AI TONG SCHOOL

2013 SEMESTRAL ASSESSMENT (1)
PRIMARY SIX SCIENCE

DURATION: 1hr 45 min

DATE: 17 May 2013

INSTRUCTIONS

Do not open the booklet until you are told to do so.
Follow all instructions.
Answer all questions.

Name : _____ ( )

Class : Primary 6 _____

Parent's Signature : _____

Date : _____

Booklet A	60
Booklet B	40
Total	100

Section A (30 x 2 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.

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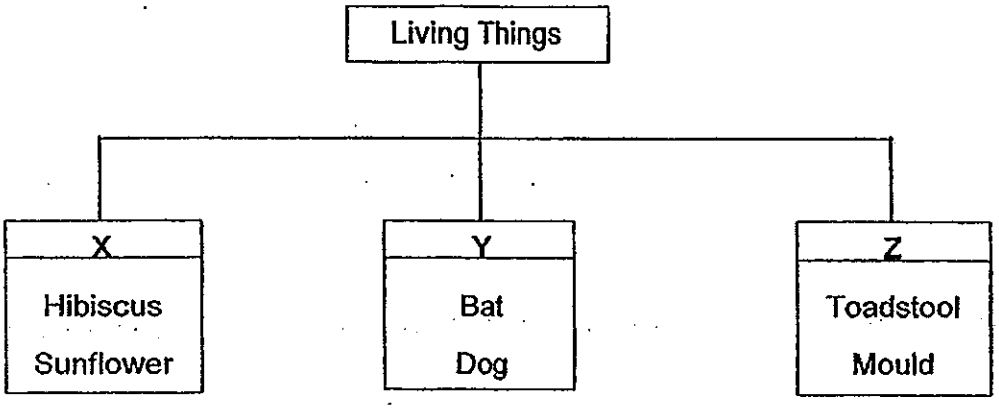
1. Some living things are classified as shown below.



Which of the following can 'X', 'Y' and 'Z' represent?

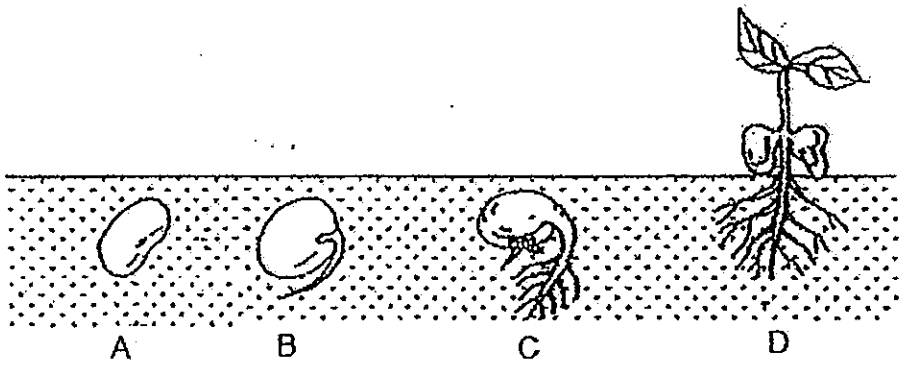
	X	Y	Z
(1)	Plants	Animals	Non-flowering plants
(2)	Plants	Reptiles	Micro-organisms
(3)	Flowering plants	Mammals	Fungi
(4)	Non-flowering plants	Animals	Fungi

2. Which of the following descriptions about the life cycle of the cockroach and butterfly is/are correct?

	Cockroach	Butterfly
A	It has a 3-stage life cycle.	It has a 4-stage life cycle.
B	The young moults.	The young does not moult.
C	It lays eggs on land.	It lays eggs in water.
D	The young resembles the adult.	The young does not resemble the adult.

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

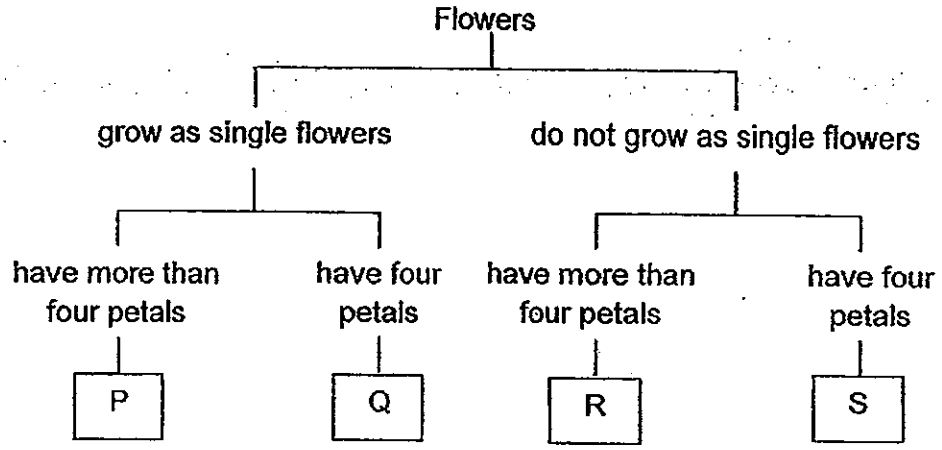
3. The diagram below shows a seed germinating into a young plant.



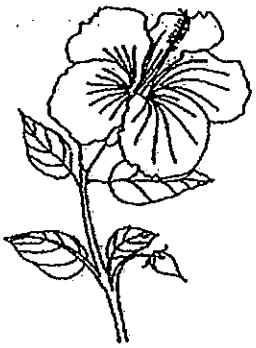
At which stage(s) does the germinating seed need to take in oxygen?

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

4. Study the classification table below.



Which groups do the flowers shown below belong to?

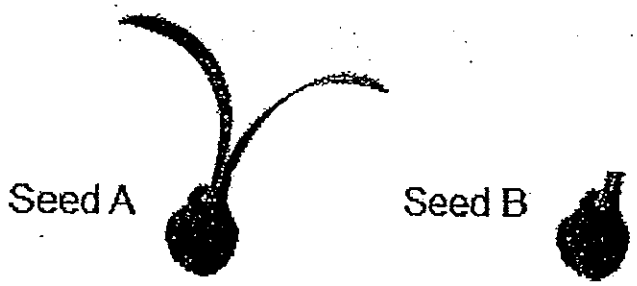


Flower A

Flower B

	Flower A	Flower B
(1)	Group P	Group S
(2)	Group Q	Group P
(3)	Group P	Group R
(4)	Group Q	Group S

5. Nancy carried out an experiment with 2 identical seeds A and B. She removed the wing-like structure of Seed B but **NOT** Seed A.



She dropped both seeds from a height of 10 m at the same time. She observed and recorded the time taken for the seeds to reach the ground.

The aim of Nancy's experiment is to find out if the wing-like structure of the seed _____.

(1) affects the rate of germination of the seed
(2) is needed to prevent the seed from being damaged
(3) enables the seed to stay in the air for a longer period of time
(4) affects the distance the seed is dispersed from its parent plant

6. Farmers sometimes use a method called stem cutting to reproduce new plants.
Diagram 1 shows how a part of the stem of a parent plant is cut off.
Diagram 2 shows the same stem that was cut and planted in a small pot.
After a few weeks, new roots will emerge at the end of the branch.
The branch with its new roots will then grow on its own.

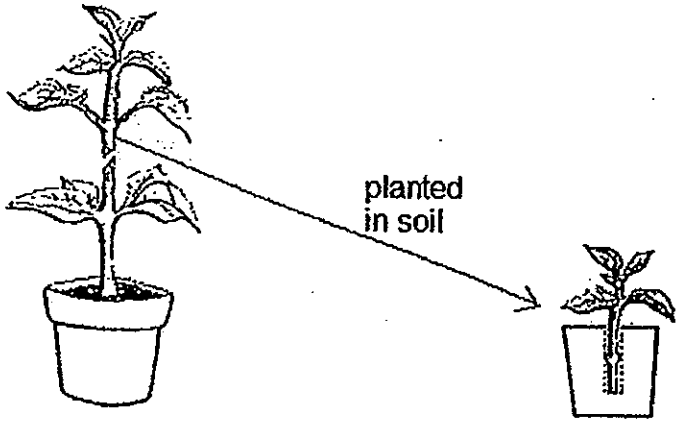


Diagram 1 Diagram 2

Which of the following can be inferred from this reproduction method?

A The new plant will not have the same characteristics as its parent plant.

B This method shortens the time needed for the plant to grow into an adult plant.

C The new plant produces the same quality of fruit as the parent plant since it inherited the genetic information from its parent plant.

D The quality of the fruit produced may not be the same as the parent plant as genetic information may not be passed on from parent to its young.

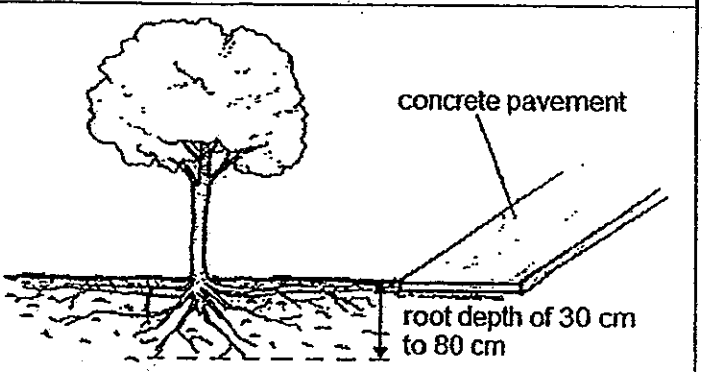
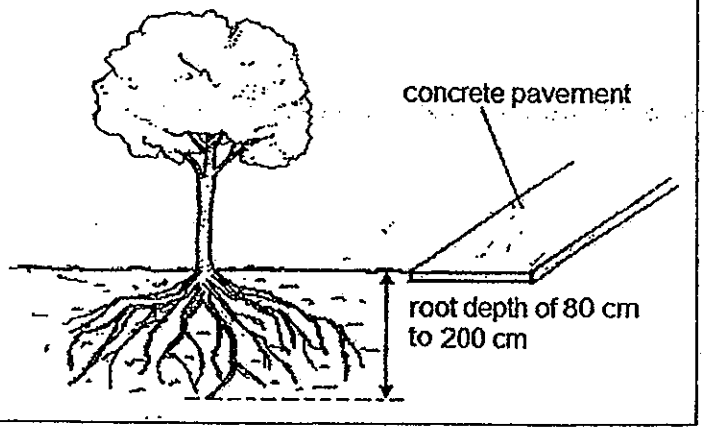
(1) A and B only

(2) B and C only

(3) A and D only

(4) B and D only

7. A student studied Tree Z over a period of time and made the following observations about the roots of Tree Z and the condition of its environment.

Time	Condition of its environment	Cross-sectional sketch of roots of Tree Z
Now	• Frequent heavy rainfall • Floods occur often	
10 years ago	• Little heavy rainfall • Floods do not occur often	

The student noticed that the roots of Tree Z have changed structurally over time. He made some statements from his observation.

A The roots of Tree Z are shallower now because there is more water in the ground surface.

B Now, Tree Z will be anchored more firmly to the ground and will not be uprooted easily.

C The pavement around Tree Z was less damaged by the roots 10 years ago.

D The roots of Tree Z grew deeper 10 years ago because it needed less water.

Which of the following statements made by the student is/are <u>incorrect</u>?

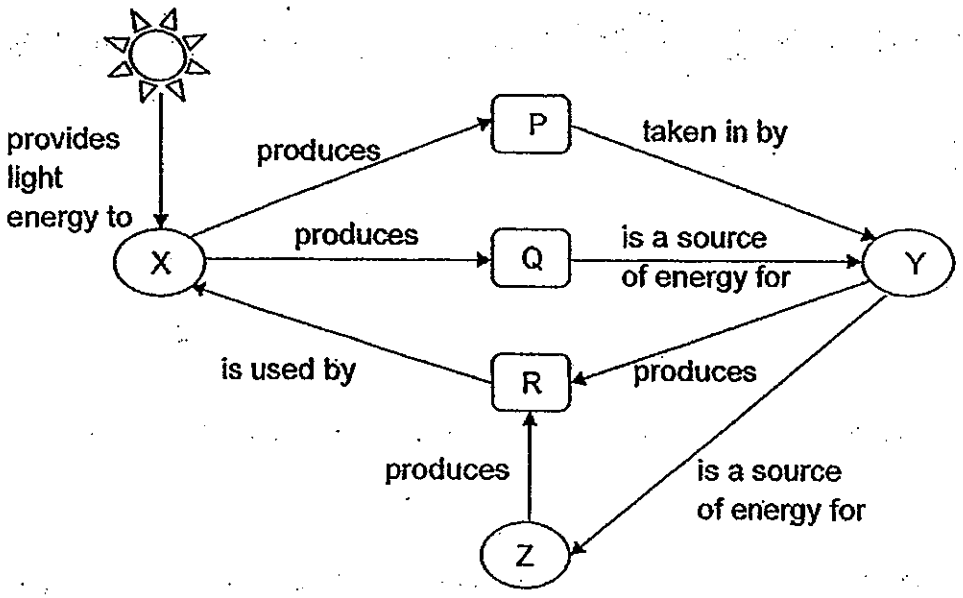
(1) A only

(2) B and D only

(3) A and C only

(4) B, C and D only

8. Study the concept map shown below.

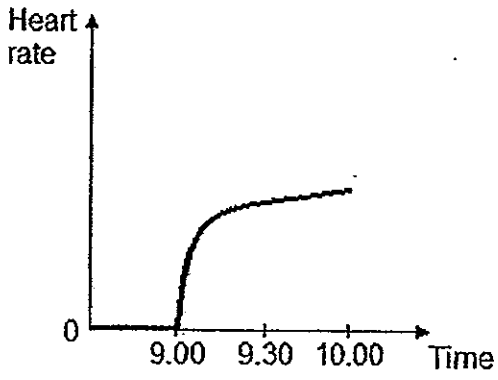


If X, Y and Z represent some organisms found in a garden, what do letters P, Q and R represent in the concept map?

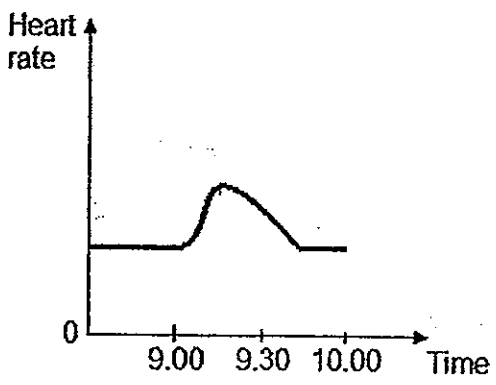
	P	Q	R
(1)	energy	carbon dioxide	water
(2)	food	oxygen	carbon dioxide
(3)	oxygen	food	carbon dioxide
(4)	oxygen	water	food

9. Sean started his 2.4 km run at 9.00 am and completed it at 9.15 am. He then rested in the canteen till 10.00 am.
Which of the following graphs is most likely to show the correct changes in his heart rate?

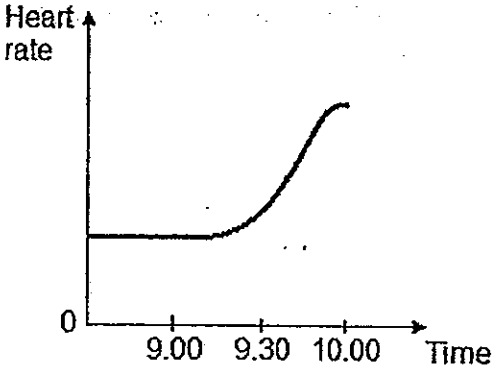
(1)



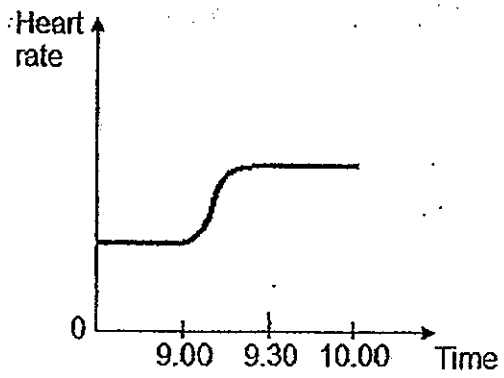
(2)



(3)



(4)

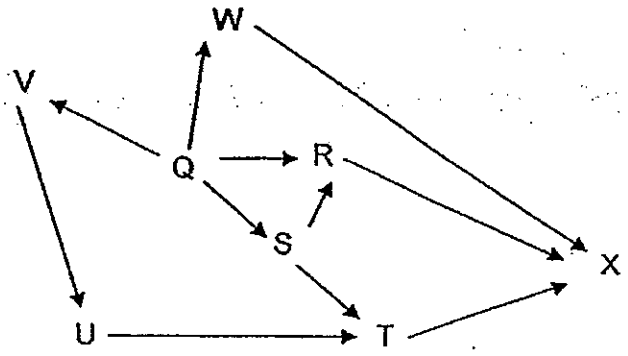


10. Which of the statements about the digestive system is correct?

A The saliva helps to break down the food into smaller pieces.
B The gullet is a passage for all the partly digested food to travel to the stomach.
C Digestive juices are added to completely digest the food in the small intestine.
D Digestion ends at the large intestine and water is absorbed into the bloodstream.

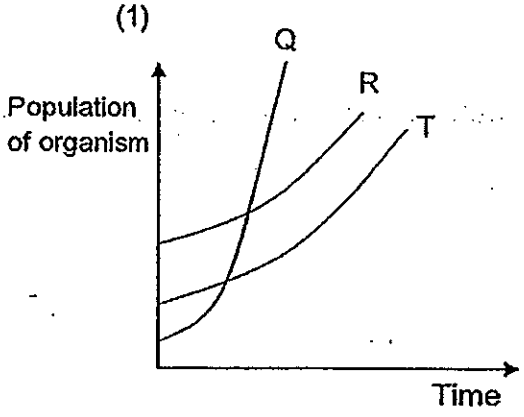
(1) A and D only
(2) B and C only
(3) A, C and D only
(4) B, C and D only

11. Study the food web below.

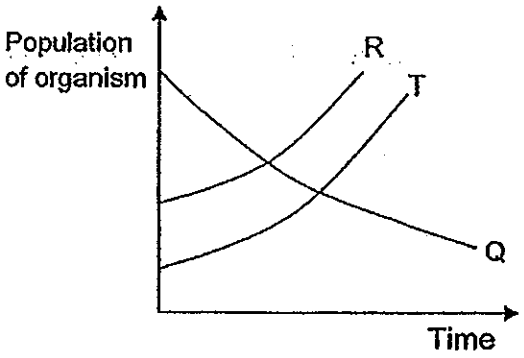


Which of the following graphs show the immediate changes in the populations of Q, R and T if S were completely removed from the habitat?

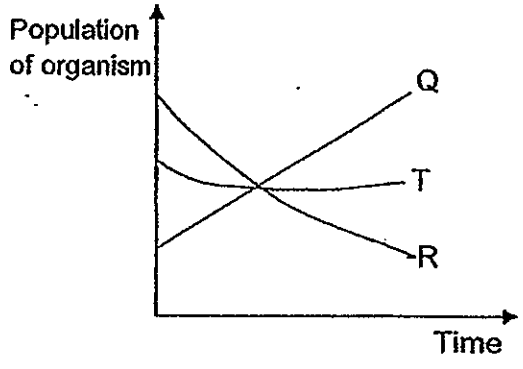
(1)



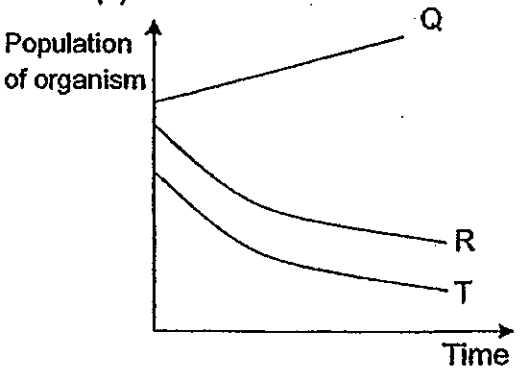
(2)



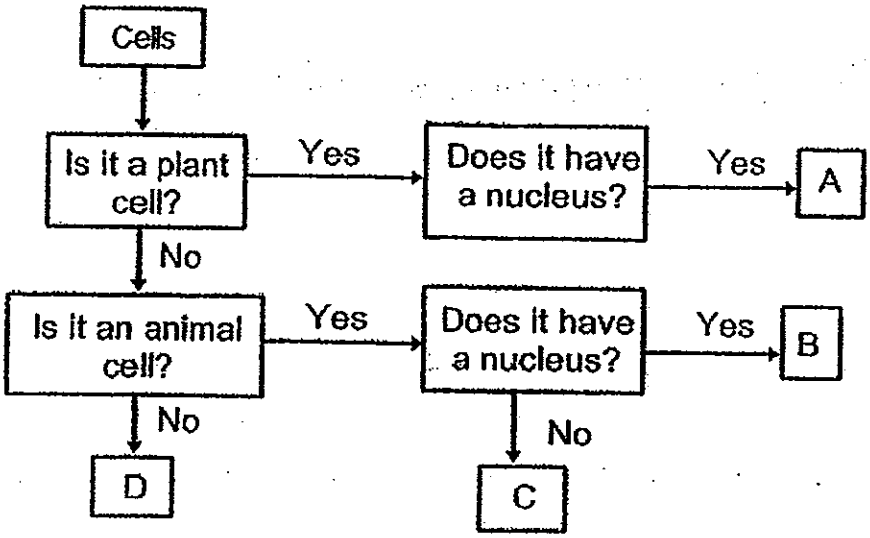
(3)



(4)



12. Study the flow chart carefully.

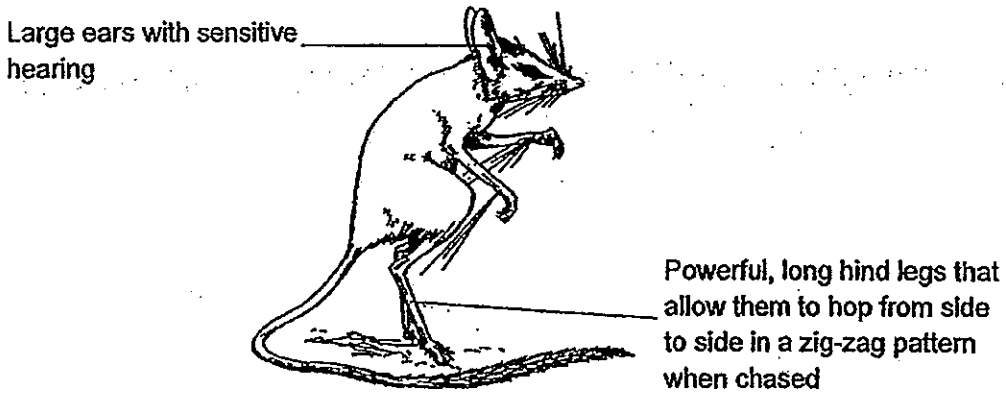


Based on the flow chart above, which of the following statements is/are correct?

A Cell B has no cell wall.
B Cell A can definitely make food.
C Cell C contains genetic materials.
D Cell D needs light to carry out its function

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

13. The diagram below shows what animal P looks like.



Animal P lives in the hot desert and feeds on small insects only at night.

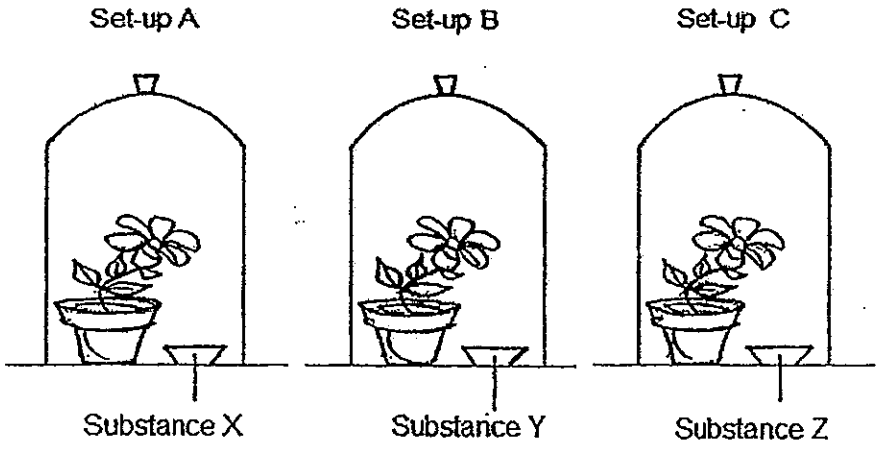
Based on the information above, 4 children wrote the following in a table created by their teacher below.

Child	Characteristic	Type of adaptation	Benefit to Animal P
Michael	Large ears	Structural Adaptation	To help them lose body heat quickly
Simon	Sensitive hearing	Behavioural Adaptation	To help them hear for prey and predator at night
James	Hop from side to side in a zig-zag pattern	Behavioural Adaptation	To help them run away from predators more easily
David	Feeds only at night	Behavioural Adaptation	To eat less so as to conserve energy

Which child/children made an error in what he wrote?

(1) David only
(2) Simon and David only
(3) Michael and James only
(4) Michael, Simon and David only

14. Kathy conducted an experiment on photosynthesis. She left 3 similar pots of plants in a dark room for 3 days and watered them daily.
After 3 days, the pots of plants were placed in Set-ups A, B and C containing different substances as shown below.
All the set-ups were placed under sunlight.



After 6 hours, Kathy removed a leaf each from set-ups A, B and C. She conducted a starch test on each of them. The iodine will turn dark blue when starch is present. The results are shown in the table below.

	Results of starch test
Leaf from Set-up A	Iodine turned dark blue.
Leaf from Set-up B	Iodine turned dark blue.
Leaf from Set-up C	Iodine remained brown

Which of the following is most likely to be substances X, Y and Z?

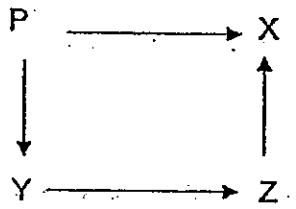
	Substance X	**Substance Y**	**Substance Z**
(1)	water	substance that produces carbon dioxide	chemical that absorbs carbon dioxide
(2)	chemical that absorbs water vapour	chemical that absorbs oxygen	substance that produces carbon dioxide
(3)	chemical that absorbs carbon dioxide	water	chemical that absorbs oxygen
(4)	substance that produces carbon dioxide	chemical that absorbs water vapour	water

15. The table below shows how some organisms are classified.

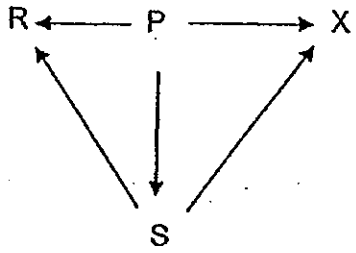
Plant	Herbivore	Carnivore	Omnivore
P	X and Y	Z	R and S

Which one of the following food webs shows a possible way energy is transferred between some of the organisms in the table above?

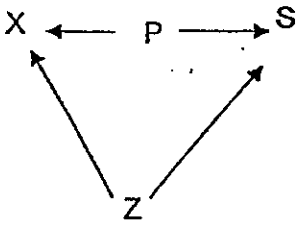
(1)



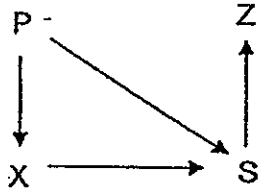
(2)



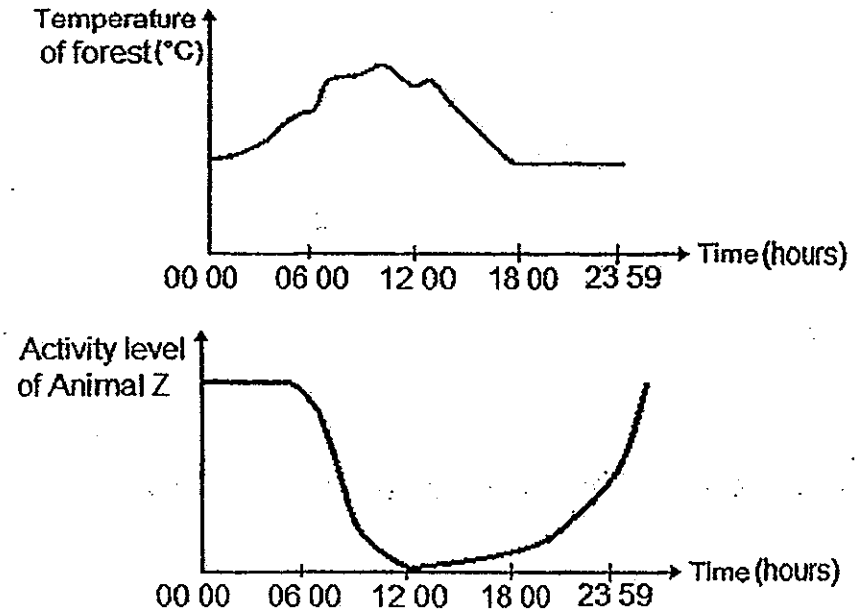
(3)



(4)



16. Calvin came upon two graphs which show the relationship between the behavioural pattern of Animal Z, which lives in the forest, and the temperature changes of the forest in 24 hours.

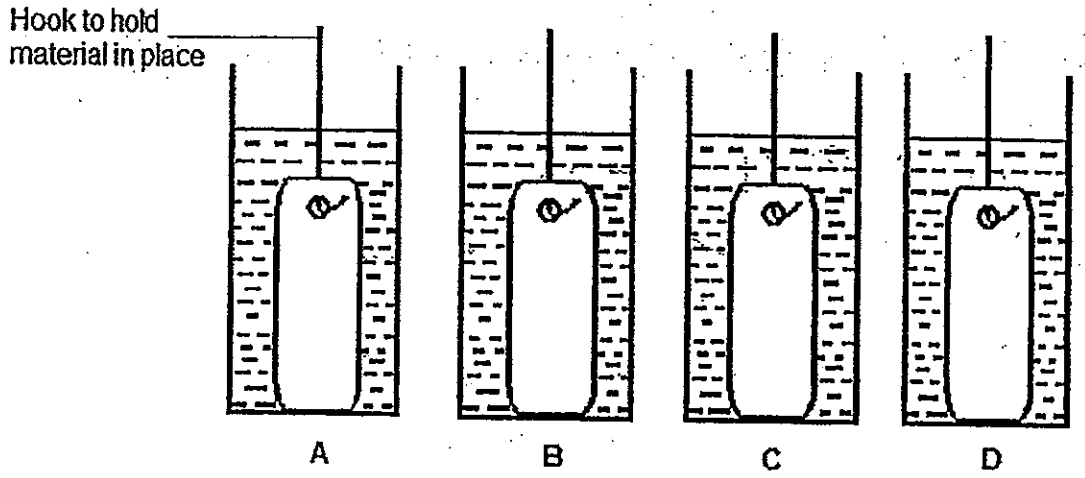


What conclusion can Calvin make about Animal Z based on the graphs?

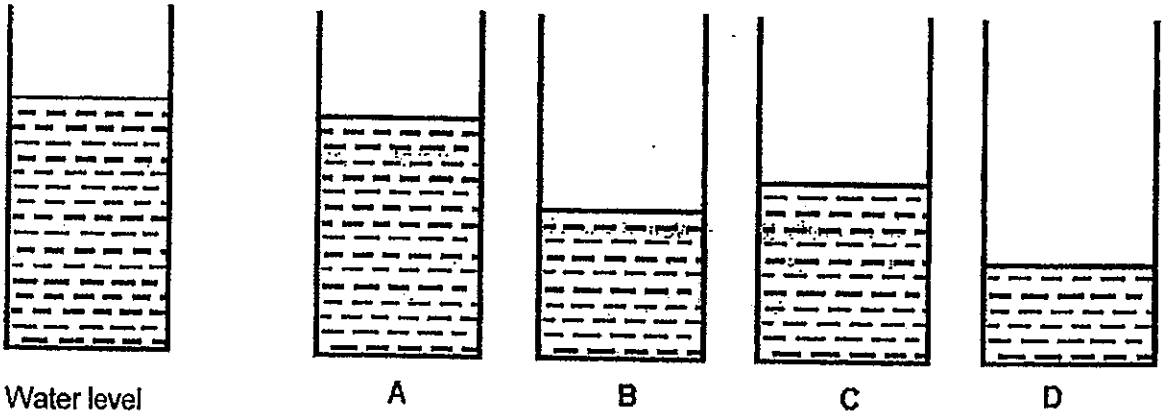
A It is likely to see well in the dark.
B It is most likely to hunt for food at night.
C It is only active as the temperature increases.

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

17. Gordon immersed four different materials, A, B, C and D, of the same size into cylinders containing equal amounts of water as shown in the diagrams below.



After leaving the materials inside for two minutes, he removed them from the cylinders. The diagrams below show the water level after the materials were removed from the cylinders.



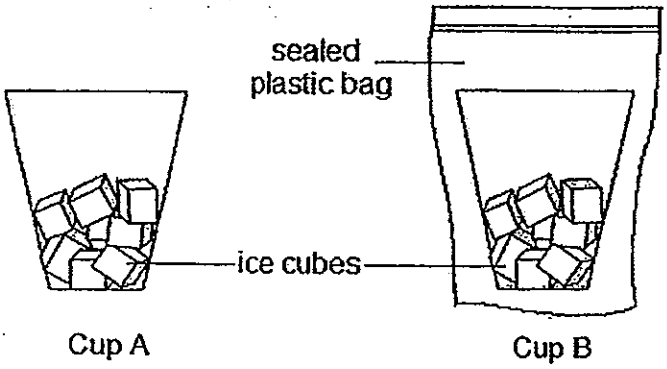
Water level before materials were immersed in cylinders

Water levels in cylinders after materials were immersed and taken out.

Based on the results of the above experiment, which material, A, B, C or D, is most suitable for making a raincoat?

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

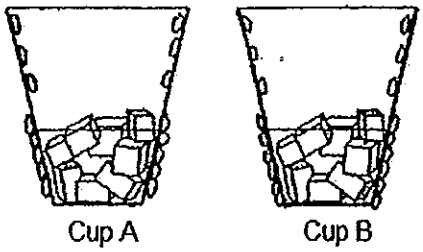
18. Roy carried out an experiment on two similar plastic cups, A and B, containing equal volume of ice as shown below.
Cup B was sealed in a plastic bag. Both cups were left on the table for 3 minutes.



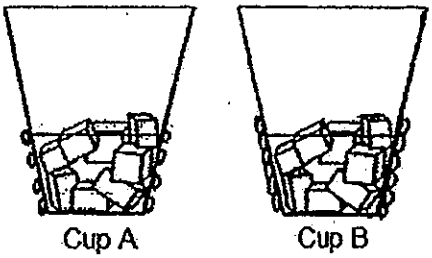
After 3 minutes, Roy removed the plastic bag from Cup B and observed that some ice had melted and water droplets had formed on both Cups A and B.

Based on the information given above, which of the following would Roy observe?

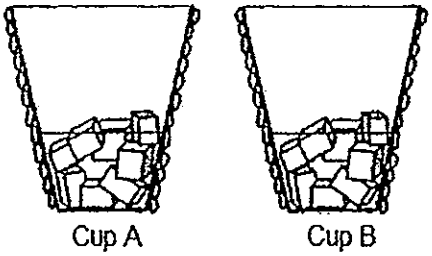
(1)



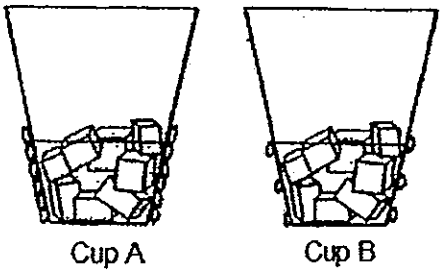
(2)



(3)



(4)



19. A group of students carried out an experiment to study the factors that affect the rate of evaporation. They recorded the conditions in the table below.

Set-up	Exposed surface area of the water (cm^2)	Temperature of water (°C)	Amount of water used (ml)
A	60	50	200
B	50	80	250
C	60	70	200
D	80	50	150

Which two set-ups must they use to conduct a fair test?

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

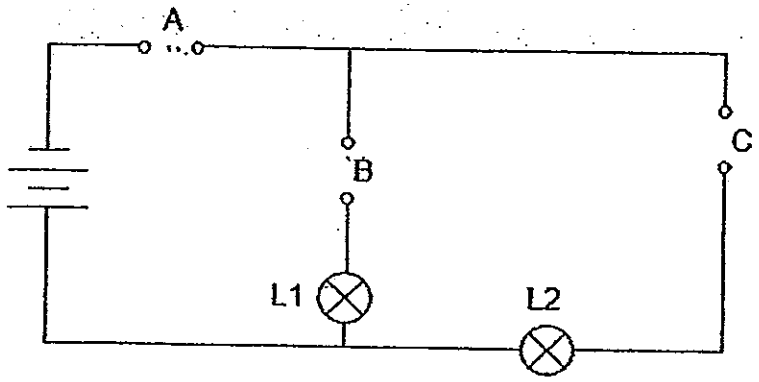
20. Substance X is a liquid at 20 °C. It becomes a gas at 75 °C.
Based on these observations, some statements about substance X were made and recorded in the table below. Zack was asked to decide if each statement was true, false or impossible to tell by putting a tick in the correct column.

	Statements	True	False	Impossible to tell
A	Substance X is a gas at 80 °C.			✓
B	Substance X is a solid at 0 °C.		✓	
C	Substance X is a liquid at 40 °C.	✓		
D	Substance X is a liquid at 87 °C.		✓	

For which of the above statements was Zack's answer correct?

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

21. Derrick had three rods, X, Y and Z, made of different materials. He placed them in various positions, A, B and C, in the circuit shown below.



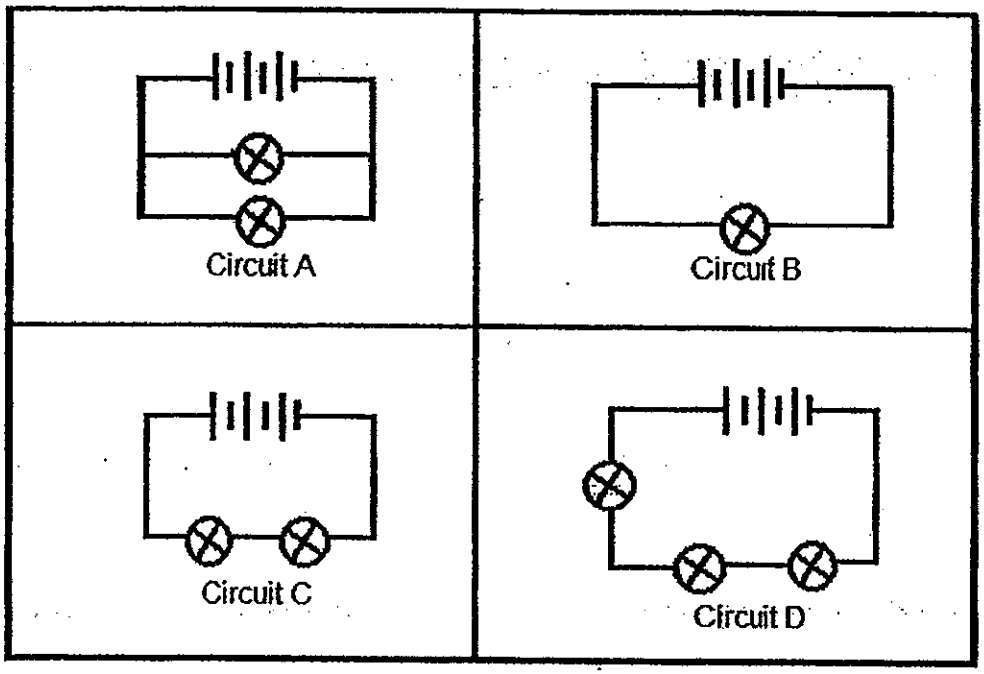
The results of the experiment are shown in the table below. A tick (✓) in the box indicates that the light bulb lit up.

Positions where rods were placed			Light bulbs	
A	B	C	L1	L2
Z	X	Y		
Y	Z	X		✓
X	Y	Z	✓	

Based on the results above, which of the following shows correctly how rods X, Y and Z could be classified?

	Electrical Conductor	Electrical Insulator
(1)	X and Z	Y
(2)	X	Z and Y
(3)	Y and Z	X
(4)	X and Y	Z

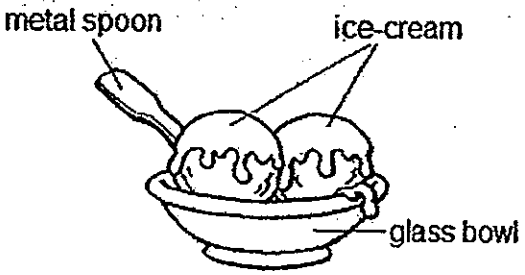
22. Ali set up four circuits, A, B, C and D, using identical batteries, wires and bulbs.



Which one of the following is correct?

	Circuit(s) with brightly lit bulb(s)	**Circuit(s) with dimly lit bulb(s)**
(1)	D	A, B and C
(2)	B	A, C and D
(3)	A and B	C and D
(4)	A and C	B and D

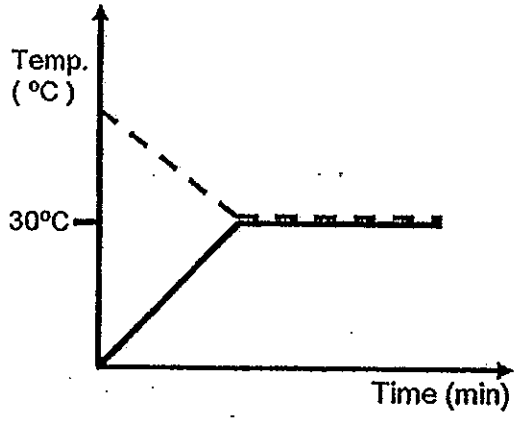
23. Mrs Tan left a bowl of ice-cream on the kitchen table at room temperature of 30°C.



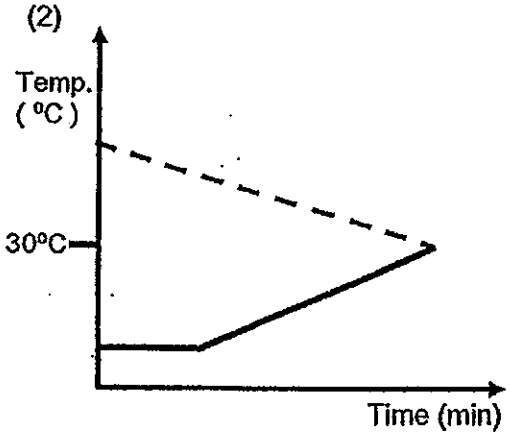
Which of the following graphs correctly shows the changes in temperature of the glass bowl and ice-cream over time?

Key: ——— ice-cream
– – – glass bowl

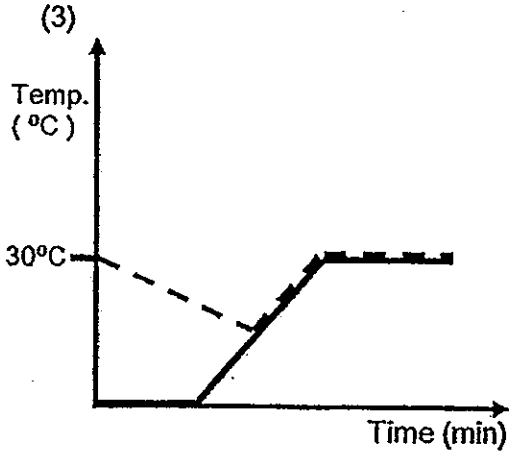
(1)



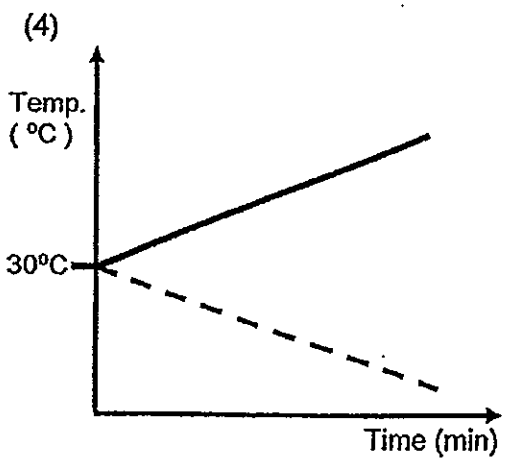
(2)



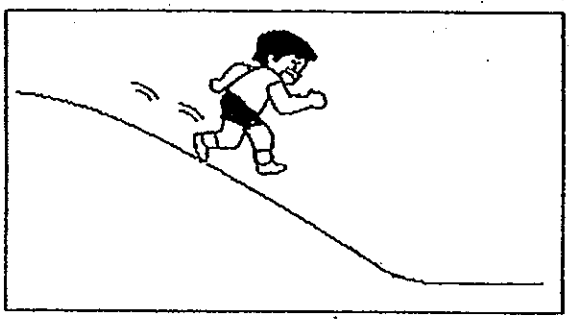
(3)



(4)

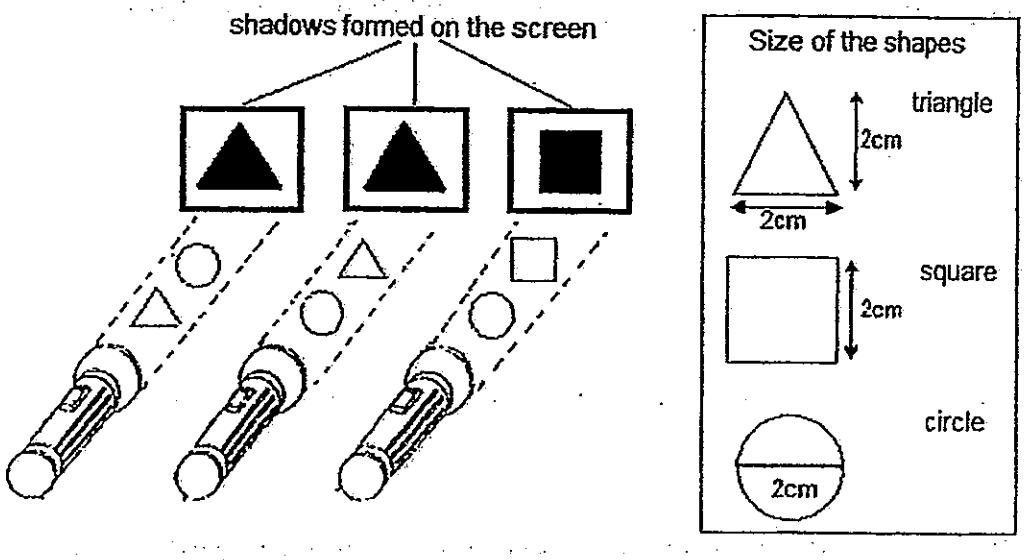


24. Jon starts to run down a slope. What happens to the amount of gravitational potential energy and kinetic energy he possesses?



	Kinetic energy	Gravitational Potential energy
(1)	Decreases	Increases
(2)	Increases	Decreases
(3)	Remains unchanged	Decreases
(4)	Increases	Remains unchanged

25. The diagram below shows the shadow produced when two different objects were placed at different positions between a screen and a torch at any one time.



A hole is then cut from the square object. The square, triangular and circular objects are then set up as shown in the diagram below.

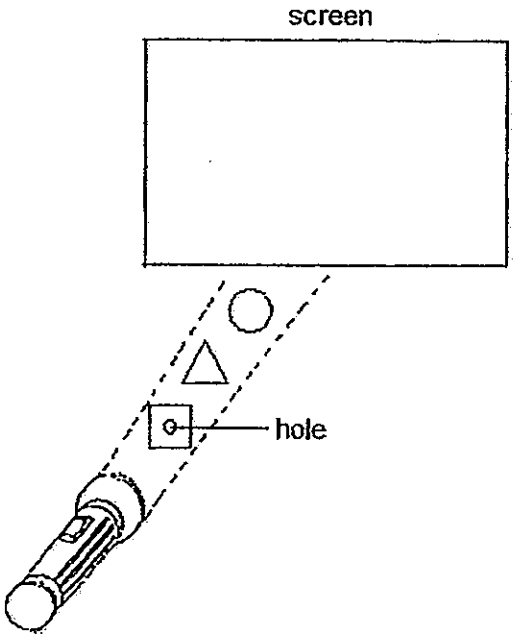
Which one of the following shadows will appear on the screen?

(1) 

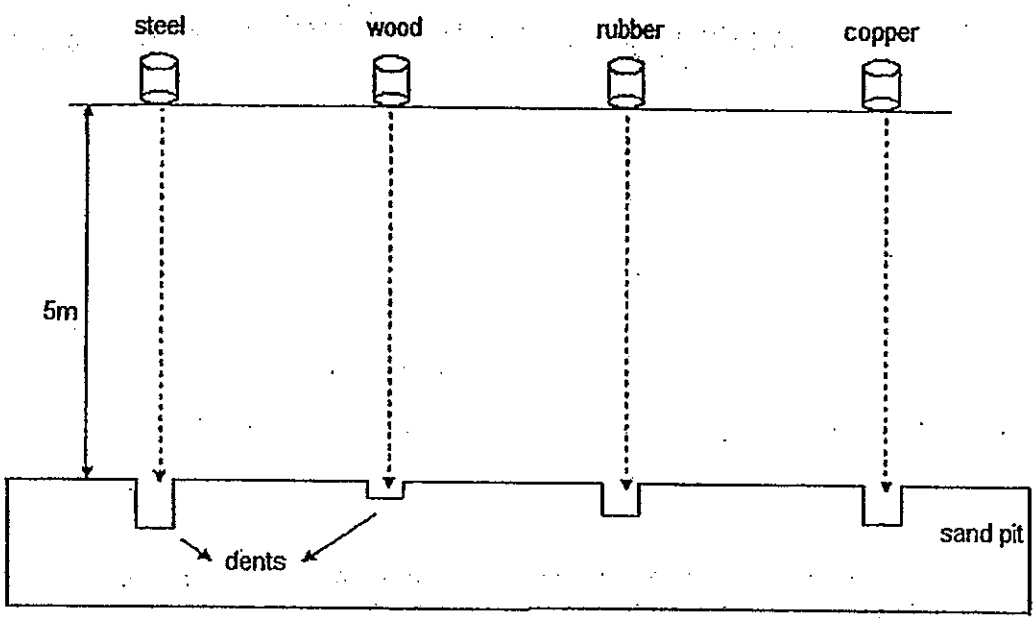
(2) 

(3) 

(4) 



26. John dropped four cylindrical blocks of the same size but made of different materials from the same height as shown in the diagram below.



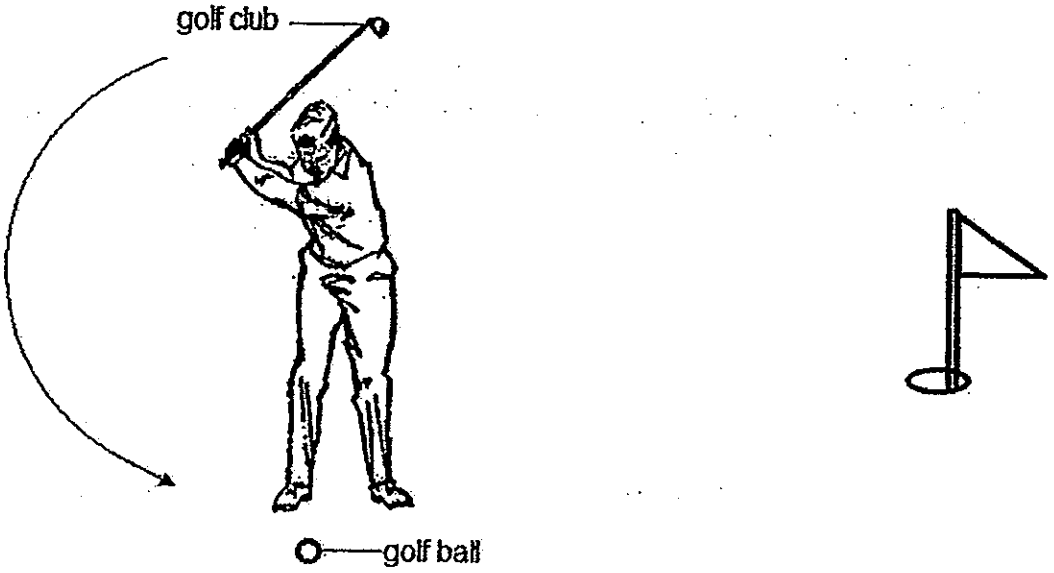
Based on their observations, four of his friends, Alan, Bob, Cal and Dan made the following inferences.

Alan: The wooden block has the least potential energy.
Bob: The rubber block has more potential energy than the steel block.
Cal: The steel block has the most potential energy to be converted to kinetic energy.
Dan: The copper block has more potential energy than the rubber block.

Who made the correct inferences?

(1) Alan only
(2) Bob and Cal only
(3) Alan, Cal and Dan only
(4) All of them

27. Mr Tham is about to swing his golf club down to hit the golf ball into the hole.



Which of the following shows the conversion of energy that will take place as he swings the golf club down to hit the golf ball?

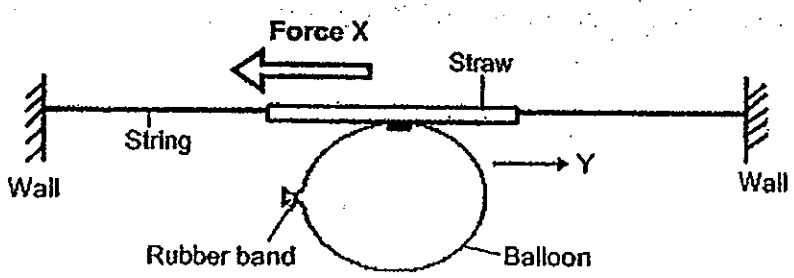
(1) Gravitational potential energy of golf club → kinetic energy of golf club → gravitational potential energy of golf ball → sound energy of golf ball when it is hit

(2) Gravitational potential energy of golf club → kinetic energy of golf club → sound energy of golf club when it hits the golf ball + gravitational potential energy of golf ball

(3) Gravitational potential energy of golf club → kinetic energy of golf club → sound energy of golf club when it hits the golf ball + kinetic energy of golf ball

(4) Gravitational potential energy of golf club → kinetic energy of golf club when it hits the golf ball + kinetic energy of golf ball

28. James carried out an experiment using a balloon, a straw and a string. The string is passed through the straw and the balloon is then glued firmly to the straw as shown below.

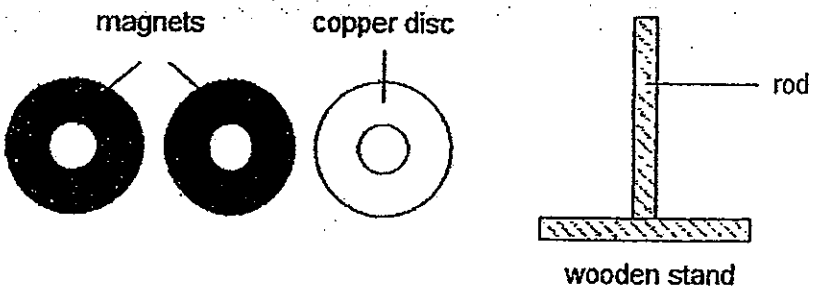


When the rubber band is removed, air rushed out of the balloon, producing a force of 12 units. This force caused the balloon and the straw to move in the direction of Y. There is also an opposing force X acting on the straw.

What type of force is Force X and what is the most likely amount of this force?

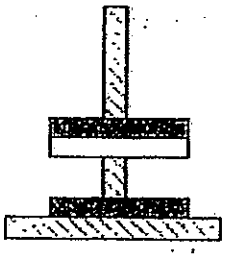
	Force X	Amount (units)
(1)	Friction	Less than 12
(2)	Gravity	Less than 12
(3)	Friction	More than 12
(4)	Gravity	More than 12

29. The diagrams below show three discs, each with a hole in the centre. Two of the discs are magnets and one is a copper disc. All three discs could pass through the rod of the wooden stand.

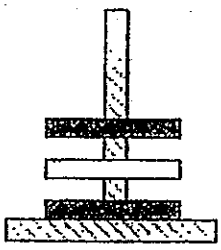


When the 3 discs are slotted through the rod, which of the following observations of the discs would be **impossible**?
(The side view of discs and stand are shown.)

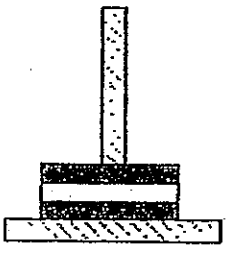
A



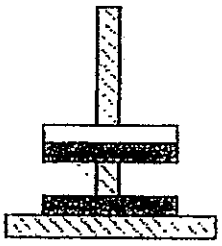
B



C



D



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

30. Tom carried out an investigation to measure the distance travelled by a battery operated car in 30 seconds on different tracks. The results were recorded in the table below.

Track	Distance travelled by toy car (cm)
A	280
B	160
C	200
D	230

The energy conversion in the toy car as it moves along the track is as follows:

Chemical potential energy → Electrical energy → Kinetic energy + Heat energy + Sound energy

On which track would the greatest amount of heat energy and sound energy be produced?

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

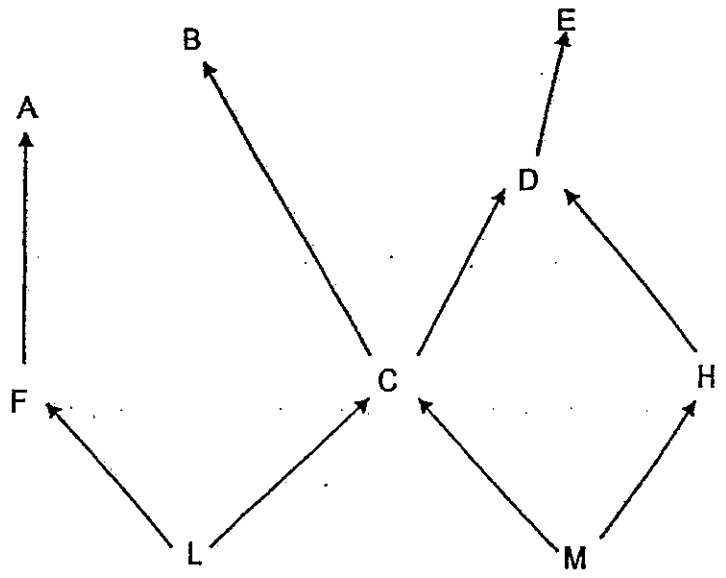
Name : _____ ( )

Class : P6 ( )

Section B: 40 marks

Read the questions carefully and write down your answers in the spaces provided.

31. The diagram below shows a food web.



(a) From the food web, identify one organism that is both a prey and a predator. [1]

_____

(b) If Organism G was completely wiped out due to a disease, which organism's population would be most affected? Explain your answer. [2]

_____

_____

_____

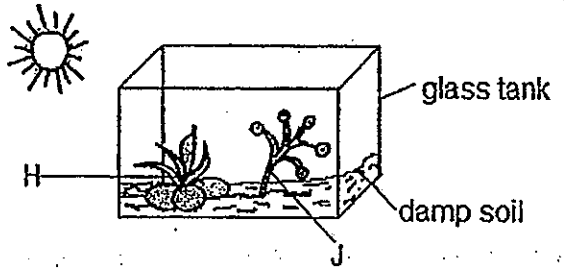
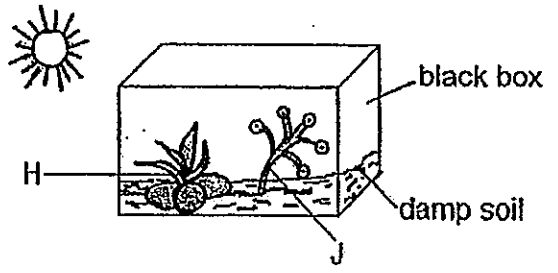
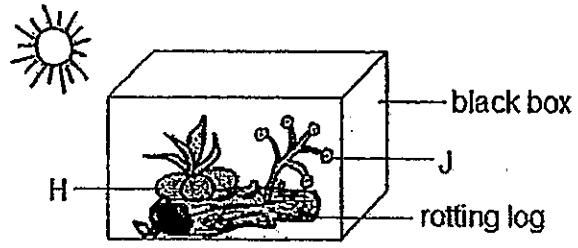
3

32. Betty found two organisms, H and J.

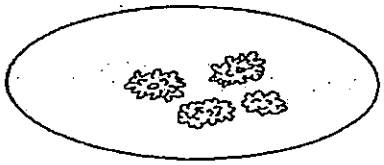
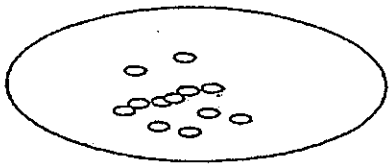
Organism H

Organism J

She carried out the following experiments to find out the characteristics of organisms H and J and recorded down the results of the experiment in the table below.

	Experimental Set-up	Results / Observations of Experiment
1		Organism H died but J continued to grow healthily
2		Both Organisms H and J died.
3		Organism H continued to grow healthily but J died

Continued on next page

4	Microscopic view of a part of Organism H 	Brown spore bags were observed
5	Microscopic view of a part of Organism J 	Ovules were observed

(a) Based on the results of the experiment above, is Organism J a fungi, flowering or non-flowering plant? Give **two** reasons for your choice. [2]

_____

_____

_____

(b) Based on the results of the experiment above, what can you conclude about how Organism H obtains its food? Explain your answer. [2]

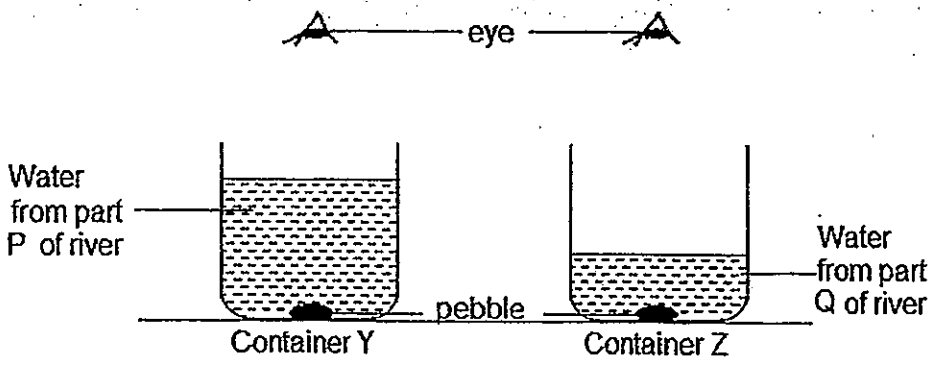
_____

_____

_____

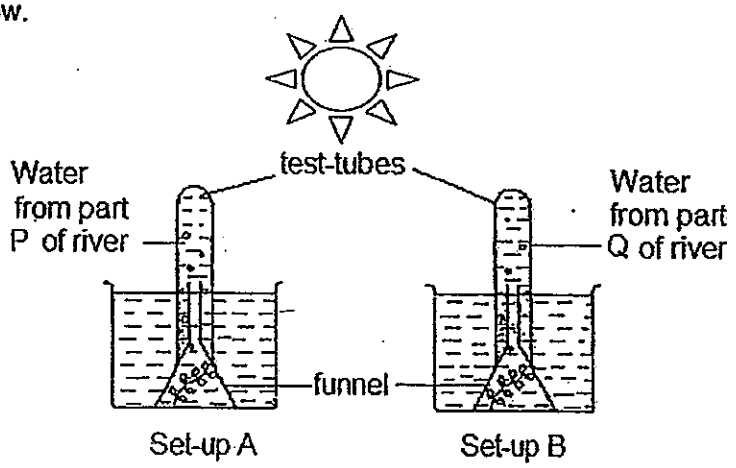
4

33. Sara collected some water from two different parts of a river, P and Q. She put a pebble at the bottom of two identical containers Y and Z. Then she poured water taken from P into container Y until the pebble could no longer be seen from the top. She did the same for water from Q with container Z. The results are shown below.



(a) Based on the results shown above, which part of the river, P or Q, is more polluted? Explain your answer. [1]

Sara then used the same water from part P and Q of the river to carry out an experiment. She used similar aquatic plants and placed them in set-ups A and B as shown below.

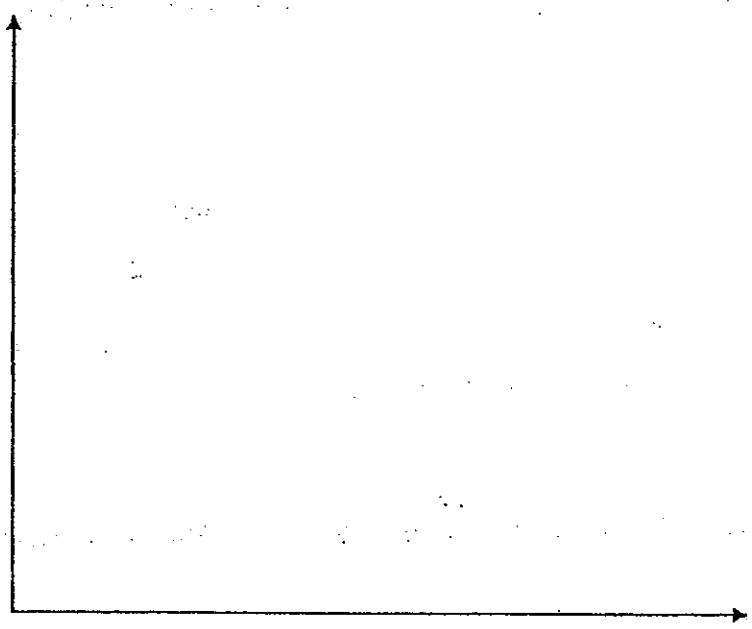


Bubbles of gas were produced and collected in the test-tubes. The amount of gas collected in the test-tubes in both set-ups A and B were measured over a period of one hour.

Continued on next page

1

(b) Using the axes below, draw two line graphs to show how the amount of gas collected in the test-tubes for set-ups A and B would change over time. Label the axes and label your line graphs as A and B for each set-up. [2]



(c) Explain why the amounts of gas collected in the test-tubes for set-up A and B were different after one hour. [2]

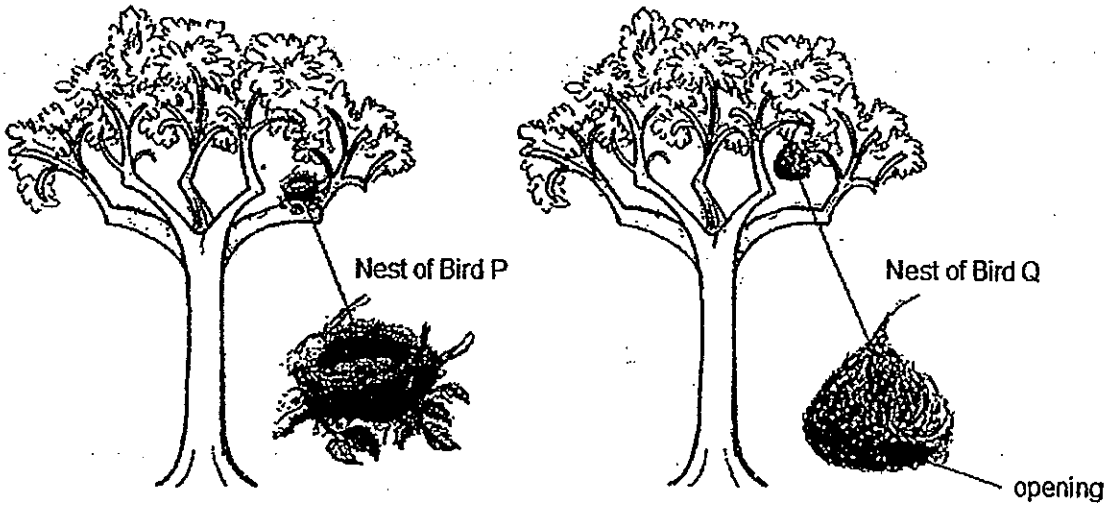
_____

_____

_____

4

34. The diagrams below show the nests built by Bird P and Bird Q.



(a) Based on the diagrams above, whose nest, bird P or Q, offers better protection to its young from the rain? Explain your answer. [1]

The predators of the young of birds P and Q are usually larger birds flying in the sky. The young of bird Q usually has a higher survival rate than the young of bird P.

(b) Explain how the structure of the nest of bird Q helps ensure that its young have a higher survival rate. [1]

2

35. James had been observing and studying the characteristics of Organism X. The following are some notes James made about Organism X:

- Both the young and adult Organism X eat animal waste.
- Organism X shapes fresh animal waste into a large ball which can be 50 times its weight.
- Organism X rolls the ball of animal waste over the ground with its legs.
- The ball of animal waste is buried in soft soil.
- The female Organism X lays eggs inside the ball of animal waste.
- Predators of Organism X are birds and bats.

(a) Based on the information above, explain how the following behavioural adaptations of Organism X help to increase the chances of survival of its young.

(i) Burying the ball of animal waste in soft soil: [1]

_____

_____

(ii) Laying eggs inside the ball of animal waste: [1]

_____

_____

When Organism X feeds on the animal waste, it breaks the waste into smaller pieces.

(b) How does breaking the animal waste into smaller pieces help in the process of decomposition? [1]

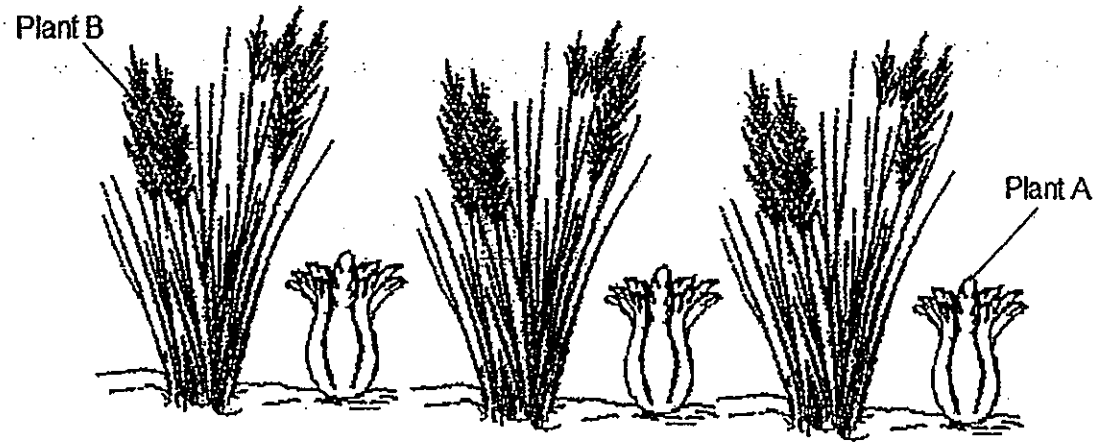
_____

_____

_____

3

36. The diagram below shows two types of plants growing in a vegetable farm.



Plant A is the vegetable that the farmer planted while Plant B was not planted in the farm by anyone.

(a) How could Plant B grow in the farm when it was not planted by anyone? [1]

_____

_____

(b) Give a reason why it is important for the farmer to get rid of Plant B quickly. [2]

_____

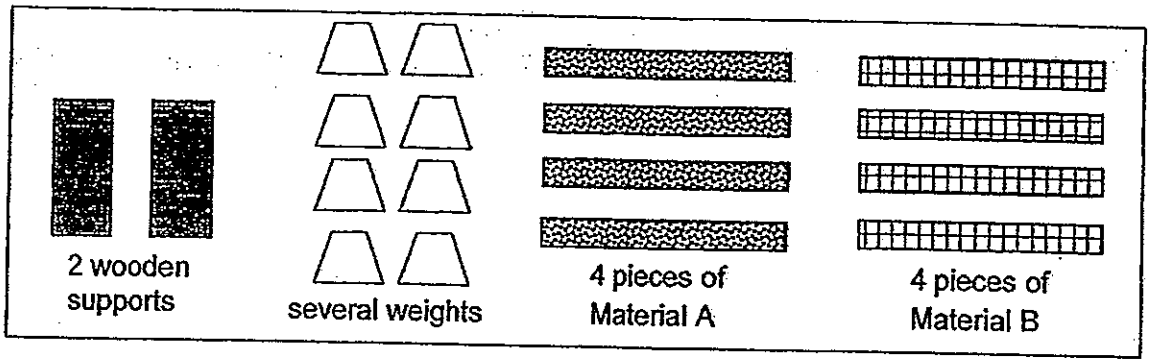
_____

_____

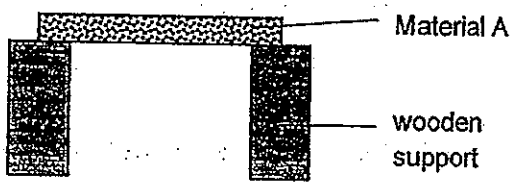
_____

3

37. Sam wanted to find out which material, A or B is stronger. He had the following items:



The diagram below shows how Sam set up his experiment with Material A.



(a) Describe the steps that Sam should take to conduct his experiment. Step One has been written for you. [2]

1. Place a piece of Material A onto two wooden supports as shown in the diagram above.

2. _____

_____

_____

_____

_____

_____

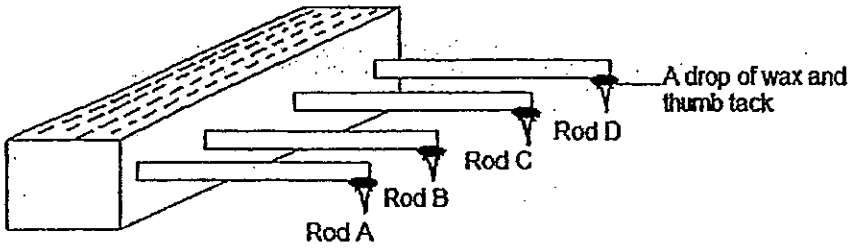
(b) If Material A were the stronger material, what results would Sam observe? [1]

_____

_____

3

38. Irene carried out an experiment on 4 rods A, B, C and D. The rods are made of different materials and were placed in a container of boiling water. At the end of each rod was a thumbtack stuck to it with a drop of wax.

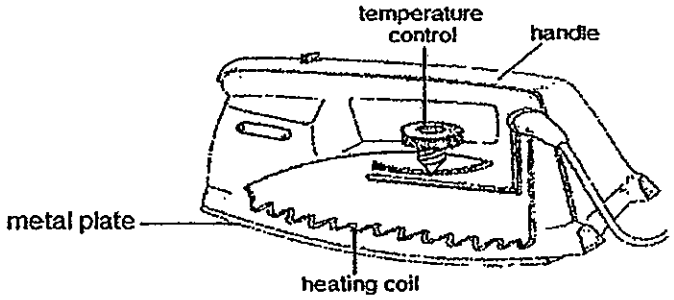


In the table below, Irene recorded the time taken for each thumbtack to fall off the rod.

	Time taken for thumbtack to fall off the rods (sec)
Rod A	10
Rod B	7
Rod C	11
Rod D	20

(a) Based on the results shown in the table above, which material is the worst conductor of heat? Explain your answer. [1]

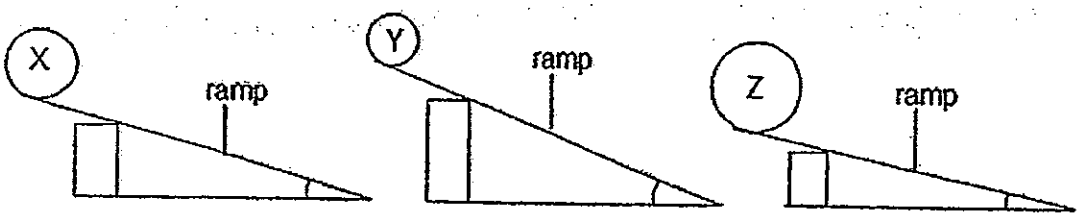
The diagram below shows an electric iron.



(b) Which one of the four materials, A, B, C or D is best suited to be used for making the metal plate of the iron? Explain your choice. [2]

3

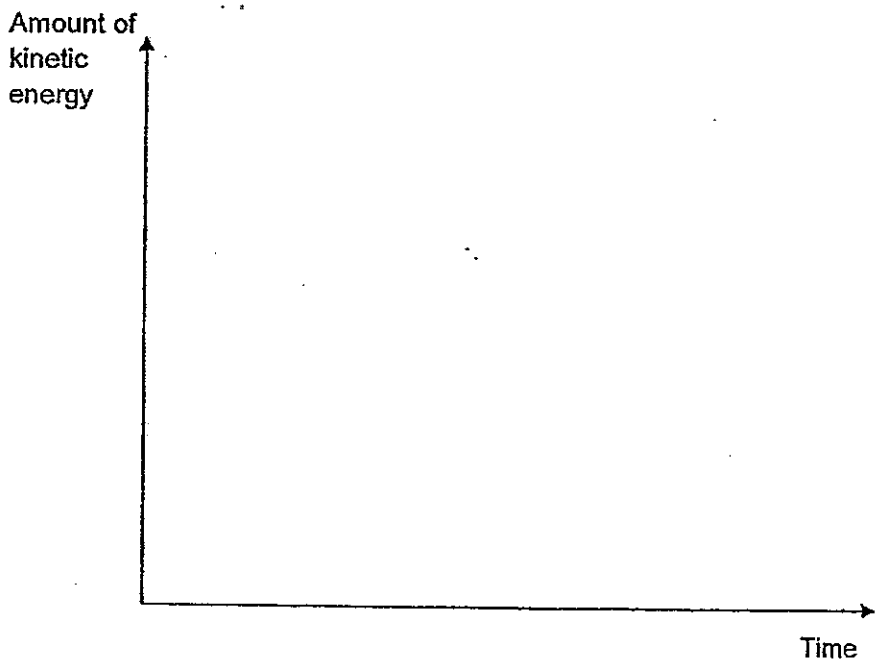
39. Wei Jie set up an experiment as shown below to find out how the angle of inclination of a ramp would affect the distance travelled by a ball along the floor after it leaves the ramp. He used three balls X, Y and Z to carry out the experiment.



Wei Jie's brother told him that his experiment was not a fair test.

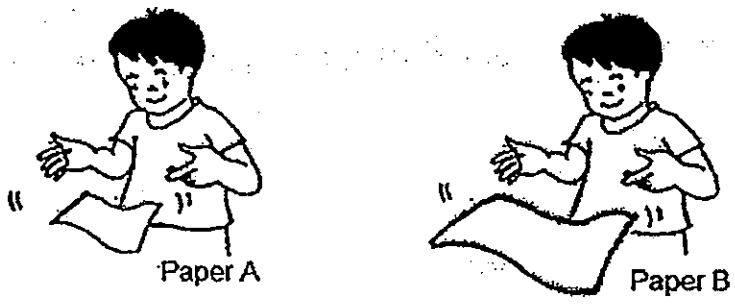
(a) Do you agree with Wei Jie's brother? Explain your answer. [2]

(b) Using the axes below, draw a graph to show the changes in the amount of kinetic energy for Ball Y, from the time Wei Jie releases it from the top of the ramp until it stops. [1]



3

40. Andrew had two similar pieces of paper, A and B. He folded Paper A into half. Then he dropped the papers as shown in the diagram below.



He recorded the time taken for them to reach the ground in the table below.

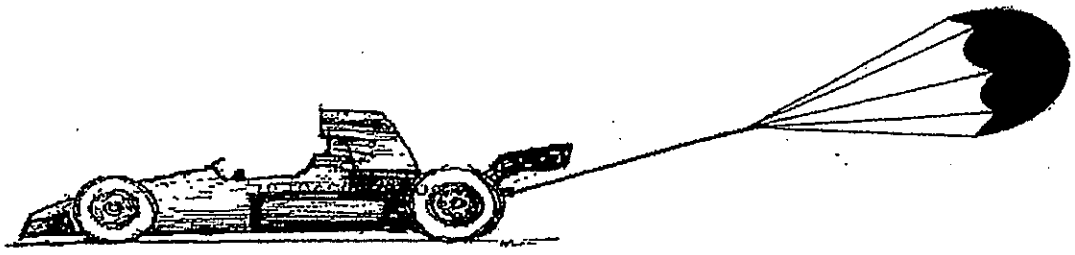
	Paper A	Paper B
Time taken to reach ground (s)	2	4

(a) What is the aim of the experiment? [1]

_____

_____

Andrew has a toy car with a parachute attached to the back. The parachute is automatically released when the toy car reaches a certain speed.



(b) How does the parachute affect the speed of the toy car? Explain your answer. [2]

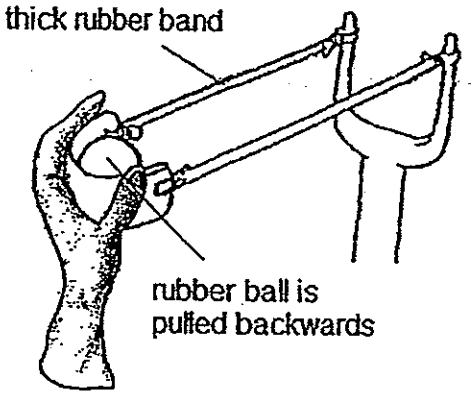
_____

_____

_____

3

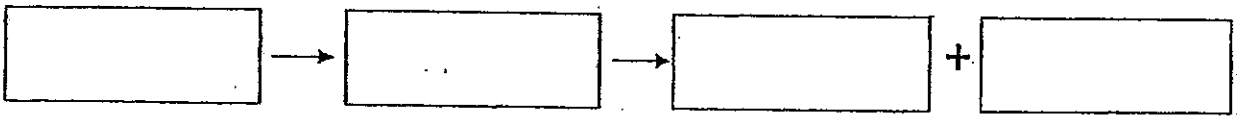
41. Ali used a catapult to shoot a small rubber ball towards the ground as shown in the diagram below.



(a) Where did Ali get the energy to pull the rubber ball backwards? [1]

_____

(b) State the energy conversions from the point when the ball was released to the point when the ball hits the ground. [1]



of stretched rubber band

of rubber ball

(c) Using the same set-up (without changing anything), what can you do to increase the distance travelled by the rubber ball? Explain your answer. [2]

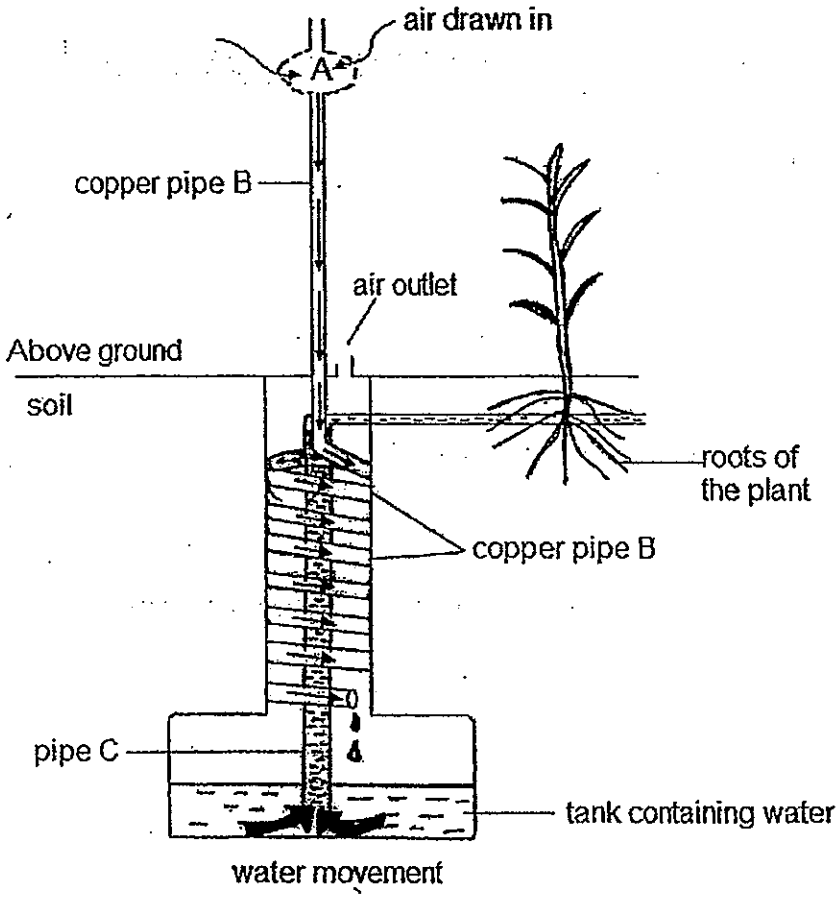
_____

_____

_____

4

42. The diagram below shows System K, which will be able to extract water from the air. System K is commonly used in very dry areas where the soil condition is also dry.



System K draws air into part A and air is transported down copper pipes B where condensation takes place. Water droplets are collected in a large underground tank. Water from the tank is then pumped up through pipe C and transported directly to the roots of plants.

The system works well when it is buried under the ground where it is always cooler than the air above ground.

(a) Based on the information above, explain why System K must always be cooler than the air temperature for it to work well? [2]

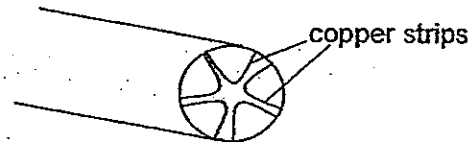
_____

_____

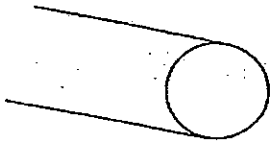
_____

2

A cross-sectional view of copper pipe B shows that the inner surface of the pipe is lined with copper strips as shown below.



copper pipe B lined with copper strips



copper pipe not lined with copper strips

(b) Explain how the presence of the copper strips in the pipes help speed up the rate of collection of water in the tank. [1]

(c) With the use of system K in dry areas, farmers can grow crops throughout the year. How is this so? [1]

2

End of paper

Please check your work carefully.

ANSWER SHEET

EXAM PAPER 2013
SCHOOL : AITONG
SUBJECT : PRIMARY 6 SCIENCE

TERM : SA1

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
3	2	4	3	3	2	2	3	2	2	4	1	2	1	4	2	1

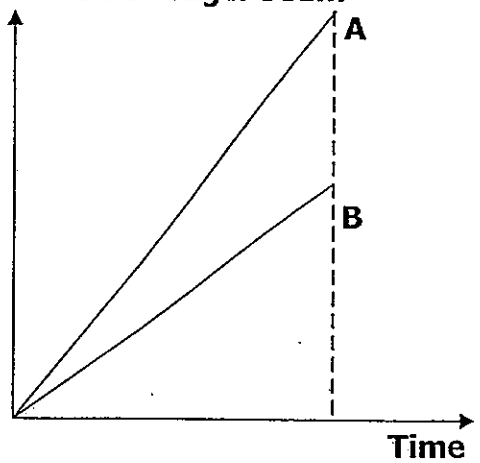
Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
4	3	2	4	3	3	2	2	3	3	1	1	2

31)a)Organism D.
b)Organism B. It feeds only on organism G and if it was wiped out, organism B could not survive as it had no food to eat.

32)a)Organism J is a flowering plant. It can photosynthesis when there is light and has ovules.
b)Organism H obtains its food from the decaying matter.

33)a)Part Q of the river is more polluted. Less water from Part Q can be poured in until the pebble is no longer seen.

b)



33)c)The water in set-up A is less murky than the water in set-up B so more light can pass through the water in set-up A. With more light, the plant in set-up A can photosythesise faster and hence the amount of oxygen produced after one hour would be more than that in B.

34)a)Bird Q. The opening of the rest is at the bottom and rain cannot get in easily. However, the nest of bird P has an opening that faces upwards, and rain can get collected there.

b)The structure of the nest blocks the babies from the predators and predators cannot see the babies. Also, the opening of the nest is small and it is harder for predators to eat the babies.

35)a)i)Their young are not easily seen by their predators.

ii)Predators would not easily fins the eggs in the ball of waste.

b)When organism X feeds on the animal waste, it increases the exposed surface area of the waster, hence more decomposers can act on the waste at any one time.

36)a)The seeds of plant B could be dispersed by animal or wind that allows to be planted in the farm.

b)Plant B would compete with plant A for water, space, sunlight and mineral salts, causing Plant A to grow unhealthily.

37)a)2)Place the most number of weight on material A until it breaks and record the number of weight.

3)Repeat steps 1 and 2 for material B.

4)Repeat the experiment a few more times and calculate the average result.

5)Compare and conclude the results.

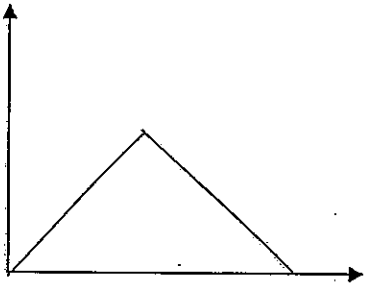
b)It would take more weight to break material A.

38)a)Rod D. It took the longest time for the thumbtack to fall off the rods.

b)B. It took the fastest time for the thumbtack wax to fall off Rod B. Thus, it id the best conductor of heat. If it is the metal plate for the iron, it would allow heat transfer from the heating to the clothes to be the fastest.

39)a)Yes. More than are variable has been changed. Hence Wei Jie cannot compare and conclude that the distance traveled by the ball along the floor is solely due to the angle of inclination. It could be due to the different sizes of balls used.

b)



40)a)To find out if the size of paper would affect the amount of air resistance against the paper.

b)The parachute slows down the speed of the toy car. The parachute provided a greater exposed surface area and increases the air resistance acting against the toy car, thus slowing it down.

41)a)He gets the energy from the food he etas.

b)Elastic potential energy→Kinetic energy→Sound energy + Heat energy

c)Stretch the rubber band back more. Stretching the rubber band more increases the amount of elastic potential energy stored in the rubber band which will be converted into more kinetic energy of the rubber ball, causing in to travel further.

42)a)To ensure that the pipes will always be cooler than the air for condensation to take place.

b)The copper strips increase the amount of surface area in contact with the air hence it speeds up rate of condensation.

c)As there is always water vapour in the air which can be condensed into water, there will always be enough water to water theplants.