RED SWASTIKA SCHOOL

RED SWASTIKA SCHOOL

2009 SEMESTRAL ASSESSMENT 1

SCIENCE

Name : _____ ( )

Class : Primary 6/ ___

Date : 7 May 2009

BOOKLET A

30 Questions
60 Marks
Duration of Paper : 1 hour 45 minutes

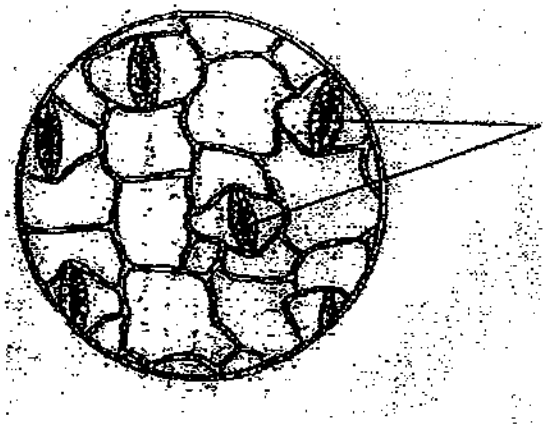
Note:

1. Do not open this Booklet until you are told to do so.
2. Questions 1 - 30 are to be done on the OAS provided.
3. Read carefully the instructions given at the beginning of each part of the Booklet.
4. Do not waste time. If a question is difficult for you, go on to the next one.
5. Check your answers thoroughly and make sure you attempt every question.

Section A: Multiple-Choice Questions (30 Questions x 2 marks = 60 marks)

Choose the most suitable answer and shade its number in the OAS provided.

1. Ali placed the underside of a leaf under a microscope and he saw many tiny openings on the leaf surface. What is the main function of these tiny openings?



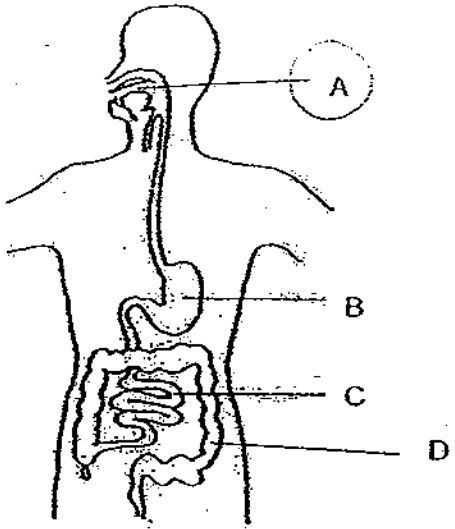
(1) To take in water for the plant
(2) To exchange gases with the surroundings
(3) To trap sunlight to make food
(4) To give out excess food

2. Which of the following statements are true about the human respiratory and circulatory system in the human body?

A : The heart relaxes and contracts in order to pump blood to other parts of the body.
B : Blood carries oxygen and carbon dioxide in the body.
C : When we exercise, we need less energy to take in oxygen.

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

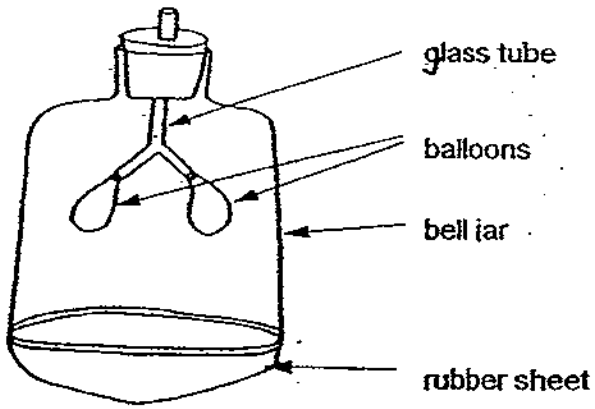
3. The diagram below shows the human digestive system.



At which part, A, B, C or D does digestion first take place?

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

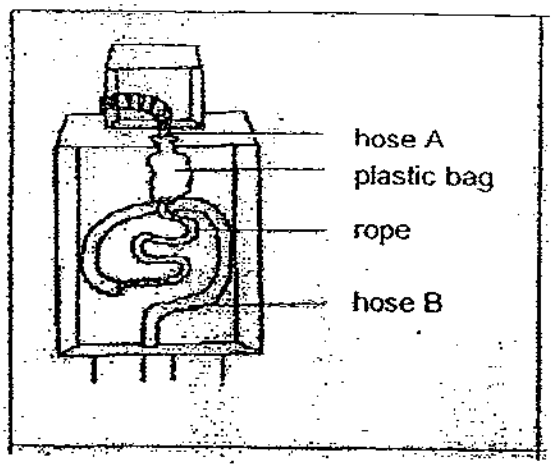
4. Billy set up a model of the human respiratory system as shown below.



What would Billy observe when he pulled down and released the rubber sheet?

	rubber sheet	balloons	Amount of air in balloon
(1)	Pulled down	Inflated	More
(2)	Pulled down	Deflated	Less
(3)	Released	Deflated	More
(4)	Released	Inflated	less

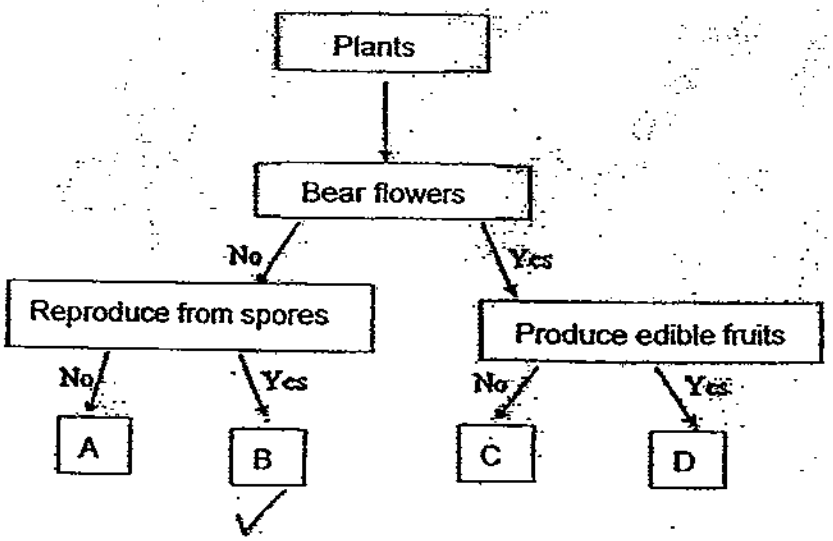
5. Davi constructed a model of the human digestive system as shown below.



What would be the process taking place at hose B?

(1) Breaking down of food into smaller pieces.
(2) Absorption of digested food into the blood stream.
(3) Absorption of water from the remaining undigested food.
(4) Transportation of digested food to the other parts of the body.

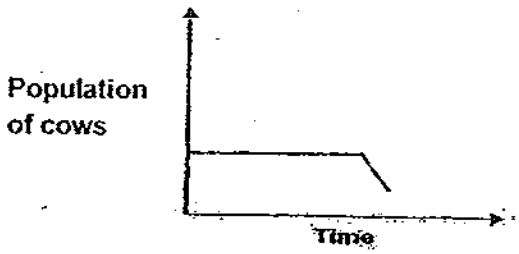
6. Study the flow chart below.



Which letter, A, B, C or D represents the bird's nest fern?

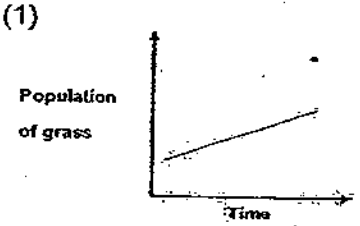
(1) A
(2) B
(3) C
(4) D

7. There was a balanced community on a field with cows grazing on the grass until a change in the population of cows was observed after a period of time. The graph below shows the change in the population of cows in the field community over that period of time.

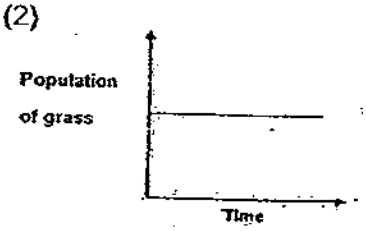


Which one of the following graphs shows the change in population of grass over the same period of time when the cows feed on the grass in that community?

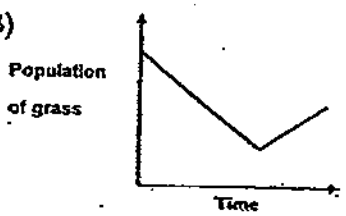
(1)



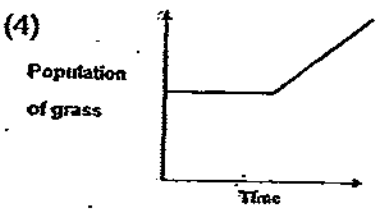
(2)



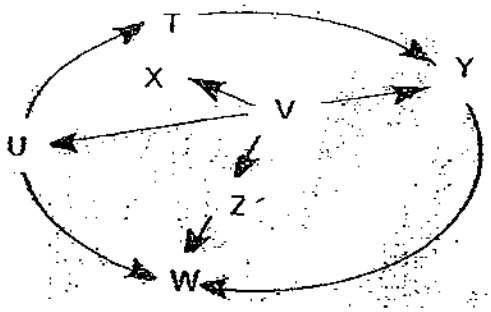
(3)



(4)



8. Study the food web below. Which of the following statements about the community are true?



A: Y is a carnivore
B: If the population of W decreases, population of Y, Z and U will increase.
C: Only X and U are herbivores.
D: The population of T will decrease if the population of U decreases.

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

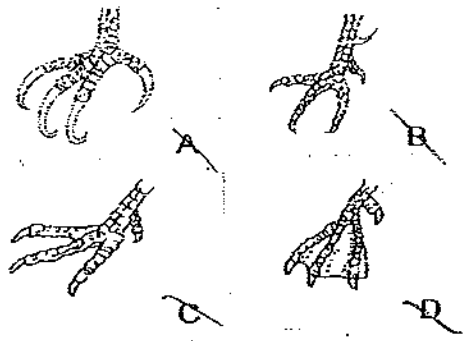
9. The table below shows a list of insects found on a lime plant and what they feed on.

Insects	What the insects feed on
beetle larva	roots of lime plant
caterpillars	leaves of lime plant
aphids	plant sap
lady bugs	aphids
stink bugs	seeds inside the fruit

Which insect is useful to the lime plant?

(1) Aphids
(2) Caterpillars
(3) Lady bugs
(4) Stink bugs

10. The pictures below show the different types of feet.



Based on the pictures above, which feet is likely to be the structural adaptation of an eagle?

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

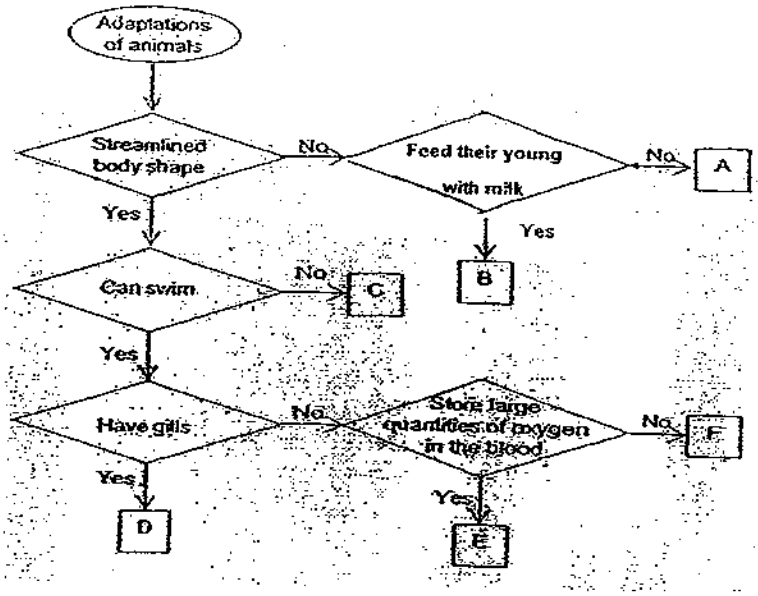
11. The classification table below shows the classification of some animals by their outer coverings.

Animals			
Shell	Feather	Fur	Scale
Lobster	Penguin	Cat	Lizard
Tortoise	Eagle	Tiger	Crocodile
Snail	Hawk	Polar bear	Kingfisher

Identify the animal that has been **classified wrongly** in the table above.

(1) Penguin
(2) Lobster
(3) Polar bear
(4) Kingfisher

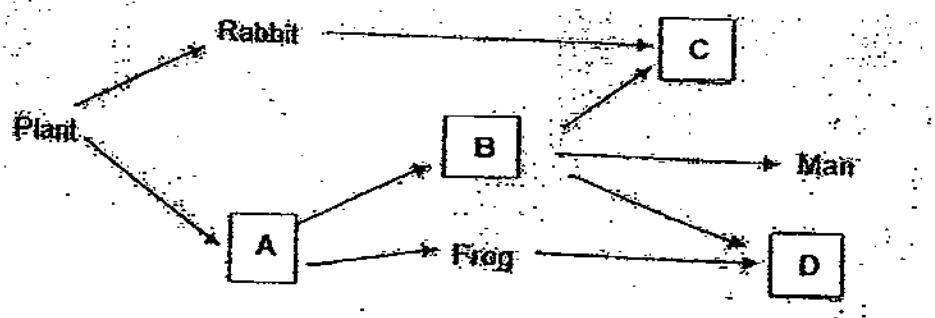
12. Study the flowchart below. A, B, C, D, E and F represent different groups of animals.



An animal has hollow bones. Which group does it most likely belong to?

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

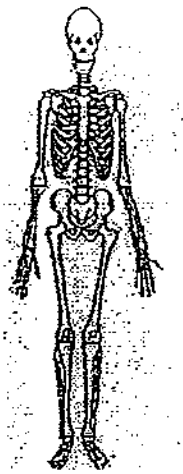
13. Study the food web below.



Which animals should be placed in Box A, B, C and D respectively to complete the food web?

	A	B	C	D
(1)	Snake	Eagle	Chicken	Grasshopper
(2)	Grasshopper	Chicken	Eagle	Snake
(3)	Chicken	Grasshopper	Snake	Eagle
(4)	Eagle	Chicken	Snake	Grasshopper

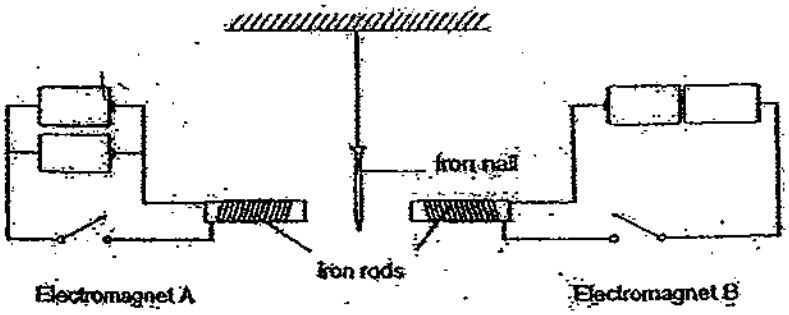
14. How does the skeletal system, as shown below, work together with the muscular system in our body?



They work together to _____.

(1) enable us to move
(2) help us in breathing
(3) protect our internal organs
(4) circulate oxygen, water and food in our body

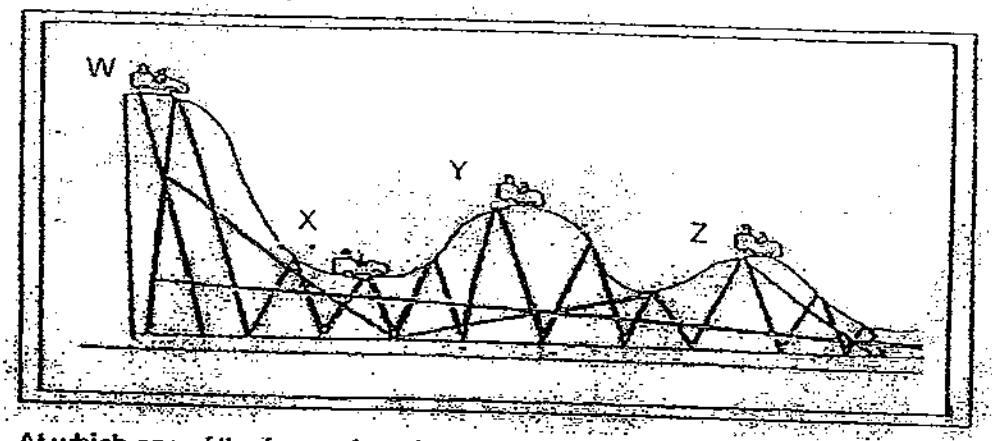
15. The diagram below shows an iron nail suspended between two electromagnets, A and B. The batteries, wires, number of coils around the iron rod, iron rods and switches are identical in both systems.



What will happen to the iron nail when both switches are closed at the same time?

(1) The iron nail will remain at its original position.
(2) The iron nail will be attracted to Electromagnet A.
(3) The iron nail will be attracted to Electromagnet B.
(4) The iron nail will be swinging outwards away from both electromagnets.

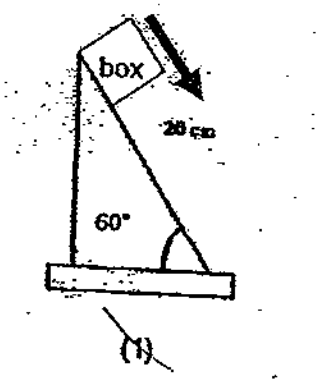
16. The diagram shows a side view of a roller coaster ride.



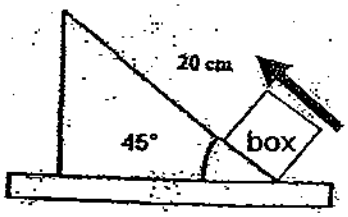
At which one of the four points (W, X, Y and Z) along the ride would the roller coaster car have the most kinetic energy?

(1) W
(2) X
(3) Y
(4) Z

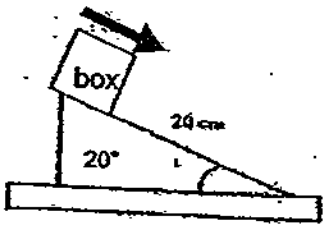
17. Wei Ming set up the following experiment with four similar boxes on four different ramps. The boxes are moved in the direction as shown below. Which one of the following boxes requires the greatest force to move it along the ramp?



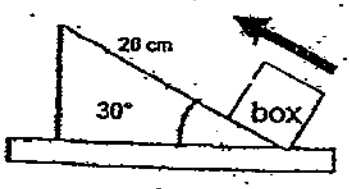
(1)



(2)



(3)



(4)

18. Rashid set up an experiment as shown in Figure 1 below.

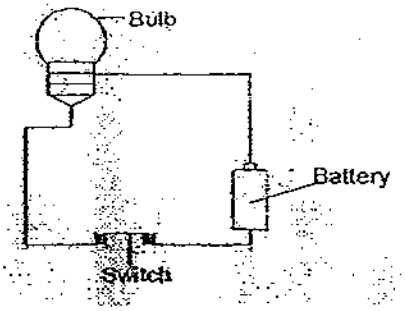


Figure 1

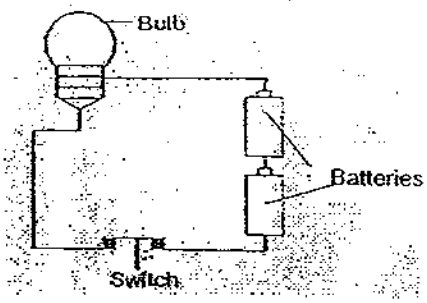
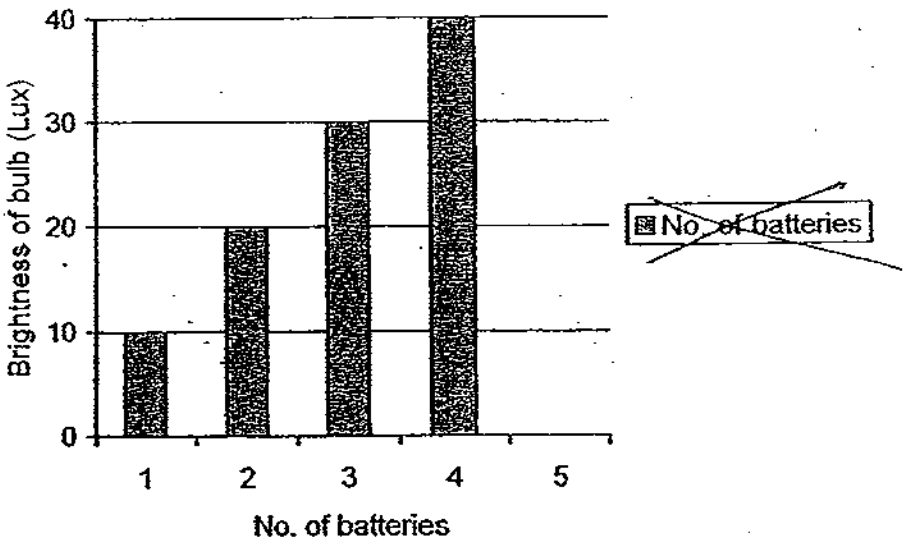


Figure 2

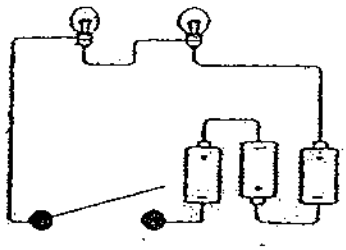
She measured the light intensity of the glowing bulb (in Lux) using a data logger She then added another battery into the circuit as shown in Figure 2 and the light intensity reading was taken. She repeated the experiment adding more batteries, one at a time until she had obtained the light intensity readings for up to five batteries. She recorded her data in the graph below.



What happened to the bulb when the fifth battery was added to the closed circuit above?

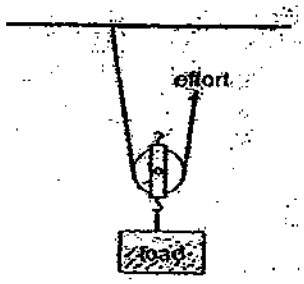
(1) The bulb fused.
(2) The bulb became dimmer.
(3) The bulb became brighter.
(4) The bulb brightness remained just as bright.

19. Liza set up a circuit as shown below. She noticed that the bulbs were dim when the circuit was closed. She wanted to increase the brightness of the bulb. What should she do?

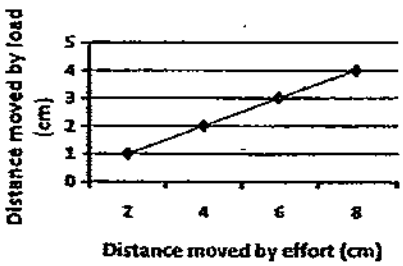


(1) Add more bulbs.
(2) Lengthen the wire.
(3) Add more batteries.
(4) Rearrange the batteries.

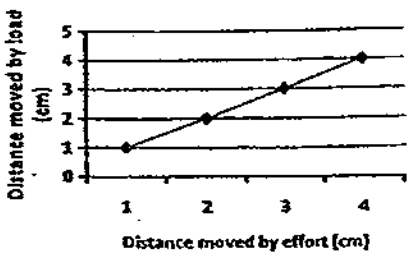
20. The diagram below shows a pulley system. Which graph below shows the relationship between the distance moved by the effort and the distance moved by the load in the pulley system?



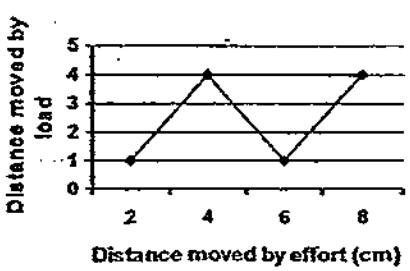
(1)



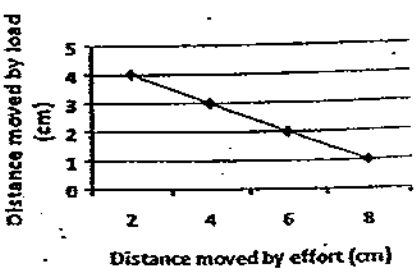
(2)



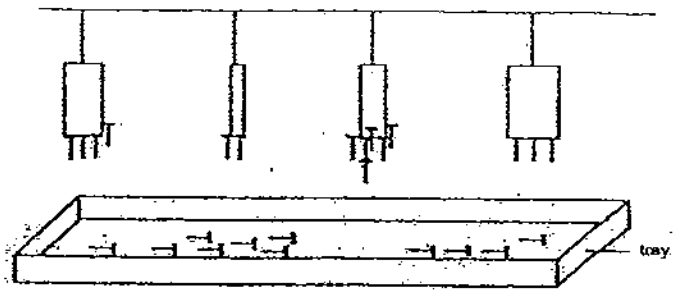
(3)



(4)



21. Kashim conducted an experiment to find out if the strength of a bar magnet increases with its size. He hung all the 4 magnets at the same distance away from a tray with nails evenly spread out.

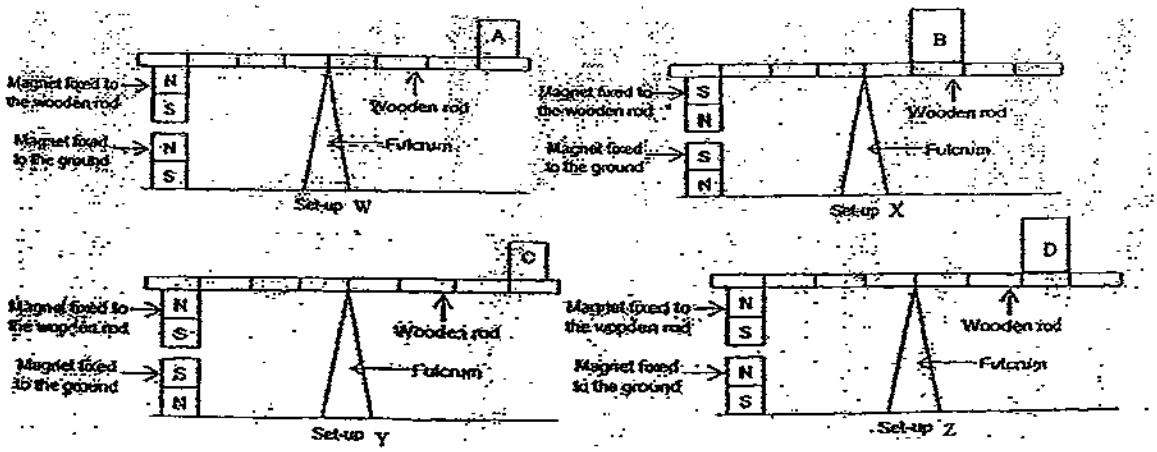


Which of the following statements are true about Kashim's experiment?

A: Magnetic force can act at a distance.
B: The nails are made of magnetic materials.
C: Magnetic strength is determined by the size of the magnet.

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

22. There are four set-ups W, X, Y and Z. Four different loads A, B, C and D are placed to balance the wooden rod. All the magnets have the same mass and the same magnetic force.



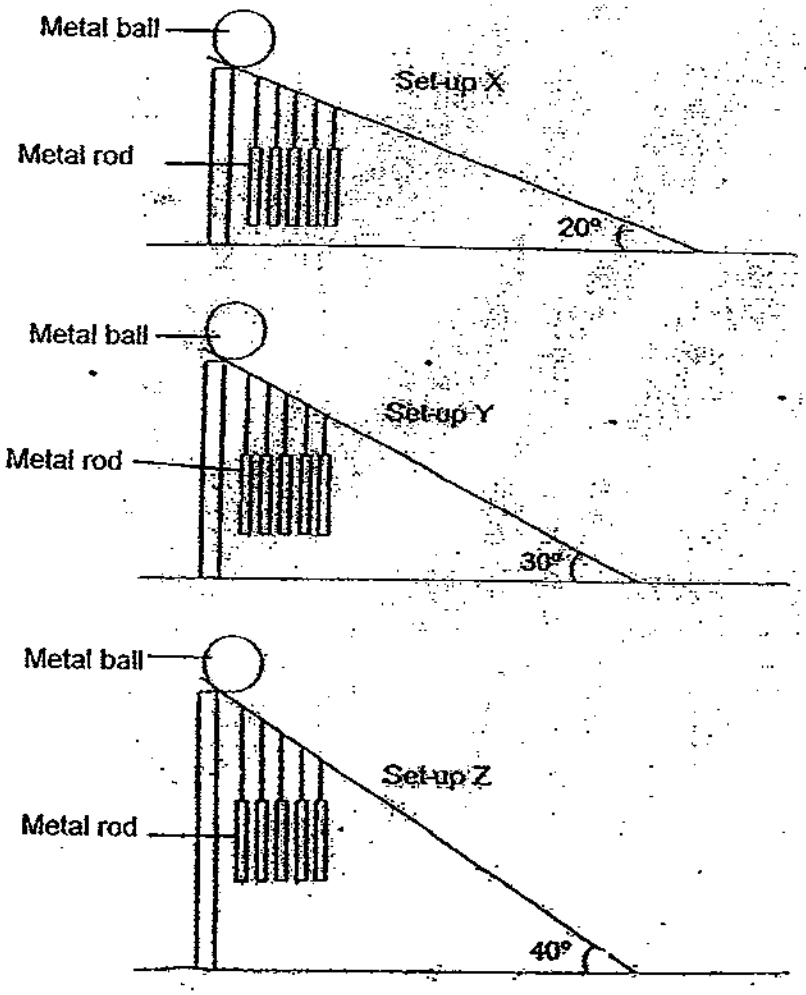
Which load, A, B, C or D has the greatest potential energy?

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

23. Bala set up the experiment as shown below.

When the ball rolls down the ramp, the metal rods hung below the ramp would clink against each other. He made the assumption that if the ball has more kinetic energy, the metal rods would clink against each other more forcefully, producing a louder sound.

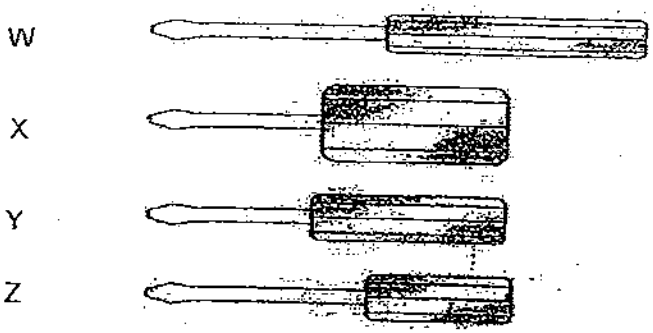
He used balls of the same mass but ramps of different steepness for each set-up.



Arrange the set-ups in order from the softest sound made to the loudest sound made by the metal rods when the ball rolled down the slope.

(1) Z, Y, X
(2) Y, Z, X
(3) X, Y, Z
(4) Z, X, Y

24. The following diagram shows four screwdrivers.



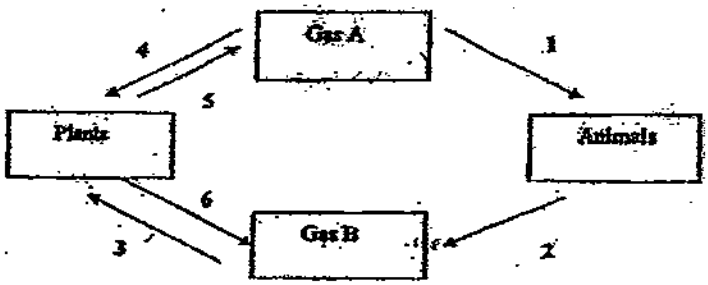
Which screwdriver should Ali use to pry open the lid of a tin of biscuits using the least effort?

(1) W
(2) X
(3) Y
(4) Z

25. The electric drill is used to drill holes in the wall. Which of the following correctly traces the energy conversion from the start to the end of the drilling process?

(1) Electrical energy ⟶ potential energy ⟶ kinetic, heat and sound energy
(2) Chemical energy ⟶ kinetic energy ⟶ heat and sound energy
(3) Electrical energy ⟶ kinetic, heat and sound energy
(4) Chemical energy ⟶ kinetic, heat and sound energy

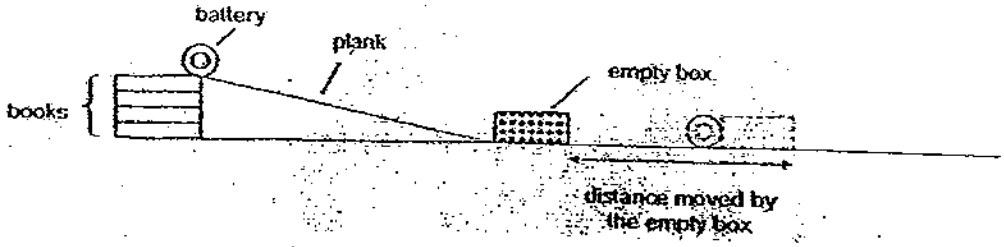
26. Study the diagram below.



Which two arrows show the exchange of gases during photosynthesis?

(1) 3 and 4
(2) 2 and 6
(3) 3 and 5
(4) 4 and 6

27. John set up the experiment as shown and he rolled a battery down a ramp. The battery collided with an empty box and the box moved. The experiment was repeated with different number of books used to support the plank. He then recorded his observations in the table below.

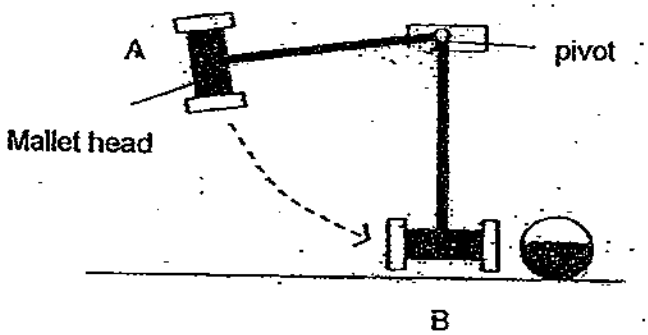


Height of ramp (cm)	Distance travelled by the empty box (cm)
5	15
10	30
15	45

What is the aim of John's experiment?

(1) To find out if the amount of potential energy of the battery affects the distance moved by the empty box.
(2) To find out if the amount of chemical energy in the battery affects the distance moved by the empty box.
(3) To find out if different types of surface of the plank affects the distance moved by the empty box.
(4) To find out if the different types of the battery affects the distance moved by the empty box.

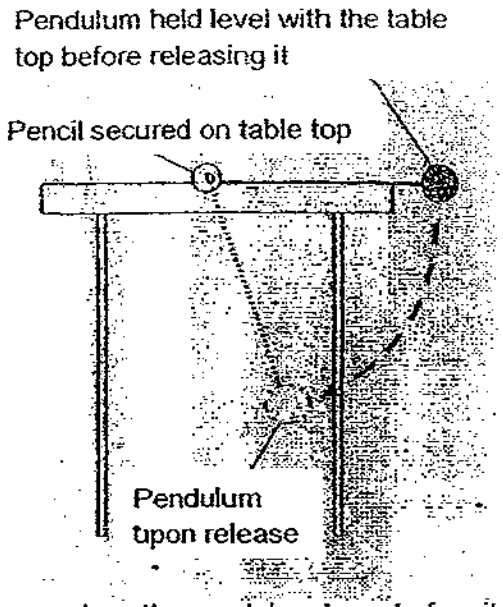
28. The diagram below shows a mallet pivoted at one end. It is allowed to swing freely to hit a ball upon release from position A.



What is likely to happen when a lighter mallet head is released from position A?

(1) The ball will not move at all.
(2) The ball will move a shorter distance.
(3) The ball will move the same distance.
(4) The ball will move a longer distance.

29. Mindy hung a pendulum from a pencil that is secured on a table top. She held the pendulum level with the table top and released it.



Which form of energy does the pendulum have before it is being released?

(1) Kinetic energy
(2) Gravitational potential energy
(3) Electrical energy
(4) Elastic potential energy

30. Mary set up the experiment as shown in Figure 1. She taped object A on the plastic board as shown in Figure 2 and observed that the compressed spring coil was 4 cm long.

She then attached a magnet to the retort stand as shown in Figure 3 and recorded the length of the compressed spring coil after placing the magnet.

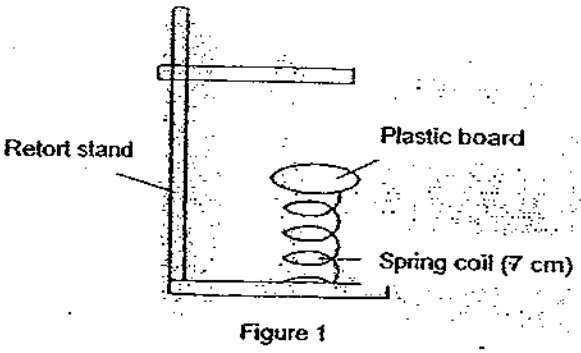


Figure 1

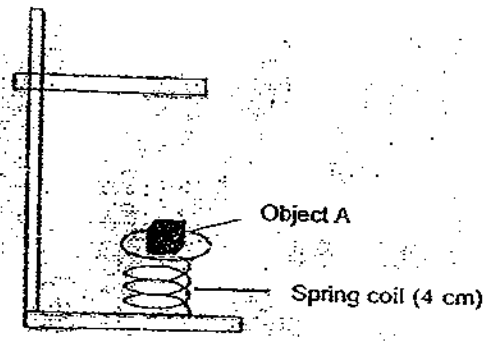


Figure 2

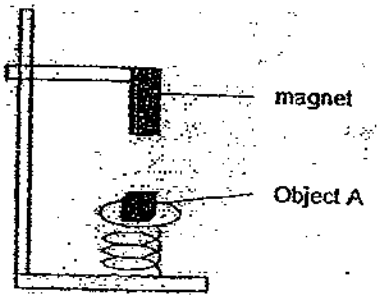


Figure 3

With the magnet still attached, she repeated the experiment by replacing object A with three other objects, B, C and D of the same mass, one at a time. She recorded the length of the spring coil in the table below.

Object	Length of Spring Coil (cm)
A	6
B	7
C	2
D	4

Which object , A, B, C or D, is most likely to be a magnet?

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

RED SWASTIKA SCHOOL

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2009 SEMESTRAL ASSESSMENT 1

SCIENCE

Name : _____ ( )

Class : Primary 6/ ___

Date : 7 May 2009

BOOKLET B

16 Questions
40 Marks

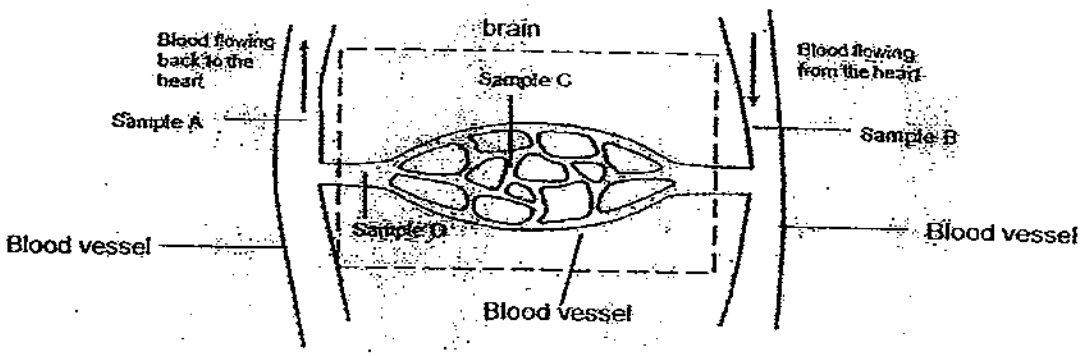
MARKS

	OBTAINED	POSSIBLE
BOOKLET A		60
BOOKLET B		40
TOTAL		100

Parent's Signature : _____

Section B: Open-ended Questions (16 Questions : 40 Marks)
Answer all the questions in the space provided.

31. The diagram below shows the movement of blood along the blood vessels from the heart to the brain and back to the heart.



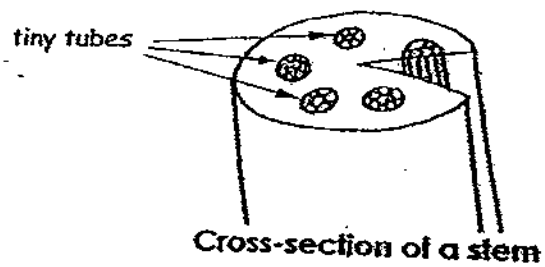
(a) Name the human system responsible for the movement of blood in the human body. [1 mark]

_____

(b) Which blood sample A, B, C or D contains the least amount of oxygen? [1 mark]

_____

(c) The diagram below shows the cross section of a stem.



Cross-section of a stem

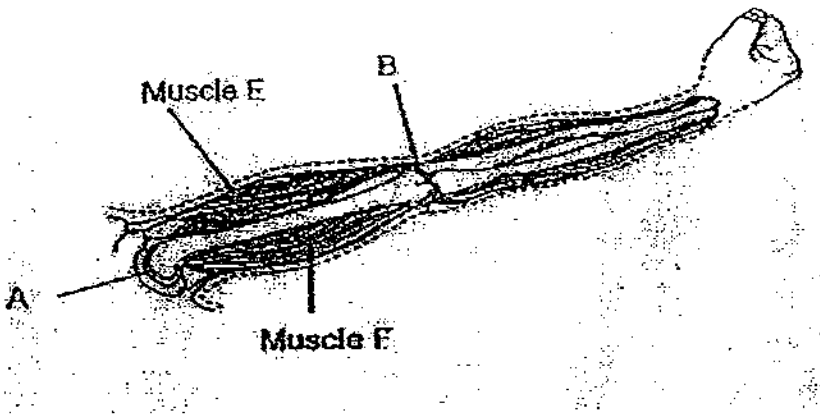
Explain how the tiny tubes of a stem are similar to the blood vessels in the human body? [1 mark]

_____

_____

3

32. The diagram below shows a model of Tim's arm.



(a) (i) Which joint, A or B, would allow Tim to touch his shoulder? [$\frac{1}{2}$ mark]

_____

(ii) Name the type of joint you identified in (i) that enables Tim to touch his shoulder.
[$\frac{1}{2}$ mark]

_____

(b) What happened to Muscle E and Muscle F when Tim touched his shoulder? [1 mark]

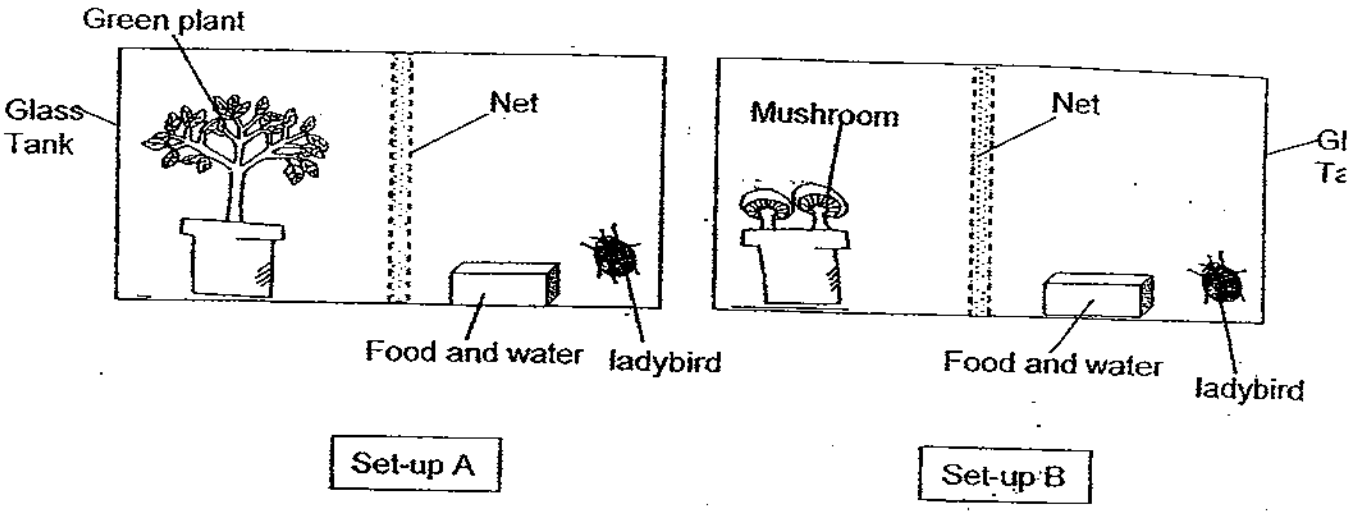
_____

_____

_____

2

33. Two set-ups, A and B, were shown below. The ladybirds in each set-up were healthy and given sufficient food and water daily. The two glass tanks were airtight and were placed in the school field for a week.



Explain clearly what would likely happen to the two ladybirds in set-ups A and B after a week.
[2 marks]

2

34. Birds have different types of beaks to help them feed on different types of food. Stud the table carefully and describe how the beaks of these birds help them to get the food. [2 marks]

(a)

Types of Beak	Examples of birds	Descriptions
A		
B		
C		
D		

(b)

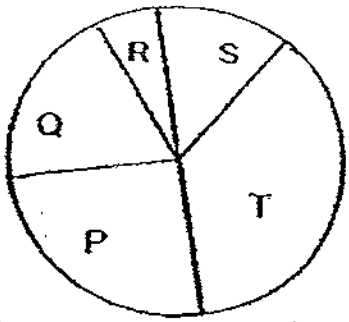
Which of these feet above, E, F, G and H is most likely to belong to bird D? Explain your answer. [1 mark]

_____

_____

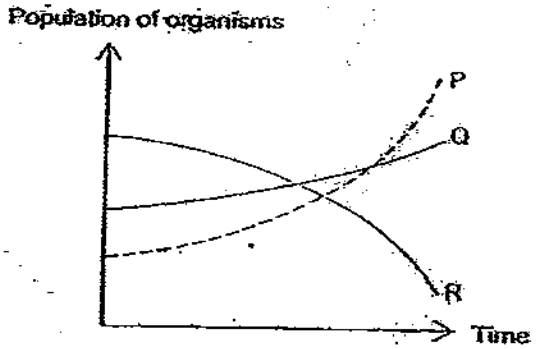
3

35. The pie chart below shows the proportion of five populations of organisms P, Q, R, S and T in a rotting log community. These five populations form a food chain.



Construct the food chain which represents the five populations in the rotting log community above. [2 marks]

36. Organisms P, Q and R in a community are interdependent on one another in their common habitat. The graph below shows the change in population of the three organisms P, Q and R over a period of time.



(a) Explain which organism is likely to be the prey. [1 mark]

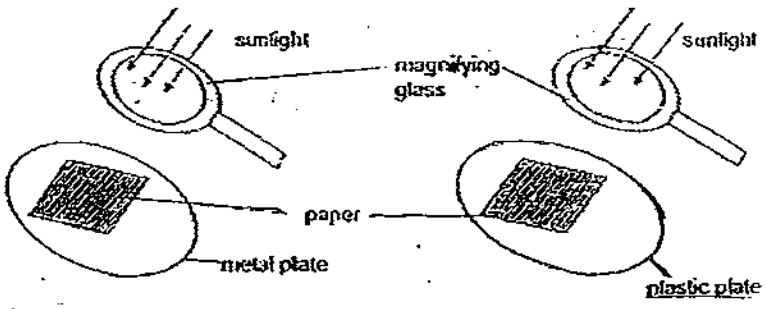
(b) Explain why the population of P increases more quickly than the population of Q. [1 mark]

4

37. The diagram below shows some water moss ferns.

State one structural adaptation of the water moss ferns and explain how it enables them to survive better in their environment. [2marks]

38. Jane and Peter conducted an experiment using two identical pieces of paper each placed on a metal plate and a plastic plate respectively. They placed the plates under the sun with a magnifying glass held above each paper.

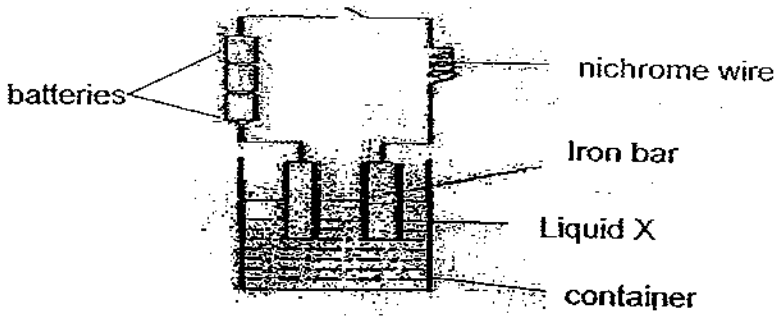


(a) What would Jane and Peter observe after half an hour? [1 mark]

(b) Explain your observation. [1 mark]

4

39. John set up an experiment as shown below in a cool room.



(a) When the circuit was closed, he observed that the nichrome wire was red hot. State **one** property of Liquid X. [1 mark]

_____

_____

(b) Explain clearly what would John observe when he replaced the iron bars with glass plates. [2 marks]

_____

_____

_____

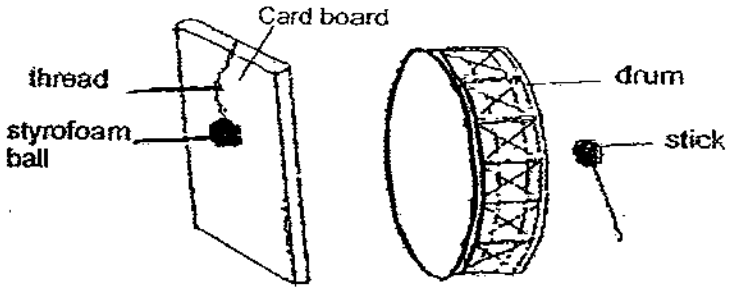
(c) John noticed that liquid X felt warmer and there were water droplets forming at the inner surface of the container just above liquid X. Explain why this happened. [1 mark]

_____

_____

4

40. Mark set up an experiment as shown below. When he hit the drum with the stick, a sound was heard and the styrofoam ball moved.



(a) Write down the energy conversion from the moment Mark hit the drum and made the above observations. [2 marks]

Mark

↓

Of arm

↓

Kinetic and sound energy of the drum

↓

Kinetic energy + _____ of the air particles

↓

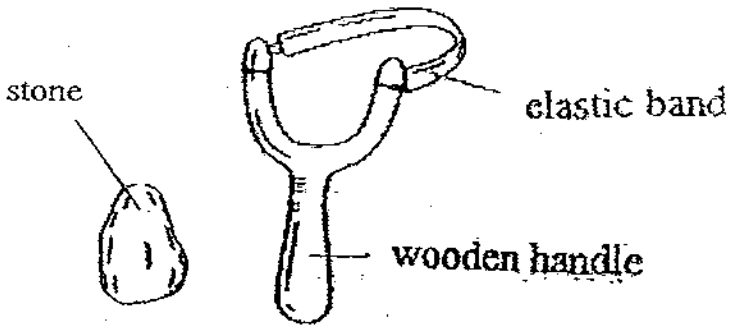
Kinetic energy of thread + _____ of styrofoam ball

(b) What can Mark do to make the styrofoam ball move more? [1 mark]

_____

_____

41. Ali used the catapult and a stone below to shoot at a distance.



Ali measured the distance the stone travelled and recorded the results in the table below.

Length of stretched elastic band (cm)	Distance travelled by stone (m)
5	2
10	4
15	6

(a) Based on the results, what is the relationship between the length of the stretched elastic band and the distance travelled by the stone? [1 mark]

(b) Explain the relationship between the length of the stretched elastic band and the distance travelled by the stone that you have made in (a). [1 mark]

(c) State two variables that must be kept the same in order for Ali's experiment to be fair. [1 mark]

3

42. Azizah set up the circuit below. She was told that one of the objects A, B, C or D in the circuit was an electrical insulator. When the switch was closed, ringing sound from Bell 1, 2 and 3 could be heard.

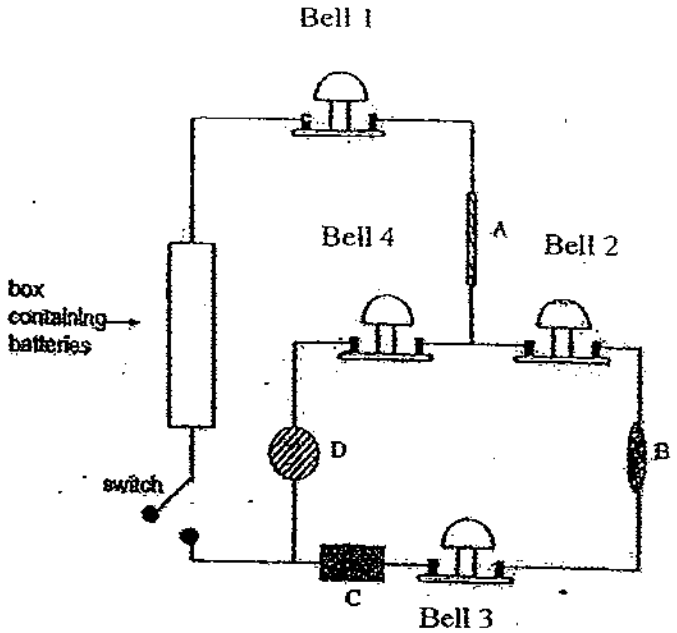


Figure 1

(a) Which objects, A, B, C or D is likely to be an electrical insulator? [1 mark]

_____

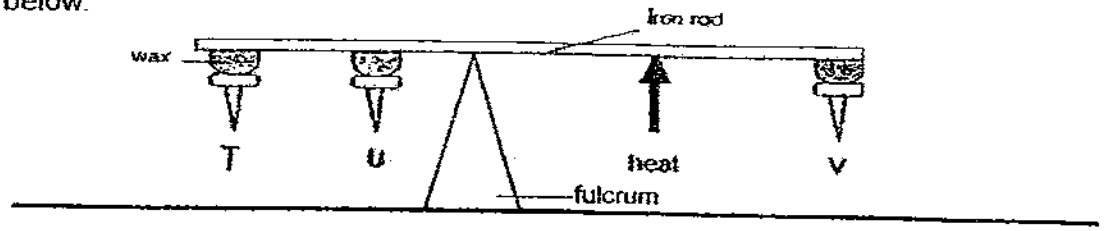
(b) Explain what would happen if Azizah removed Bell 2 with the switch closed in Figure 1. [2 marks]

_____

_____

3

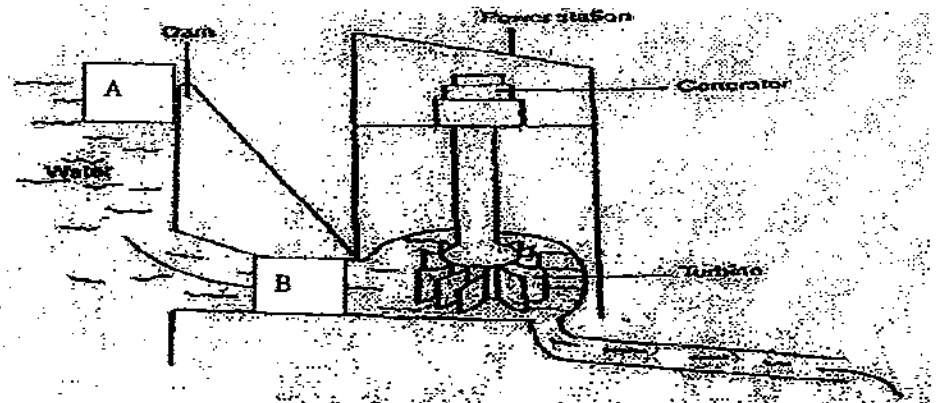
43. Three identical thumbtacks, T, U and V are held onto an iron rod by the same amou of wax. The metal rod is being balanced on a fulcrum as shown. The metal rod is then heated by a candle placed at the position indicated by an arrow as shown below.



(a) Which thumbtack will drop first and what will happen to the lever ? [1 mark]

(b) Describe the energy change experienced by the iron rod when it was being heated as shown in the set-up above. [1 mark]

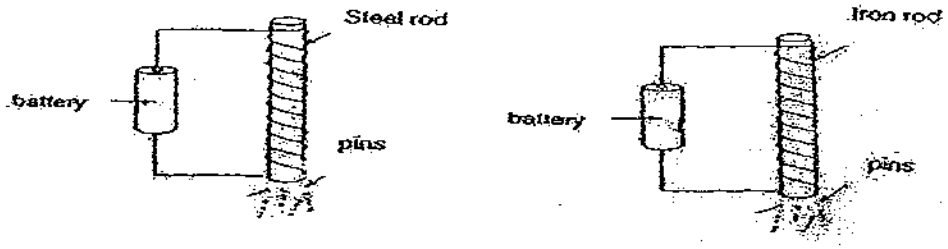
44. The diagram below shows a hydro-electric power station.



(a) At which point, A or B does the water have the most kinetic energy? [1 mark]

(b) How would the amount of kinetic energy of water affect the amount of electrical energy produced in the generator? [1 mark]

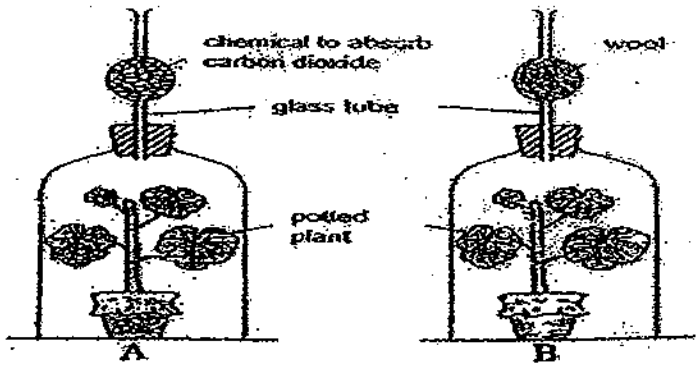
45. Kim set up two electromagnets as shown below. She observed how many pins could be attracted by the electromagnets.



(a) What is the purpose of Kim's experiment? [1 mark]

(b) State two ways in which Kim could increase the magnetic strength of each electromagnet. [2 marks]

46. Wee Ming set up the experiment as shown below. He left the experiment set-ups at the same location for a week. The potted plants were healthy and were given sufficient amount of water.



(a) State the variable that is being changed. [1 mark]

(b) Wee Ming observed that both plants died at the same time. Explain why the plants died. [1 mark]

End of Paper

ANSWER SHEET

EXAM PAPER 2009

SCHOOL : RED SWASTIKA PRIMARY
SUBJECT : PRIMARY 6 SCIENCE

TERM : SA1

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

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

31)a)The Circulatory system.
b)Sample A.
c)The tiny tubes of a stem transport water, dissolved minerals and food to different parts of the plant. Similarly, the blood vessels in the human body transport water and dissolved food to all parts of the body.

32)a)i)Joint B.
ii)Hinge joint.
b)Muscle E contracted and Muscle F relaxed.

33)The ladybird in Set-up A would survive whereas the ladybird in Set-up B would die. The ladybird in Set-up A took in oxygen to carry out respiration an gave out carbon dioxide, which the green plant took in to carry out photosynthesis, and in turn give out oxygen for the ladybird to use, and both the green plant and ladybird survived by exchanging gases. The ladybird in Set-up B died as the Mushroom could not carry out photosynthesis to exchange gases with it and instead, took in oxygen to respire.

34)a)A)Its beak is shaped like a big spoon for scooping fish to eat from the water.

B)Acts as a nutcracker to crack nuts so that the bird is able to eat.

C)It has a long and tubular beak to draw nectar from flowers.

D)It tears meat from flesh when the bird is eating its prey.

b)Feet F. Bird D eats meat so it has talons or sharp claws to grip its prey tightly.

35)T→P→Q→S→R

36)a)Organism R is likely to be the prey as its population decreases when the other two populations of organism P and Q increased.

b)The birth rate of organism P could be more than the birth rate of organism Q.

37)Waterproof coat tiny hair on the leaves allow it to float on the water surface to get more sunlight.

38)a)The paper on the plastic plate would catch fire but the paper on the metal plate would not catch fire.

b)Metal plate is a good conductor of heat so it conducts most of the heat away, plastic is a poor conductor of heat so it could not conduct the heat away quickly causing the paper to catch fire.

39)a)It is a conductor of electricity.

b)The nichrome wire would not be red hot. The glass plates are not conductors of electricity as such, electricity cannot flow through it to reach the nichrome wire.

c)Some of liquid X evaporated and condensed onto the cooler inner surface of the container.

40)a)Chemical potential energy→Kinetic energy→Sound energy+ Kinetic energy

b)He could use more strength to hit the drum.

41)a)The longer the length of the stretched elastic band, the further the distance travelled by the stone.

b)When the elastic band was stretched, it contained more elastic potential energy, this stored energy was passed on to the stone, as such when the plastic band was released, the stone's potential energy was converted into more kinetic energy . Thus, the longer the length of the elastic band the further the distance travelled by the stone.

c)The weight of the stone and the thickness of the elastic band.

42)a)Object D.

b)None of the bells would ring, as when Bell 2 was removed, there was a break in the circuit which resulted in an open circuit which the electric current cannot flow through.

43)a)Thumbtack V would drop first and caused the lever to balance towards the side of thumbtack T and U.

b)Heat energy is changed to movement energy.

44)a)Point B.

b)The more the amount of kinetic energy possessed by the water, the faster the turbine spins as a result more kinetic energy is converted into electricity energy.

45)a)To find out whether the material of the electromagnet affects the number of pins it is able to attract.

b)She could add more batteries or do more coils around the rods.

46)a)Presence of carbon dioxide.

b)The location had no sunlight for the plants to make food.