Name : _____ ( )

Class : Primary _____

CHIJ ST NICHOLAS GIRLS' SCHOOL

SIMPLE IN VIRTUE

STEADFAST IN DUTY

德 纯 义 学

Primary 6

Semestrai Assessment 1 – 2008

SCIENCE

BOOKLET A

8th May 2008

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

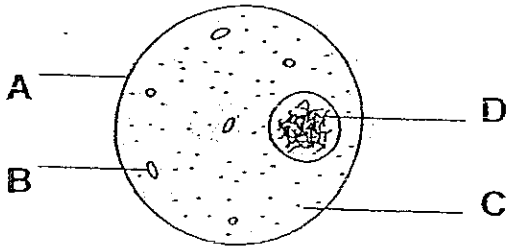
30 questions
60 marks

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

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.

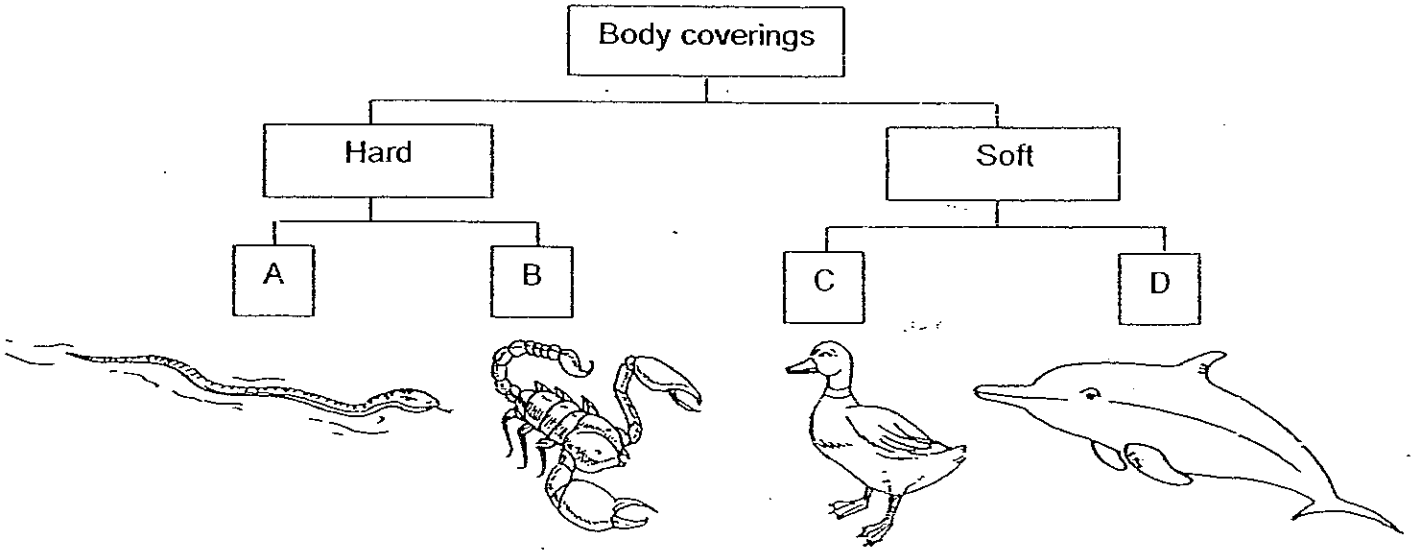
1. The diagram below shows an animal cell.



Which part(s) of the cell above contain(s) substances which determine the colour of our eyes?

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

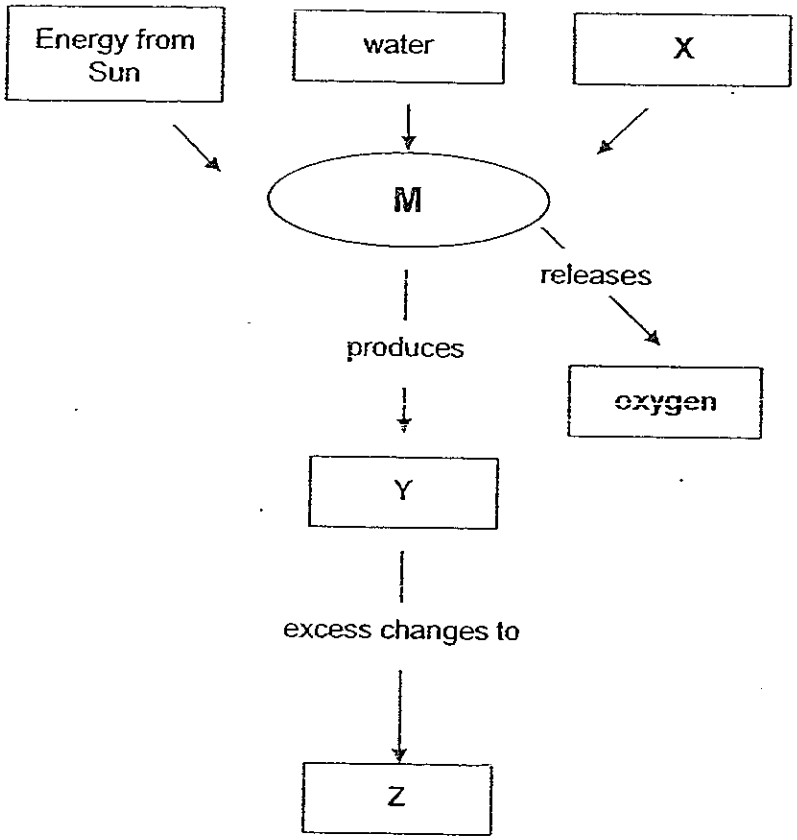
2. The classification chart below shows how some animals can be grouped according to their body coverings.



In which group, would you put **guppies** in?

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

3. Study the following concept map.

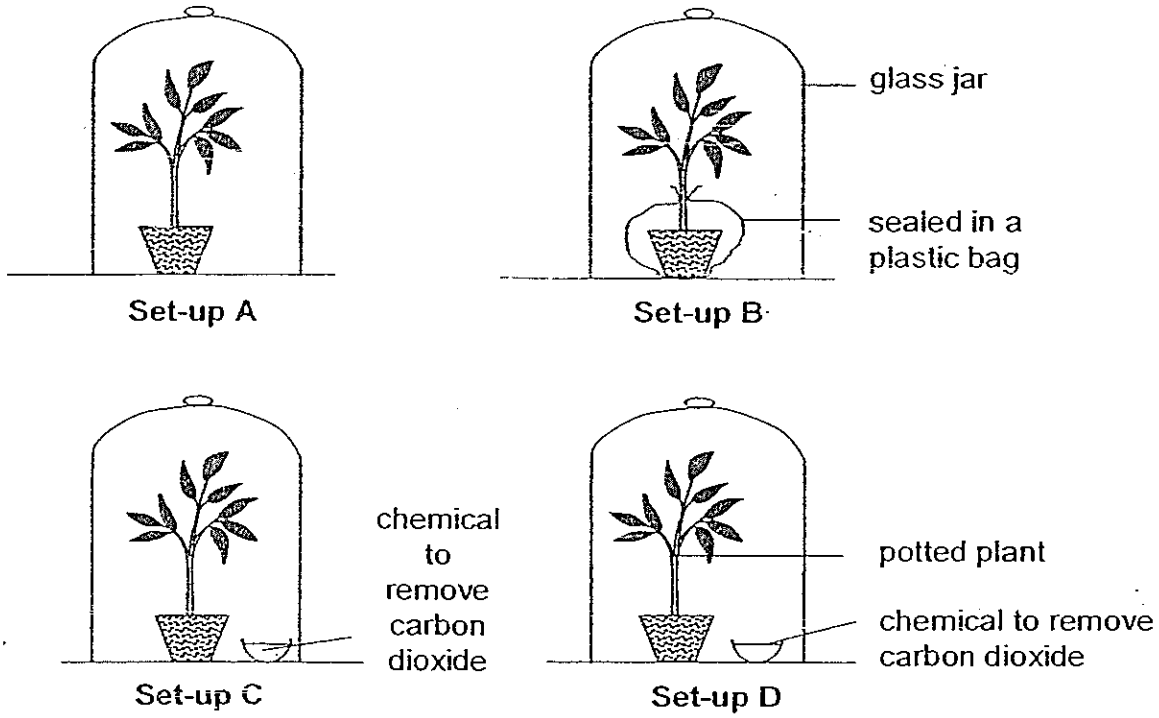


Identify process M and the substances X, Y and Z respectively.

	M	X	Y	Z
(1)	Photosynthesis	Oxygen	Glucose	Starch
(2)	Respiration	Carbon dioxide	Sugar	Starch
(3)	Respiration	Oxygen	Glucose	Starch
(4)	Photosynthesis	Carbon dioxide	Sugar	Starch

45

4. Ban Seng wants to show that carbon dioxide is needed for photosynthesis to take place. He intends to carry out starch tests on some leaves to help him in his investigation. He uses 4 similar plants of similar size and sets up the investigation as shown in the diagram below. All set-ups are exposed to the sunlight, except set-up D, which is placed in the dark.



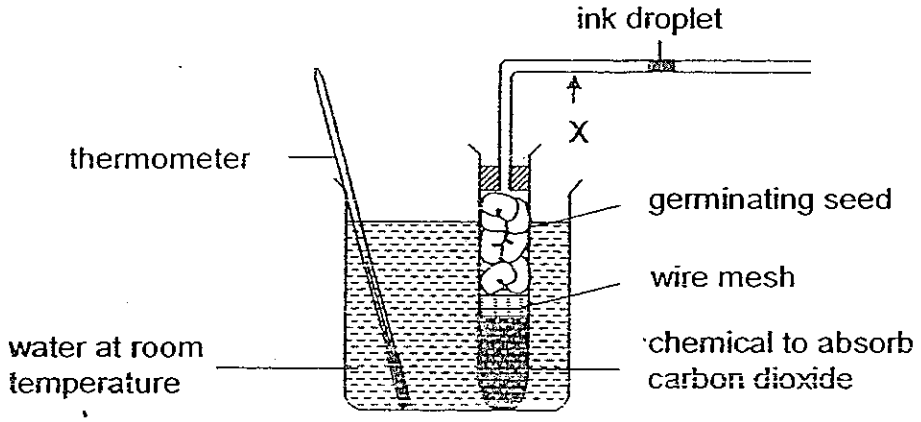
Set-up A Set-up B Set-up C Set-up D

Which two of the above set-ups should he use to make a valid conclusion?

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

4b

5. Jenna set up an experiment as shown in the diagram below in a dark room for a day.



At the start of the experiment

Jenna noted her observation at the end of the day. Which one of the following statements about the ink droplet is correct?

(1) It shifted towards X because the germinating seeds took in oxygen.
(2) It did not move because germination cannot take place in the absence of light.
(3) It shifted away from X because germinating seeds gave out carbon dioxide.
(4) It did not move because the germinating seeds took in oxygen and gave out carbon dioxide.

6. Which is / are the difference(s) between external and internal fertilisation?

	Internal ~~Fertilisation~~ (Fertilisation)	External ~~Fertilisation~~ (Fertilisation)
A	Laying of eggs does not occur.	Laying of eggs does occur.
B	Eggs are ~~fertilised~~ (fertilised) and developed outside the mother's body.	Eggs are ~~fertlised~~ (fertilised) and developed inside the mother's body.
C	The sperm meets the ovum inside the mother's body.	The sperm meets the ovum outside the mother's body.
D	All embryos are developed inside the mother's body.	All embryos are developed outside the mother's body.

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

7. The table below shows the characteristics of four seeds or fruits, A, B, C and D.

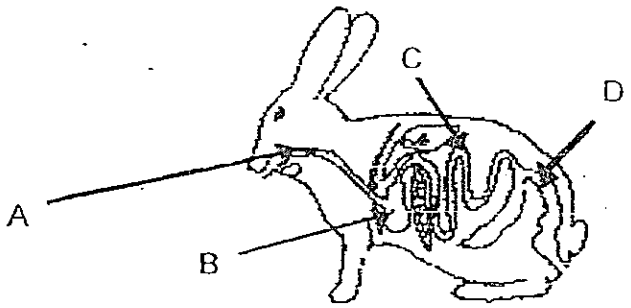
Seed / Fruit	Weight	Size	Other Characteristics
A	Heavy	Big	- Edible - Has husk
B	Light	Small	- Edible - Is a pod
C	Light	Small	- Inedible - Has stiff hair
D	Light	Small	- Inedible - Has fluffy hair

Which of the following shows the method by which A, B, C and D are probably dispersed?

	A	B	C	D
(1)	Animals	Water	Wind	Splitting
(2)	Water	Splitting	Animals	Wind
(3)	Animals	Wind	Splitting	Water
(4)	Water	Wind	Splitting	Animals

43

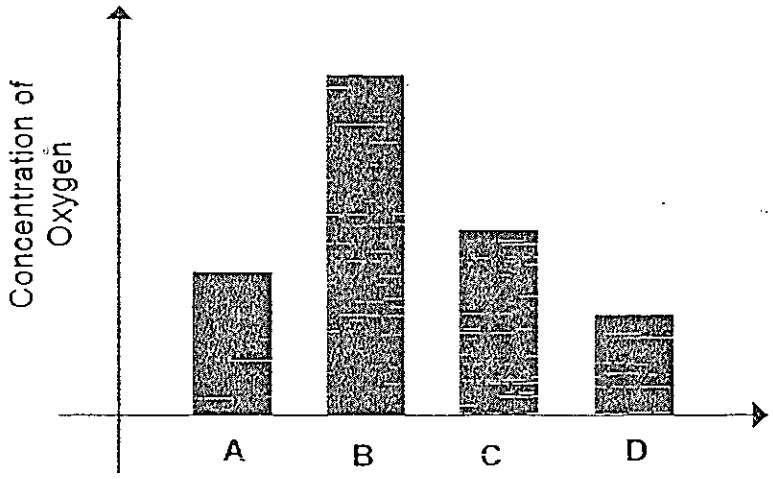
8. Katherine and her classmates were told that the digestive system of a rabbit is very similar to that of a human being. The class was shown a model of the different parts of the digestive system of a rabbit.



After observing the model, Katherine told her friend that food is partially digested at part _____ and that the food that is totally digested is absorbed into the bloodstream at part _____.

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

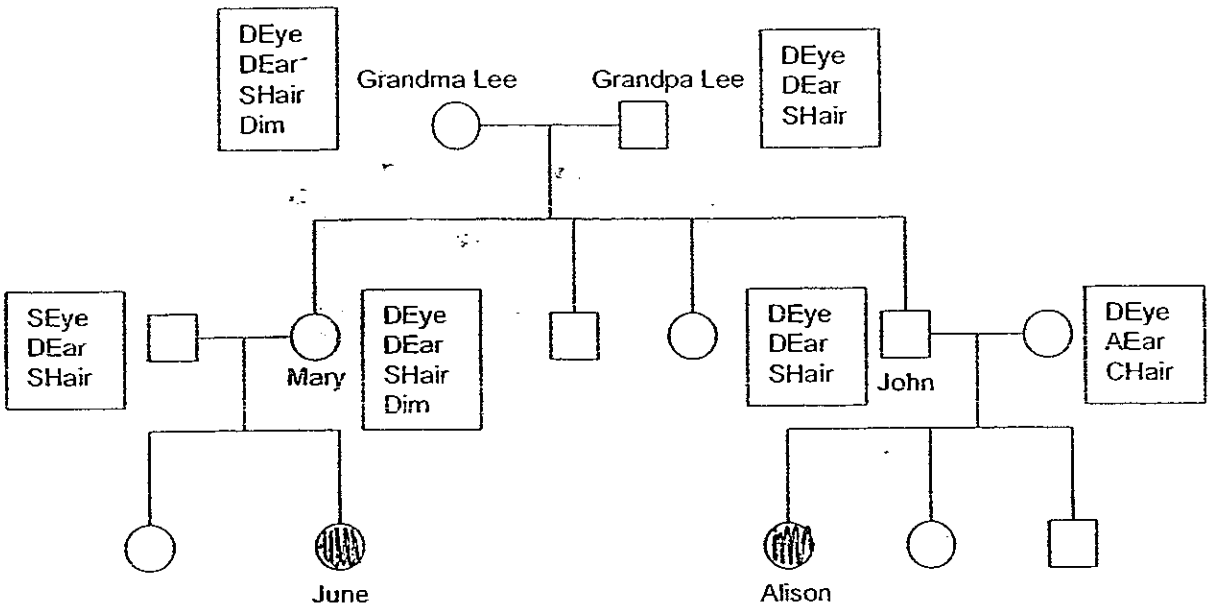
9. The graph below shows concentration of oxygen in 4 blood samples taken from different blood vessels in the circulatory system.



Which sample is most likely to be taken from the blood vessel which carries blood from the lungs to the heart?

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

10. Study the Lee's family tree carefully.



Legend
DEye –double eyelid
SEye – single eyelid
DEar – detached earlobes
AEar – attached earlobes
SHair – straight hair
CHair – curly hair
Dim - dimples

June and Alison have similar characteristics. These characteristics are found in either their parents or their grandparents.

What similar characteristics do June and Alison have?

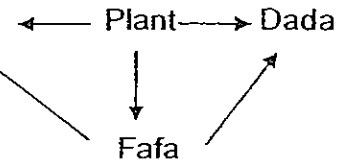
(1) Double eyelid and dimples
(2) Detached earlobes and curly hair
(3) double eyelid and attached earlobes
(4) Single eyelid and detached earlobes

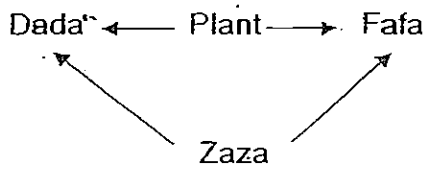
50

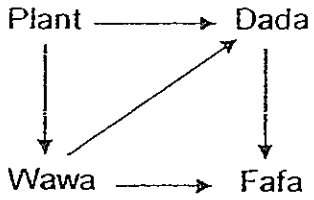
11. The classification table below groups 6 imaginary animals according to their diet.

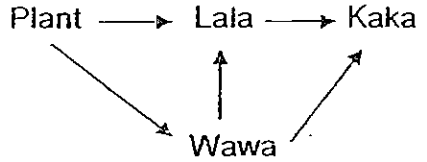
Carnivores	Herbivores	Omnivores
Kaka	Dada	Fafa
Zaza	Wawa	Lala

Based on the information above, which one of the following food webs is correct?

(1) 

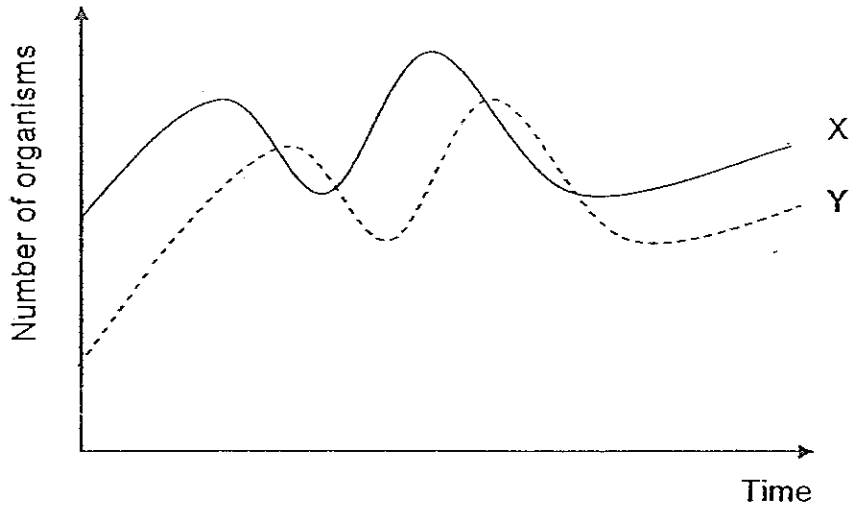
(2) 

(3) 

(4) 

51

12. The graph below shows the changes in the number of Organism X and Organism Y living in a field over a period of two years.



Which of the following statements can be inferred from the graph?

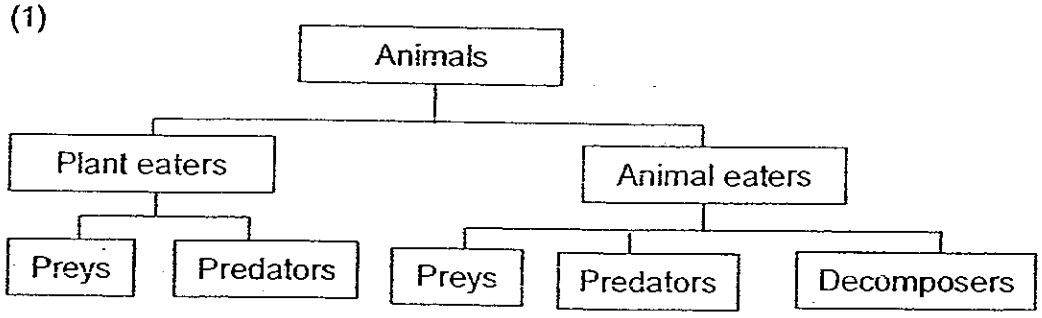
A : If X is a plant, Y is an animal that feeds on it.
B : If both X and Y are animals, X is a prey of Y.
C : Population X is always bigger than Population Y.

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

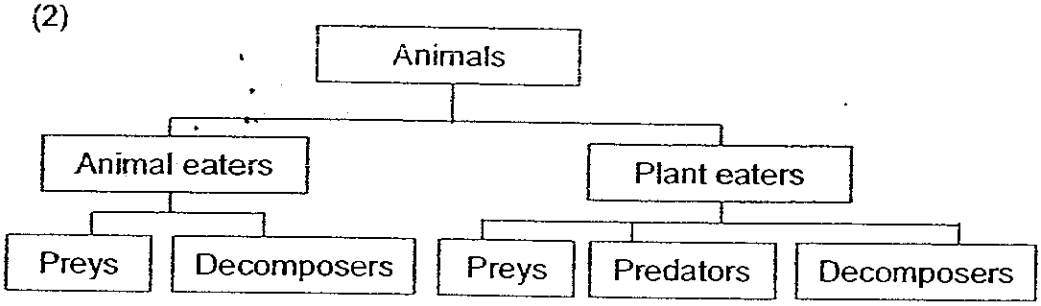
52

13. Which one of the following classification charts is correct?

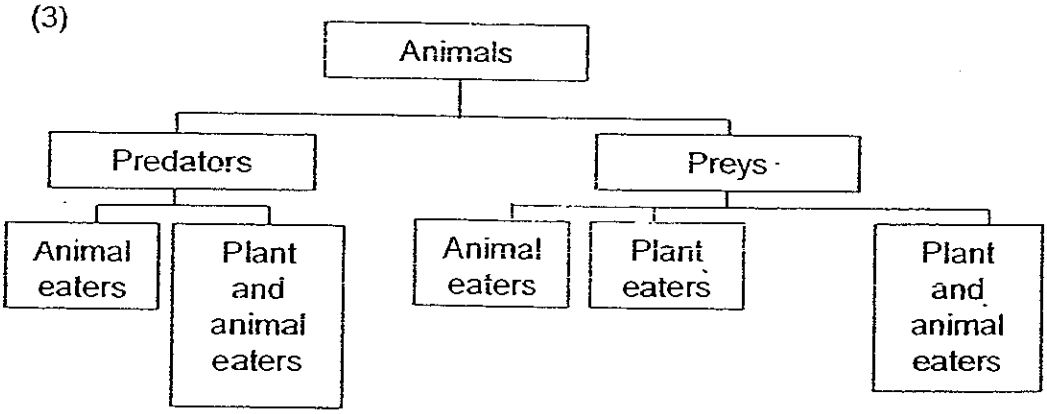
(1)



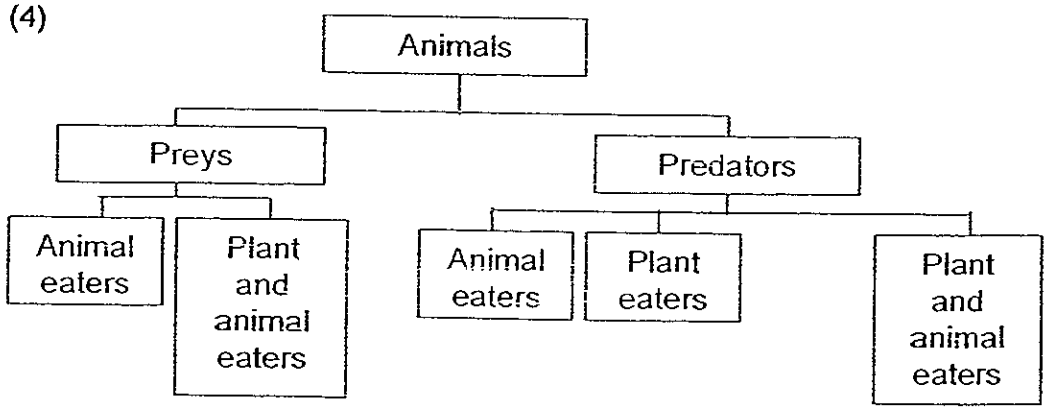
(2)



(3)



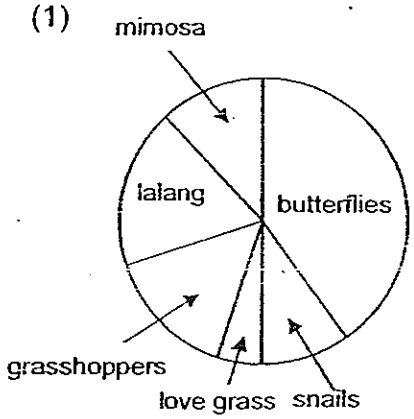
(4)



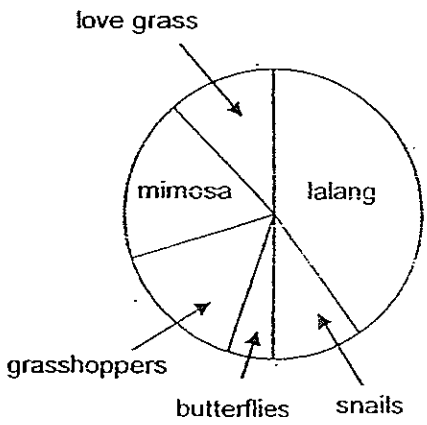
14. The four pie charts below show the possible population sizes of 6 organisms found in a field community.

In terms of the population sizes, which one of the pie charts shows a **well-balanced ecosystem** of the 6 organisms living in a field habitat?

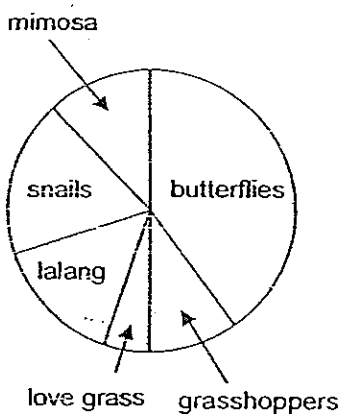
(1)



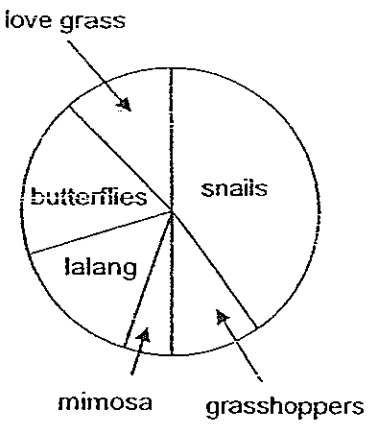
(2)



(3)



(4)



15. Below are some examples of how energy is transferred from one living thing to another.

leaf → caterpillar → bird

grass → goat → lion

corn → chicken → man

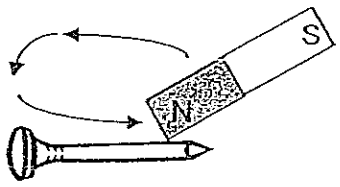
papaya → fruitfly → frog

Which conclusion can you draw based on the above examples?

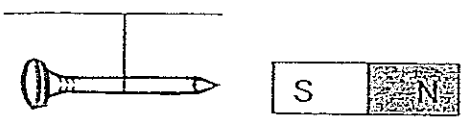
A: The transfer of energy always begins with a plant.
B: All carnivores get their energy indirectly from the plant.
C: The arrows show the direction of energy transfer.
D: Energy can only be transferred from a herbivore to an omnivore to a carnivore.

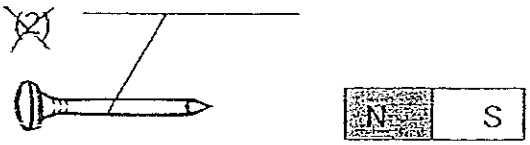
(1) A and B only
(2) B and C only
(3) A, B and C only
(4) B, C and D only

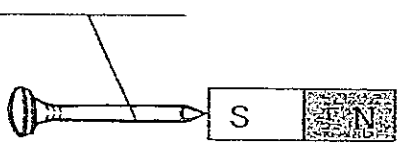
16. An iron nail is magnetised by using the stroking method, as shown below. The nail is then suspended from a string and a bar magnet is brought near the nail.

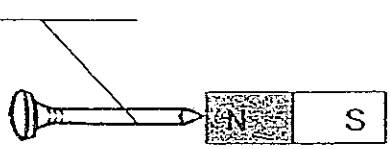


Which one of the following correctly shows what happens when the magnet is brought near the nail?

(1)


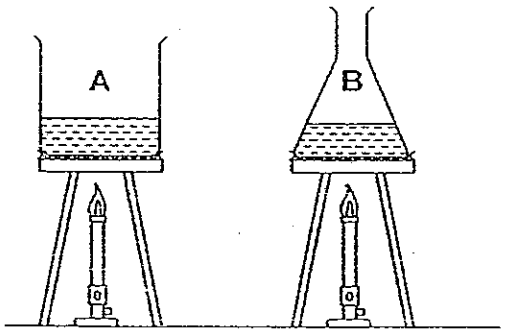
(2)


(3)


(4)


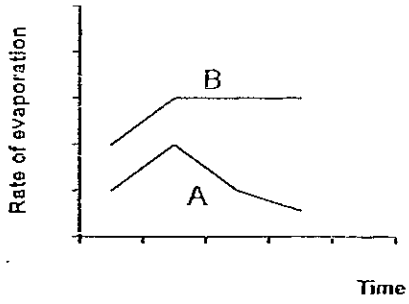
55

17. Joo Huat heated the same amount of water in Containers A and B. He measured the rate of evaporation. All other variables remained the same for both set-ups during the experiment.

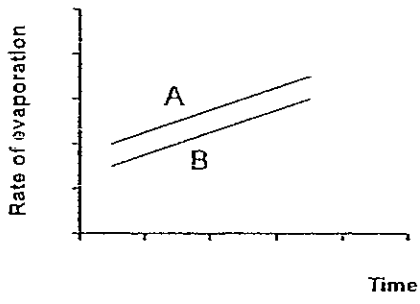


Which one of the following graphs shows the rate of evaporation correctly?

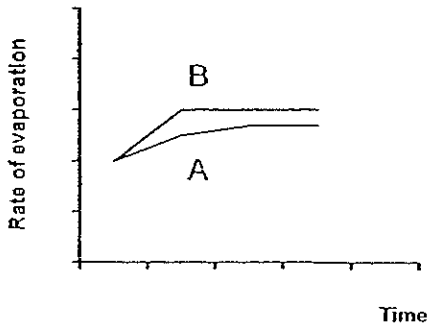
(1)



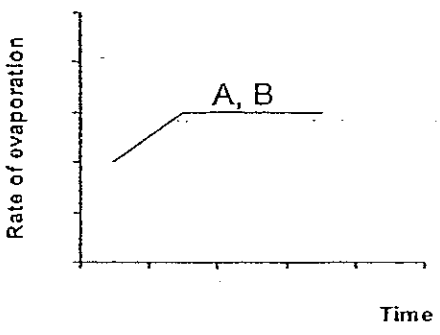
(2)



(3)

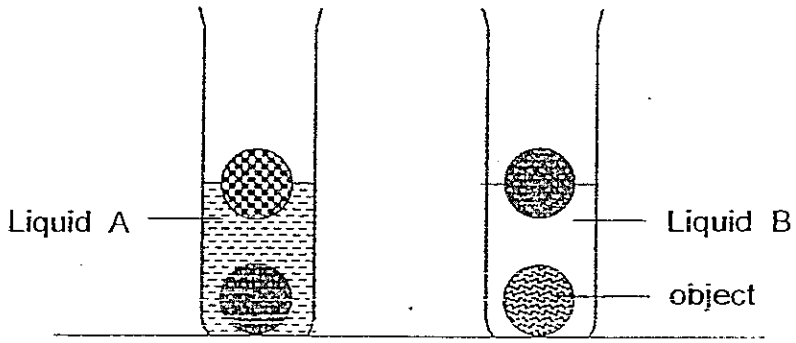


(4)



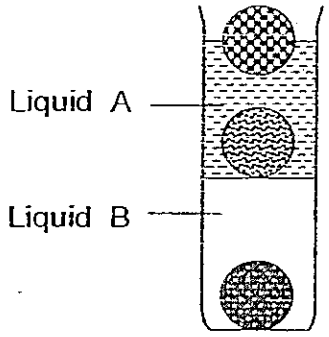
sb

18. The diagram below shows how three different objects behave in equal amount of Liquids A and B, which do not mix, when they are put together.

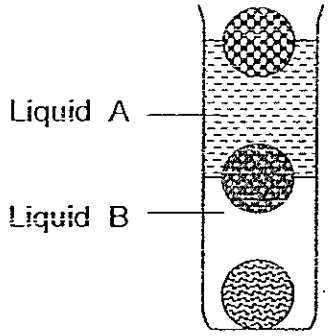


Which of the following diagrams show clearly what happens when Liquids A and B and all the objects are placed in one container?

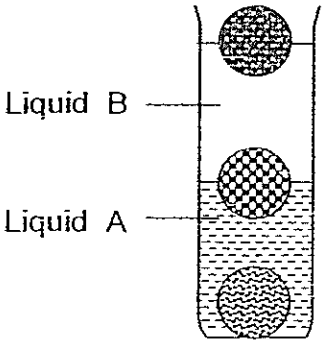
(1)



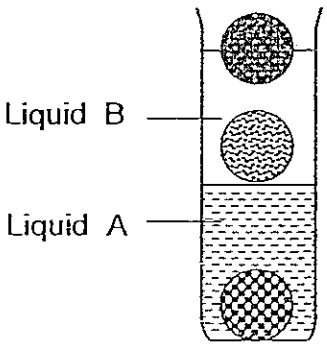
(2)



(3)



(4)



19. Shawn wanted to compare the hardness of four objects, A, B, C and D. He tested them by scratching them with rulers made of different materials. After the experiment, he concluded that object C is the hardest, followed by object B, A and D.

Which one of the following is the most likely observation that he had made?

(1)

Objects	(✓) indicates the presence of scratch marks made by the rulers		
	Plastic ruler	Wooden ruler	Metal ruler
A			✓
B	✓		✓
C	✓	✓	✓
D			

(2)

Objects	(✓) indicates the presence of scratch marks made by the rulers		
	Plastic ruler	Wooden ruler	Metal ruler
A		✓	✓
B	✓	✓	✓
C			
D			✓

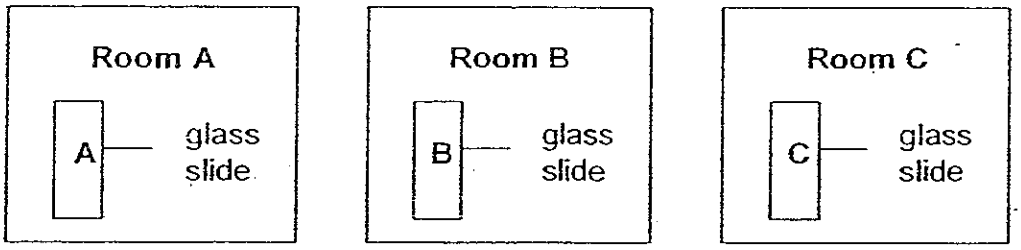
(3)

Objects	(✓) indicates the presence of scratch marks made by the rulers		
	Plastic ruler	Wooden ruler	Metal ruler
A	✓		✓
B			✓
C			
D	✓	✓	✓

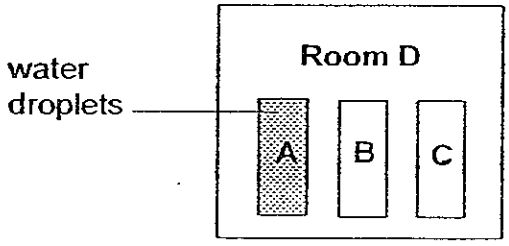
(4)

Objects	(✓) indicates the presence of scratch marks made by the rulers		
	Plastic ruler	Wooden ruler	Metal ruler
A			✓
B	✓	✓	✓
C			✓
D		✓	✓

20. Joseph left three glass slides in three Rooms, A, B and C, of different temperatures for an hour.



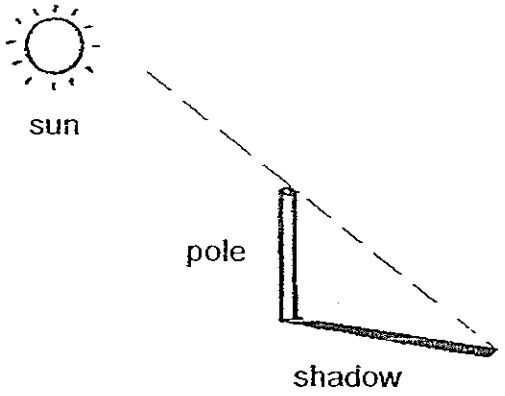
Thereafter, they are removed and left in Room D. After 5 minutes, he noticed water droplets on the glass slide from Room A but not on the glass slides from Rooms B or C.



Which of the following statements best describes the temperature of the room(s)?

(1) Room A is the coldest room.
(2) Room D is the warmest room.
(3) Room B and C are the warmest room.
(4) Rooms B, C and D have the same temperature.

21. Jalimah measured the length of the shadow of a pole at various times of the day.



Which one of the following tables shows data that are likely to be those recorded by Jalimah?

(1)

Time	Length of shadow
8.00am	2.55m
10.00am	1.25m
12.30pm	0.50m
4.00pm	1.90m

(2)

Time	Length of shadow
8.00am	1.25m
10.00am	1.90m
12.30pm	0.50m
4.00pm	2.55m

(3)

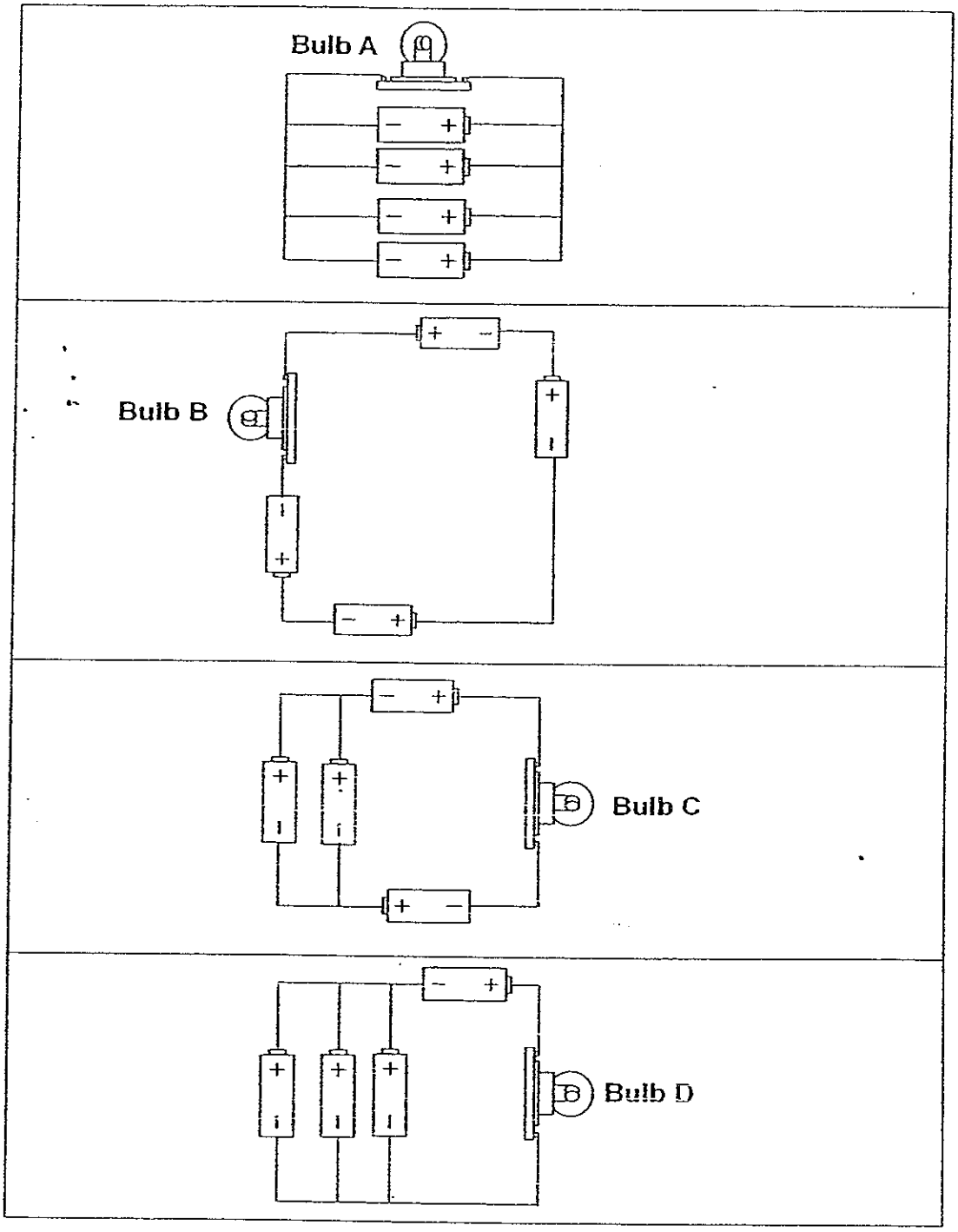
Time	Length of shadow
8.00am	1.90m
10.00am	2.55m
12.30pm	1.25m
4.00pm	0.50m

(4)

Time	Length of shadow
8.00am	2.55m
10.00am	1.90m
12.30pm	1.25m
4.00pm	0.50m

60

22. Study the four electric circuits as shown below. All the batteries in the circuits have the same voltage and the bulbs are of the same size and voltage.



Arrange Bulbs A, B, C and D in ascending order of brightness.

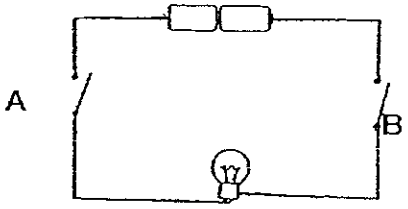
(1) A, B, C, D
(2) A, D, C, B
(3) B, C, D, A
(4) C, D, A, B

23. The table below shows how the switches in a circuit affect the bulb. "0" means the bulb is not lighted. "1" means the bulb is lighted.

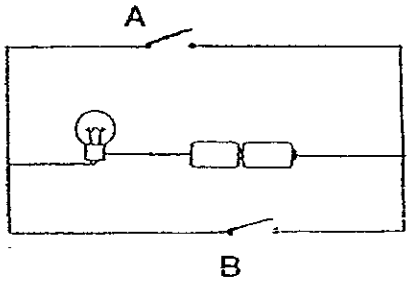
Switch		Bulb
A	B	
closed	closed	1
open	closed	0
closed	open	0
open	open	0

Which one of the following circuits fits the above table?

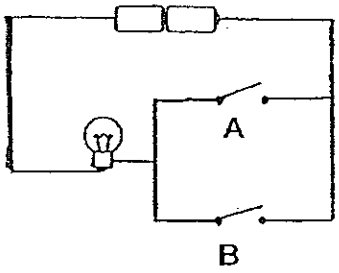
(1)



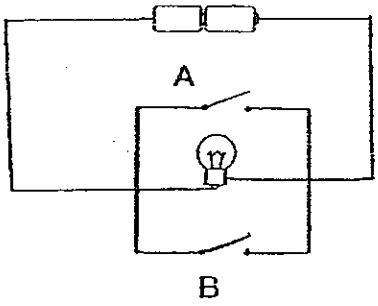
(2)



(3)



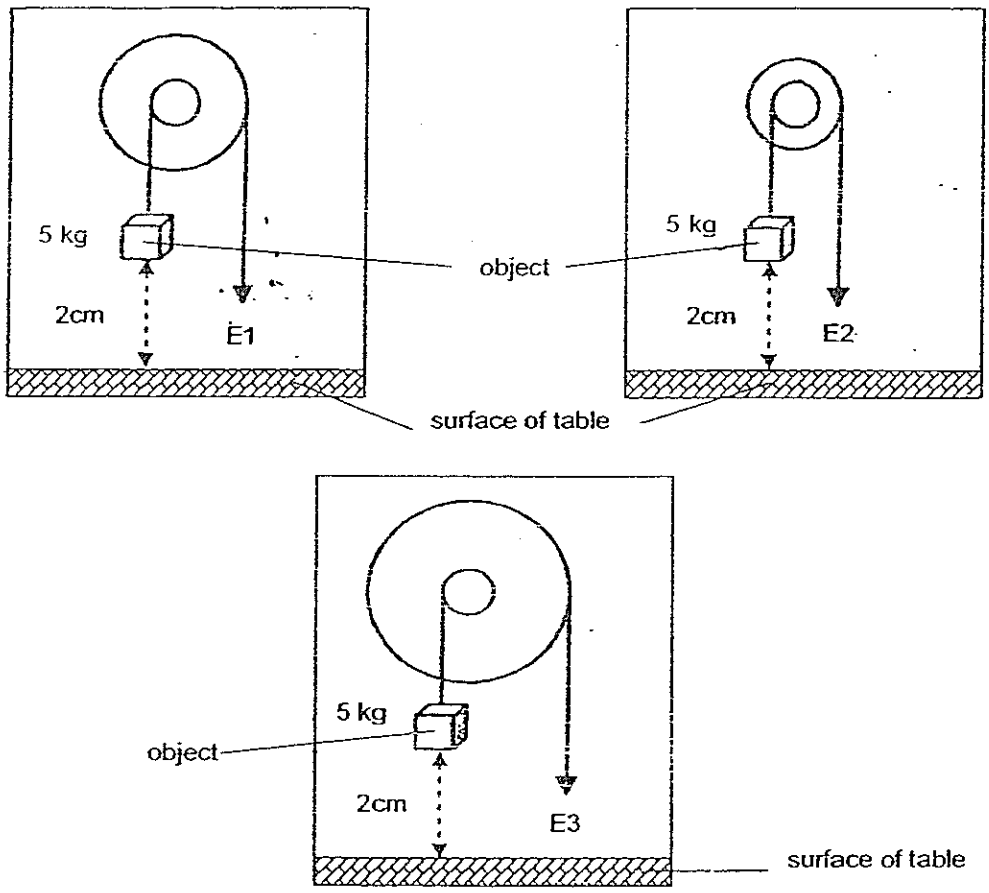
(4)



12

24. The diagram below shows 3 wheel and axle systems being used to lift up a similar object of mass 5 kg. The diameters of the axles are the same but the **diameters of the wheels** are **different**.

E1, E2 and E3 represent the amount of effort used to lift the object 2 cm above the surface of a table.



Which of the following correctly shows the effort used in **descending order**?

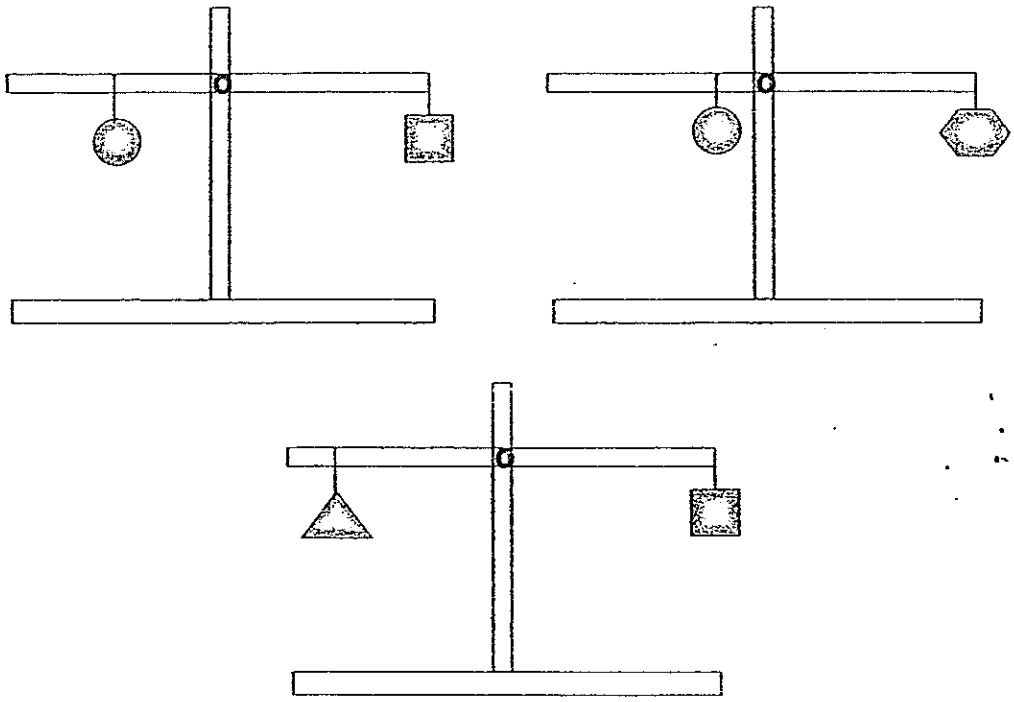
(1) E1, E2, E3

(2) E1, E3, E2

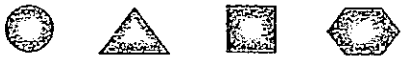
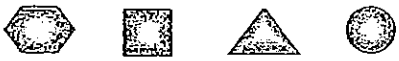
(3) E2, E1, E3

(4) E3, E1, E2

25. Ah Teck balanced four objects using the same balance as shown in the diagrams below.



Which one of the following arranges the objects from the heaviest to the lightest?

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

64

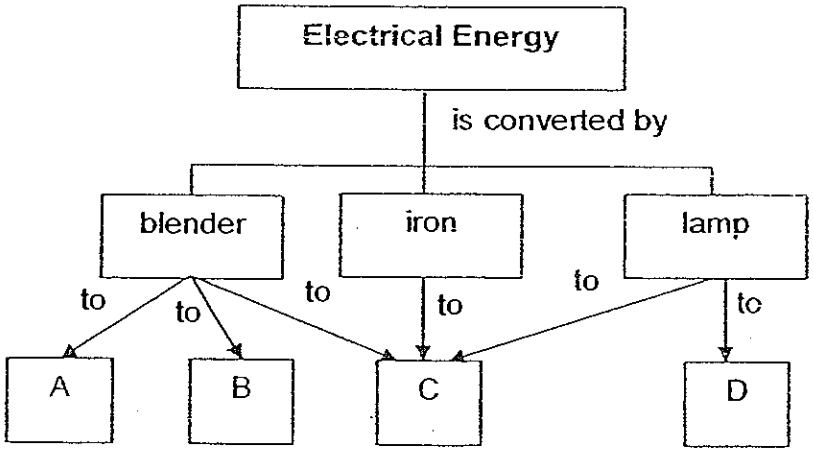
26. Four pupils, when asked to give a statement about forces, gave the following:

Anwar	:	A force is a push or a pull.
Betty	:	A force can be seen especially when a dent is made on an object as a result of the force.
Caixing	:	A force can cause a moving ball to stop moving, slow down, move faster and / or change its direction of motion.
Dorisamy	:	A force can change the shape of an object.

Who made a **true** statement?

(1) Anwar and Betty
(2) Anwar and Caixing
(3) Anwar, Caixing and Dorisamy
(4) All of them

27. The graphic organizer below shows the conversion of electricity to other forms of energy, A, B, C and D, by some household electrical appliances.

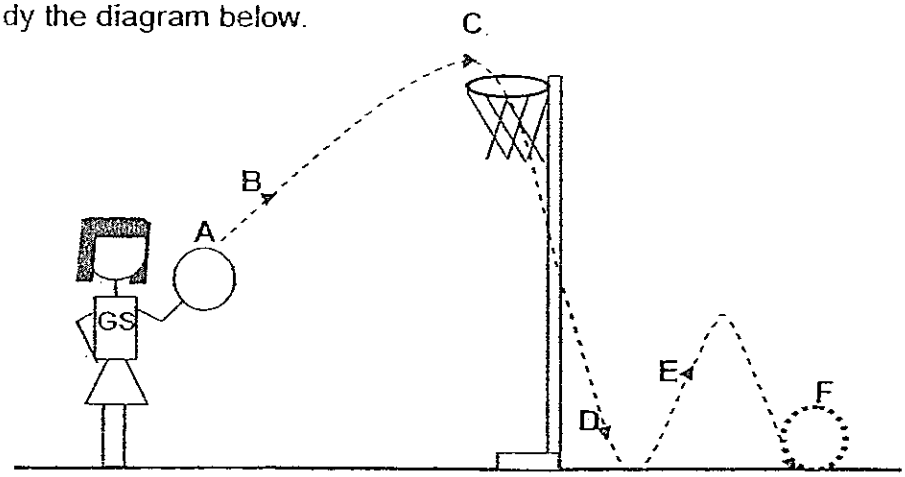


Identify energy A, B, C and D.

	A	B	C	D
(1)	kinetic	sound	heat	light
(2)	kinetic	potential	light	heat
(3)	sound	chemical	heat	light
(4)	heat	light	sound	kinetic

65

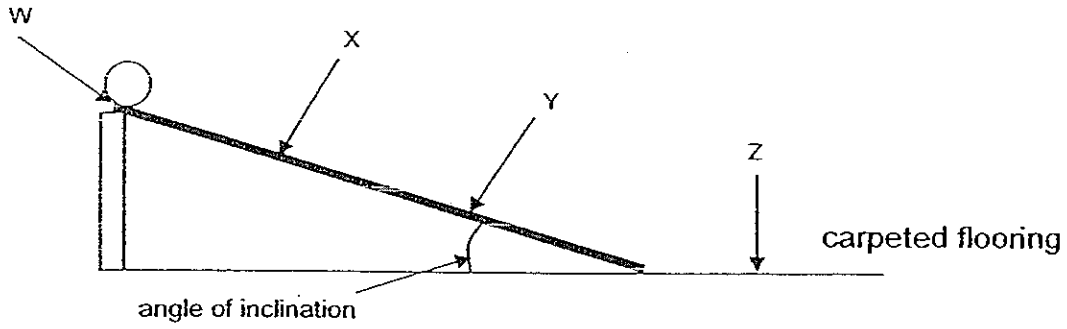
28. Study the diagram below.



Hui Ling aims and shoots a netball into the net. The dotted arrows in the diagram above show the path of the netball.
At how many points (A, B, C, D, E, F), did the netball possess potential energy?

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

29. Annie released a marble at point W, as shown in the diagram below. It rolled down the slope, moved along the floor and stopped at point Z.



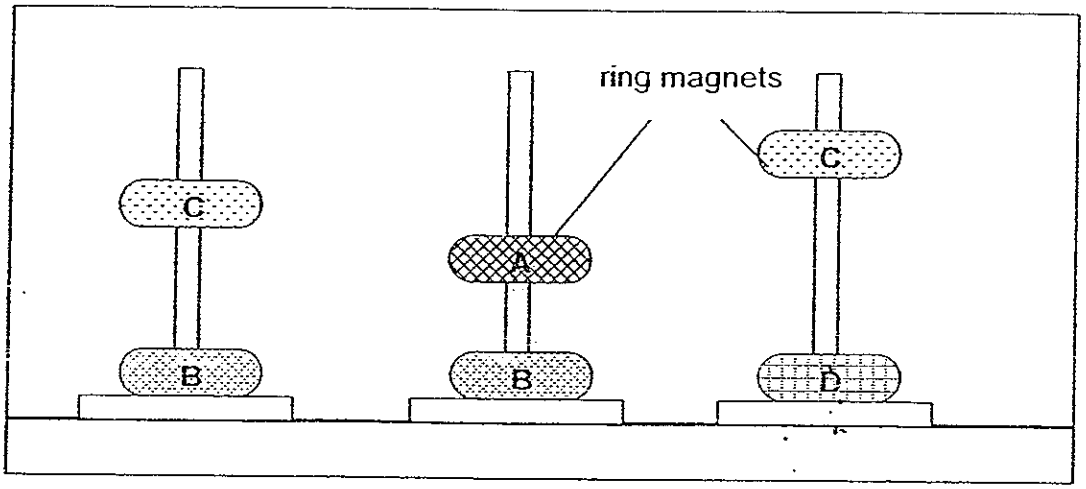
Which of the following statements are **true** about the marble?

A: At points X and Y, the marble only has kinetic energy.
B: The marble has maximum potential energy at point W.
C: The marble would have rolled beyond point Z if the flooring is smooth.
D: The marble would have rolled down the slope faster if the angle of inclination had been bigger.

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

66

30. The following set-up shows four different ring magnets, A, B, C and D, of the same mass with the like poles facing each other.



Based on the set-up shown above, which one of the following statements is most likely to be correct?

(1) The magnetic strength of magnet B is stronger than magnet A.
(2) The magnetic strength of magnet B is stronger than magnet D.
(3) The magnetic strength of magnet C is stronger than magnet A.
(4) The magnetic strength of magnet C is stronger than magnet B.

~~ End of Section A ~~

Name : _____( )

Class : Primary _____

CHIJ ST NICHOLAS GIRLS' SCHOOL

SIMPLE IN VIRTUE

STEADFAST IN DUTY

德 纯 义 孝

Primary 6

Semestral Assessment 1 – 2008

SCIENCE

BOOKLET B

8th May 2008

Booklet A	60
Booklet B	40
Total	100

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

16 questions
40 marks

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

_____
Parent's Signature/Date

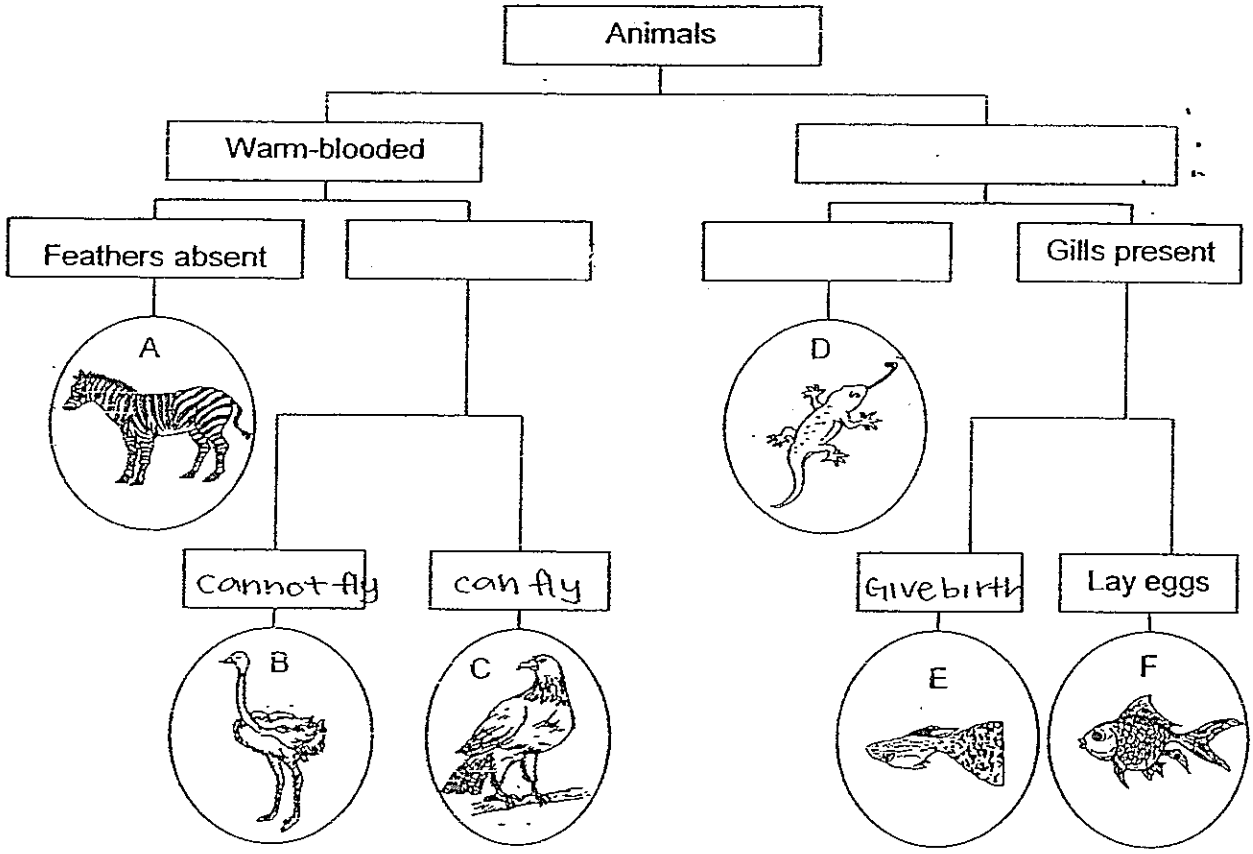
18

Section B : (40 marks)

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

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

31. Issac received an incomplete information sheet from a zookeeper. The information showed six different animals as classified in the chart based on their characteristics.



a) Based on the information from the chart, state one similarity between Animal A and C. [1]

_____

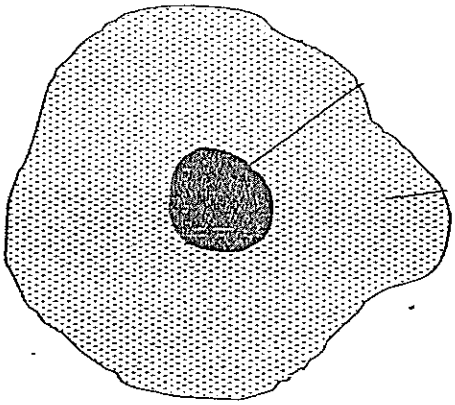
b) Based on the information from the chart, state two differences between Animal C and F. [2]

i) _____

ii) _____

69

32. The diagram below shows an animal cell.



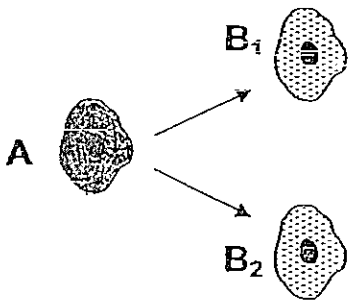
(a) Using the information given below, label the respective parts of the animal cell 'A', 'B' and 'C' in the diagram above: [1½]

A - instructs the cell what to do

B - is the jelly-like part of the cell

C - allows certain substances in and out of the cell

(b)



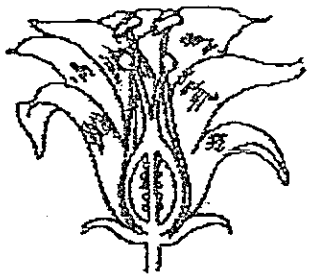
Name the process that is shown in the diagram on the left. [½]

_____

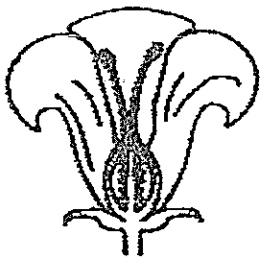
(c) If the same process is repeated in B_1 and B_2, how many cells will be produced altogether? [1]

_____

33. The diagram below shows the cross-sections of two flowers from different plants.



Flower A

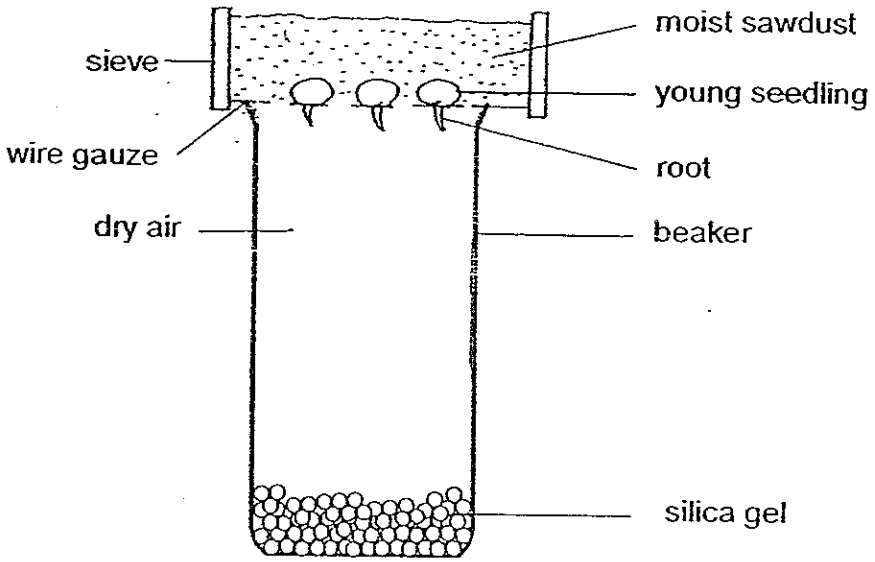


Flower B

Based on your observation of Flower A and Flower B, state whether each statement is 'True', 'False', or 'Not Possible To Tell'. Put a tick (✓) in the appropriate column. [2]

	Statement	True	False	Not Possible to Tell
(a)	After fertilisation, Flower A can develop into a fruit but Flower B cannot.			
(b)	Both flowers have female parts.			
(c)	Pollination is not required in Flower A.			
(d)	Both flowers are pollinated by bees.			

34. The picture below shows an experiment carried out by Raja. He placed three seeds that have just germinated (young seedlings) on the wire-gauze base of a sieve and placed the sieve on a beaker which contained dry silica gel, a substance used for removing moisture in the air. He then covered the germinated seeds with moist sawdust and left the setup in a dark place for a few days.



a) Do you think the young seedlings would have grown after a few days? Why?[1]

b) What would Raja notice about the roots of the seedlings after a few days? Why? [1]

72

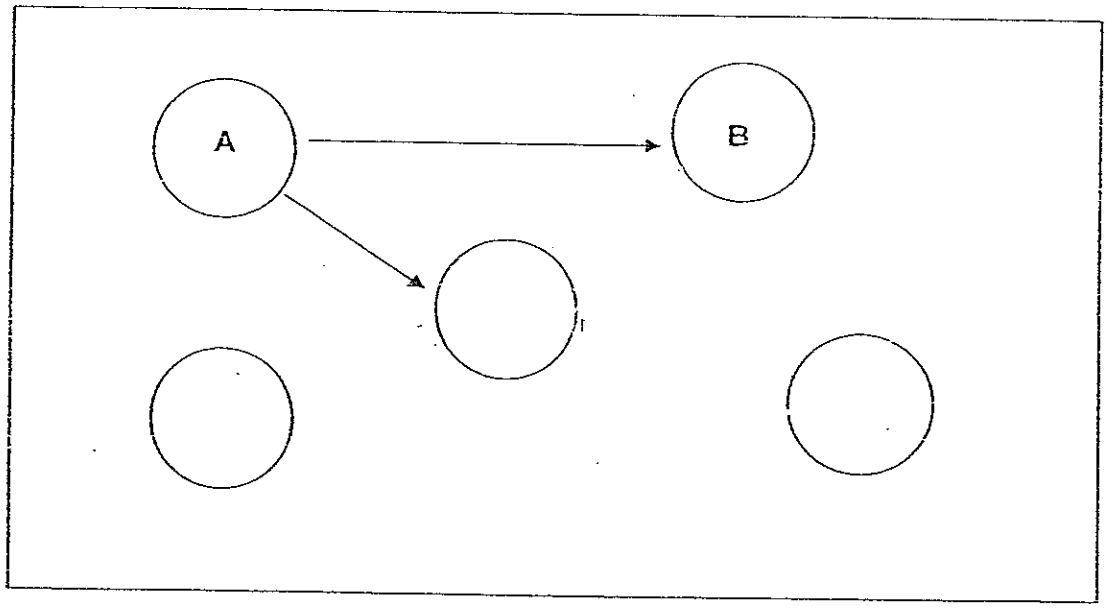
35. The table below shows one difference between arteries and veins.
Complete the table by giving two **other** differences. [2]

	Differences between	
	Arteries	Veins
1	contains blood that is rich in oxygen	contains blood that is rich in carbon dioxide
2		
3		

36. The information about a group of organisms, A, B, C, D and E, is as shown below.

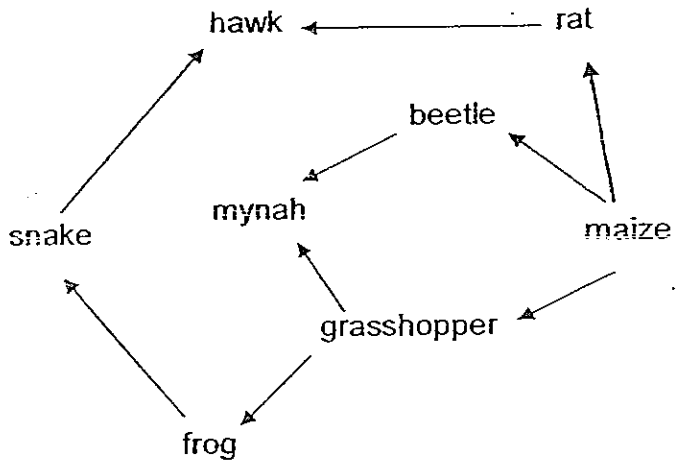
A is a consumer.
B feeds on A and C.
D is eaten by A.
D is able to convert light energy to stored energy.
C eats A and D.
E is the predator of B.
C is the prey of E.

Complete the food web to show the relationship among the organisms, A, B, C, D and E, described above. [2]



74

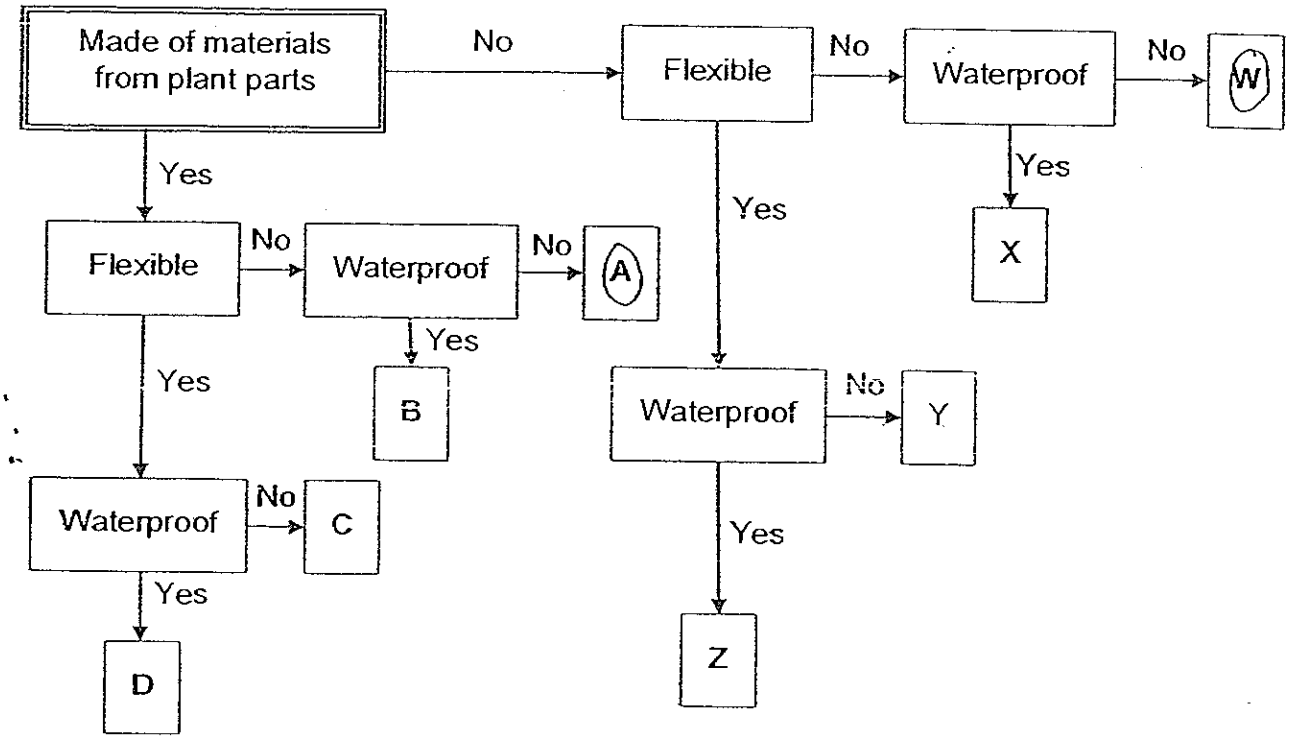
37. The food web below represents a forest community living close to a piece of farmland. Farmers in this farmland used insecticides without any control. As a result, there was a large scale poisoning of organisms feeding on the insects which are regarded as pests by the farmers.



(a) Name the first consumer(s) to be poisoned by the toxic insects. [1]

(b) Will the snake population be affected by the insecticides? Explain your answer. [2]

38. The classification chart below shows the characteristics of 8 different objects represented by A, B, C, D, W, X, Y and Z.



a) What characteristic(s) does / do objects A and W have in common? [1]

b) Which object represented by the letters A, B, C, D, W, X, Y and Z best represents a plastic sheet? [1]

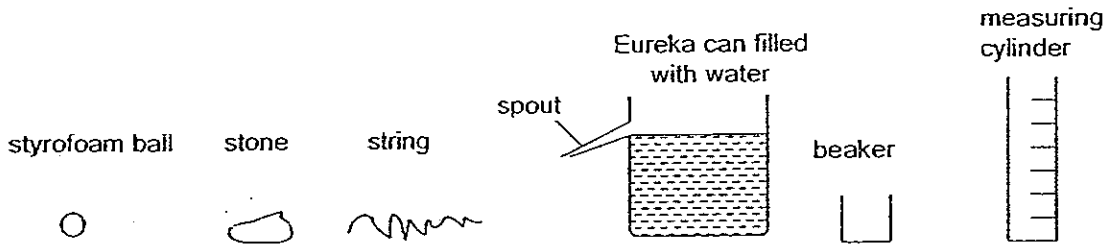
c) If the objects are to be placed into two different groups based on their characteristics above, what will be a suitable heading for each of the following groups? [1]

i) Objects B, D, X, Z:

ii) Objects A, C, W, Y:

76

39. Mei Mei wants to find the volume of a styrofoam ball. She used the apparatus as shown below to carry out her experiment.



(a) The steps showing how Mei Mei carried out her experiment are given below. Fill in the missing steps. [2]

(i) Place the empty beaker at the spout of the Eureka can.

(ii) Tie the string to the stone.

(iii) Lower the stone into the water. Collect the water that flows out of the can into the beaker.

(iv) Record the volume of water collected.

(v) Fill the Eureka can to its brim again.

(vi) Place the empty beaker at the spout of the Eureka can.

(vii) _____

(viii) _____

_____

(ix) Record the volume of water collected.

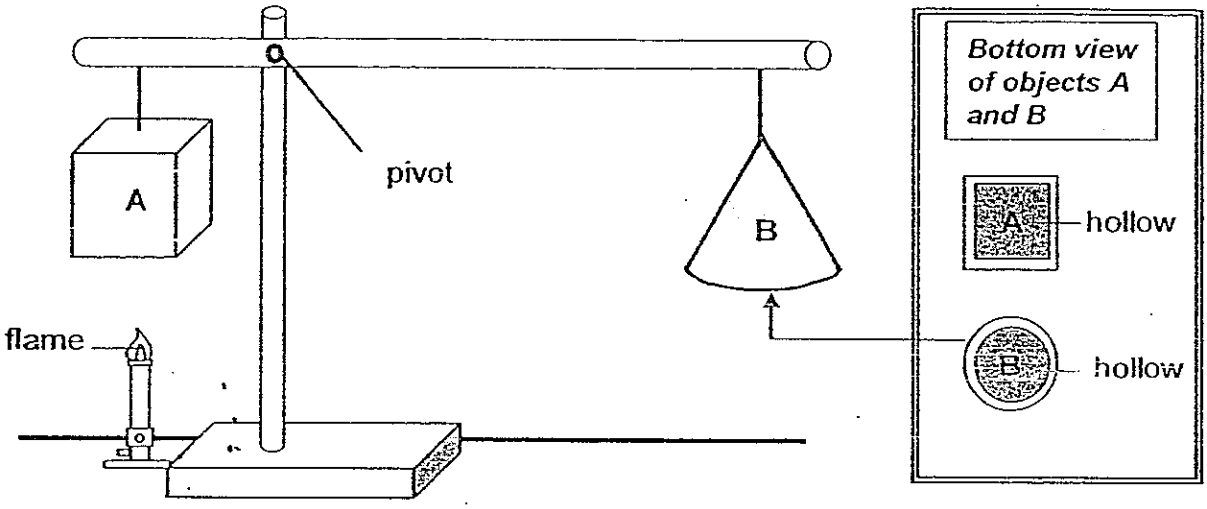
(b) Explain how Mei Mei could find out the volume of the styrofoam ball with the measurement recorded? [1]

_____

_____

77

40. Two objects, cuboid A and cone B, are balanced on a lever with the help of a flame from the bunsen burner as shown in the diagram below. Object A and B are both hollow with the base removed.



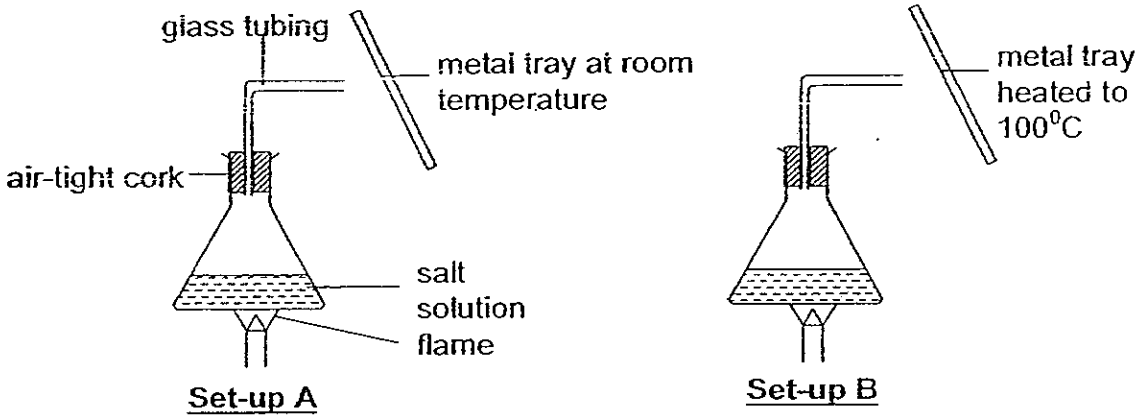
(a) What would happen to the lever when the flame from the bunsen burner is put out? [1]

(b) What can be said about the mass of object A as compared to the mass of object B? [1]

(c) Why are objects A and B in balance only when the flame is used? [1]

41. Ramli carried out an experiment according to the steps below.

Step 1:	He heated the salt solution till it started to boil.
Step 2:	He placed a metal tray that is at room temperature close to the glass tubing. (Set-up A)
Step 3:	He observed what happened on the surface of the metal tray and recorded his observations.
Step 4:	He replaced the metal tray with one that is heated to 100^0C. (Set-up B)
Step 5:	Again he recorded his observations.



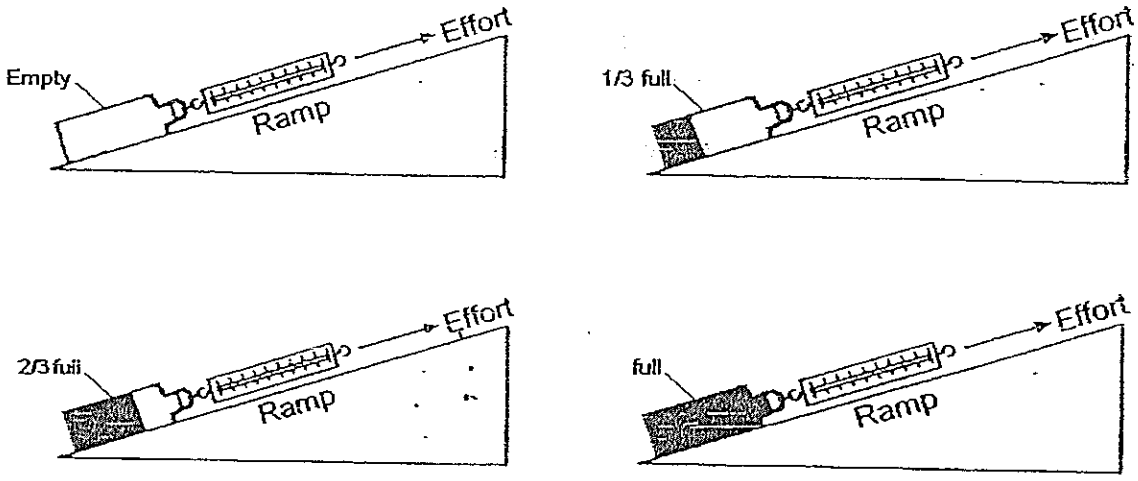
(a) Describe what Ramli observed <u>on</u> the surface of the metal tray in Set-up A. [½]

(b) Describe what Ramli observed <u>on</u> the surface of the metal tray in Set-up B. [½]

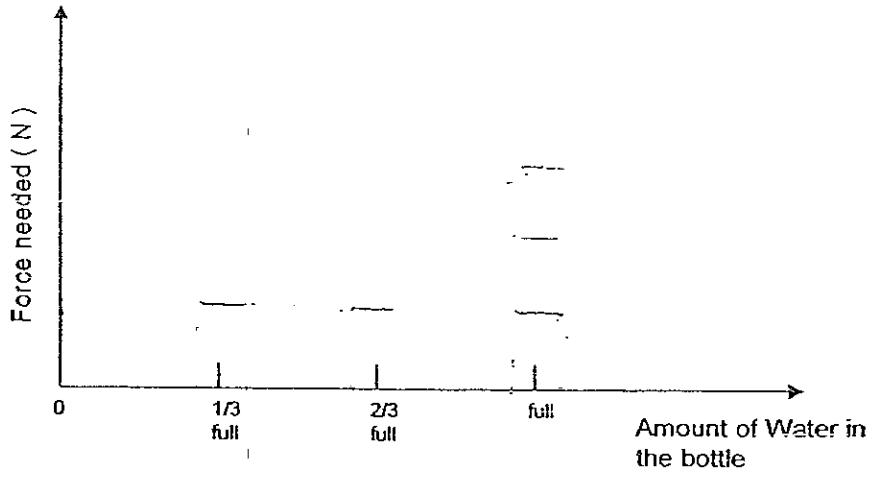
(c) Explain the reason for the different observations made. [2]

79

42. Mdm Lee carried out the experiment as shown below. She pulled an empty bottle up the ramp and measured the force needed by using a spring balance. She repeated the experiment using the same bottle but filled with different amounts of water.



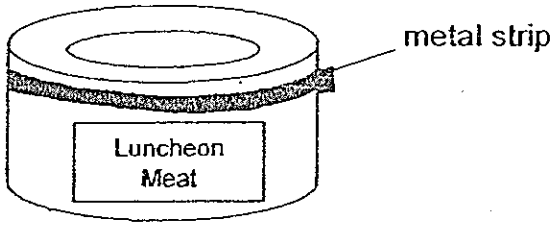
(a) Predict the results of Mdm Lee's experiment by drawing a line graph to show the relationship between the amount of water in the bottle and the force needed to pull the bottle up the ramp. [1]



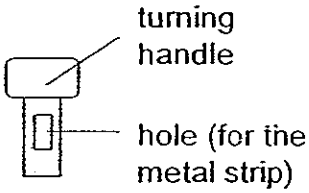
(b) Name a variable (excluding the bottle) that has to be kept the same in order to have a fair test. [1]

80

43. Grandma Jane used a "T" key as shown below to open a can of luncheon meat.

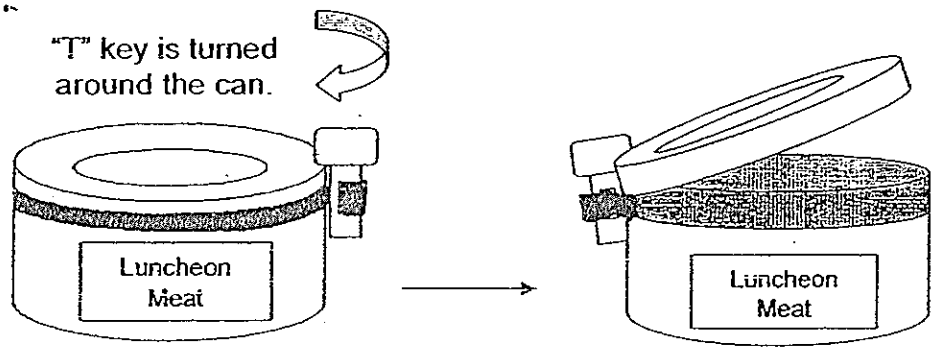


can of luncheon meat



"T" key

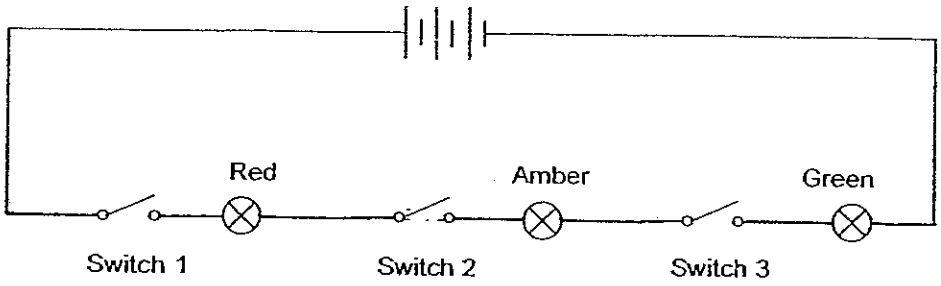
She inserted the metal strip into the hole of the "T' key and turned the key, As she turned the key, the metal strip wound around the key, opening the can of the luncheon meat.



(a) Grandma Jane felt that it was difficult to open the can of luncheon meat using the "T" key provided. Suggest how the design of the "T" key could be improved on so that she could open the can of luncheon meat more easily. [1]

(b) Explain how your suggestion in (a) could help Grandma Jane to open the can of luncheon meat more easily. [1]

44. Nicky wanted to design a traffic light circuit. The diagram below shows the circuit that he had constructed.



However, Nicky found that he could not get each coloured bulb to light up one at a time. **Using the same circuit components**, draw the circuit in the space below to show how Nicky should reconstruct so that each coloured bulb could be lighted up one at a time. [2]

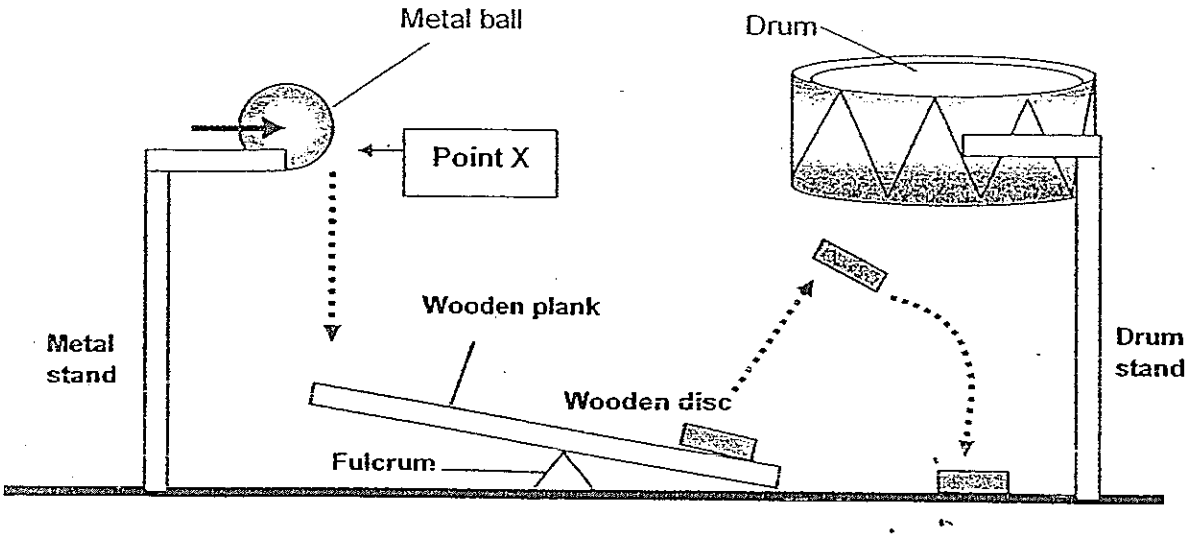
45. The table below shows the statistics of our Solar System.

Planet	Distance from the Sun (km)	No. of days taken for one revolution	Length of Day (in Earth days of hours)
Mercury	57 900 000	88	59 days
Venus	108 200 000	224	243 days
Earth	149 600 000	365	24 hours
Mars	228 000 000	686	24.6 hours
Jupiter	778 400 000	4 329	9.8 hours
Saturn	1 427 000 000	10 753	10.2 hours
Uranus	2 869 300 000	30 660	15.5 hours
Neptune	4 497 000 000	60 152	15.8 hours

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

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

46. Joseph designed a toy as shown below.



He pushed a metal ball from point X at the top of the metal stand and the ball dropped landing at one end of the wooden plank. That end of the wooden plank would move down and this in turn caused the other end of the plank to move up, sending the wooden disc flying. However, the wooden disc did not hit the drum.

(a) Without making any changes to the drum and the drum stand, what could Joseph do so that the wooden disc would hit the drum to produce a "dome" sound? [1]

(b) Explain your answer in (a). [2]

~~ End of Paper ~~

CHIJ Primary School

Primary 6 Science SA1 Exams (2008)

Answer Keys

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

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

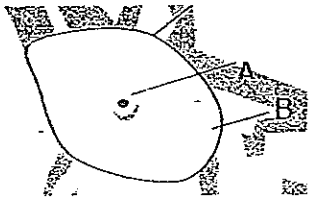
Qn no	Ans
21	1
22	2
23	1
24	3
25	2
26	3
27	1
28	3
29	4
30	3

31a. They are both warm-blooded

31b(i). Animals C is warm-blooded while animal F is cold-blooded.

(ii). Animals C have feathers present while animal F has grills present.

32a.



32b. Cell division

32c. There will be 4 cells

33a. F (b) T

33c. F (d) Not

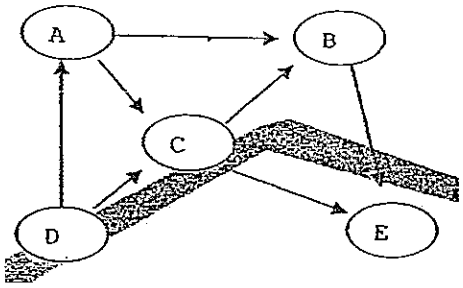
34a. Yes, there was air and water for the seedling to grow.

34b. Plants need to grow so they respond by growing towards the moist sawdust.

35a. Arteries : 1) They are thick tubes that contain blood.
2) carries food

Veins 1) they are thin tube which contain blood
2) carries waste materials.

36.



37a. Mynah, frog

37b. Yes, they feed on frog which on the toxic insect grasshopper.

38a. They are both not flexible and not waterproof

38b. Z

38c(i). waterproof

(ii). Not waterproof

39a(i) Tie the string to the Styrofoam ball and the stone

(ii) Lower the Styrofoam ball into the water. Collect the water that flows out of the can into the beaker.

39b. She should take the different in the 2 volume of water collected.

40a. The lever would tip onto A's side.

40b. Object A is heavier than Object B.

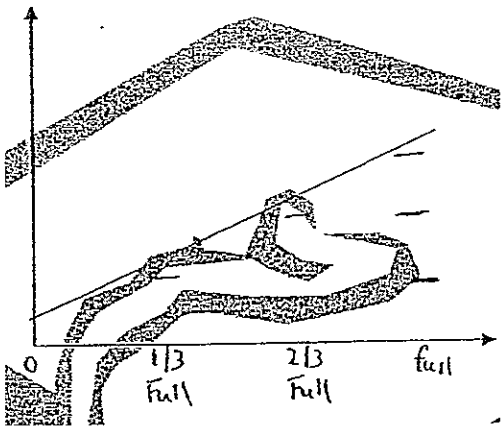
40c. The flame heats up the air above the Bunsen burner and since hot air rises, it pushes against the inside of the hole in cupboard A causing the lever to move up.

41a. He observed that tiny water droplets were formed on the surface of the mantel tray.

41b. Nothing was found.

41c. In setup A condensation take place on the metal plate as the temperature of the metal plate was lower than of the steam emitted from the glass tubing. But in set-up B condensation did not take place since the temperature of the metal plate was as high as the steam.

42a

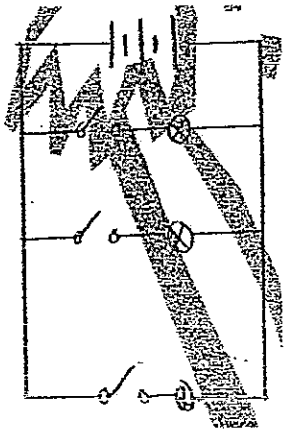


42b. The height of the ramp.

43a. Make the turning handle larger.

43b. The greater the distance moved by the effort, the smaller the amount of effort used.

44.



45a. The further it is from the sun, more days taken for one revolution.

45b. There is no relationship

46a. He can push the further to the wooden disc.

46b. Kinetic energy increases with a heavier bal, thus causing the wooden disc to fly higher hitting the drum making a 'dome' sound.