NAN HUA PRIMARY SCHOOL
SEMESTRAL ASSESSMENT 2
PRIMARY FOUR
SCIENCE

Name : _____(

Class : Primary 4 / ____

Date : 28 October 2008

Duration : 1 hr 45 min

MARKS	
Sect A:	/ 60
Sect B:	/ 40
Total :	/ 100

Parent's Signature : _____

Section A: (30 x 2marks = 60marks)
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.

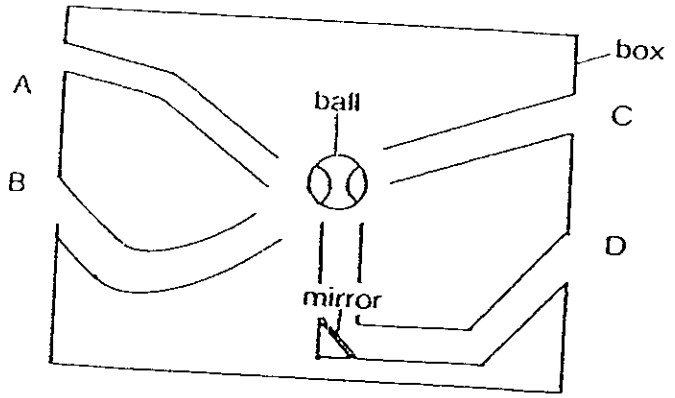
1. Which one of the following is translucent?

(1) Brick
(2) Clear glass
(3) Frosted glass
(4) Cardboard box

2. Which one of the materials would be best used to make a cup to keep hot coffee hot for as long as possible?

(1) Metal
(2) Glass
(3) Paper
(4) Styrofoam

3. A ball was placed in the middle of a cardboard box as shown in the figure below. Four tubes, A, B, C and D were placed in the box. Which of the tubes can be used to view the ball?



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

4. Which of the following young **resemble their parents**?

A. Caterpillar
B. Chick
C. Tadpole

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

5. Which of the following is **not** needed for a seed to germinate into a seedling?

(1) Air
(2) Water
(3) Warmth
(4) Sunlight

6. Which of the following is **not** matter?

(1) Book
(2) Wind
(3) Sound
(4) Water

7. The diagram below shows the different stages of the life cycle of an animal.

Which of the following animals go through the life cycle as shown above?

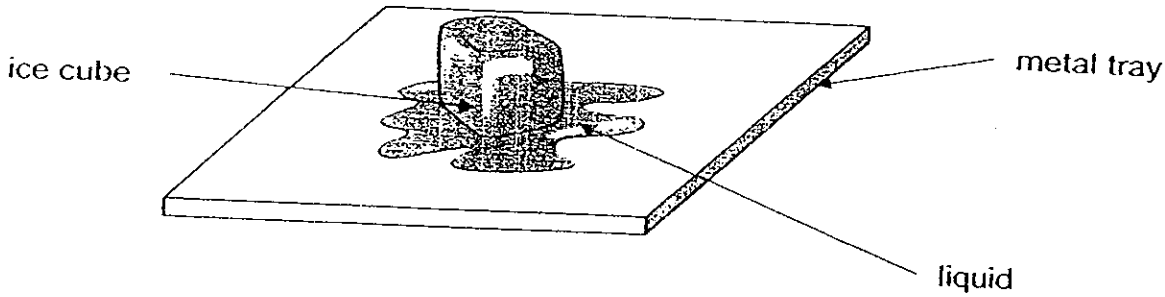
A. Butterfly
B. Mosquito
C. Chicken
D. Cockroach

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

8. Which one of the following is not a source of light?

(1) Sun
(2) Fire
(3) Lightning
(4) Moon

9. An ice cube is left to melt on a metal tray as shown in the diagram below.

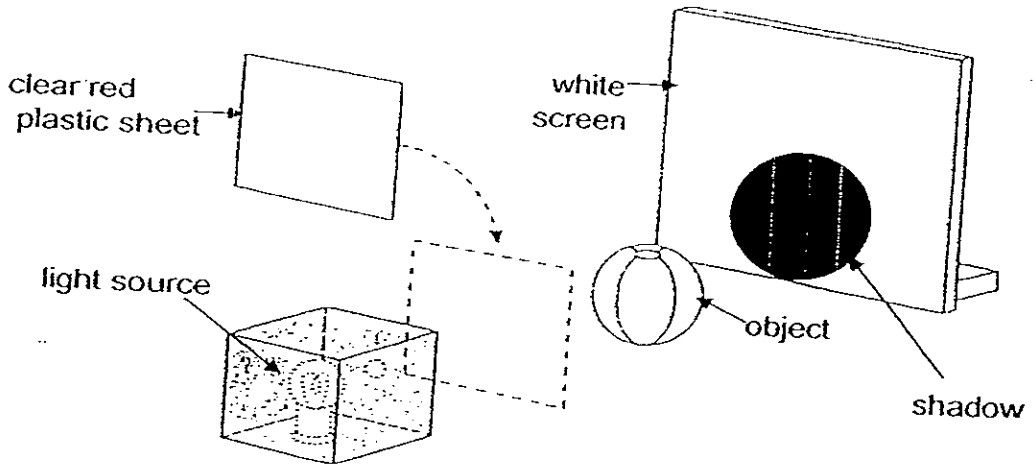


Which of the following statement(s) is/are correct when the ice cube is melting?

A: The temperature of the metal tray decreases.
B: The liquid is losing heat to the surrounding air.
C: The temperature of the ice cube rises above 0°C.

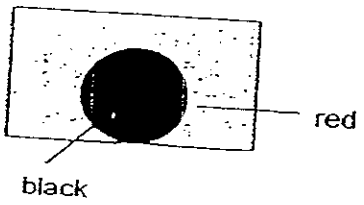
(1) A only
(2) A and B only
(3) B and C only
(4) A, B and C

10. When an object was placed between the light source and the white screen, a shadow was seen on the white screen as shown below.

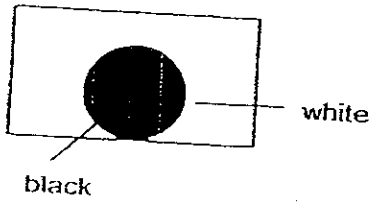


If a clear red plastic sheet were placed in front of the light source, what would be observed on the white screen?

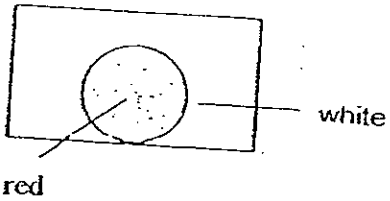
(1)



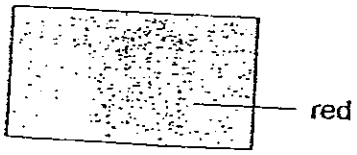
(2)



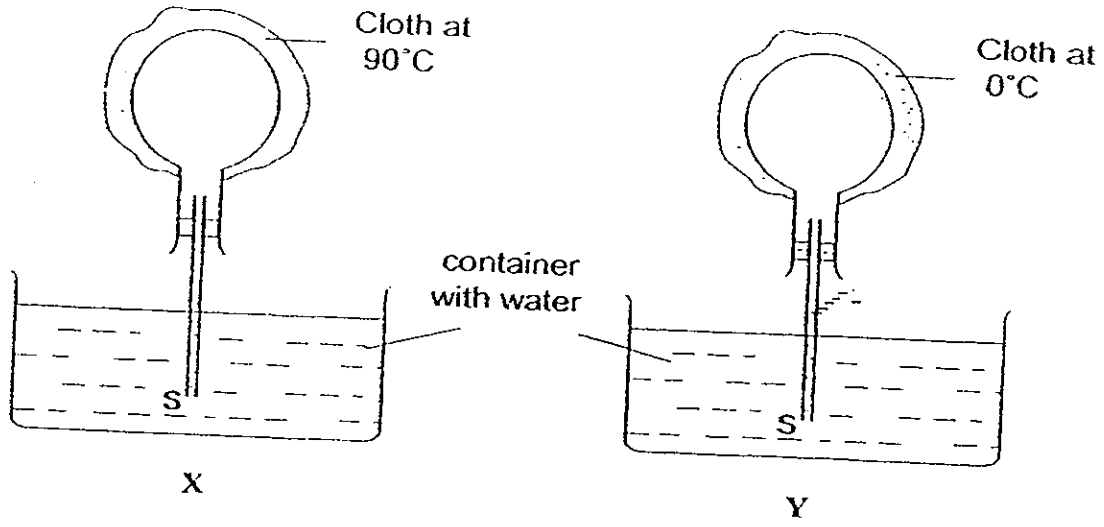
(3)



(4)



11. Study the set-ups X and Y below.

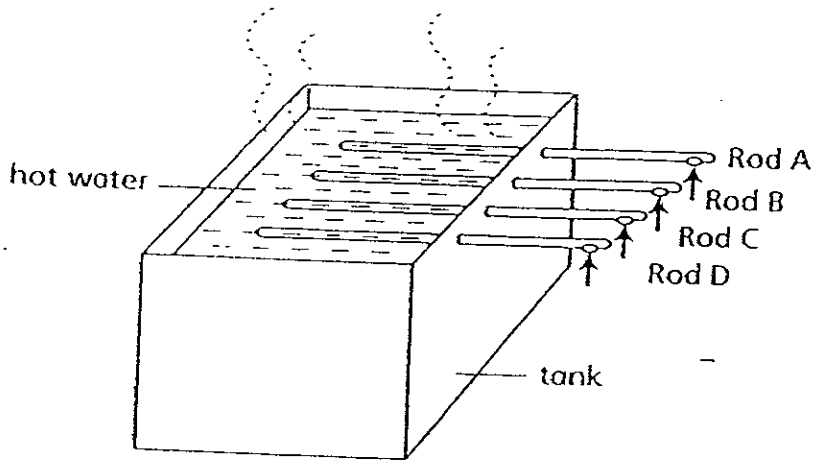


Which one of the following could be observed two minutes after the cloth was placed on the flask in set-ups X and Y?

	Observation for X	Observation for Y
(1)	Water rises up the tube	Bubbles escape from the tube at S
(2)	Water rises up the tube	Water rises up the tube
(3)	Bubbles escape from the tube at S	Bubbles escape from the tube at S
(4)	Bubbles escape from the tube at S	Water rises up the tube

12. Four rods made from different materials of the same length were attached to a tank filled with hot water. Four thumbtacks were attached to the ends of the four rods with wax.

It was observed that the thumbtack on rod A falls off first, followed by the thumbtack on B, then C and finally D.



What conclusion(s) can you draw based on the above observations?

A: Rod A is the best heat insulator.
B: Rod B conducts heat better than Rod C.
C: Some materials give off heat but others do not.
D: Some materials can conduct heat more readily than others.

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

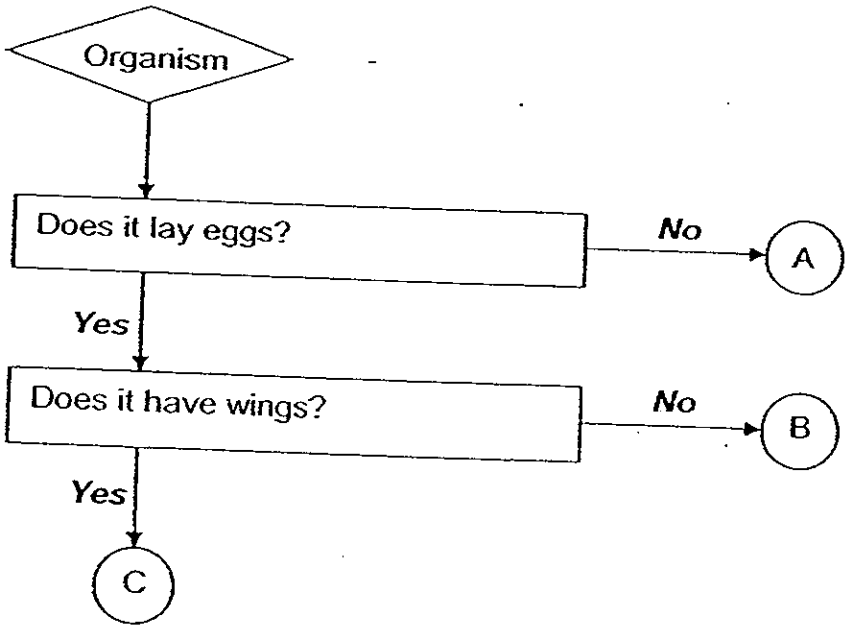
13. Study the observations made of two animals, X and Y, in the table below carefully.

Observations	Animal X	Animal Y
There are 4 stages in the life cycle	✓	✓
The young looks like the adult	x	x
It lays eggs in water	✓	x
The adult animal has six legs	✓	✓

Which of the following best represents animal X and Y respectively?

	Animal X	Animal Y
(1)	Frog	Cockroach
(2)	Frog	Chicken
(3)	Mosquito	Butterfly
(4)	Mosquito	Cockroach

14. Study the flow chart below carefully



Which of the following best represents A, B and C respectively?

	A	B	C
(1)	Chicken	Mosquito	Frog
(2)	Mosquito	Cockroach	Horse
(3)	Horse	Platypus	Cockroach
(4)	Platypus	Cockroach	Mosquito

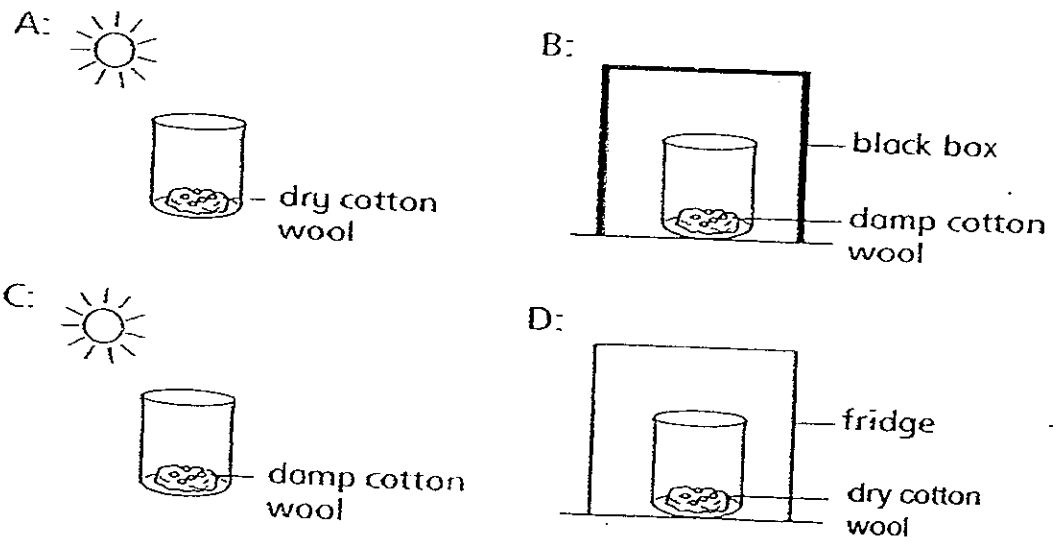
15. Four pupils, Peter, Jane, Tom and Sally, carried out an experiment using a piece of plasticine. They recorded their observations in the table below.

Pupils	Observation
Peter	When it is pressed, it becomes flat and thin.
Jane	When it is placed on a lever balance, its mass is 25g.
Tom	When it is put in a beaker of water, the water level rises.
Sally	When it is placed in an empty bowl, it does not change its shape.

Whose observation shows that the piece of plasticine takes up space?

(1) Tom
(2) Sally
(3) Peter
(4) Jane

16. Study the set-ups below carefully.



Which of the following seeds will **not germinate**?

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

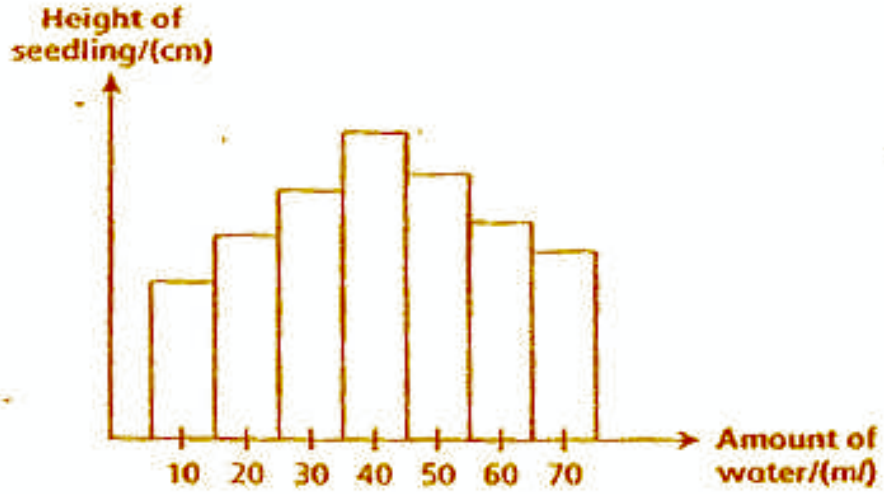
17. The events that occur as a seed germinates are listed randomly below.

A: The root appears.
B: The shoot appears.
C: The leaves emerge.
D: The seed coat breaks.

Which one of the following represents the correct sequence of events in the germination of a seed?

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

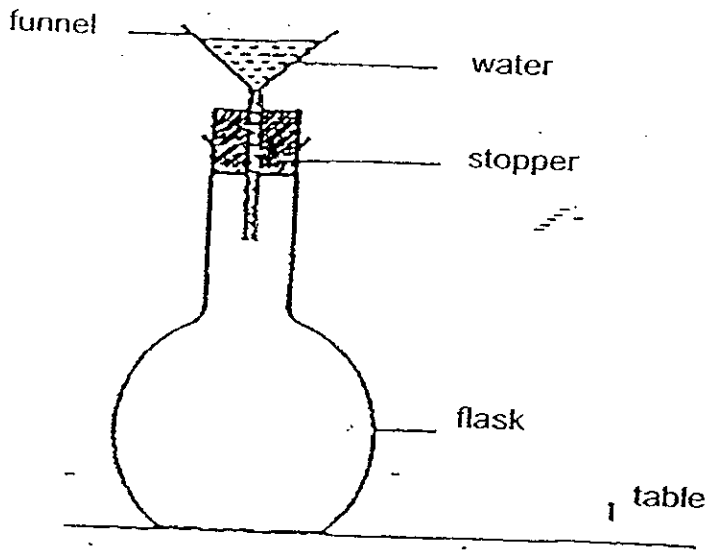
18. Ali conducted an experiment and recorded the results in the graph as shown below.



Based on his findings, which of the following best describes the aim of his experiment?

(1) To prove that plants grow taller over time.
(2) To investigate if water is needed for plant growth.
(3) To prove that the amount of sunlight affects the height of the seedlings.
(4) To investigate how different amounts of water affect the growth of the seedlings.

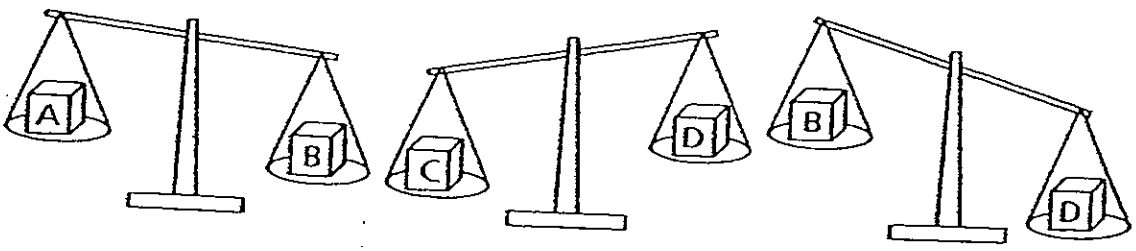
19. An experiment was set up as shown in the diagram. When water is poured into the funnel, the water did not flow into the flask.



Which one of the following could be a possible reason why the water did not flow into the flask?

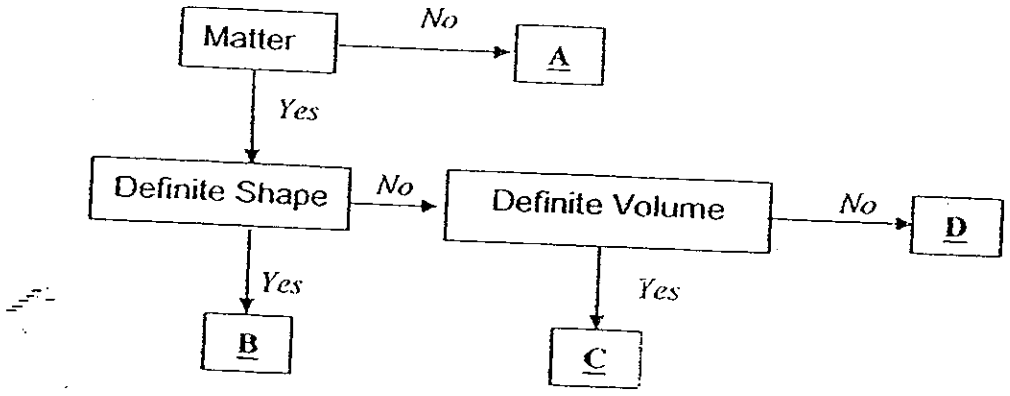
(1) There was air in the flask taking up space.
(2) The stopper stopped the flow of the water.
(3) The water was poured too slowly into the funnel.
(4) The water in the funnel could not mix with the air in the flask.

20. Arrange the following objects according to their mass in **descending** order.



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

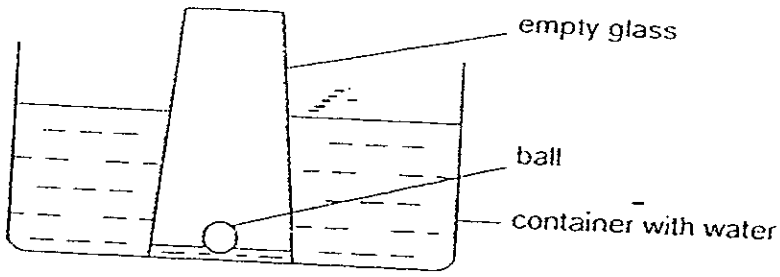
21. Study the flow chart below.



Which one of the following best represents steam in the flow chart?

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

22. James carefully lowered an empty glass with a small ball into a container of water until it touched the bottom of the container. He observed that the water level inside the glass was lower than the water level outside. The ball was still floating on the water as shown below.



What could be the main reason for the difference in the water level inside and outside the glass?

(1) The ball in the glass occupied space.
(2) The air trapped in the glass occupied space.
(3) The ball pushed the water out from the glass.
(4) The air trapped in the glass dissolved in the water.

23. The table below shows the melting points of three substances, A, B and C.

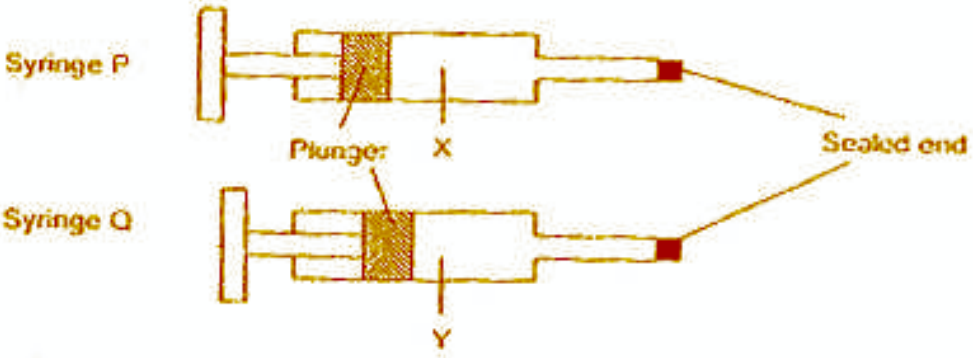
Substance	Melting point (°C)
A	10
B	45
C	130

Based on the information given above, which one of the following is **correct**?

(1) A is a solid at 8°C
(2) A and B are both liquids at 43°C
(3) B and C are both solids at 140°C
(4) C can be a liquid or a gas at 120°C

24. Two syringes, P and Q, contain substances X and Y respectively. One end of each syringe is sealed.

The plunger in syringe P could not be pushed in while the plunger in syringe Q could be pushed in slightly as shown in the diagram below.



Which of the following substances are most likely to be X and Y?

	X	Y
(1)	Air	Water
(2)	Carbon dioxide	Oxygen
(3)	Oil	Air
(4)	Water	Oil

25. The interaction between the _____ system and the _____ system helps the body to move.

A: Circulatory
B: Digestive
C: Muscular
D: Skeletal

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

26. Digestion of food begins in the mouth and moves down the _____ before it reaches the stomach.

(1) Gullet
(2) Windpipe
(3) Small intestine
(4) Large intestine

27. Mindy has 3 rods labelled A, B and C.

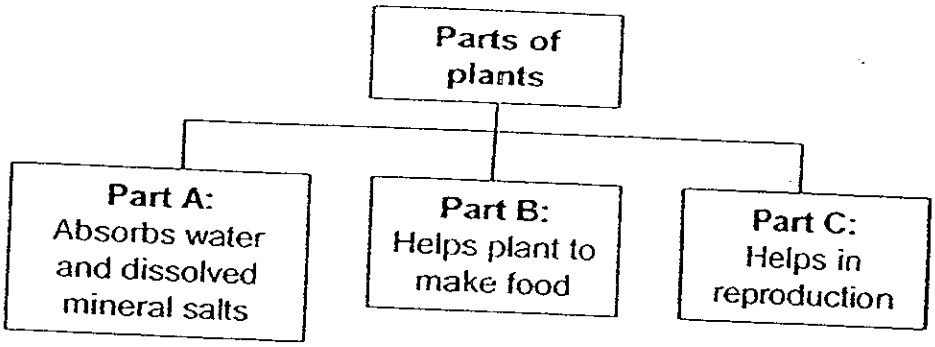
She carried out a simple test by bringing a bar magnet near each of the 3 rods. She then recorded her results in the table below.

Rod	Test results
A	X was attracted to the North-pole of the magnet. Y repelled from the North pole of the magnet.
B	X was attracted to both poles of the magnet. Y was also attracted to both poles of the magnet.
C	Both X and Y were not attracted to the two poles of the magnet.

Which of the following statements about rods A, B and C is most likely to be correct?

(1) Rod C is made of a magnetic material.
(2) Rod A and B are magnets.
(3) Rod B is a temporary magnet.
(4) Rod A and B are made of magnetic materials.

28. Study the classification table below carefully. The plant parts are grouped according to their functions.



Which of the following represents the plant parts correctly?

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

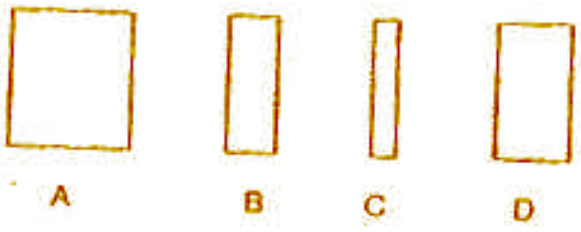
A	B	C
Roots	Flowers	Fruit
Roots	Leaves	Flowers
Leaves	Fruits	Buds
Stems	Roots	Seeds

29. Which of these statements are **correct** about movement?

A. Joints are necessary for movements.
B. Movement takes place when muscles push against each other.
C. When muscles contract, they pull on bones causing movement.
D. The skeletal and muscular systems interact to enable movement to take place.

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

30. Minhui carried out an experiment to find out the magnetic strength of the magnets labelled A, B, C and D, as shown in the diagram below.



She took each of the magnets and placed them 15cm away from a pile of paper clips.

The table below shows the number of paper clips attracted by the magnets A, B, C and D.

Magnet	Number of paper clips attracted
A	13
B	13
C	17
D	14

Which of the following statement(s) is/are most likely to be correct?

A: C is the strongest magnet.
B: Magnet D is the weakest magnet.
C: Magnet A is as strong as magnet B.
D: Magnet B is stronger than magnet D.

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

NAN HUA PRIMARY SCHOOL
SEMESTRAL ASSESSMENT 2
PRIMARY FOUR
SCIENCE

Name _____( )

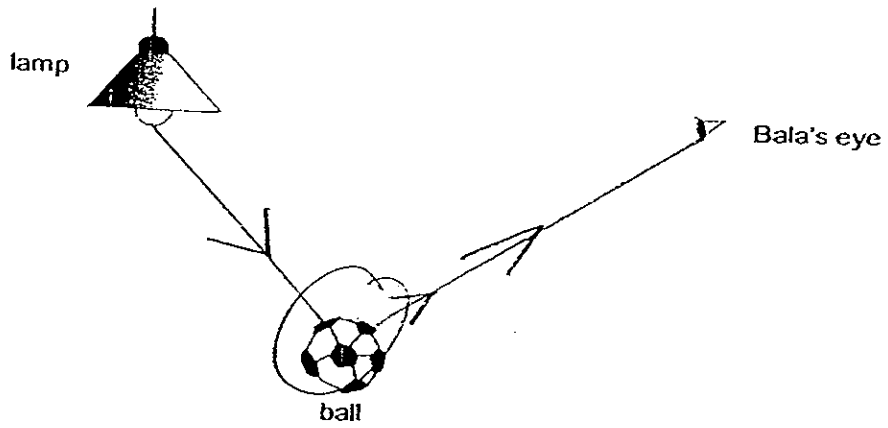
Class : Primary 4 / ___

MARKS
40

Section B: (40marks)
Write your answers to questions 31 to 46.
The number of marks available is shown in brackets [ ] at the end of each question or part question.

31 Bala is in a room lit with a lamp. He sees a ball in the room.

(a) In the diagram below, **draw arrows** to show the paths of light that enables Bala to see the ball. [1]



(b) State one **property** of light. [1]

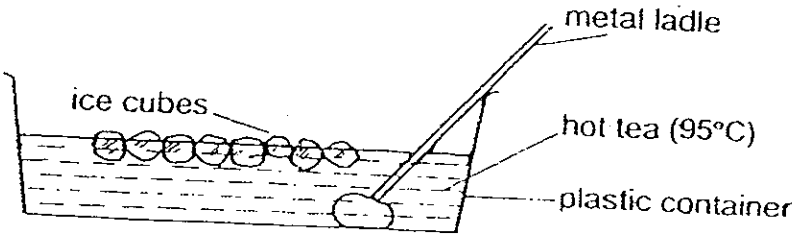
_____

_____

Score	
	2

32. The diagram below shows a plastic container containing hot tea and ice cubes. It was stirred with a metal ladle and an observation was made after 2 minutes.

Room temperature at 28°C



Put a **tick (✓)** in the correct box in the table below to indicate whether the object gained or lost heat. [2]

	Plastic Container	Hot Tea	Metal Ladle	Ice Cubes
Gained Heat				
Lost Heat				

Score	2

33. An National Environment Agency (NEA) officer spotted a few flower pots in Hafiz's house which had accumulated water on their trays.

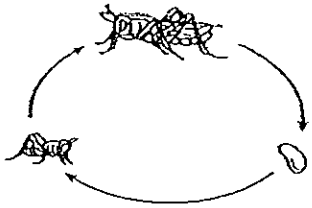
He told Hafiz, "*You have to get rid of the water collected in the trays and change the water in the vase regularly to control the population of mosquitoes.*"

Explain how the method advised by the NEA officer can be used to control the population of mosquitoes. [2]

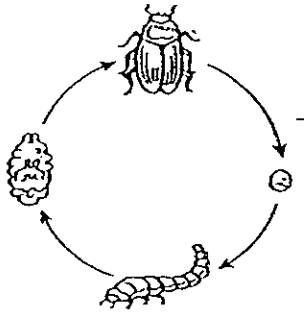
_____

_____

34. The diagrams below show the life cycles of a grasshopper and a mealworm beetle:



Life cycle of a grasshopper



Life cycle of a mealworm beetle

(a) State two **differences** between the two life cycles shown above. [2]

_____

_____

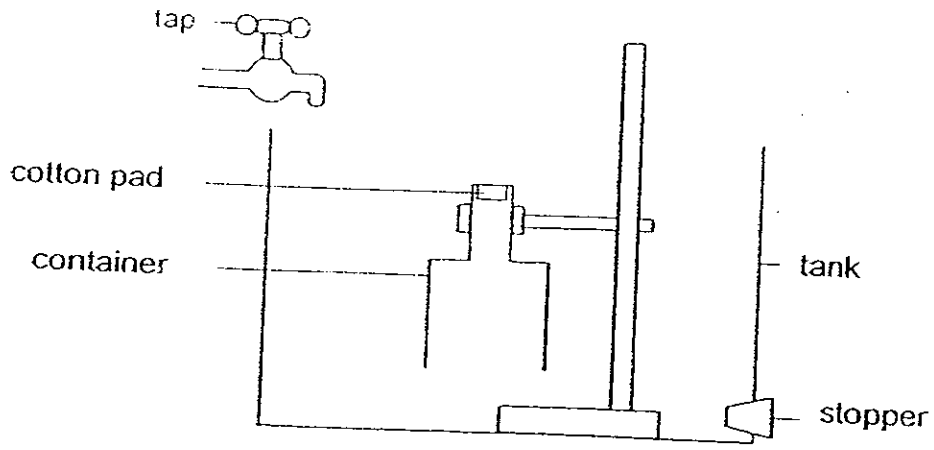
(b) What will eventually happen if the young animals do not reproduce as quickly as the older ones die? [1]

_____

_____

Score	
	5

35. Zenith set up an experiment as shown in the diagram below. A piece of cotton pad was glued to the inside of a container as below



At first, the tank was empty. Zenith turned on the tap to allow water to flow slowly into the tank until the container was completely under water. After ten seconds, the stopper was removed to allow the water in the tank to drain away completely.

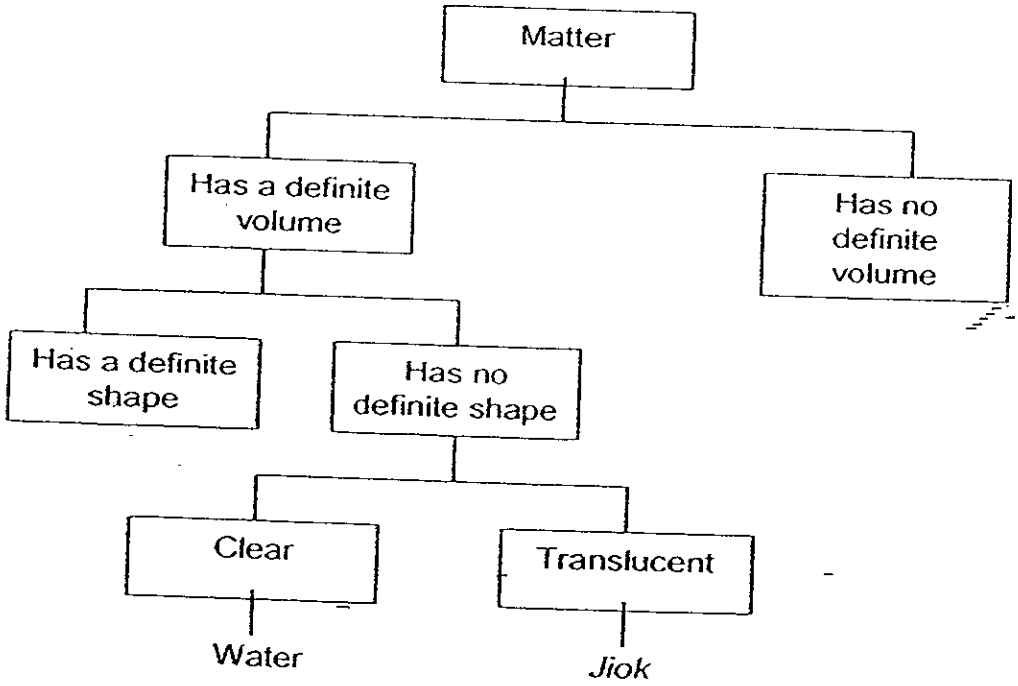
Explain why the cotton pad in the container remained dry at the end of the experiment. [2]

_____

_____

Score	/ 2

36. Study the classification table below and answer the questions that follow.



(a) What are the three characteristics of "Jiok"? [2]

(i) _____

(ii) _____

(iii) _____

37. Classify the following objects according to the amount of light they allow to pass through them. Write each object **ONCE** only.[2]

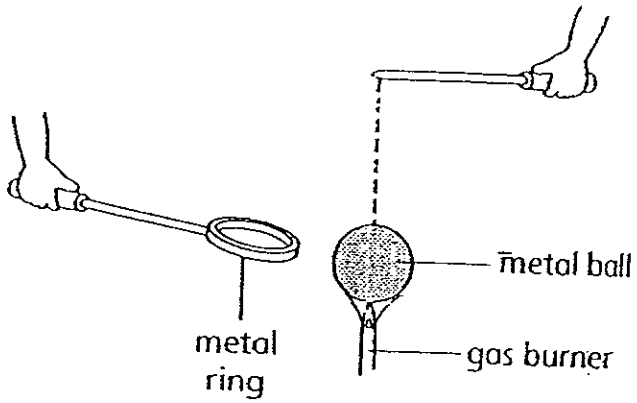
Mirror	Aluminium Foil
Tracing paper	Clear plastic sheet

Transparent	Translucent	Opaque

Score	/ 4

38. Hui Yao had a metal ball and ring as shown in the picture below. Initially, the metal ball was able to pass through the metal ring.

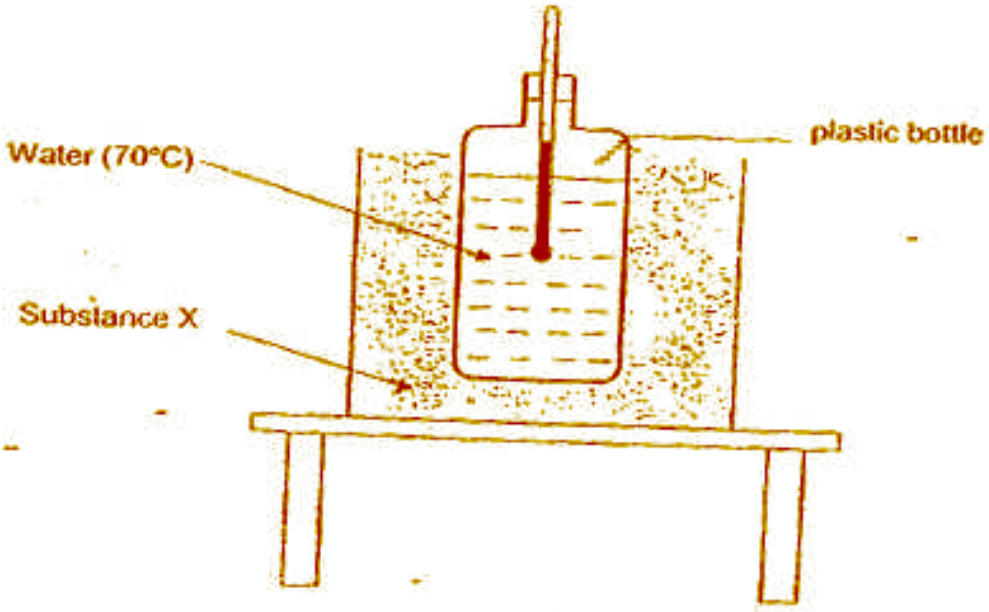
He then placed the metal ball over a lit gas burner as shown in the picture below. He then observed that the metal ball was not able to pass through the metal ring.



Give a reason for his observation. [2]

Score	
	2

39. The diagram below shows a plastic bottle containing water at a temperature of 70°C. Substance X was put around the plastic bottle. The water in the plastic bottle remained hot after 10 minutes.

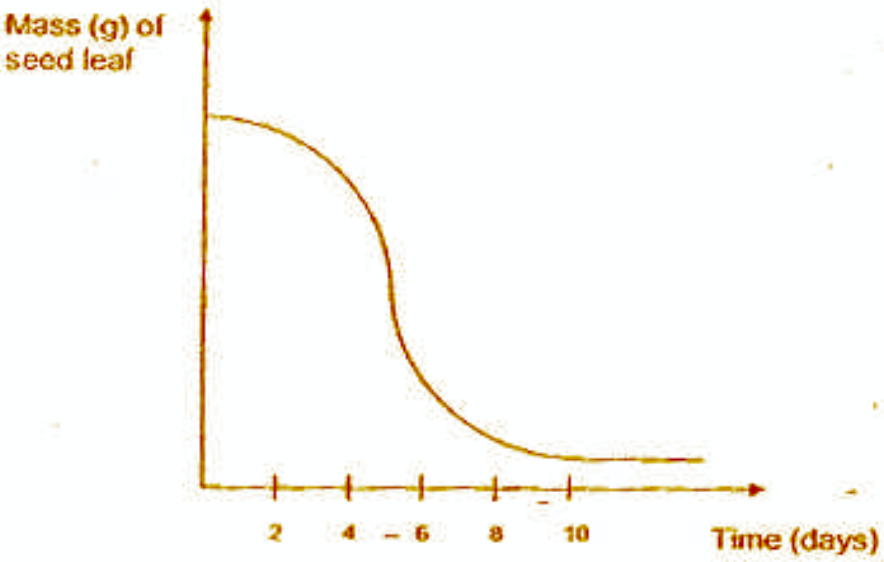


(a) Give one possible example of substance X. [1]

(b) What is the purpose of putting substance X around the plastic bottle? [1]

Score 3

40. The graph below shows the changes in the mass of the seed leaf during the germination of a seed.



(a) During the first ten days, it was observed that there was a decrease in the mass of the seed leaf. Give a reason for this observation. [1]

(b) What happened to the mass of the seed leaf from day 10 onwards? [1]

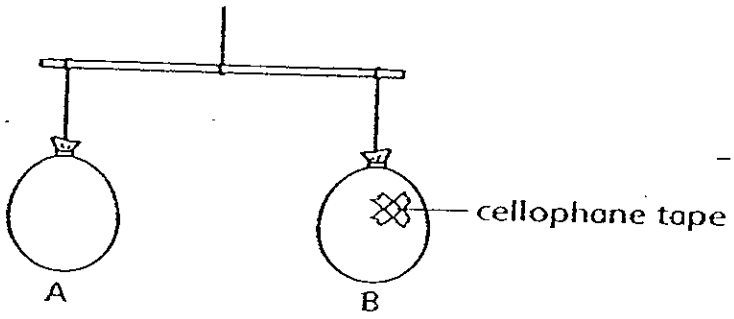
(c) Give a reason for your answer in (b). [1]

Score	3

41. David wants to set up an experiment to investigate how the amount of soil affects the height of the seedling. Place a tick (✓) next to the factor(s) which he should keep **constant** to ensure that it is a **fair test**. [2]

The amount of soil.	
The amount of water.	
The amount of sunlight.	
The location of the seedlings.	

42. Two balloons, A and B, were filled with air and balanced on a straw as shown below. Sticky cellophane tape is placed on Balloon B to prevent it from bursting when pierced.



(a) State two **observations** to the set-up that you will be able to make when a needle is used to pierce the cellophane tape on Balloon B. [2]

(i) _____

(ii) _____

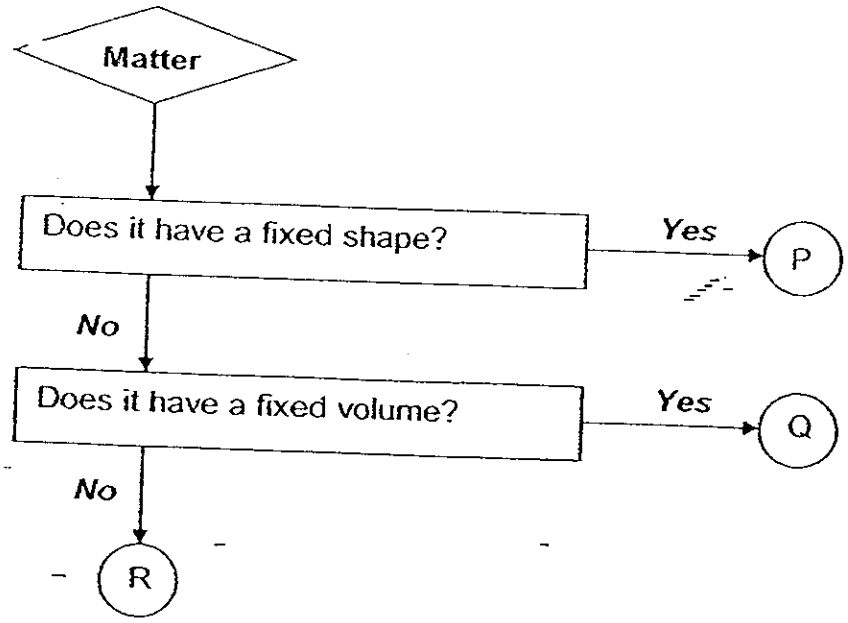
(b) What does this experiment show? [1]

_____

_____

Score	5

43. Study the flow chart below.

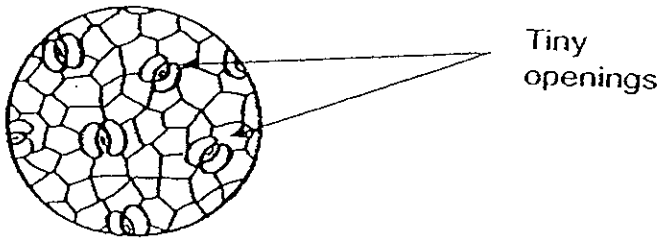


What states do P, Q and R represent? Give an example each. [3]

	State	Example
P		
Q		
R		

Score	3

44. Hannah placed the underside of a leaf under a microscope and noticed some tiny openings as shown in the picture below.



(a) What are the tiny openings found on the underside of the leaf known as? [1]

_____

(b) Name two functions of these tiny openings. [2]

(i) _____

(ii) _____

Score	3

45. The table below shows the functions of some of the organs in our digestive system.

Function	Organ
Food is first broken into smaller pieces.	X
Food continues to be broken-down into simpler substances and digestion is completed here.	Y
Water is absorbed from the undigested food.	Z

Identify the organs X, Y and Z. [3]

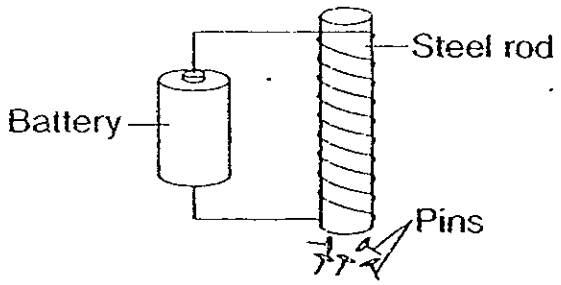
(i) Organ X : _____

(ii) Organ Y : _____

(iii) Organ Z : _____

Score	
	3

46. Sally set up an experiment to magnetize a steel rod as shown below.



She found out that by changing the number of turns of the wire around the steel rod, she got different results when she used it to attract some pins. The results she obtained are shown in the table below.

No of turns of wire around the steel rod	No of pins attracted to the steel rod
12	3
18	5
22	6
28	8

(a) What conclusion can be made from her observations? [1]

_____

_____

(b) Name **one other** way in which a piece of iron nail can be **magnetised.** [1]

_____

_____

(c) What will happen if you hammer the magnetized iron nail in (b) several times and place it near some pins? Give a reason for your answer. [1]

_____

_____

Setters: Mr Priji Nair
Ms Sanisa

End of Paper

Score	
	3

ANSWER SHEET

EXAM PAPER 2008

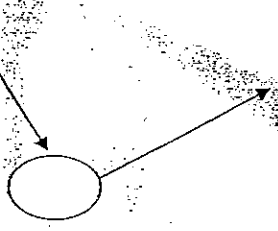
SCHOOL : NAN HUA PRIMARY SCHOOL
SUBJECT : PRIMARY 4 SCIENCE

TERM : SA 2

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

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

31)a)



b)Light travels in straight lines.

32)Gained Heat-->Plastic Container, Metal Ladle, Ice Cubes.
Lost Heat--> Hot Tea, Ice Cubes

33)Mosquito lay eggs and spend their larva and pup stage in stagnant water. By getting rid of stagnant water, the young will not be able to grow and develop into adult.

34)a)i)The grasshopper has a three stage life cycle while the meal worm beetle has of our stage life cycle.
ii)The larva of the meal worm beetle does not look like the adult but the grasshopper nymph.
b)They will become extinct.

35)Air occupied space in the container and the water level was not able to rise to the top of the container to wet the cotton.

36)a)i)It has a definite volume.
ii)It has no definite shape.
iii)It is translucent.

37)Transparent : clear plastic sheet
Translucent : tracing paper
Opaque : Mirror, Aluminium oil

38)The metal ball expanded upon heating and was no longer able to pass through the metal ring.

39)a)Styrofoam.
b)The purpose is to slow down heat loss from the water in the plastic bottle to the surrounding air.

40)a)The germination seed gets it nutrients stored in the seed leaf. Therefore the mass will decrease.
b)The mass remains constant.
c)From day lot starts to develop green leaves which helps it to photosynthesize.

41)The amount of water.
The amount of sunlight.
The location of the seedlings.

42)a)i)Balloon B will deflate.
ii)The balance will tilt down wards to wards balloon A.
b)Air has mass.

43)P: solid, bricks
Q: liquid, water
R: gas, oxygen

44)a)They are know as stomata.

b)i)They allow the exchange of gases between the plant and the surroundings.

ii)The allow the plant to give off water vapour.

45)i)Mouth.

ii)Small intestine.

iii)Large intestine

46)a)The more turns of wire around the steel rod, the more pins are attracted.

b)The other way is called the touch method.

c)The nail cannot attract the pins because it will loose it magnetism.