SA2

MAHA BODHI SCHOOL

2004 SEMESTRAL ASSESSMENT 2

SCIENCE

PRIMARY 5 EM1 / 2

Name: ___ ___ _____ ( ) Date: 4 Nov 2004

Class: Primary 5 ( )

Course: EM 1 / 2

BOOKLET A

30 Questions

60 marks

Total Time for Booklets A & B: 1 h 45 min

Instructions to Candidates

Do not open this booklet until you are told to do so.

Follow all instructions carefully.

Check all the pages carefully to make sure that all the questions are in order.

Answer all the questions.

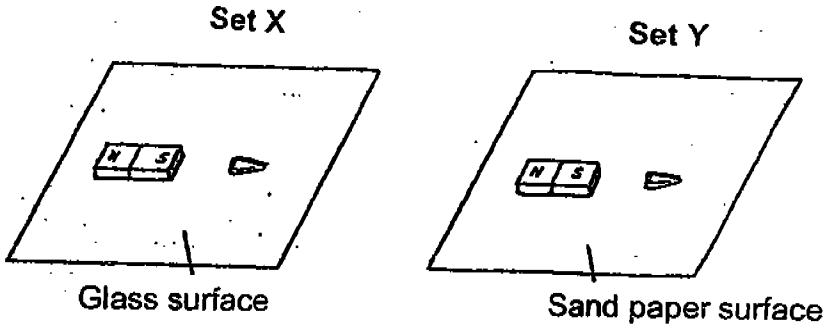
If a question is difficult, go on to the next one. Do not waste time.

This booklet consists of 15 pages.

PART I (60 marks)

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

1. When identical magnets and paper clips were placed in the set-ups as shown below, the paper clip in Set-up X moved towards the magnet. However, for Set-up Y, the paper clip remained stationary.



Which of the following statements correctly explain the results of the experiment?

A. The magnetic force can pass through the glass surface, but cannot pass through the sand paper surface.
B. In Set-up X, the magnetic force is stronger than the frictional force between the paper clip and the glass surface.
C. In Set-up Y, the magnetic force is weaker than the frictional force between the paper clip and the sand paper surface.

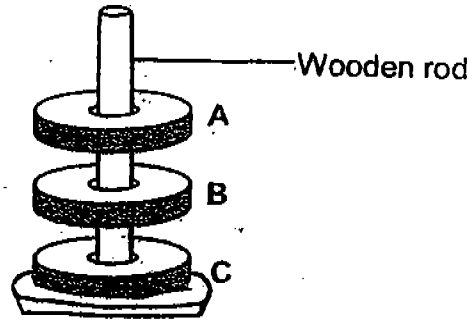
(1) A and B only
(2) A and C only
(3) B and C only
(4) A, B and C

2. An animal cell and a plant cell are similar as they each have _____.

A. a cell membrane
B. a cell wall
C. chloroplasts
D. cytoplasm
E. a nucleus

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

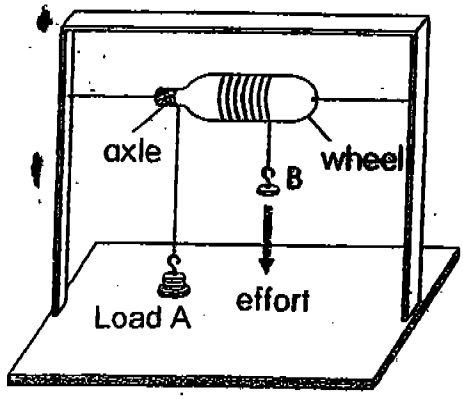
3. Three magnets were arranged through a wooden rod as shown below.



Why did the magnets appear to float above each other?

(1) The like poles of magnets A, B and C are facing each other.
(2) The like poles of magnets A and B are facing each other while the unlike poles of magnets B and C are facing each other.
(3) The unlike poles of magnets A, B and C are facing each other.
(4) The unlike poles of magnets A and B are facing each other while the like poles of magnets B and C are facing each other.

4. During a practical demonstration, Abigail set up a wheel and axle as shown below.



When she released B, Load A was lifted. This shows that with a wheel and axle, _____.

(1) the effort does not move as far as the load
(2) the effort needed to raise the load is less than the load
(3) no force is needed to make the machine work
(4) the force on the axle is less than the force on the wheel

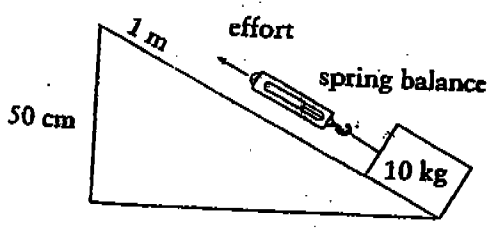
5. Which of the following statements are **TRUE** of a force?

A. It is neither a push nor a pull.
B. It can change the speed of a moving object.
C. It can cause the shape of an object to change.
D. It cannot stop a moving object.

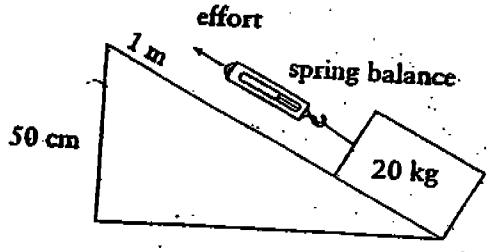
(1) A and B only
(2) A and D only
(3) B and C only
(4) C and D only

6. Joel wants to find out if the height of an inclined plane affects the effort needed to pull a load up the slope.

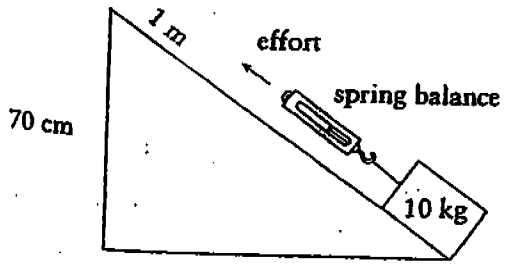
(A)



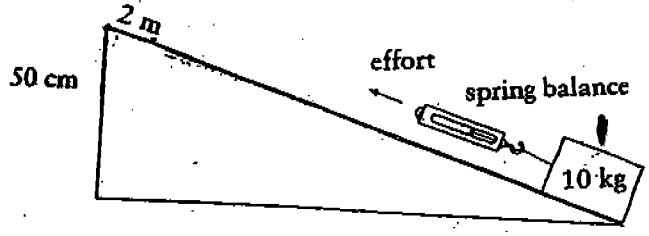
(B)



(C)



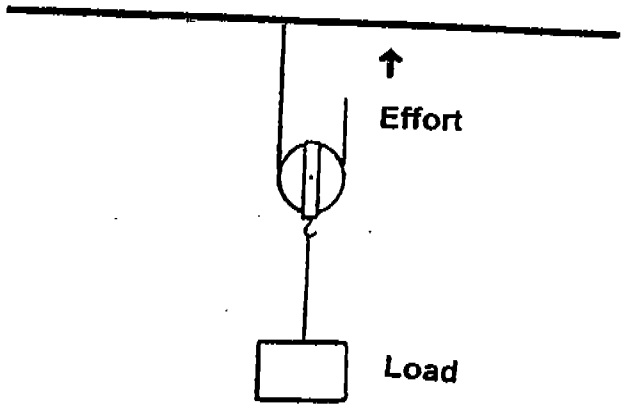
(D)



Which two set-ups should he use so that his experiment is a fair test?

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

7. The diagram below shows a movable pulley.



Which of the following statements about the system above is NOT true?

(1) The effort and the load move in the same direction.
(2) The effort has to move a greater distance than the load.
(3) The movable pulley changes the direction of the effort.
(4) The movable pulley reduces the effort needed to move the load.

8. Which of the following natural phenomena are due to the rotation of the Earth?

A. Changes in the weather
B. Day and night
C. Phases of the moon
D. Rising and falling of tides
E. Rising and setting of the Sun

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

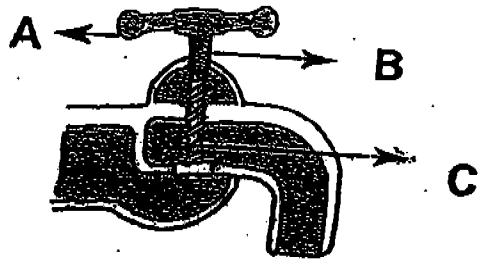
9. In which one of the following groups does the ice-tongs belong to?

Group	Simple Machines
(1)	stapler, fishing rod
(2)	wheelbarrow, can opener
(3)	scissors, claw-hammer
(4)	steering wheel, windlass

10. Digested food is converted to glucose in the _____.

(1) mouth
(2) stomach
(3) small intestine
(4) large intestine

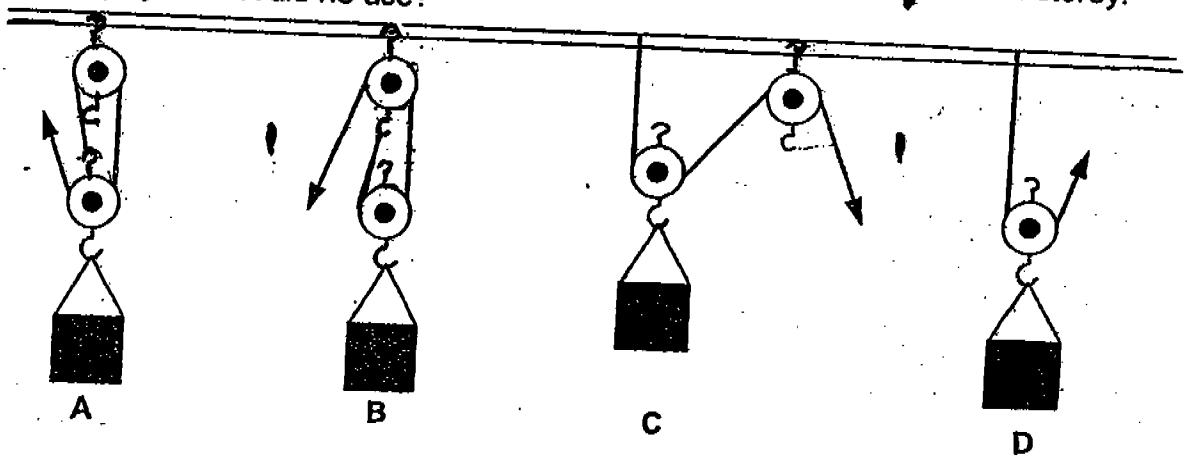
11. The diagram below shows a tap.



The part marked **A** and **B** is a/an _____ and the part marked **C** is a/an _____.

(1) gear ..... pulley
(2) pulley .....gear
(3) wheel and axle ..... gear
(4) wheel and axle ..... inclined plane

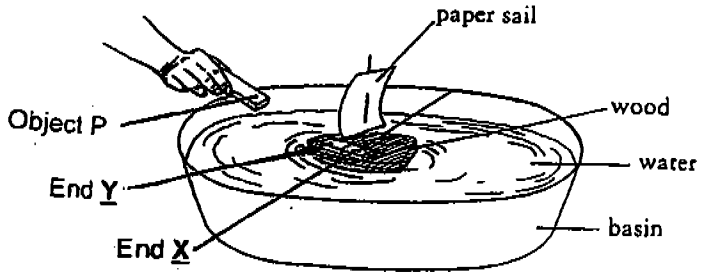
12. Jeremy is at the ground floor of a building. He wants to lift a load up to the fifth storey. Which pulley system could he use?



He could use pulley system _____ or _____.

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

13. Eddie made a small sailing boat using paper and wood. He put a metal rod on it.
When he placed object P near end X of the metal rod, the boat began to move away.
When he placed object P near end Y, the boat moved towards it.
He repeated the experiment several times and obtained similar results.



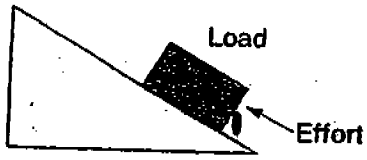
What can Eddie conclude from his experiment?

A. The metal rod is a magnet.
B. Object P is a magnet.
C. Object P is made of iron but is not a magnet.
D. The metal rod is made of iron but is not a magnet.

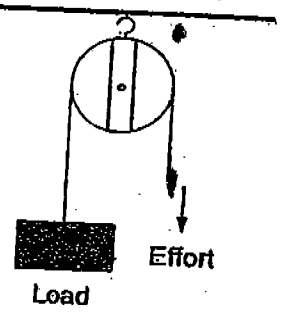
(1) A and B only
(2) A and C only
(3) B and D only
(4) C and D only

14. Which of the simple machines shown below use a smaller effort to lift up the load?

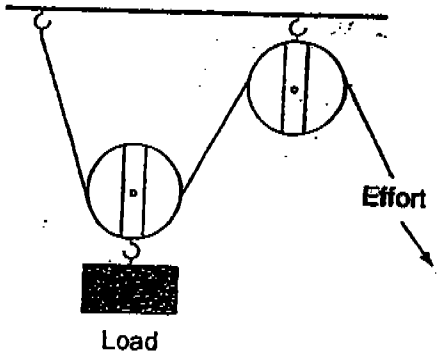
(A)



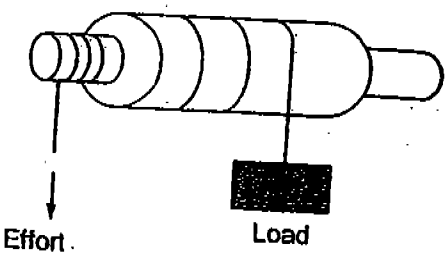
(B)



(C)

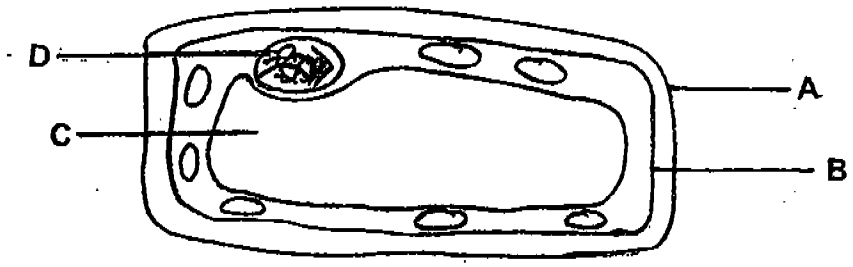


(D)



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

15. The diagram below shows a typical plant cell.



Which one of the following lists correctly identifies the function of the cell parts?

	A	B	C	D
(1)	Prevents the cell from collapsing	Will split into halves when cell divide.	Contains plasma for the cell to use	Contains chlorophyll that trap light energy for plants to photosynthesize
(2)	Gives the cell its shape	Allows substances to move in and out of the cell	Enables plant to stand upright	Contains the genetic material of the cell
(3)	Allows substances to move in and out of the cell	Gives the cell its shape	Where cellular activities take place	Contains the genetic material of the cell
(4)	A body covering for the cell	Allows substances to move in and out of the cell	Where cellular activities take place	Contains chlorophyll that trap light energy for plants to photosynthesize

16. Which statement(s) about the life cycle of a butterfly is/are **NOT** true?

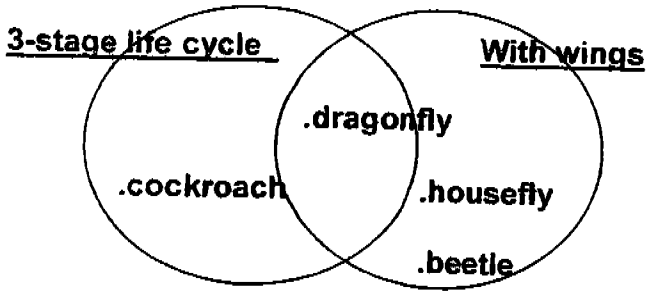
A. Both the larvae and the pupa moult many times.
B. The adult butterfly lays its eggs on a leaf.
C. The pupa does not feed.
D. The eggs hatch into caterpillars.

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

17. Which statement about the process of fertilisation of the human egg is **NOT** true?

(1) At least two sperms must fuse with the egg.
(2) A mature egg is released from the ovary monthly.
(3) Fertilisation takes place in the uterus.
(4) Sperms are produced in the testes of the male.

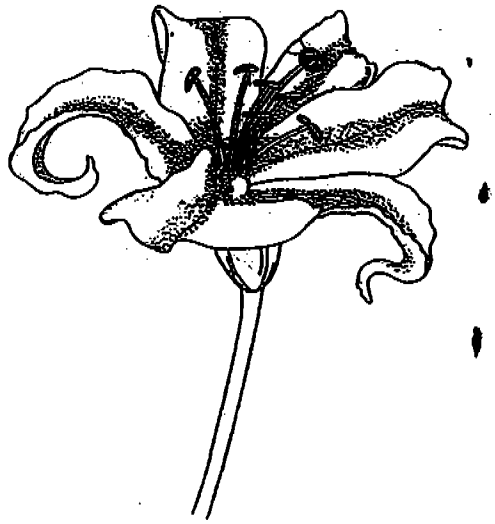
18. Four insects have been classified as shown in the diagram below.



Which insect has been **INCORRECTLY** classified?

(1) Beetle
(2) Cockroach
(3) Dragonfly
(4) Housefly

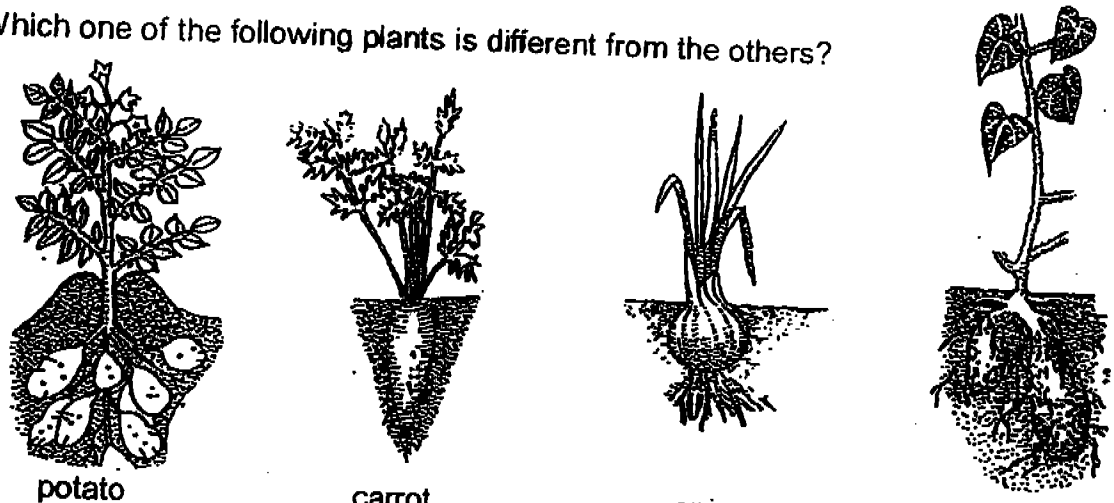
19.



Which one of the following parts of the flower is **NOT** visible in the diagram shown above?

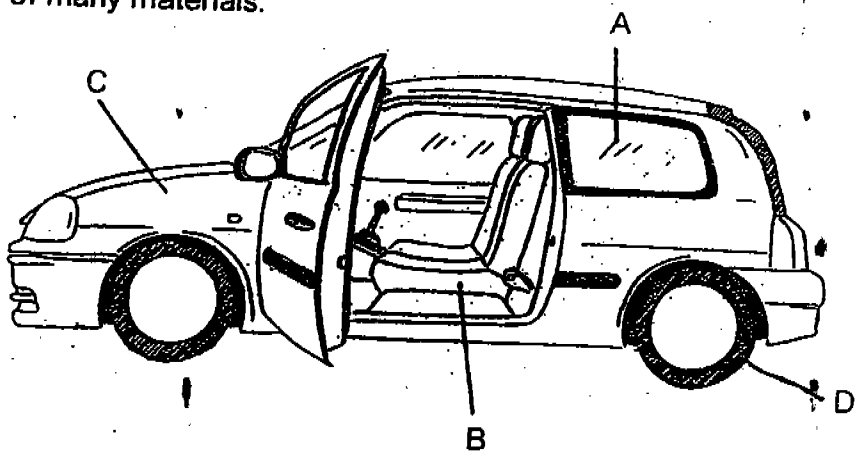
(1) Ovary
(2) Stamen
(3) Stigma
(4) Style

20. Which one of the following plants is different from the others?



(1) The carrot plant because the others reproduce from underground stem.
(2) The onion plant because it does not have storage roots like the others.
(3) The potato plant because the others reproduce from storage roots.
(4) The yam plant because it does not have many leaves like the others.

21. A car is made of many materials.



Which of the following reasons for the choice of materials for the labelled parts of the car are **CORRECT**?

	Parts	Material	Reason for choice of material
A.	Window	Glass	It is transparent
B.	Seat cover	Fabric	It is soft and comfortable
C.	Front of car	Metal	It is strong and rigid
D.	Car tyre	rubber	It enables the motorist to move faster

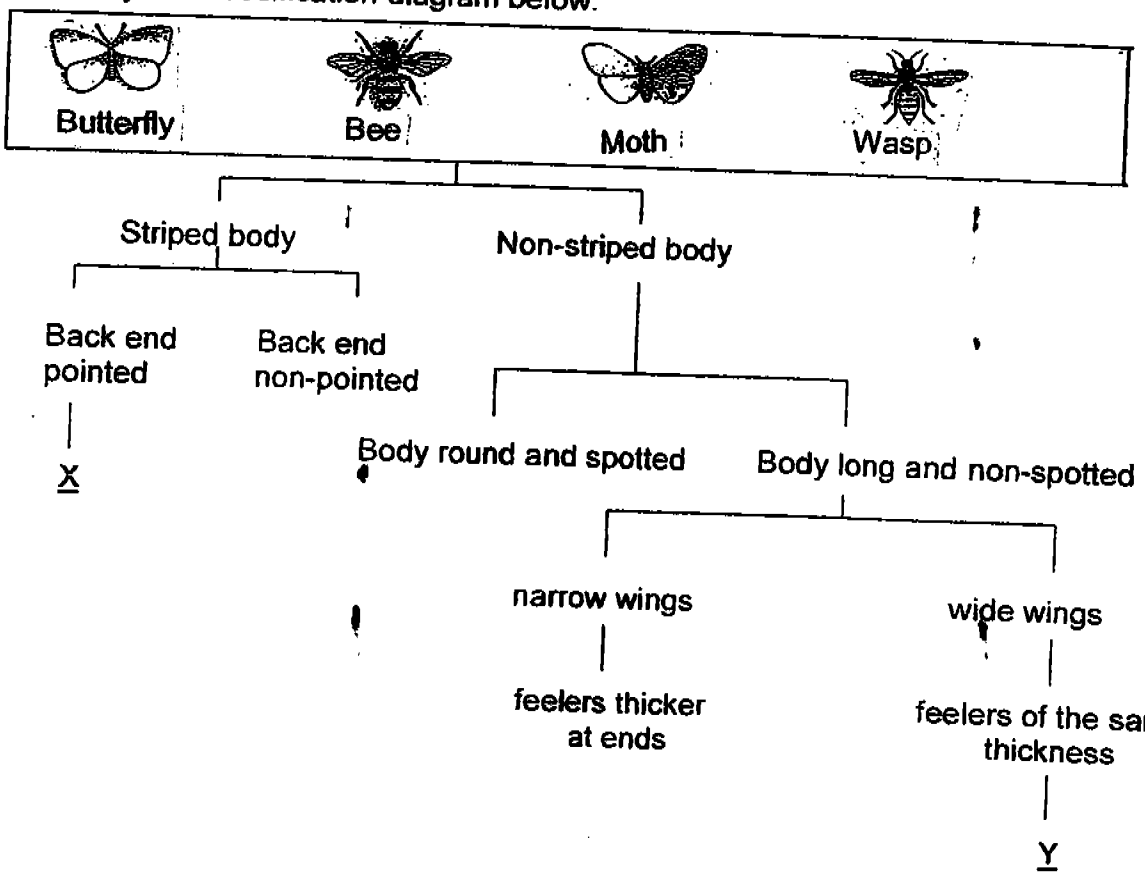
(1) A and B only
(2) C and D only
(3) A, B and C only
(4) A, B, C and D

22. Mr Tan wants to manufacture toilet paper.
Which of the following properties of paper is important in determining his choice of paper?

A. It is absorbent.
B. It allows light to pass through.
C. It tears easily.
D. It is soft.

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

23. Study the classification diagram below.



Which one of the lists below correctly identifies Insects X and Y?

	Insect X	Insect Y
(1)	Bee	Moth
(2)	Wasp	Moth
(3)	Wasp	Bee
(4)	Butterfly	Wasp

24. A hunter and his friend saw the tracks of some animals in the forest.

			
Animal W	**Animal X**	**Animal Y**	**Animal Z**

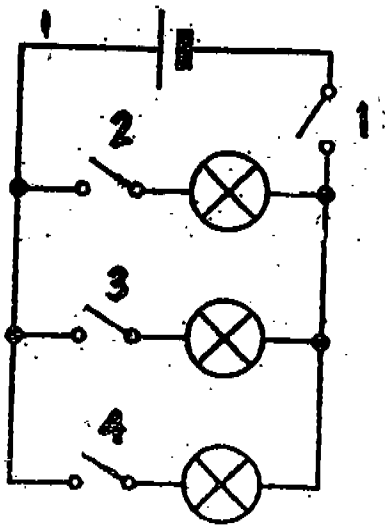
His friend made these statements.

A. One of the animals is two-legged.
B. One of the animals has four legs and five toes on each leg.
C. There are four different types of tracks.
D. Two of the animals are small.

Which statements are observations and **NOT** inferences?

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

25. An electrician fixed lights in three different rooms. He connected them in the manner as shown below. He installed a master switch which could switch off **all** the lights.



Which is the master switch?

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

26. A gardener conducted an experiment using some similar flowers in his garden. He wanted to find out if each flower would still develop into a fruit when a certain part of it was removed.

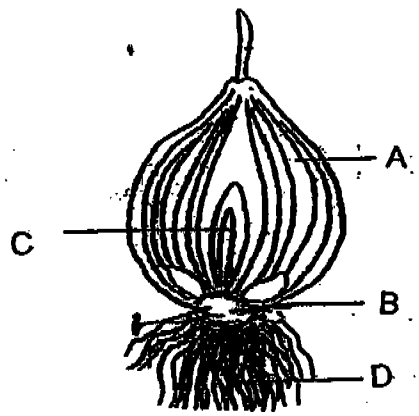
Flower	Parts removed
X	Petal
Y	Anther
Z	Style

The gardener then dusted pollen grains from the same type of flowers over flowers X, Y and Z. He then observed them for 2 weeks.

Which of the flowers are most likely to have produced fruits?

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

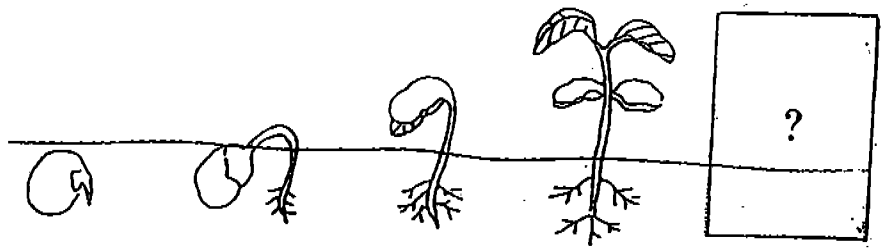
27. The diagram below shows the cross-section of an onion.



Listed in the table below are the functions of the parts A, B, C and D of the onion. Which one of the following functions is **INCORRECT**?

	Parts	Function
(1)	A	Photosynthesizes for the seedling
(2)	B	Transports water to the other parts of the plant
(3)	C	Grows into shoot
(4)	D	Absorbs water from the soil

28. The diagram below shows the different stages of growth of a bean plant.

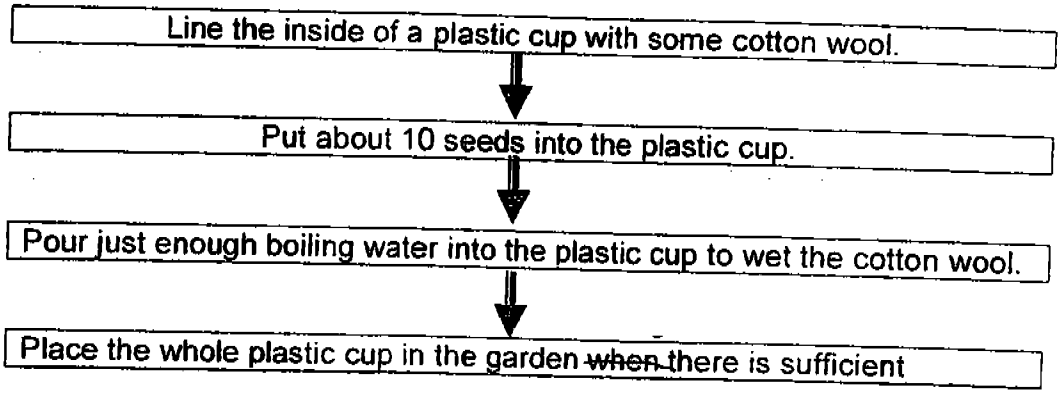


Which statements are **TRUE** about the growth of a bean plant?

A. At every stage the plant needs air, water and nutrients from the soil in order to grow.
B. It starts to photosynthesize from stage D onwards.
C. From stage E, the plant matures and bears fruit.
D. At stages A, B and C, the seed germinates.

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

29. Julian wanted to grow some seedlings from some broad bean seeds. He did the following:



However, after a week, there were still no signs of seedlings.
What should he have done so that germination could have taken place?

(1) He should have placed the cup in the shade.
(2) He should have used a glass instead of plastic cup.
(3) He should have used soil instead of cotton wool.
(4) He should have used tap water.

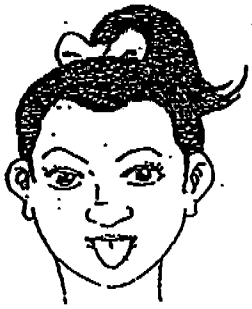
30. Mr and Mrs Tan have a son and a daughter.

Characteristics	Mr Tan	Mrs Tan
Earlobe	Detached	Attached
Ability to roll tongue	No	Yes

One of the children has inherited the father's traits while the other has inherited the mother's traits.

Mary

Edwin



Sally

Sean

Who are their children?

(1) Mary and Edwin
(2) Edwin and Sally
(3) Mary and Sean
(4) Sean and Sally

~~~ END OF PART I ~~~
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MAHA BODHI SCHOOL

2004 SEMESTRAL ASSESSMENT 2

SCIENCE

PRIMARY 5 EM1 / 2

Name: _____ _____

Date: 4 Nov 2004

Class: Primary 5 (

Course: EM 1 / 2

BOOKLET B

16 Questions

40 marks

Total Time for Booklets A & B: 1 h 45 min

Instructions to Candidates

Do not open this booklet until you are told to do so.

Follow all instructions carefully.

Check all the pages carefully to make sure that all the questions are in order.

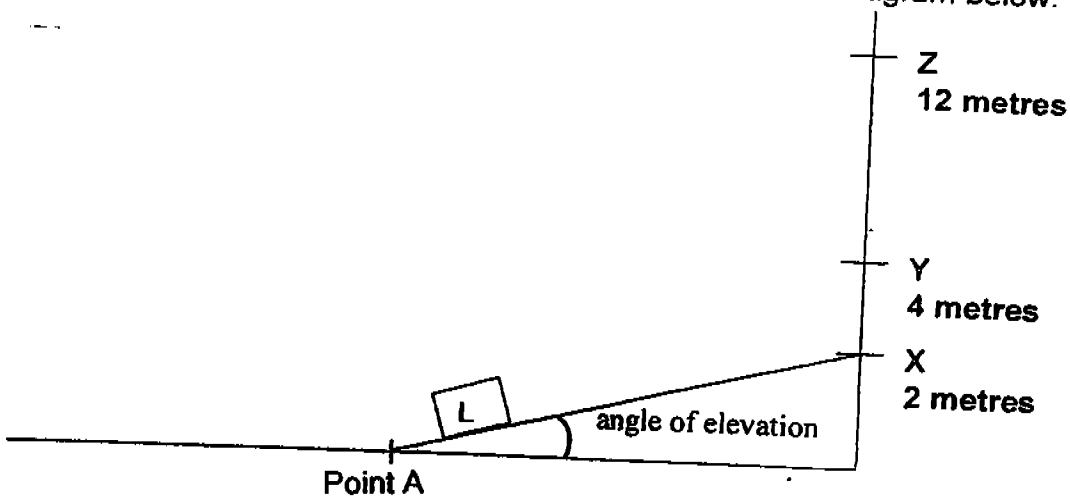
Answer all the questions.

If a question is difficult, go on to the next one. Do not waste time.

This booklet consists of 11 pages.

	Max. Marks	Actual Marks
Booklet A	60	
Booklet B	40	
Total	100	
Parent's Signature		

33. Joshua has moved a load from Point A to Point X as shown in the diagram below.



(a) Jacob was told to move a similar load to Point Y instead.
What changes can he make so that the angle of elevation remains the same?

(1 mark)

b
(a) A third load has to be moved to Point Z and the ramp should not be used as it would be too steep.
What other simple machine can be used to move the load with a smaller effort?

(1 mark)

34. Mr Goh taught his pupils the different types of simple machines. He listed some examples and asked Ron to classify them in the table below.

Nutcracker	Pencil sharpener	Door wedge	Cross-spanner

Help Ron to complete the table.

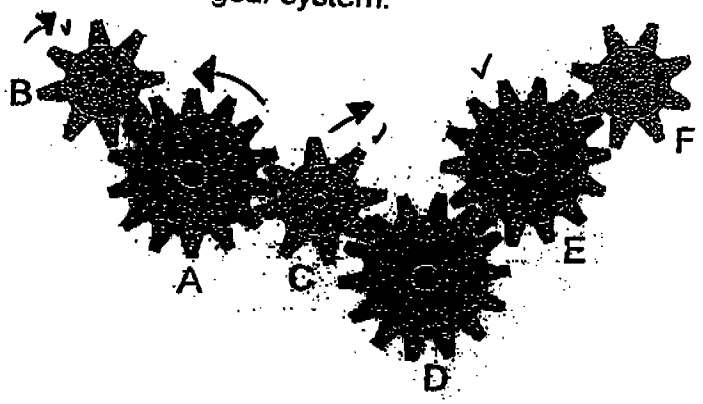
Lever	Inclined Plane	Wheel and axle
Pliers	Screw	Steering wheel

(2 marks)

PART II (40 marks)

Write your answers to questions 31 to 46 in this booklet.

31. The diagram below shows a gear system.



(a) Which of the gears will move **clockwise** when Gear A moves in the direction as indicated by the arrow?

_____

(1 mark)

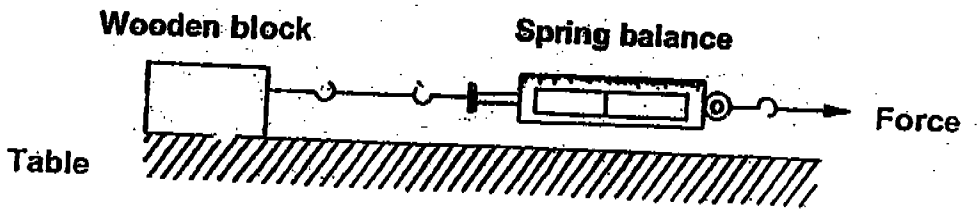
(b) Name 2 objects that make use of gears to do work.

(i) _____

(ii) _____

(2 marks)

32. Adam set up an experiment to measure the amount of force required to move the wooden block across the table top.



Suggest 2 ways in which he can reduce the force required to move the wooden block.

(i) _____

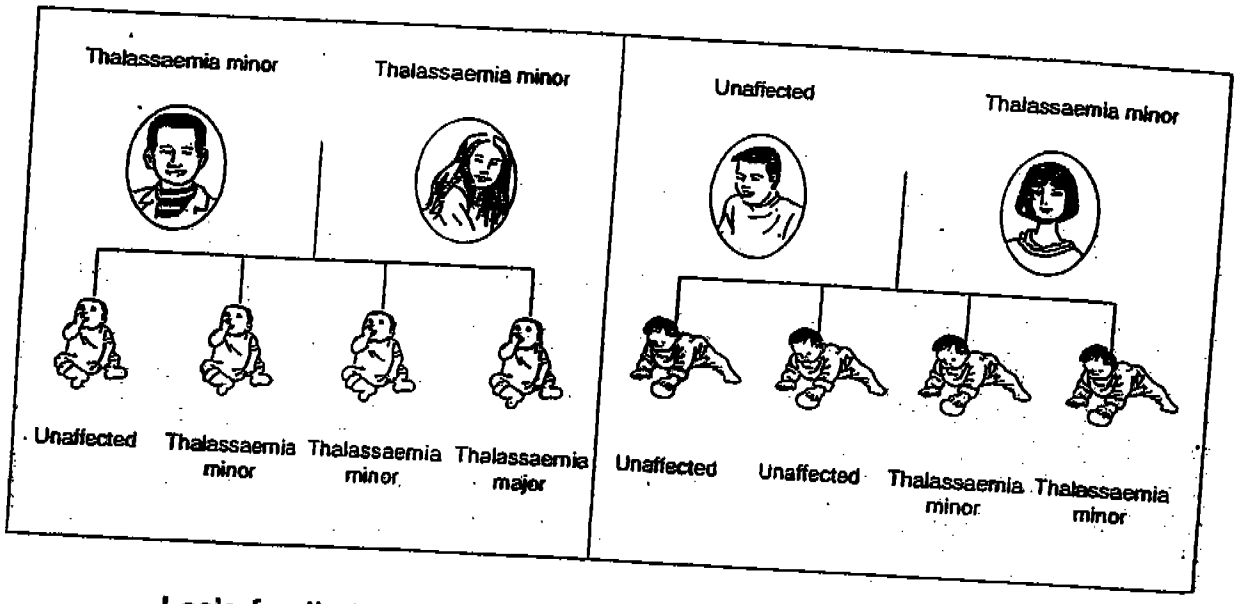
(ii) _____

(2 marks)

50

35. Parents pass on their genes to their offspring. The two family trees below show how children inherit a disease called *Thalassaemia* from their parents.

If a person is identified as a *Thalassaemia major*, he would turn pale and become tired easily. However, if a person is identified as a *Thalassaemia minor*, he only carries the 'bad' gene and is not affected by the disease.



Lee's family tree

Lim's family tree

(a) What are the characteristics of the Lim's children?

_____

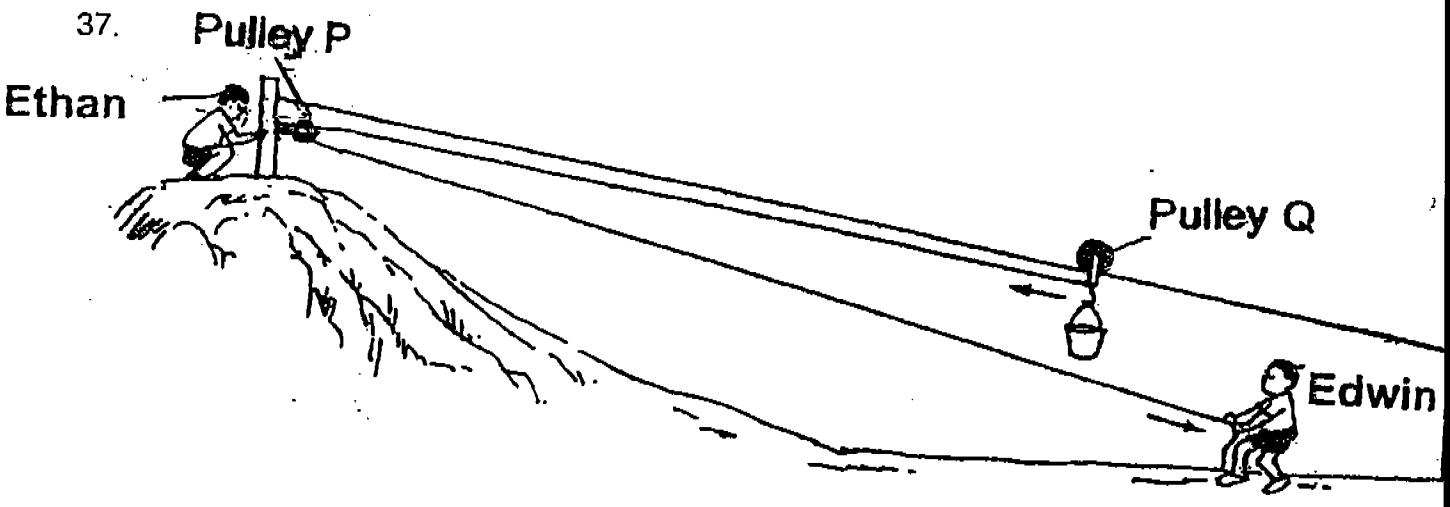
_____

(b) Based on the family tree above, how many of Lee's children are infected with the genetic disease?

_____

(1 mark)

37.



The picture above shows a pulley system used by Edwin and Ethan to transport a heavy load up the hill.

(a) Who applied a force to move the load?

_____

(1 mark)

(b) State the advantage of using each pulley.

Pulley P: _____

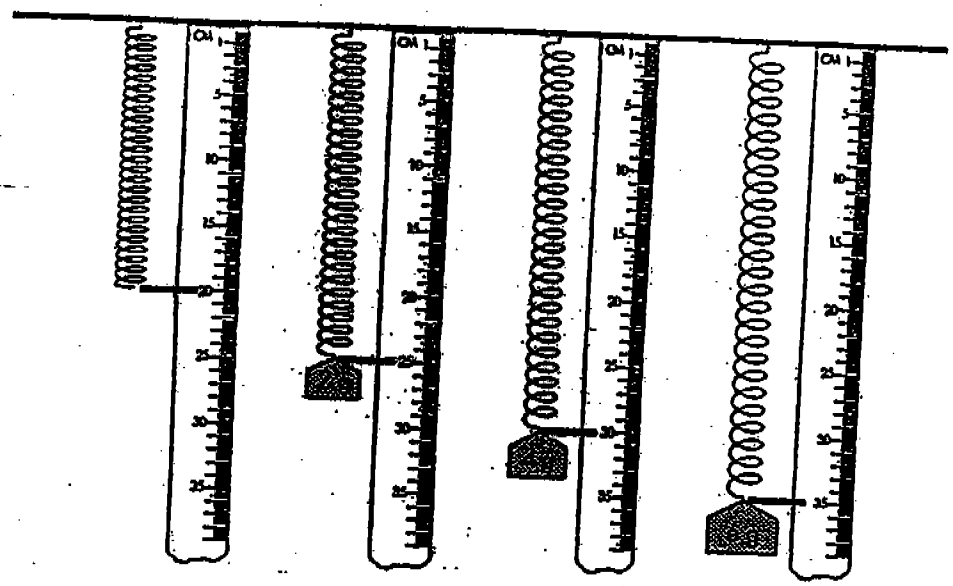
_____

Pulley Q: _____

_____

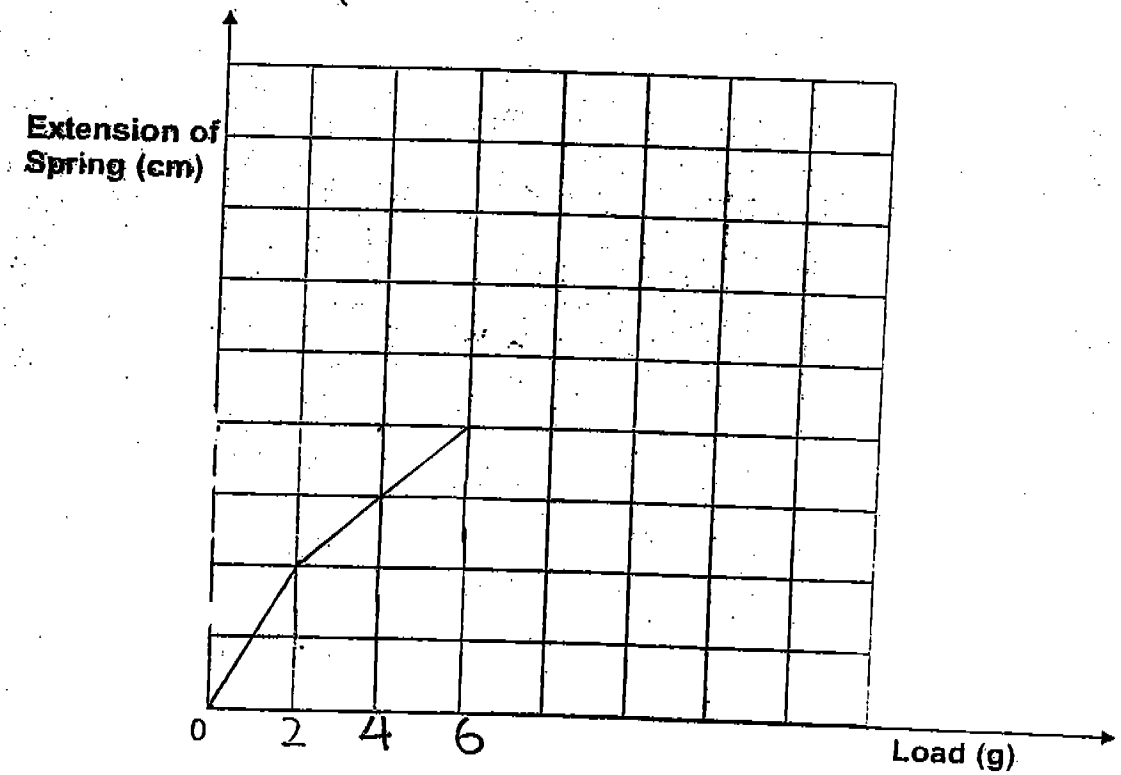
_____

38.



Jack added different weights to a spring, one at a time and recorded the results. He needs to plot a graph to represent his findings but it is incomplete.

(a) Help Jack to plot the line graph below.



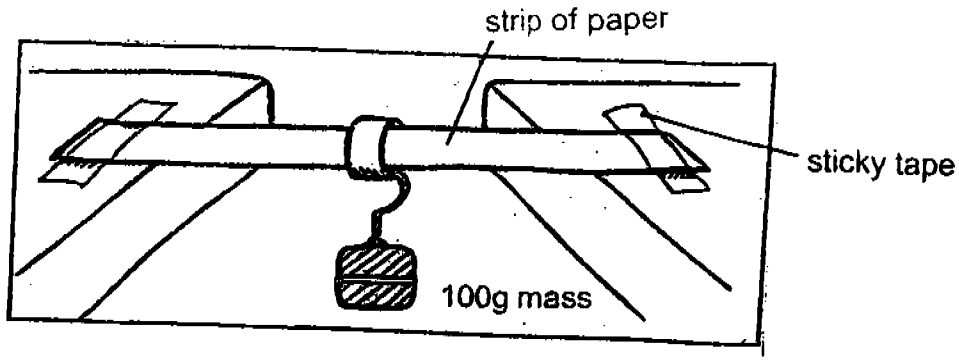
(2 marks)

(b) State the relationship between the load and the extension of the spring.

_____

_____

39.



James and Rashid carried out an investigation using different types of paper. They cut out a strip from each type of paper and used sticky tape to stick the paper between two desks that were 16 cm apart.
They tested the paper's strength by hanging 100g masses from the middle of each strip as shown in diagram above.

(a) What was their **hypothesis**?

_____

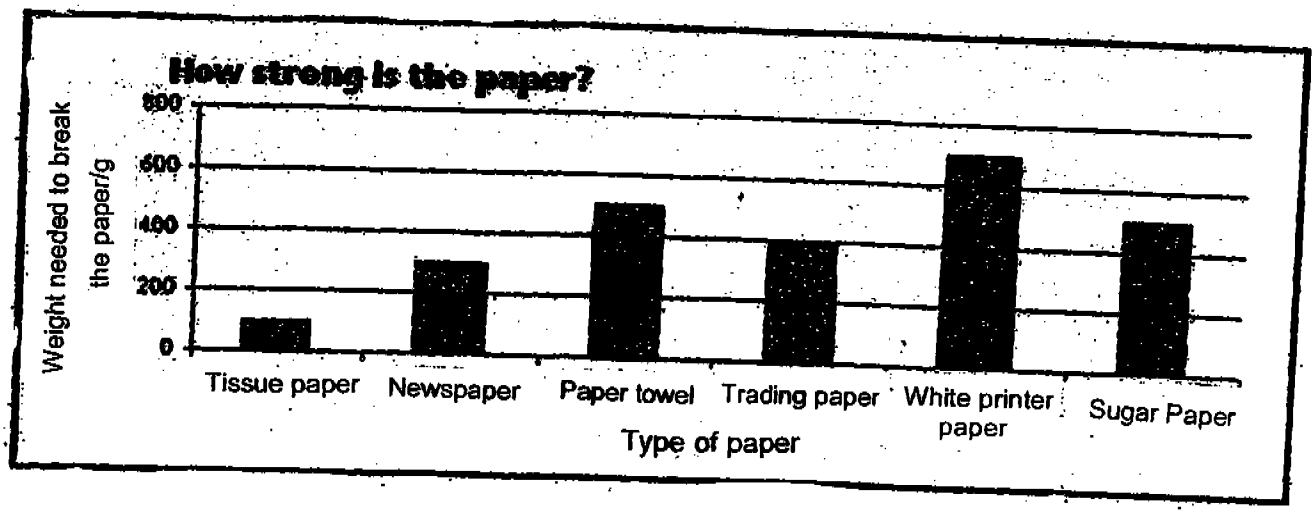
(b) Write down **2** variables that should remain constant.

(i) _____

(ii) _____

(2 marks)

The graph below shows the results of their investigation.



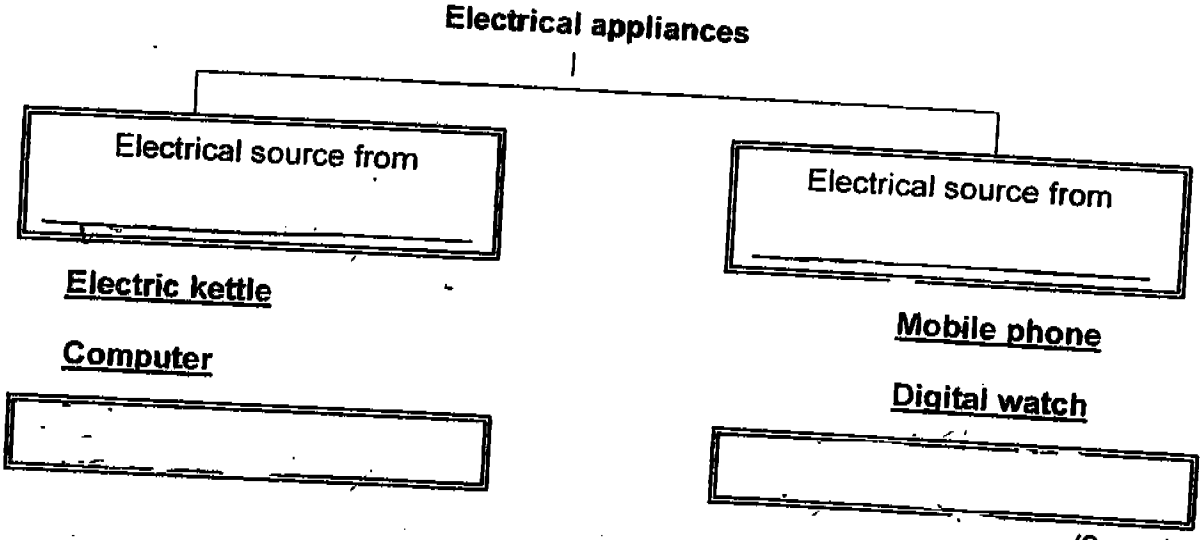
(c) Write down any conclusion that they made.

_____

_____

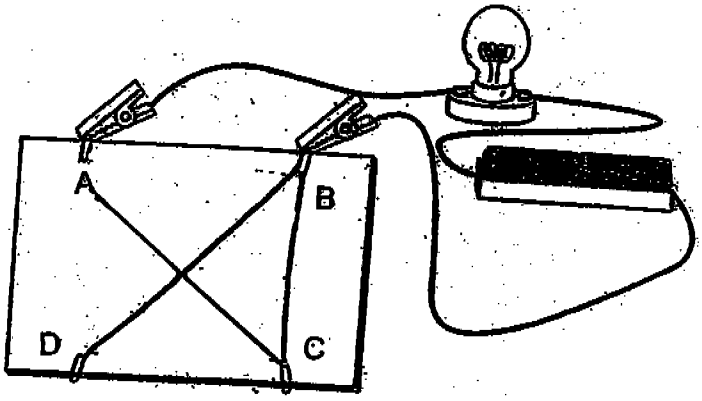
(1 mark)

40. Study the classification table below.
Fill in the headings and give an example for each group.



(2 marks)

41.



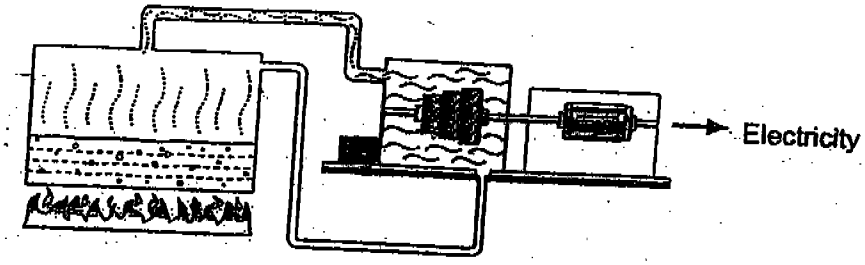
Tim tested the card above and recorded the results in the table below.

Positions of clips	Did the bulb light up?
A and B	No
A and C	No
A and D	No
B and C	Yes
B and D	Yes
C and D	Yes

Draw a line on the card to connect 2 more points so that the bulb would light up each time he tested it.

(1 mark)

42.



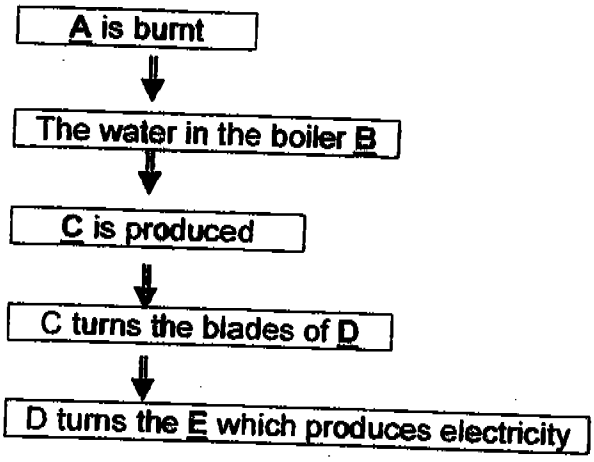
The diagram above shows how electricity is produced in a power station.

(a) Give an example of a source of stored energy used in a power station.

_____

(1 mark)

(b) Complete the flow chart below by identifying the words that A, B, C, D and E represent.



(i) A represents _____

(ii) B represents _____ boils _____

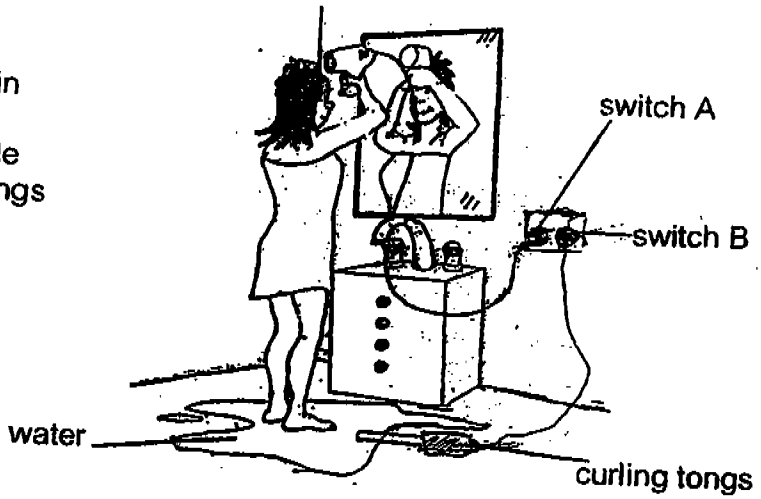
(iii) C represents _____

(iv) D represents _____

(v) E represents _____

(2 marks)

43. Mrs Lim is drying her hair in her bathroom.
She is standing on a puddle of water and her curling tongs are on the floor.



Mrs Lim has not followed some safety rules and she is now in danger.

(a) What could happen to her if switch B is turned on?

_____

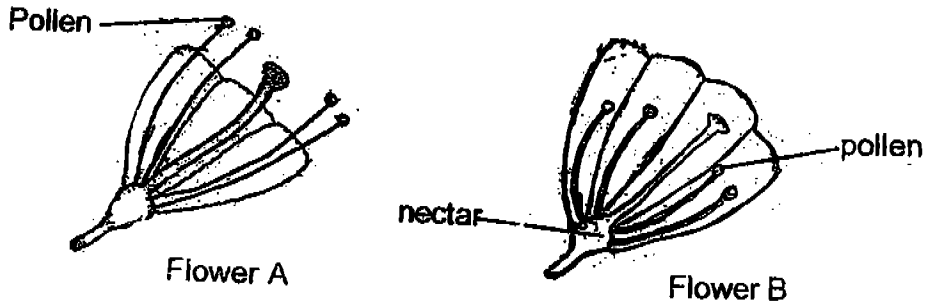
(b) Explain why this could happen. rk)

_____

_____

_____

44.



The drawing above shows two flowers A and B. One is wind-pollinated and the other is insect-pollinated.

(a) Which flower is wind-pollinated?

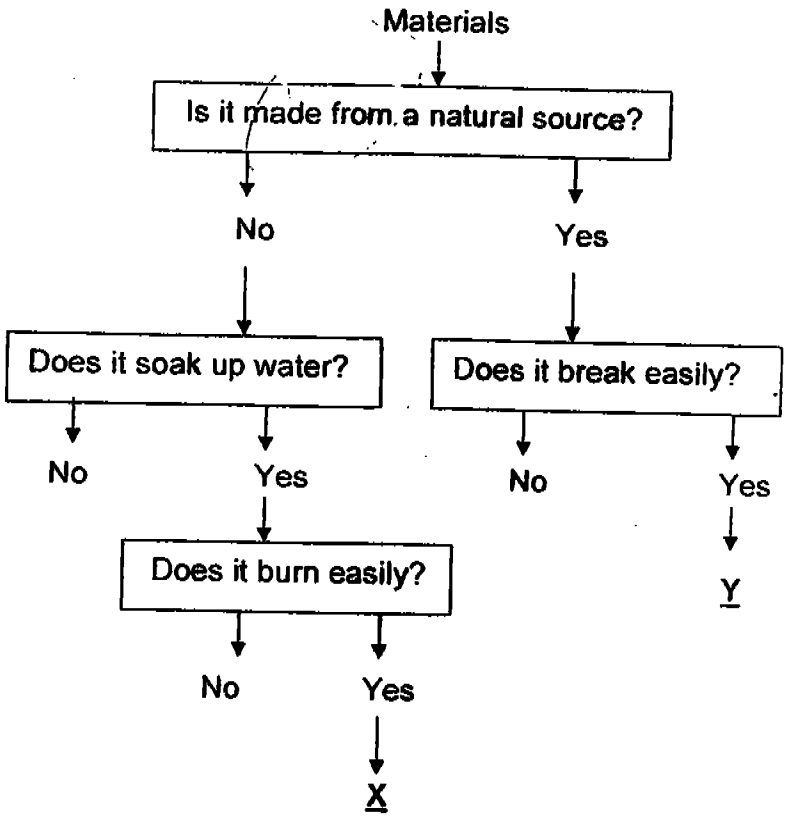
_____

(b) Explain your answer. (1 mark)

_____

_____

45. The diagram shows a binary key.



(a) Based on the key, write down the properties of X.

_____

_____

(b) Write down <u>one</u> difference between X and Y.
(Your answer must be on a common basis of comparison)

_____

(1 mark)

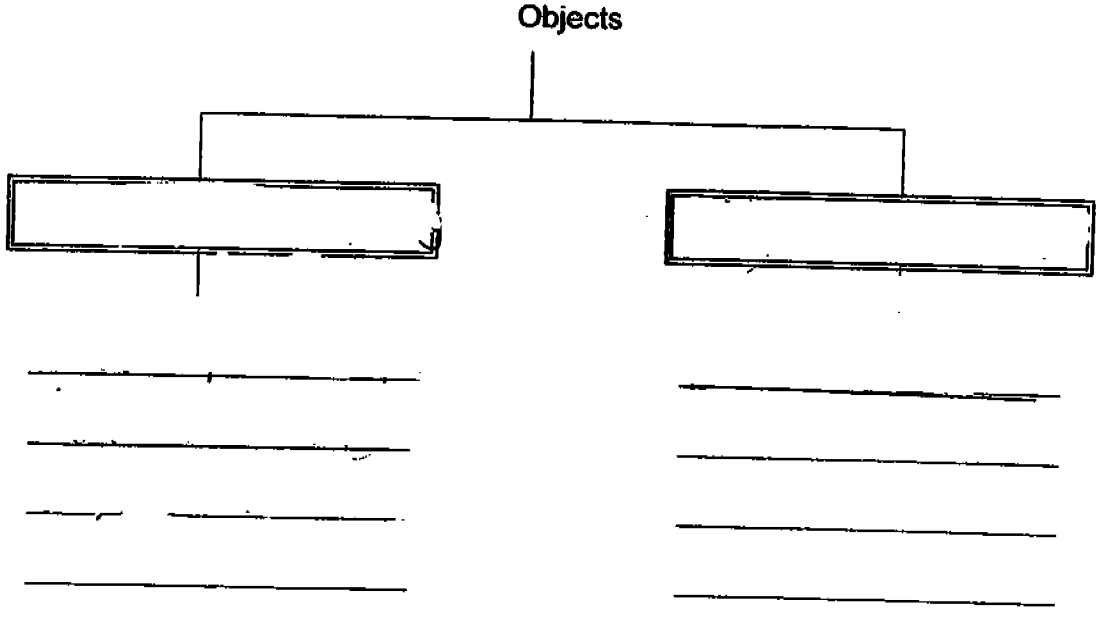
46. Ben made a circuit tester and tested the objects shown in the table below. What will the results of his experiment be?

(a) Complete the table below.

Object	Did the bulb light up?
Sewing Needle	
Aluminium Foil	
Copper Wire	
Eraser	

(2 marks)

(b) Complete the classification diagram below by putting the above objects into 2 groups.



(2 marks)

~~~ END OF PAPER ~~~
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SA2

MAHA BODHI SCHOOL
2004 SEMESTRAL ASSESSMENT 2
PRIMARY 5 SCIENCE

1) 3
2) 3
3) 1
4) 2
5) 3
6) 2
7) 3
8) 2
9) 1
10) 3
11) 4
12) 3
13) 1
14) 2
15) 2
16) 1
17) 1
18) 2
19) 1
20) 1
21) 3
22) 2
23) 2
24) 2
25) 1
26) 2
27) 1

29) 4 30) 2

31) a) Gears B, C and E will move clockwise.

b) i) watch ii) egg-beater

32) i) Put powder on the table to reduce friction.

ii) Put wheels under the wooden block.

33) a) Use a longer ramp.

b) Combined pulley system.

34) Nut cracker Door Wedge Pencil sharpener
Cross-spanner

35) a) Two of them are unaffected while the other two are infected with the bad gene.

b) 3

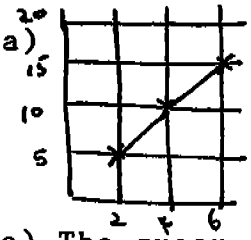
36) a) To find out if germinating seeds give out carbon dioxide during respiration.

b) To confirm that carbon dioxide is only produced by germinating seeds during respiration.

37) a) Edwin

b) It can change the direction of the effort.

38) a)



b) The heavier the load, the longer the extension of the spring.

39) a) The sugar paper was the strongest of all.

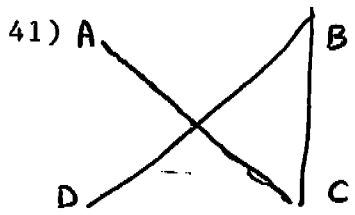
b) i) The width of the paper.

ii) Type of sticky tape.

c) Paper is the strongest of all and the tissue paper is the weakest of all.

40) Power stations batteries

Television torch light

41) 

42) a) Coal

b) i) fuel

ii)

iii) steam

iv) turbine

v) generator

43) a) She could get electrocuted.

b) If switch B is turned on, electricity will flow to the curling tongs and then to the water. As water is a good conductor of electricty, the current will flow to Mrs. Lim

44) a) Flower A

b) The anthers are hanging outside the flower so that wind can blow away the pollen on the anthers & pollinate other flowers.

45) a) It is not a natural source, soaks up water and burns easily.

b) X is not made from a natural source but Y is.

46) a) YEs

Yes

Yes

No

b)

Conductors of electricity	Insulators of electricity
Sewing needle	Eraser
Aluminium Foil	
Copper wire	