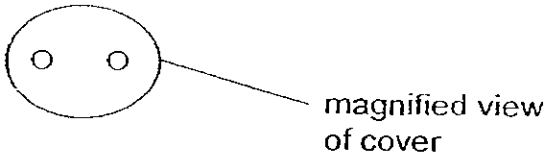
(1) The mass of one brick is greater than the mass of one book.

(2) The total weight of the two bricks is the same as the total weight of the ten books.

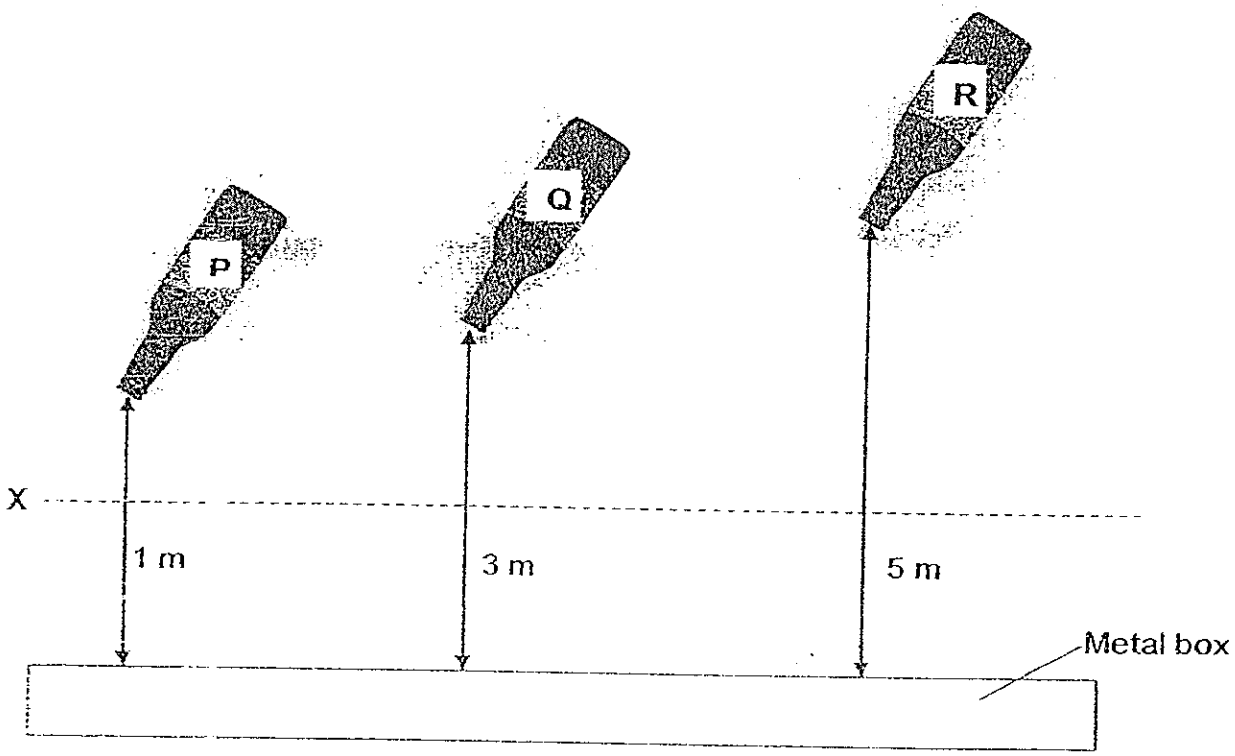
(3) The total volume of the two bricks is the same as the total volume of the ten books.

(4) The two bricks can still balance the ten books when the beam balance is placed on the moon.

4. Three similar bottles, P, Q and R, were filled to the brim with water. The opening of each bottle was fitted with a similar cover which had two holes as shown below.



The bottles were tilted at the same angle but held at different heights from a metal box.



Water dripped onto the metal box and after 15 seconds, the bottles were inverted upright. Which of the following statements are true?

A. Water flows out from bottles P, Q and R at the same rate.

B. Water from bottle P produced the loudest sound upon hitting the metal box.

C. Water from bottles P, Q and R possessed the same amount of kinetic energy at Point X.

D. Water in bottles P, Q and R possessed gravitational potential energy and kinetic energy when the bottles were tilted.

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

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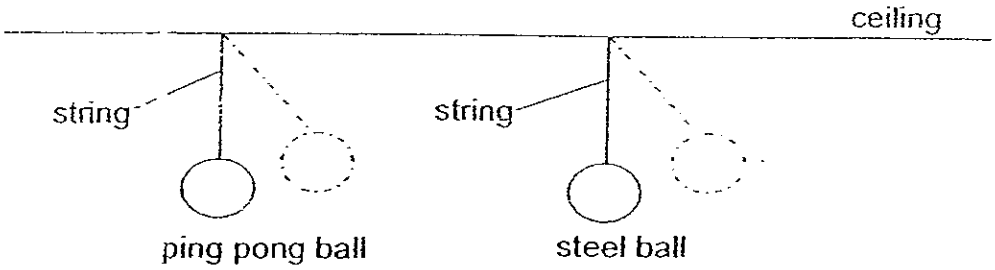
5. Hassan set up an experiment as shown below. Both the ping pong ball and steel ball were of the same size.



He lifted both the ping pong ball and steel ball to the same height, released them and allowed them to swing. He used a stopwatch to record the time needed for each of the ball to come to a stop. Which one of the following is Hassan's aim of the experiment?

(1) To find out if the steel ball is stronger than the ping pong ball.

(2) To find out if the mass of the ball affects the time it takes to come to a stop.

(3) To find out if the amount of gravitational energy affects how fast each ball swings.

(4) To find out if the angle of elevation affects the time it takes for each ball to come to a stop.

6. Zhi Yang placed a light sensor in a completely dark room. He shone torchlight W at the light sensor and recorded his results in the table below. He repeated the experiment with three torchlights X, Y and Z.

Torchlight	Intensity of light in room when torchlight is switched off (lux)	Intensity of light in room when torchlight is switched on (lux)
W	0	55
X	0	30
Y	0	55
Z	0	70

Which of the following statements correctly explain Zhi Yang's observations?

A. Torchlight Z is bigger than torchlight X.

B. Torchlight Z gave out more heat than torchlight W.

C. Torchlight W and torchlight Y used the same number of batteries.

D. When torchlight X and torchlight Y were placed at the same distance from the wall, and Zhi Yang's hand blocked the light, torchlight Y allowed a darker shadow of his hand to be formed.

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

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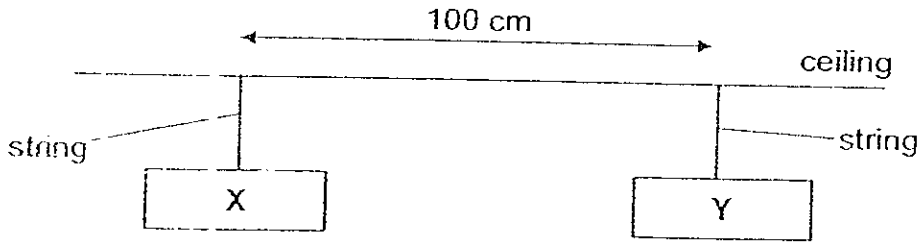
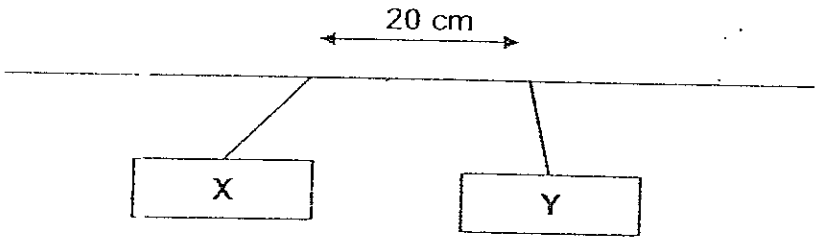
7. Two objects, X and Y, were suspended in mid air as shown below. The strings were placed 100 cm apart from each other.



When the distance between them was reduced to 20 cm, the following observation was made.



Which of the following statements is/are correct?

A. Both object X and object Y are magnets.

B. No gravitational force is acting on object X.

C. Object X has a greater magnetic force compared to object Y.

D. More elastic spring force is acting on object Y compared to object X.

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

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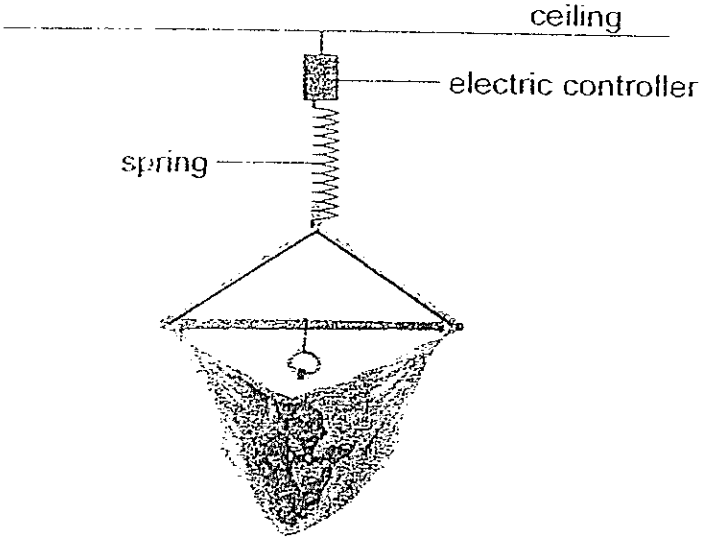
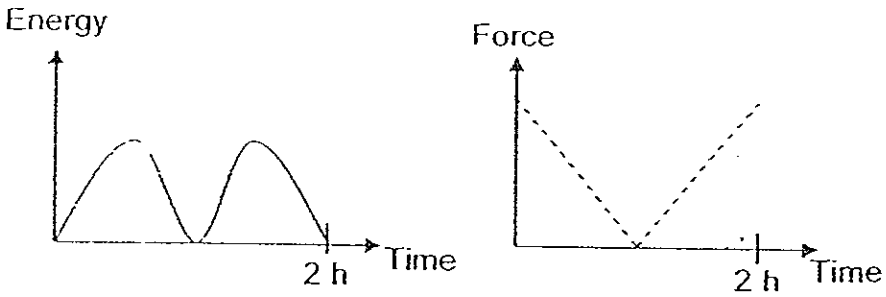
8. The picture below shows an electric baby hammock that will move the baby up and down to the same height to put the baby to sleep.



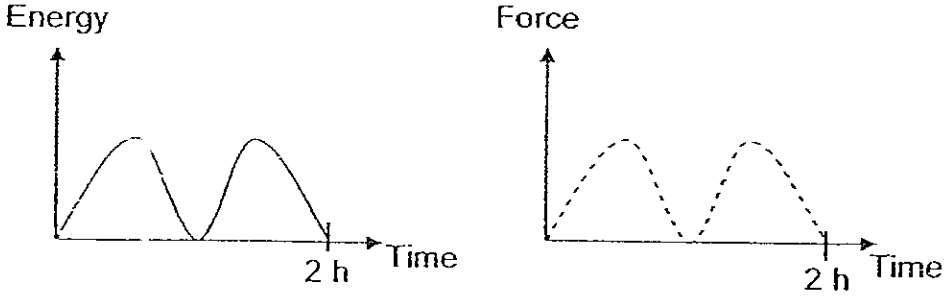
The electric controller was set to move the spring up and down for a period of two hours. Which one of the following pairs of graphs correctly shows the gravitational potential energy possessed by the baby and the gravitational force that is acting on the baby for the two hours?

Key:
Gravitational Potential Energy ————
Gravitational Force - - - - - - - - - - - -

(1)



(2)



Please turn over to page 8 for options 3 and 4.

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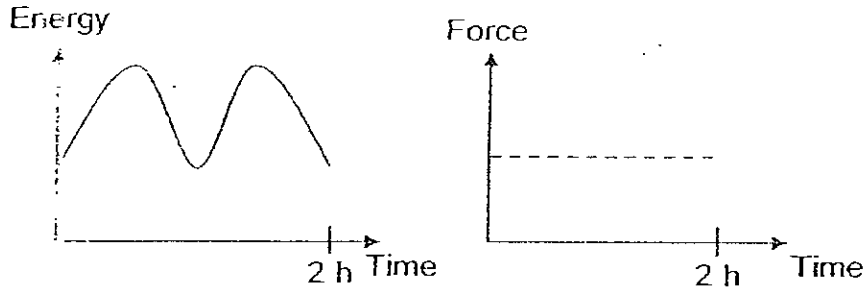
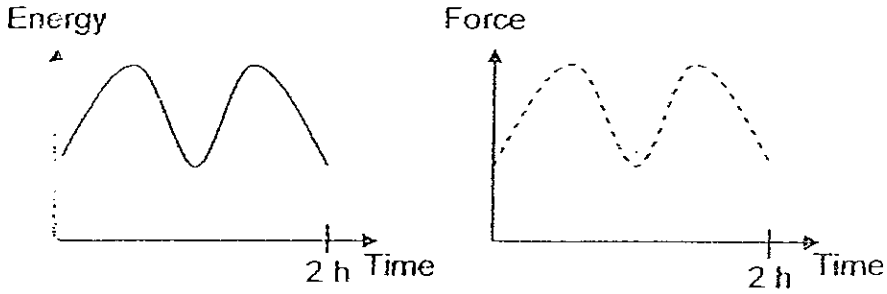
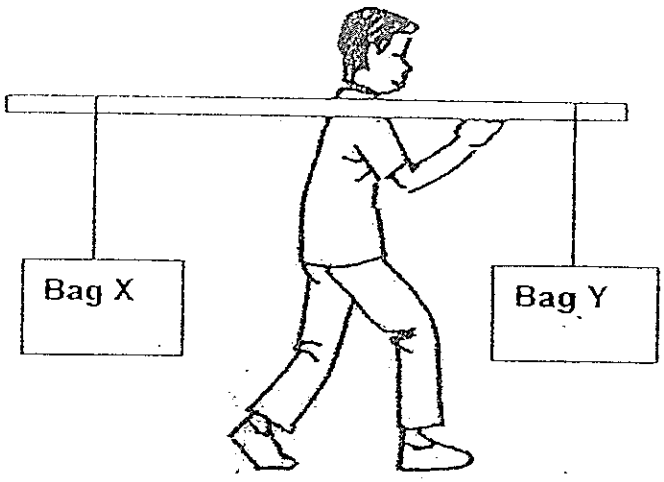
(3)



(4)



9. Josh is trying to balance two loads, A and B, on his shoulder using a pole holding two bags, X and Y. Load A is lighter than load B.



Which one of the following should Josh do to balance the two loads?

	Load in bag X	Load in bag Y	Distance from shoulder
(1)	A	B	Move bag Y nearer to shoulder
(2)	A	B	Move bag Y further from shoulder
(3)	B	A	Move bag X further from shoulder
(4)	B	A	Move bag X and bag Y at equal distances from the shoulder

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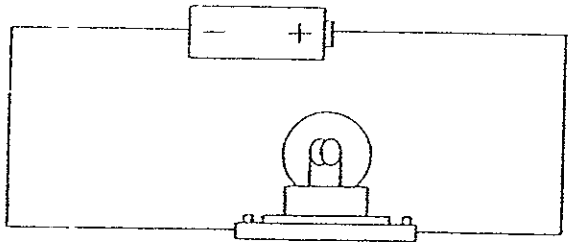
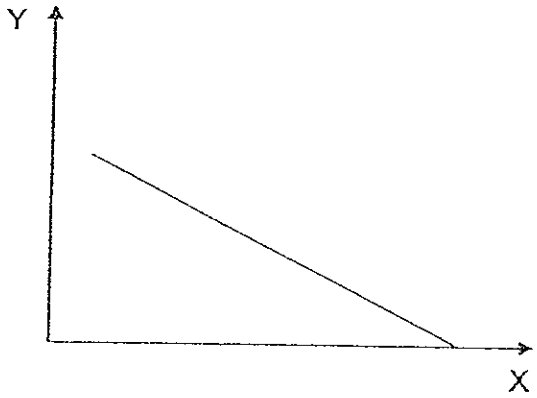
10. Raja carried out an experiment using the electrical circuit below.



He was given some batteries, bulbs and wires which were new. He made some changes to the circuit using the materials he was provided and used a certain device to obtain readings before he recorded the results. The results were used to plot the graph as shown below.

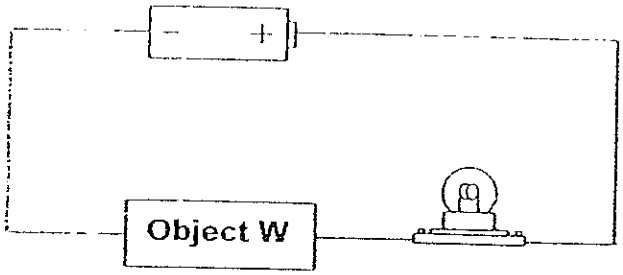


Which of the following could possibly represent the labels X and Y?

	X	Y
A.	Number of bulbs	Voltage of bulbs
B.	Voltage of batteries	Number of bulbs
C.	Voltage of bulbs	Brightness of bulbs
D.	Number of bulbs	Brightness of bulbs

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

11. Yan Ying set up a circuit as shown below.



She recorded object W's temperature before placing it in the circuit. After placing object W in the circuit for 15 minutes, she recorded object W's temperature again. She repeated the experiment with objects X, Y and Z. The table below shows her results.

Object	Temperature before being placed in circuit (^{0}C)	Temperature after being placed in circuit for 15 min (^{0}C)	Did bulb light up?
W	30.5	44.5	Yes
X	28	28.5	No
Y	32	40.5	Yes
Z	29.5	30	No

Which of the following can Yan Ying infer from her results?

A Object X and Z are poor conductors of heat.
B Objects W and Y can be attracted by a magnet.
C The circuit is open when object Z is placed in the circuit.
D When object W and object X were heated to the same temperature, object W will cool down faster than object X when both are placed in a pail of ice.

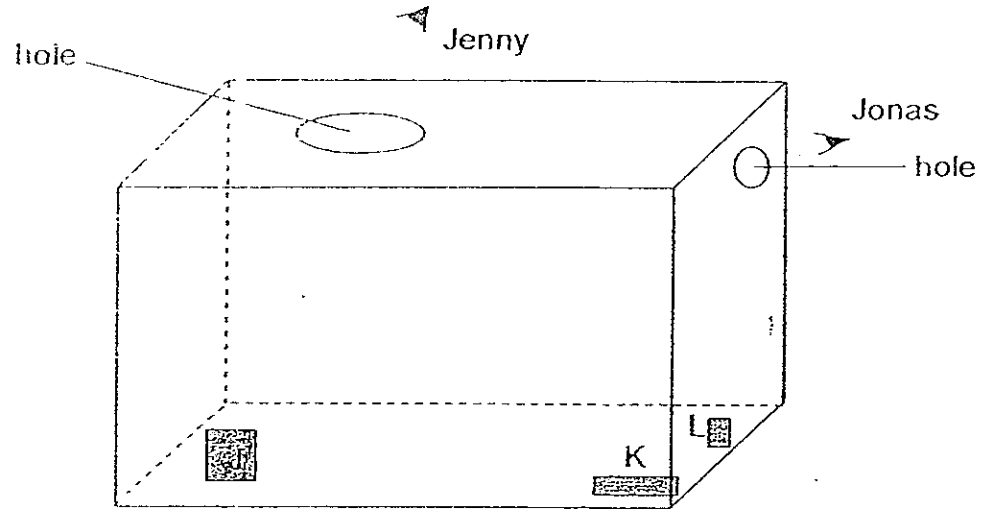
(1) A only
(2) B and C only
(3) A, C and D only
(4) A, B, C and D

12. A boy looks into a still river and is able to see his reflection clearly. Which of the following can the boy conclude about his observation?

A The water surface of the river is smooth.
B Light is reflected off the boy's face onto the river surface.
C The boy's reflection is a shadow since the boy is blocking light from the sun.

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

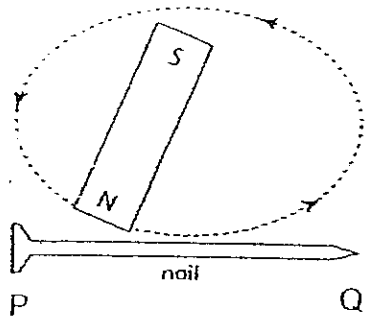
13 An opaque box with two holes contains three items, J, K and L as shown in the diagram below.



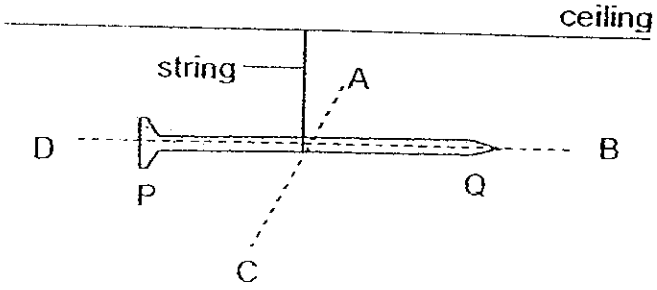
Two pupils, Jenny and Jonas, looked through the two holes in the direction indicated by the position of the eyes. Which one of the following shows the item(s) that can be seen by Jenny and Jonas?

(1) J only
(2) K only
(3) L only
(4) J, K and L

14 An iron nail is stroked 50 times along its entire length by a magnet in one direction as shown in the diagram below.



The iron nail is then hung from a ceiling and the iron nail settled in the direction as shown below. A, B, C and D show different directions in the room.



Which one of the following statements is correct?

(1) When the North pole of a magnet is placed at B, the iron nail will move in the direction of D.

(2) When the South pole of a magnet is placed at C, end Q of the iron nail will move in the direction of C.

(3) The iron nail is able to attract the same number of paper clips from direction A and D since it is a temporary magnet.

(4) To avoid having direct morning and evening sun rays in the room, windows should be fixed in the directions of B and D.

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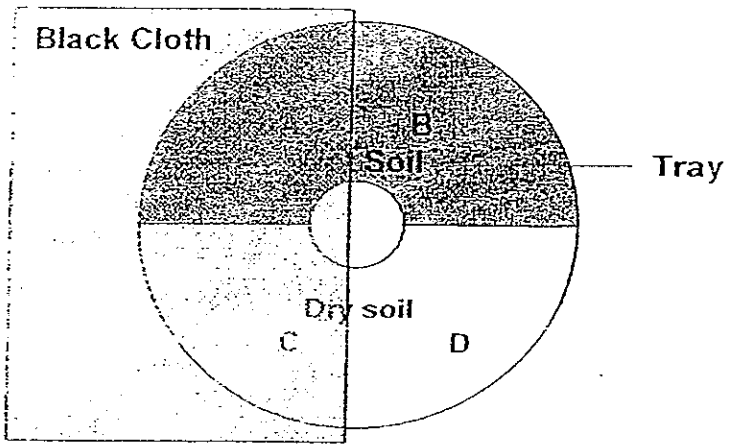
15. Gopal used the setup below to find out the most suitable living condition for organisms X and Y which are not nocturnal. The tray was divided into sections A, B, C and D. He filled it with wet and dry soil and covered part of the tray with a piece of black paper.



He placed the tray in the hot sun and released 50 **living** organisms X and Y each in the middle of the tray in the area marked by the circle. After one hour, he counted the number of organisms in each section.

Which one of the following **least** explained why some organisms X and Y are still found within the circle?

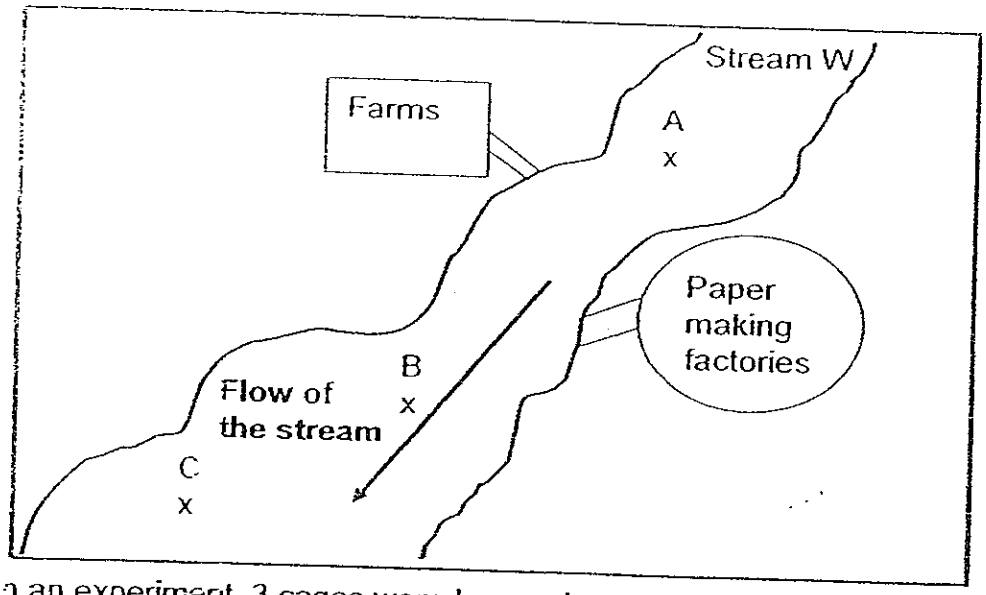
(1) Some organisms X and Y are dead.

(2) Some organisms X and Y prefer to stay in the circle.

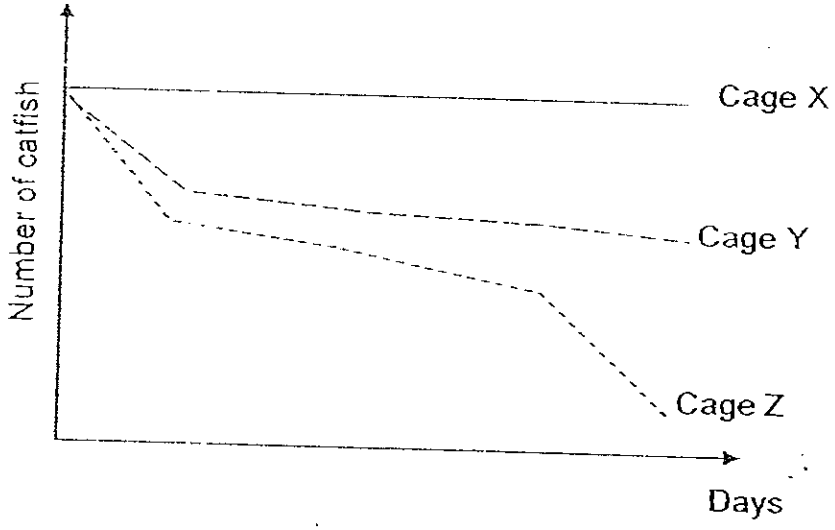
(3) Some organisms X and Y need more time to find their suitable living condition.

(4) Some organisms X and Y are very active so they have moved round the tray and have returned to where they started.

16. The diagram shows stream W. The farms and factories discharge waste into it.



In an experiment, 3 cages were lowered separately into the water at three points A, B and C of the stream. Each cage contains the same number of live catfish. The number of live catfish in the cages was counted over 2 weeks. The result is shown in the graph below.



Which of the following graphs correctly show where the different group of cat fish was placed?

	Cage X	Cage Y	Cage Z
(1)	A	B	C
(2)	A	C	B
(3)	B	C	A
(4)	C	A	B

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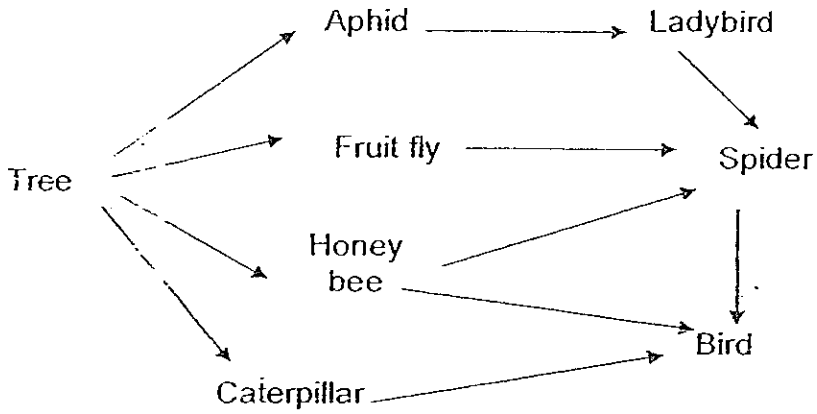
The food web below shows the food relationship among several organisms in a tree community. Use the food web to answer questions 17, 18 and 19.



17. How many food chains are there in the above food web?

(1) 7 (2) 6

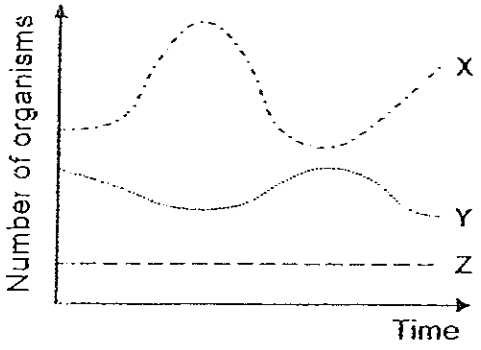
(3) 5 (4) 4

18. How many of the organisms in the food web are both a prey and a predator?

(1) 1 (2) 2

(3) 3 (4) 4

19. The graph below shows organisms X, Y and Z interacting with one another in the same community over a period of time.



Which one of the following correctly identifies organism X, Y and Z?

	X	Y	Z
(1)	aphid	ladybird	tree
(2)	honey bee	spider	bird
(3)	honey bee	fruit fly	tree
(4)	tree	caterpillar	bird

20. The following organisms are found in a rotting log community.

slug	woodlouse	spider	scorpion	mushroom	fungi	millipedes

Which of the following organisms break down dead matter into simple substances such as mineral salts and carbon dioxide?

(1) spider and scorpion

(2) slug and woodlouse

(3) mushroom and fungi

(4) millipedes and woodlouse

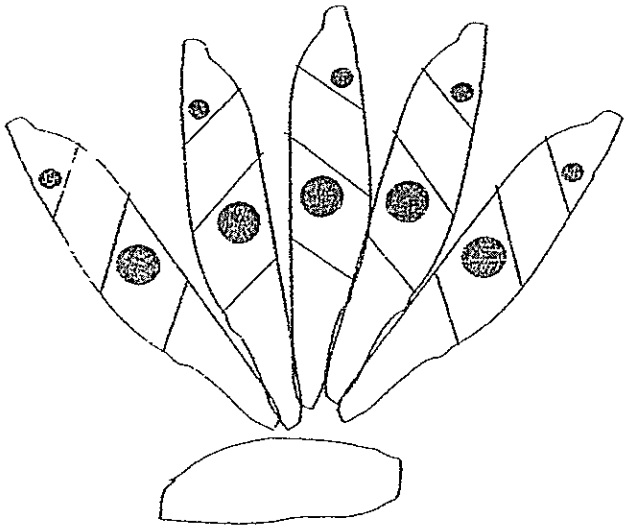
21. Animals and plants have different adaptations that help them to survive in their natural habitats. Which one of the following correctly states the structural and behavioural adaptations of the organism mentioned?

	Organism	Structural	Behavioural
(1)	Polar bear	Has white thick fur to blend into the surroundings	Cover his black nose with his paws when resting
(2)	Lizard	Drops its tail when attacked	Has a flat body to allow it to move through small openings
(3)	Bird	Has hollow bones to make its body lighter for flight	Has long wingspan for flight
(4)	Plants	Fruits dispersed by water has husk	Fruits dispersed by wind has wing-like structure

22. Some plants such as mimosa and the morning glory have weak stems. Which one of the following states the correct adaptations that both plants have to get sunlight?

	Morning glory	Mimosa
(1)	Has tendrils that coil around the support	Has roots that spread out in the ground
(2)	Has stem that twines around a support	Creeps horizontally on the ground
(3)	Has clasping roots that attached to a support	Leaves closes when touched
(4)	New flowers blossom everyday	Leaves folds in the evening

23. The diagram shows a type of sea grass that is found along the sea shore.



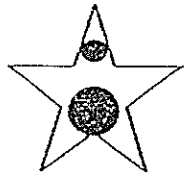
Which one of the following starfish is **most easily** spotted by its predator when it is near this seagrass?

(1)

(2)

(3)

(4)



24. The example below shows a type of relationship that exists between two different organisms.

> **The bee obtains its food from the flower and the flower is pollinated by the bee.**

Which one of the following best describes a similar relationship as the above?

(1) Ants living in a group.

(2) A bird catching a grasshopper.

(3) A bird nest fern growing on a rain tree.

(4) Pilot fish feeding on the leftover bits between the teeth of a shark.

25. The table below shows the different cell parts of 4 types of cells S, T, U and V.

Cell parts	S	T	U	V
Cell Wall	Present	Absent	Present	Absent
Nucleus	Present	Absent	Present	Present
Chloroplast	Present	Absent	Absent	Absent

Which one of the following best represents cells S, T, U and V?

	S	T	U	V
(1)	animal skin cell	roots cells	red blood cells	leaf cells
(2)	leaf cell	red blood cell	roots cell	animal skin cell
(3)	leaf cell	roots cell	red blood cell	animal skin cell
(4)	leaf cell	animal skin cell	red blood cell	roots cell

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26 The table below shows the development of a fertilized egg to a human baby.

Period after fertilisation	Stage of development.
7-10 days	Hollow ball of cells which is thickened in one area and implanted in the wall of the womb.
3 weeks	Head is formed. Spinal cord and heart start to develop.
6 weeks	Brain grows rapidly. Eyes and ears start to develop. Limbs start to form.
12 weeks	The foetus has almost all the external features of a baby.
9-10 months	Birth

From the table, what is the earliest period after fertilisation that the mother can start feeling the foetus kicking?

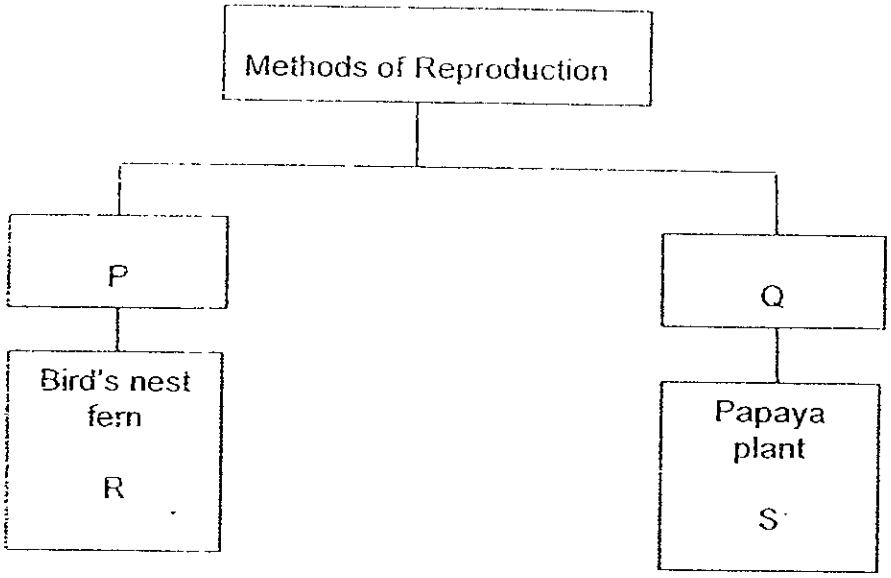
(1) 1st week

(2) 5th week

(3) 3rd week

(4) 13th week

27. The classification chart below is used to classify some organisms.



Which one of the following would complete the classification chart correctly?

	Heading P	Heading Q	Organism R	Organism S
(1)	Asexual Reproduction	Sexual Reproduction	Corn	Tomato
(2)	Sexual Reproduction	Asexual Reproduction	Yeast	Pineapple
(3)	By Spores	By Seed	Mushroom	Water melon
(4)	By Spores	By Seed	Yeast	Banana

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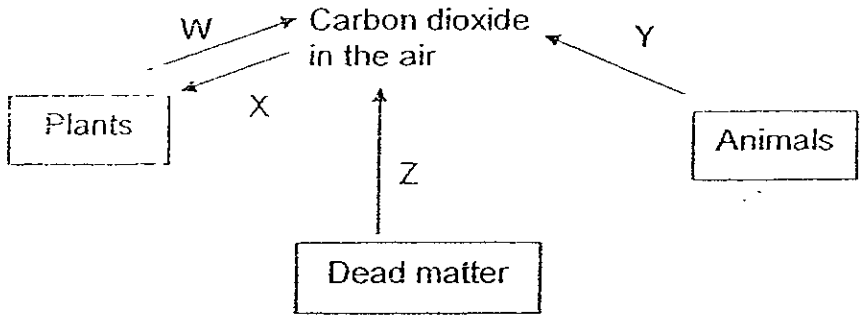
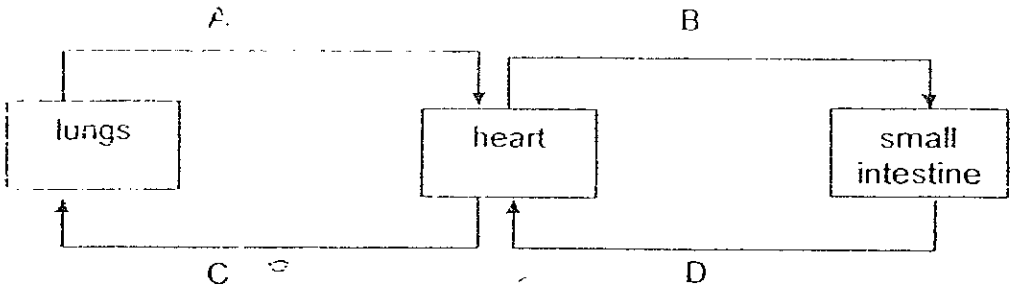
28. The diagram below shows how carbon dioxide is released to or removed from the air during the processes W, X, Y and Z.



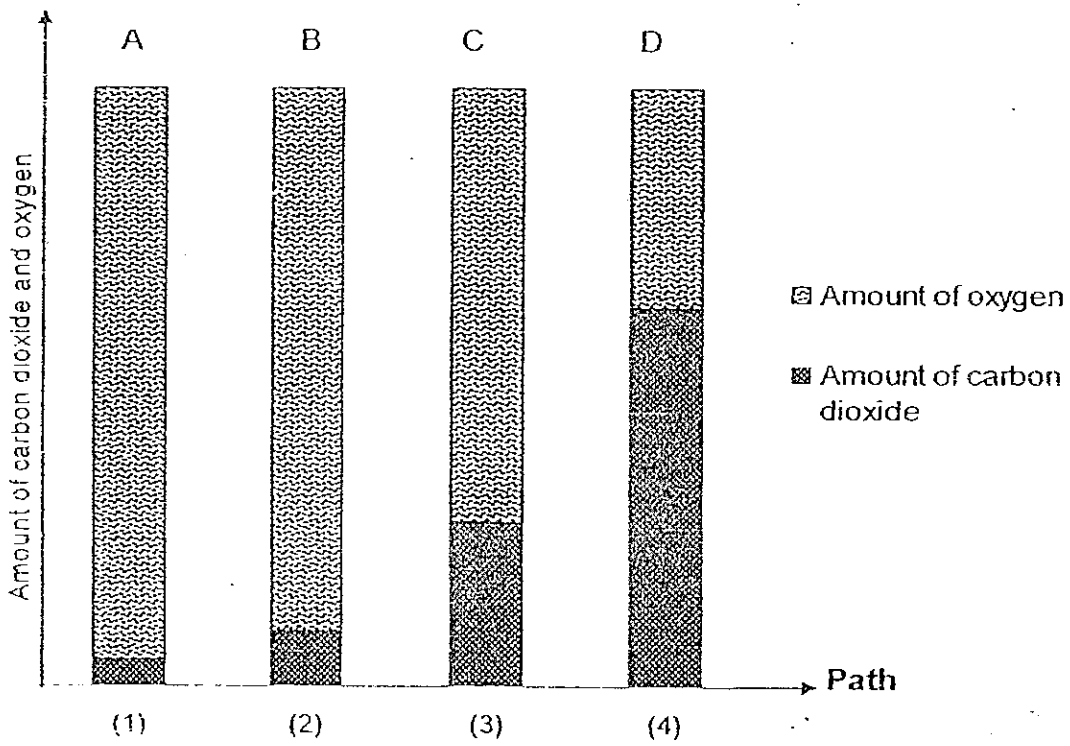
Which one of the following correctly identifies the processes W, X, Y and Z?

	W	X	Y	Z
(1)	Respiration	Photosynthesis	Respiration	Decomposition
(2)	Decomposition	Respiration	Photosynthesis	Respiration
(3)	Photosynthesis	Respiration	Respiration	Decomposition
(4)	Decomposition	Photosynthesis	Respiration	Respiration

29. Paths A, B, C and D show the movement of blood round parts of a human body.

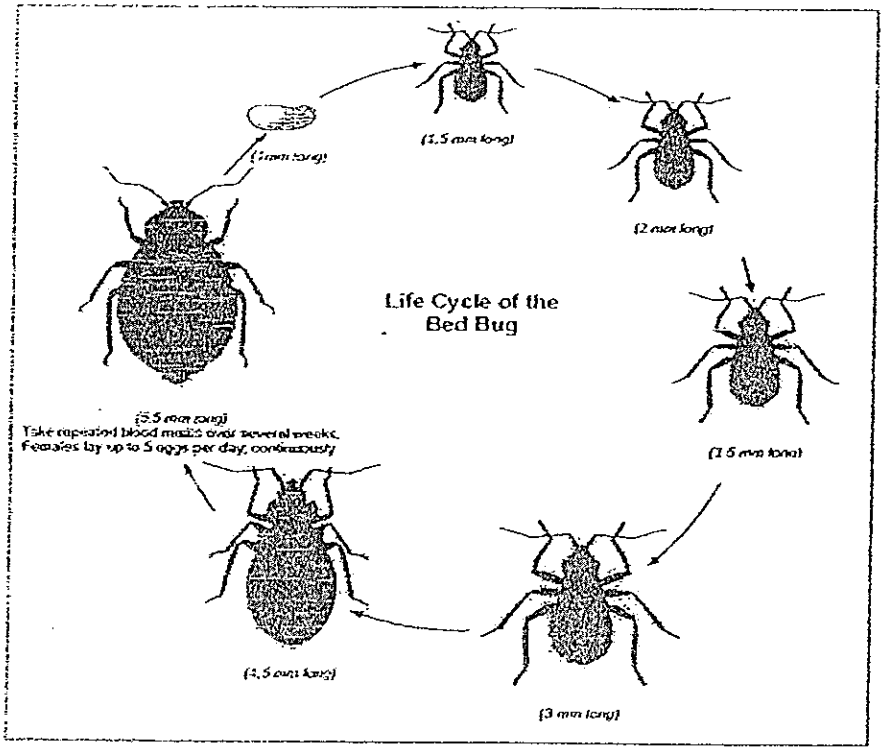


Which one of the following bars in the graph does not show the correct amount of carbon dioxide and oxygen at different parts of the body?



qb

30 The life cycle of a bed bug takes between 5 weeks to 4 months to complete. The diagram below shows the development of a bed bug from egg to adult.



How many stages are there in the lifecycle of a bedbug?

(1) 5

(2) 7

(3) 3

(4) 4

南洋小學

NANYANG PRIMARY SCHOOL

PRIMARY 6 SCIENCE

Preliminary Examination

2008

BOOKLET B

Date : 21 August 2008

Duration : 1 h 45 min

Name : _____ ( )

Class: Primary _____ ( )

Marks Scored:

Booklet A :		60
Booklet B :		40
Total :		100

Parent's signature: .....

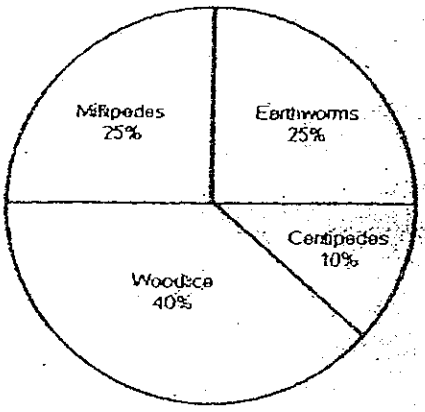
DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
FOLLOW ALL INSTRUCTIONS CAREFULLY.

Booklet B consists of 18 printed pages.

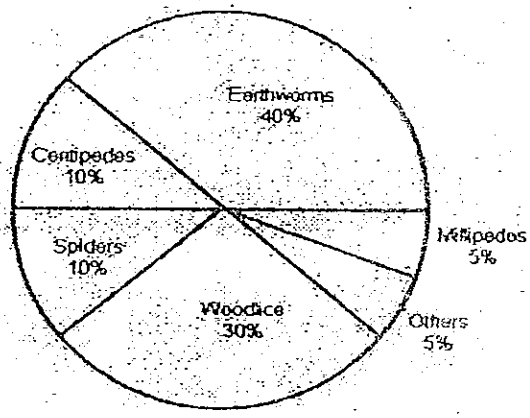
Section B (40 marks)

Write your answers to questions 31 to 46 in the spaces provided.
Marks will be deducted for misspelt key words.

31. The following pie charts show the composition of animals found in a leaf litter community and a rotting log community.



leaf litter community



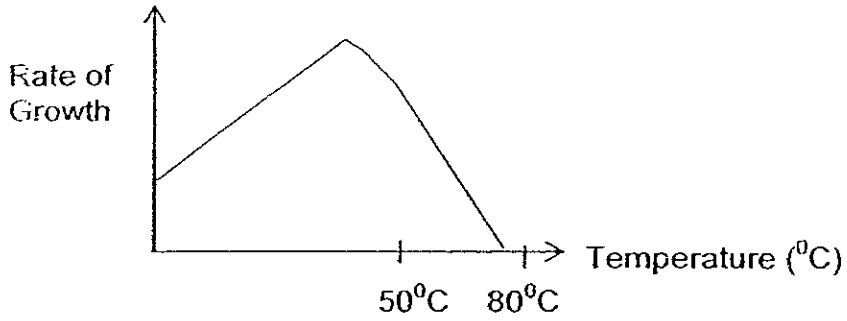
rotting log community

Put a tick (✓) in the appropriate boxes to indicate whether the statements are 'True', 'False' or 'Not possible to tell'. [2]

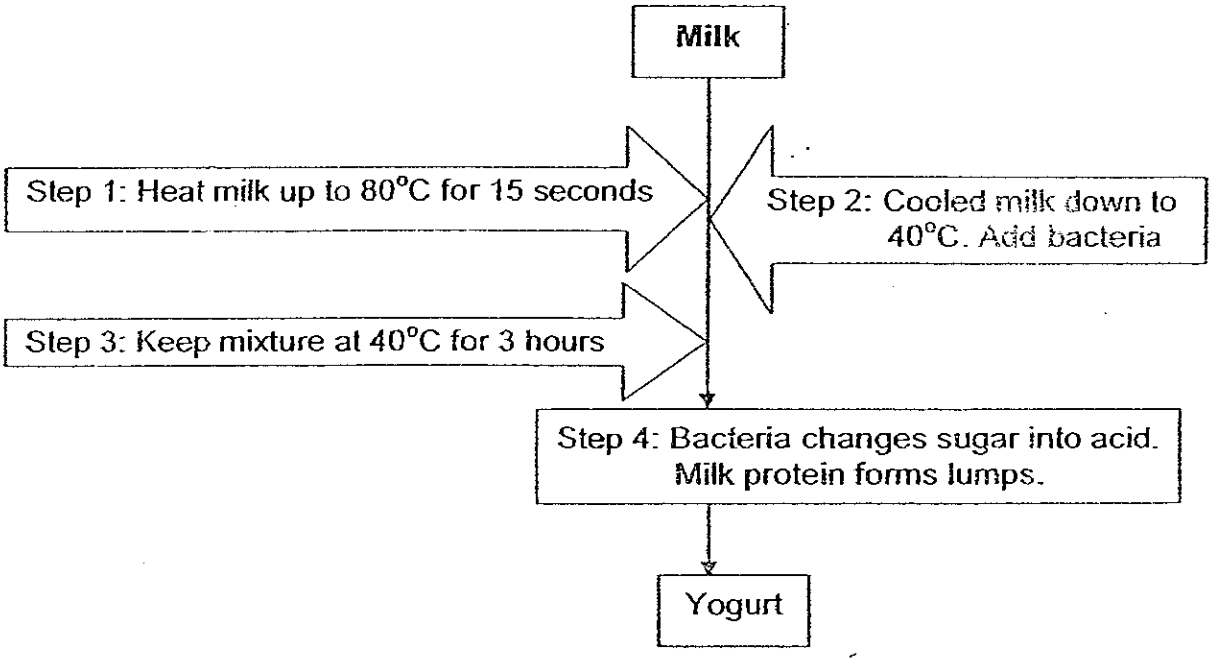
	Statements	True	False	Not possible to tell
(a)	The number of centipedes in both the leaf litter community and rotting log community are the same.			
(b)	In the leaf litter community, percentage of centipedes is lower than millipedes.			
(c)	There are only 6 animal populations in the rotting log community.			
(d)	There are more types of organism in the rotting log community than the leaf litter community.			

99

32. The graph below shows the rate of bacteria growth at different temperature



The flow chart below shows 4 steps in the production of yogurt.



(a) In the production of yogurt, why does milk need to be heated up to 80°C for 15 seconds in the first step? [1]

_____

(b) Why is the mixture of milk and bacteria kept at 40°C for 3 hours instead of in the refrigerator? [2]

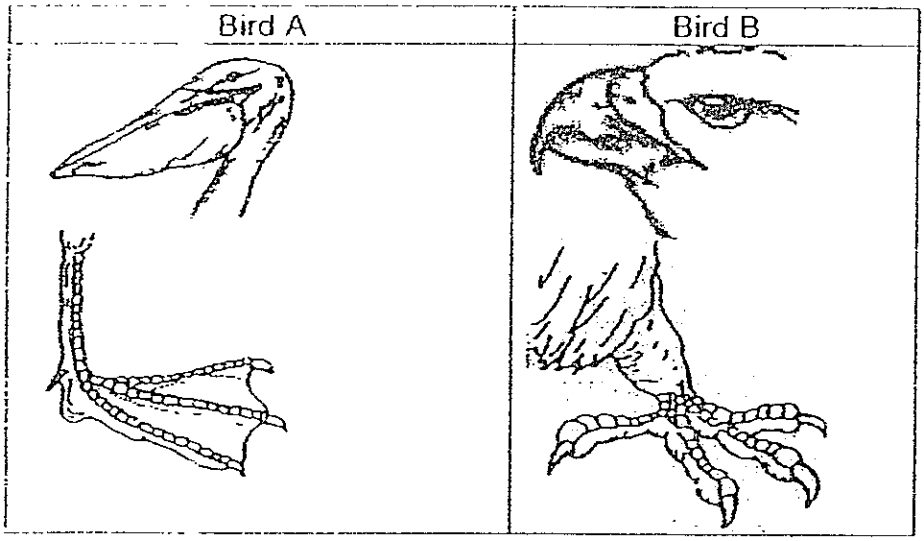
_____

_____

_____

100

33. The following pictures show the feet and beaks of bird A and bird B.



(a) Put a tick in the habitat that bird A can be most likely found in. [1]

Habitat	Bird A can be found
Garden	
Lake	
Dessert	

(b) Lucy said that bird B is a bird of prey. Fill in the blanks with the two structural adaptations that allow her to make this conclusion. [2]

	Structural Adaptation	Functions
(i)		
(ii)		

10]

34. Both seed A and seed B are dispersed by animals.

Seed A

Seed B

(a) Carry out an experiment to find out whether seed A or seed B are better dispersed by animals. [2]

Items available: A metal tray
A wooden block
A woollen towel
Fifty seed A
Fifty seed B

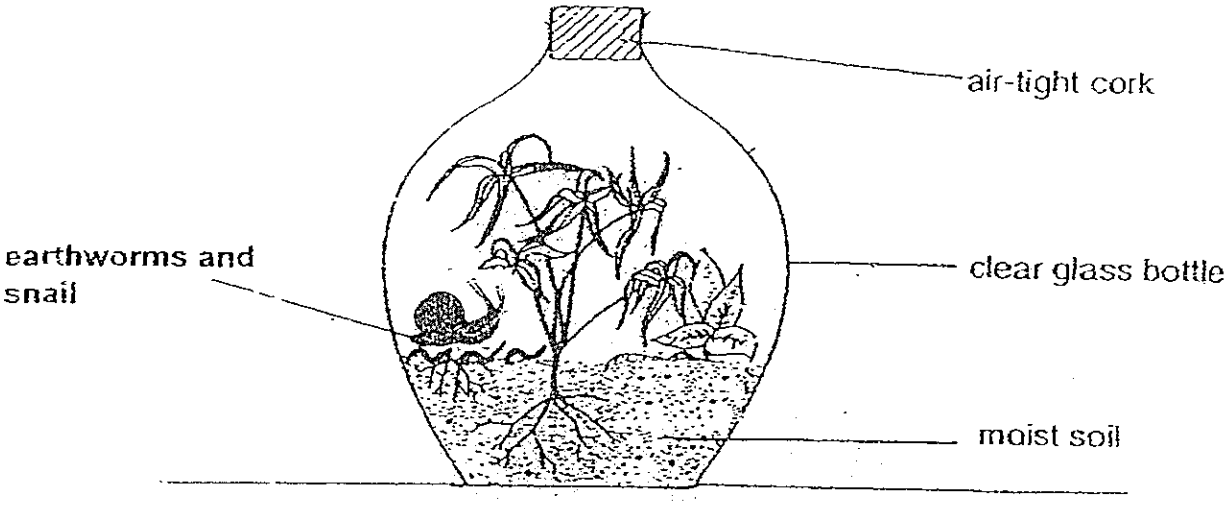
Procedure
Step 1:

(b) Put a tick against the variable that must be kept the same in order for the experiment to be fair. [1]

Variables	Ticks
No of Seed A and B	
Size of the towel	
Temperature of the surrounding	

102

35. The picture below shows a 'garden-in-a-bottle' which is placed in a room with plenty of sunlight. The bottle is sealed. It was observed that the plants remain alive after one month.

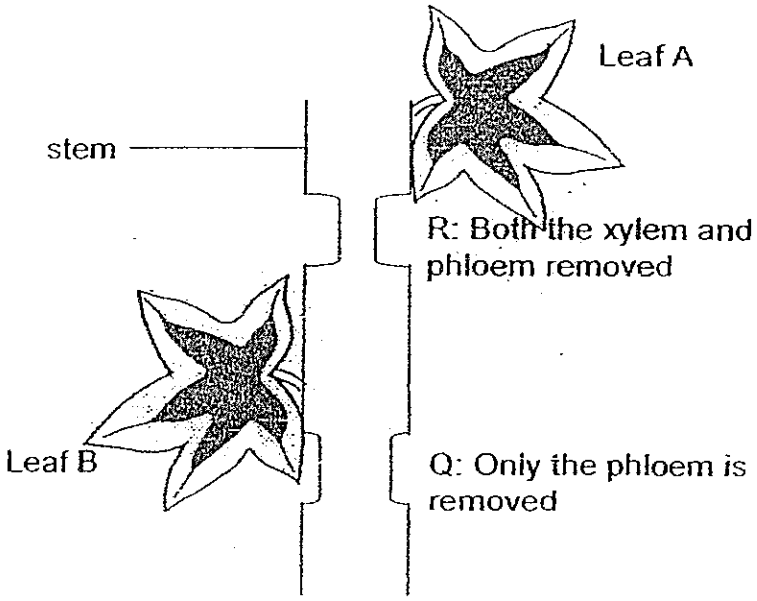


The plants are not watered and no air can enter the sealed bottle. Explain how the plants in the bottle **are able to photosynthesize**.

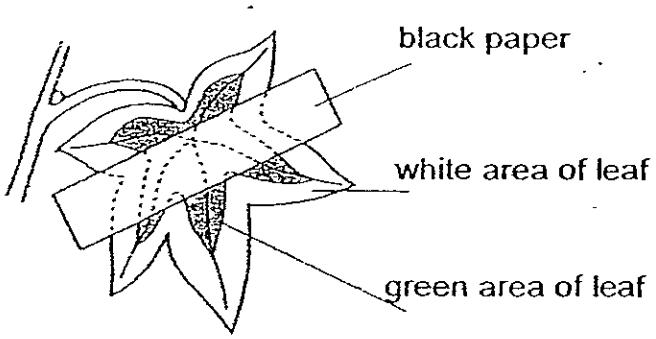
[2]

103

36. A geranium plant has leaves that are green in the centre but white around the edges. In this experiment, rings of different thickness were cut and removed from the stem of the germanium plant at Q and R as shown below

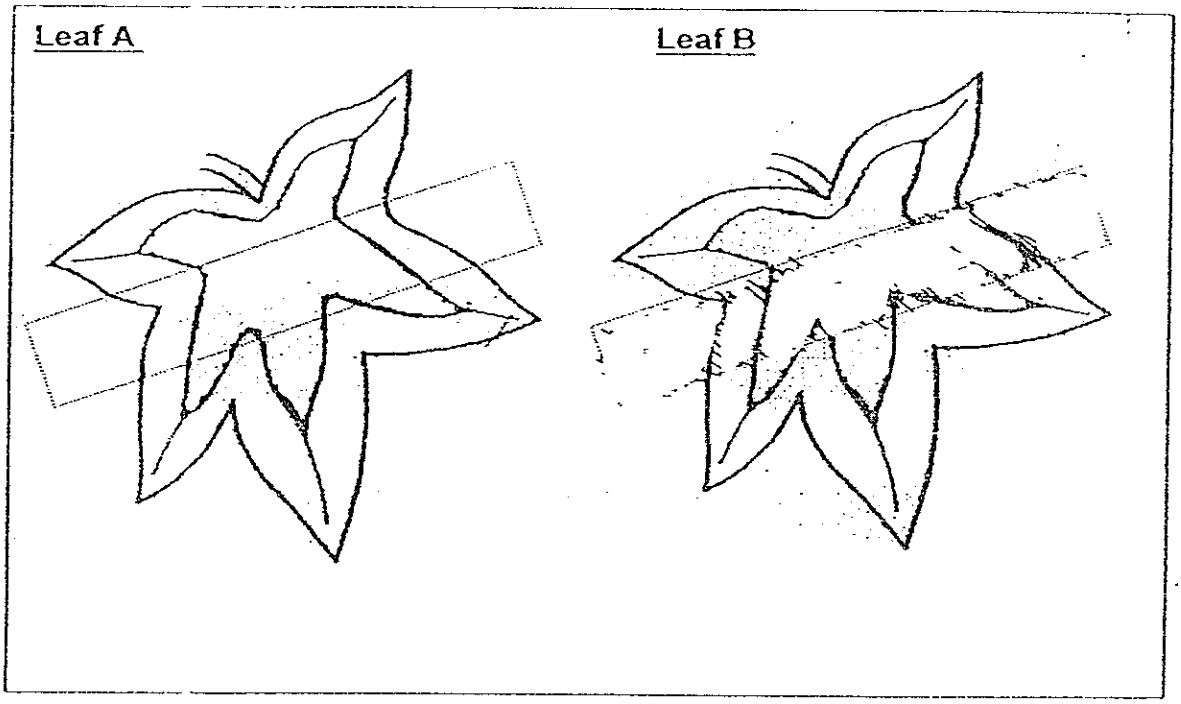


The plant was watered daily and kept in the dark for 96 hours. Both leaf A and leaf B were partly covered with black paper on both sides of the leaf as shown below. The plant was then placed under bright light for 12 hours.

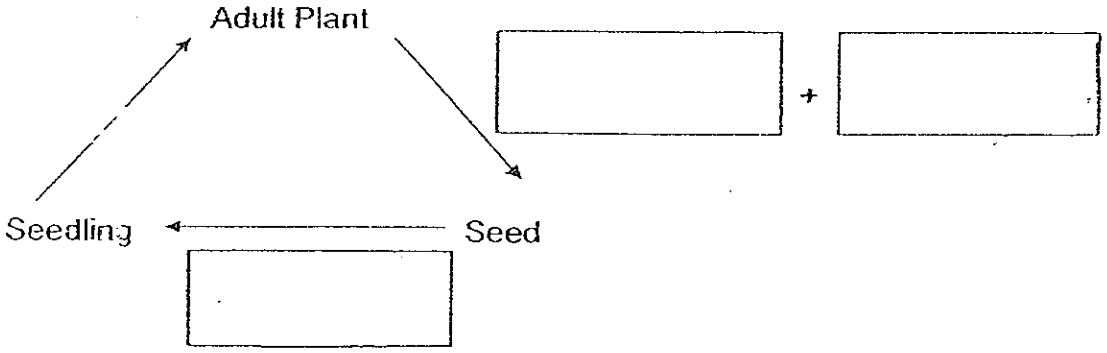


104

After 12 hours, leaf A and leaf B were tested for starch using iodine.
Shade the part(s) that will turn iodine dark blue. [2]



37. The diagram below shows the life cycle of a flowering plant.



(a) Write the names of processes which occur in the life cycle in the boxes [1 1/2]

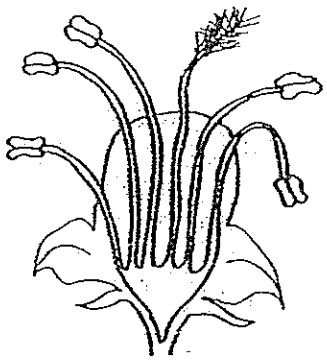
(b) State two conditions which are required for a seed to germinate. [1/2]

_____

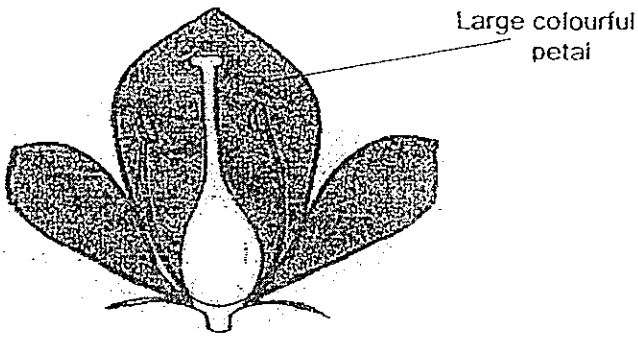
105

38. The diagram below shows two flowers.

Flower A



Flower B



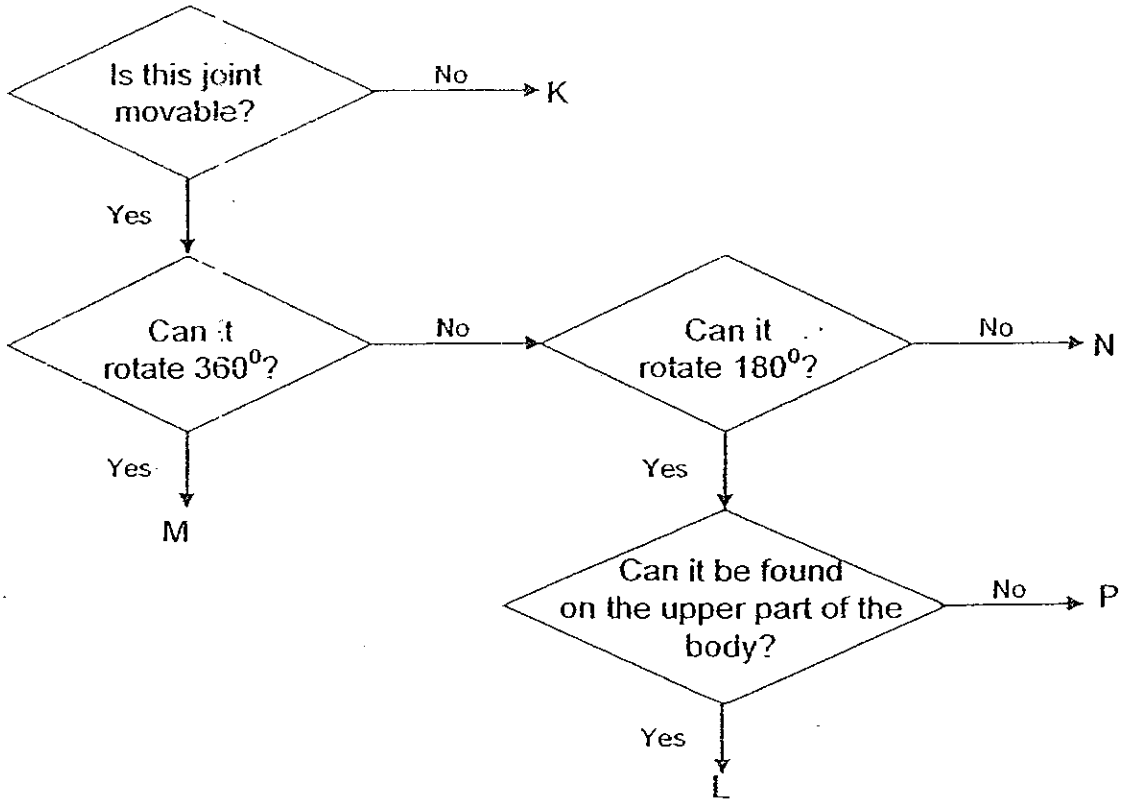
Which flower is most likely pollinated by animals? State 2 reasons for your answer. [2]

_____

_____

_____

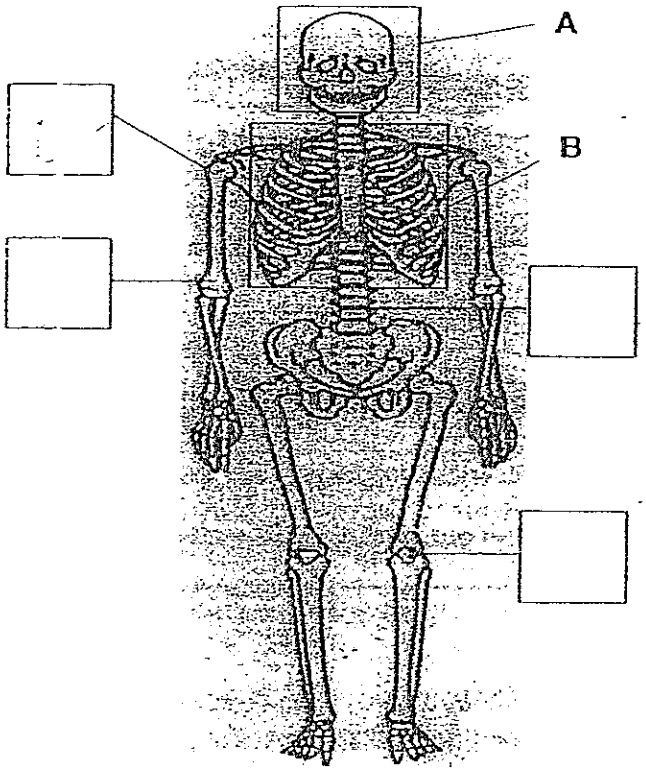
39. The flowchart below classifies the different kinds of joints K, L, N and P found in the human body.



106

(a) Based on the flow chart, label joint M and joint L on the human skeleton below. [1]

Human Skeleton

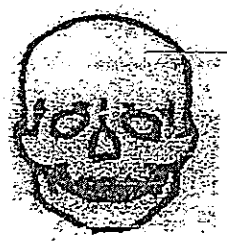


(b) Refer to the human skeleton. State a similar function between structure A and B. [1]

_____

_____

(c) Refer to the flow chart. Which joint, K, L, N or P can be found in the upper part of structure A. [1]

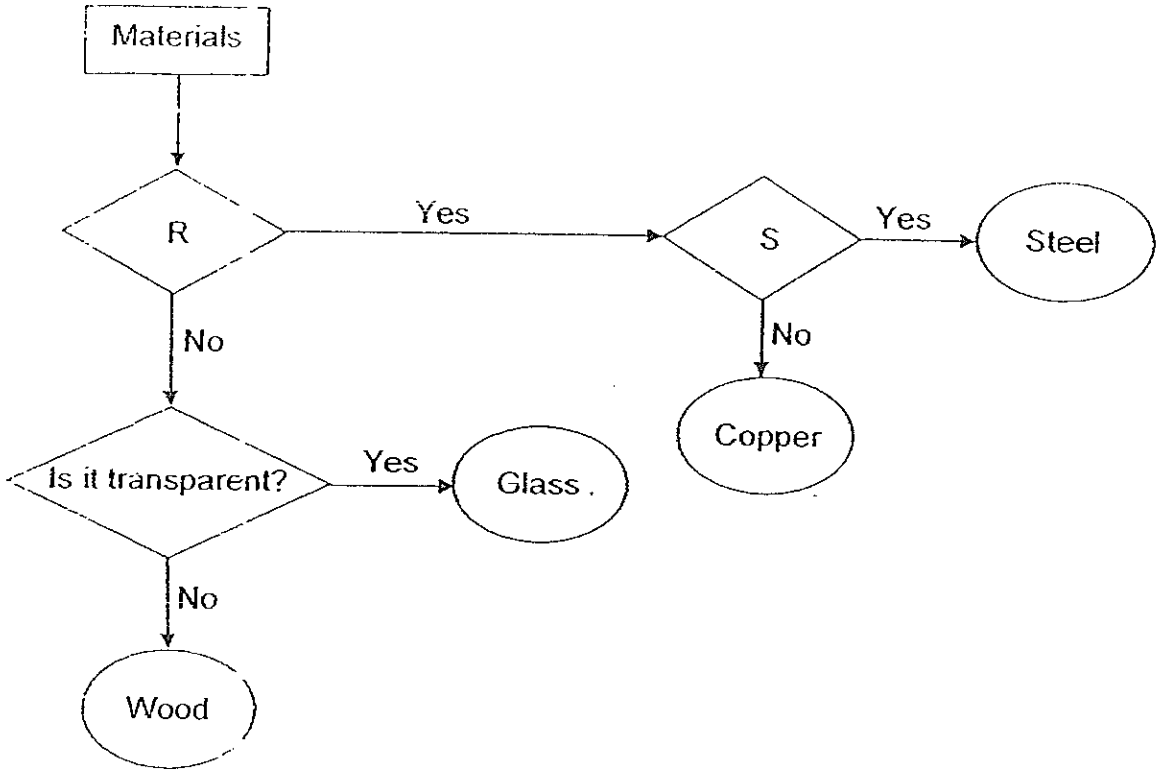


Upper part of structure A

_____

107

40 Study the flow chart below.



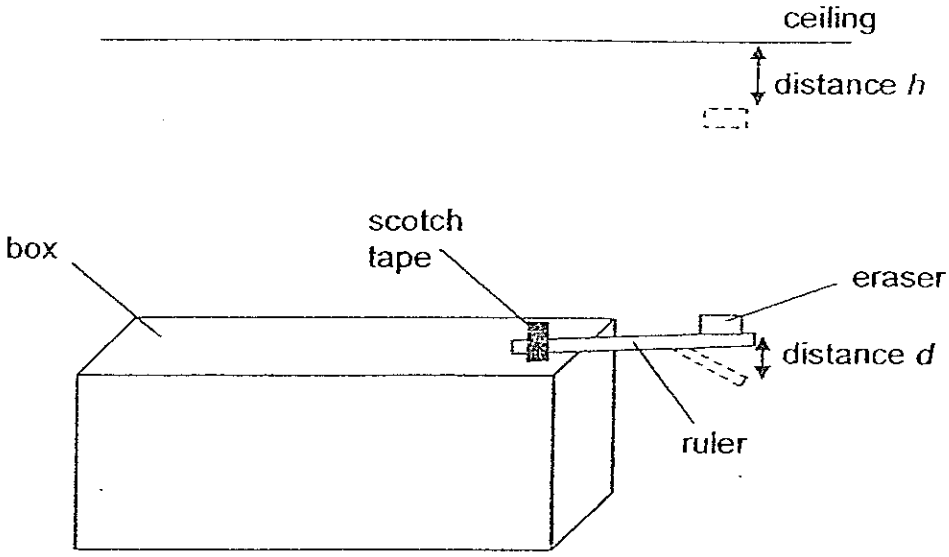
(a) Write down the questions (based on properties) that are represented by R and S. [2]

R: _____

S: _____

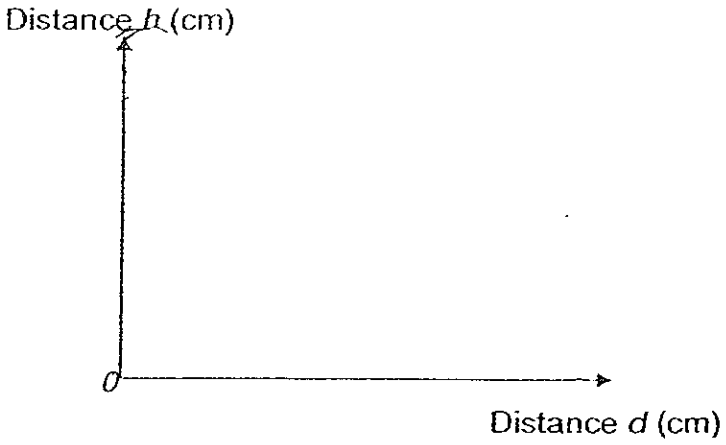
108

41. Study the set up below. An eraser rests on a ruler which is placed on a box.



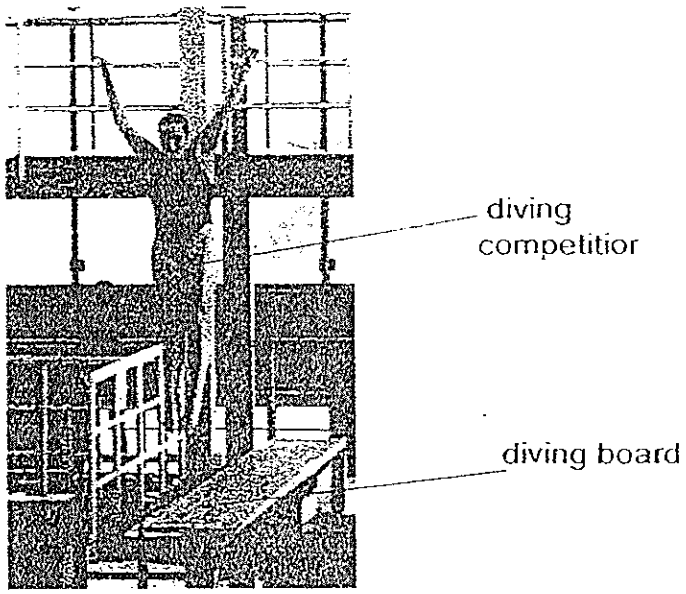
The ruler is then pressed down by d cm. When the ruler was released, the eraser shot upwards. The distance between the highest point reached by the eraser and the ceiling is measured. The experiment is repeated with different values of distance d.

(a) Draw a straight line in the graph below to show the relationship between distance d and distance h. [1]



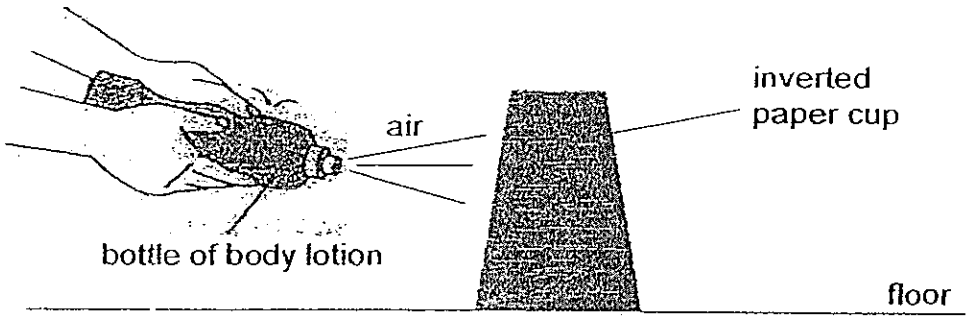
10 9

(b) In the Olympic Games, diving competitors need to jump **as high as possible** to allow time for them to complete various somersaults during their dive into the pool



Explain, in terms of energy conversion, why the diving competitor needs to jump on the diving board a **few times** before she dives into the water. [2]

42. Chong Jie carried out an experiment with a bottle of body lotion and a paper cup as shown below. The bottle can hold a maximum of 50 g of body lotion.



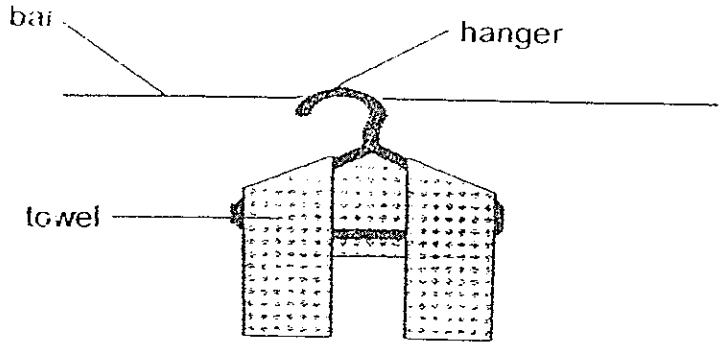
Before carrying out the experiment, Chong Jie would hold the bottle upright so that all the lotion will settle at the bottom of the bottle. He then squeezed the **upper** part of the bottle with the opening facing the paper cup and no lotion spilled out. The paper cup is observed to move across the floor. He repeated this experiment with different amounts of body lotion in the bottle. The table below shows his results.

Amount of body lotion (g)	Distance moved by paper cup (cm)
40	0
30	2
20	5
10	7

(a) State the relationship between the volume of air in the bottle and the distance moved by the paper cup. [1]

(b) Explain why Chong Jie made sure that all the lotion settled at the bottom of the bottle before carrying out the experiment? [1]

43 Mrs Singh draped a dry cotton towel on a hanger made of material X as shown below.



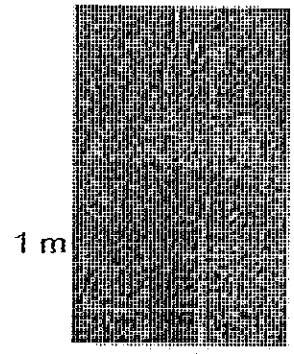
She then recorded the time taken for the towel to slip off the hanger. She repeated the experiment with another hanger made of material Y. The table below shows her results.

Material of hanger	Time taken for towel to slip off (s)
X	3
Y	Did not slip off

(a) What force(s) is/are acting on the towel during the experiment? [1]

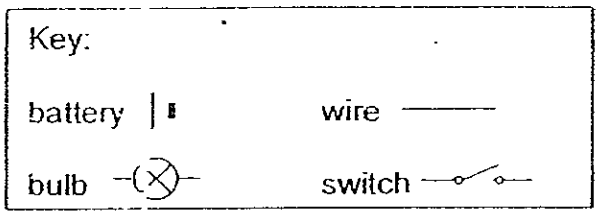
(b) Compare the texture of material X and Y. [1]

(c) Material X is used to make a whole bench which has a tilted surface. The side view of the bench is shown below.

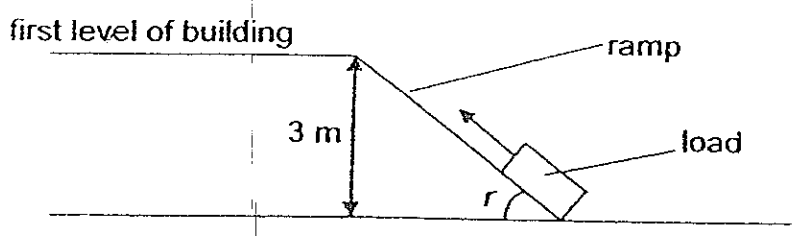


Referring to the experiment above, explain why it is dangerous for children whose legs are shorter than the bench to be sitting on point X. [1]

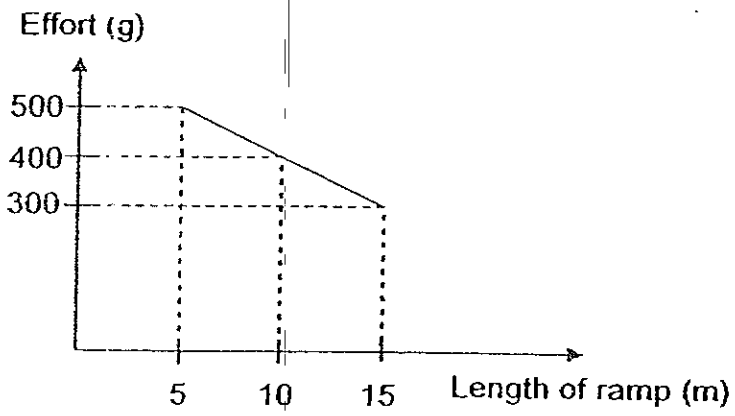
44 Ming En had three identical bulbs. Two of them were in good condition and one of them was faulty. She was given batteries, a switch and wires. She set up a circuit using the bulbs and given materials to find out which one was the faulty bulb. When the switch is closed, Ming En immediately identified the faulty bulb. In the space below, draw a circuit diagram to show how Ming En identified the faulty bulb. [2]



45. Annie wanted to find out how the length of a ramp affects the effort needed to pull up a similar load up to the first level of a building. The tip of the ramp was placed touching the floor of the first level of building. The angle of elevation is labelled *r*.



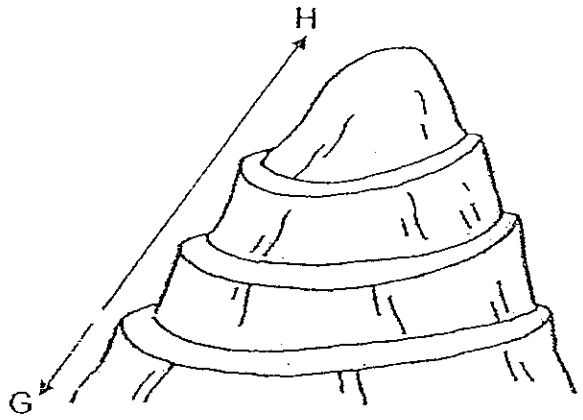
She repeated the experiment with two other ramps of different lengths. The graph below shows the results of her experiment.



(a) What is the length of the ramp with the largest angle of elevation? [1]

(b) State one variable that should be kept constant to make this experiment a fair one. [1]

(c) Study the picture below.



Explain why it is easier to drive round and round up the hill compared to driving directly from point G to point H. [2]

_____

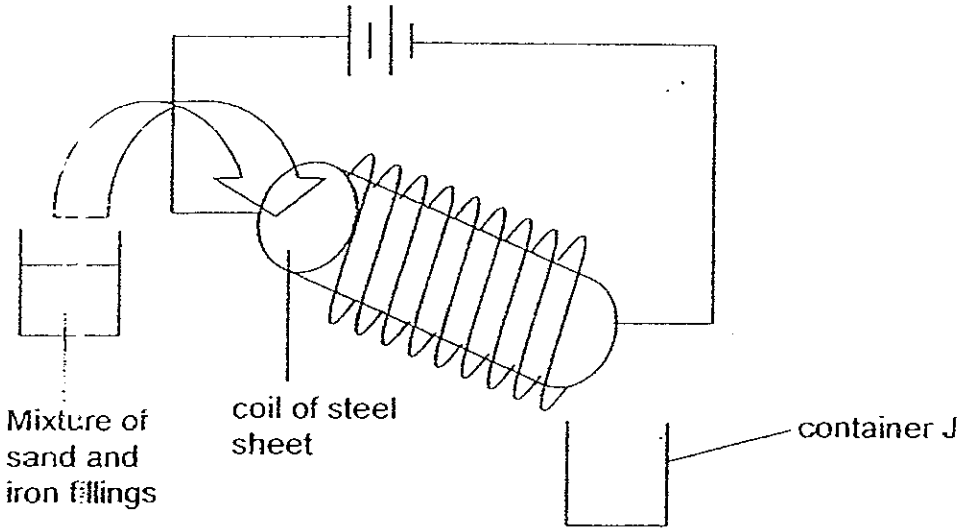
_____

_____

_____

115

46 Jeremy mixed iron filling of different sizes into a container of dry sand. He tried to separate the iron fillings and sand using the set up as shown below.



He poured the mixture through a coil of steel sheet with openings on both ends and observed that small pieces of iron fillings are stuck on the inner surface of the steel sheet but the sand and bigger pieces of iron fillings flowed through into container J.

(a) Explain why smaller pieces of iron fillings got stuck on the inner surface of the steel sheet. [1]

_____

_____

(b) Explain why the bigger pieces of iron fillings flowed through the steel sheet. [1]

_____

_____

——— END OF PAPER ———

Setters: Ms Peh Yunn Chyn
Ms Tan Si Ming

Nanyang Primary School

Primary 6 Science SA2 Exams (2008)

Answer Keys

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

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

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

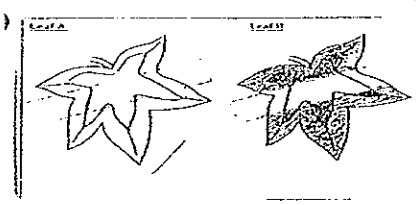
31a. Not (b) True
31c. False (d) True

32a It is to kill all the bacteria present in the milk.
32b Bacteria grows the faster when kept at about 40° and so the milk can change into yogurt in a shorter period of time as compared to when it is placed in the refrigerator which temperature is about 5°C.

33a Lake
33b(i) Sharp beak ⟶ It is tear its prey into smaller pieces so that it can eat its prey easily.
(ii) Sharp claw ⟶ To catch prey

34a Step 1 : Take the fifth seed A and put it on the metal tray and use the woolen towel to press on them. Records the numbers of seeds stuck to the touch and remove all the seeds from the towel as well as on the tray.
Step 2 : Go through the same process with seed B.
Step 3 : Compare the number of each seed on the towel with the most number of seeds stuck to the woolen towel are that is better dispersed by animals.
34b. No of seed A and B
Size of the towel

35. Firstly, the plant is able to get its water from the moist soil which will not dry up because the water vapour in the air will condense on the cooler surface of the clear glass bottle and turn into water droplets. Secondly, the plant able to get its carbon dioxide from the earthworms and snail when they respire or decompose. Thirdly, it has plenty of sunlight so it can photosynthesize.

36 

37a Fertilization + Pollination
germination

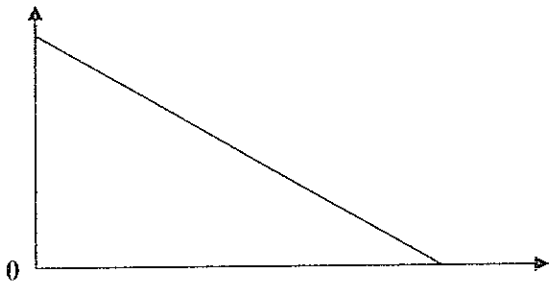
37b. The seed needs warmth and water.

38. Flower B, because it has large colourful petals to attract animals to go to it. The stigma is big for a pollinating agent to reach in to get nectar and in the process getting off pollen grains on bodies from the previous flower and pollinating the flower.

39a The protect organs that are important to the body.

39b Joint K

40a R : Is it a good conductor of heat?
S : Can it be attracted by a magnet?

41a 

41b When the kinetic energy of the diver's body hits the board, it will be changed into elastic potential energy of the diving board. When the diver jumps up again, elastic potential energy from the board is changed back kinetic energy and this kinetic energy is added to the diver energy. Each time the diver bounces, the board will bend more allowing the diver to go higher, thus creating more time or her to do her tricks.

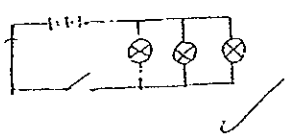
42(a) The more the volume of air in the bottle, the further the distance moved by the paper cup.

42(b) He wants to let air occupy space at the top of the bottle so that only air will be squeezed out.

43a Gravity and friction.

43b. X has a smoother texture than Y.

43c. They might slip because there is less friction between the bench and the children's clothes.

44 

45a 5m

45b The material of the surface of the ramp.

45c The circular path is not as steep than the direct path from G to H. Using the circular path, the car has to travel a longer distance hence effort is reduced.

46a. The steel sheet became an electromagnetic since steel filings are magnetic; they are attracting to the steel sheet.

46b. The magnetic force is not strong enough to overcome the gravity that is acting on the iron filings.