NAME : _____

CLASS: _____

METHODIST GIRLS' SCHOOL (PRIMARY)

MID - YEAR EXAMINATION 2008

PRIMARY FIVE

SCIENCE

BOOKLET A

Total time for Booklets A and B: 1 h 45 min.
Booklet A: 30 Questions (60 marks)

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

FOLLOW ALL INSTRUCTIONS CAREFULLY.

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. (30 x 2 marks)

---

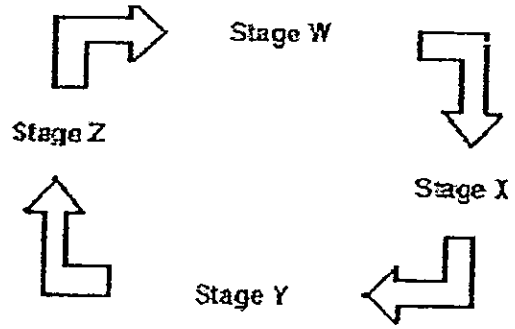
1) Study the following statements.

A: A young zebra ran when it saw a tiger.
B: A mouse ran when it heard a loud noise.
C: A sunflower grows towards sunlight.
D: A mimosa plant folded its leaves when a boy touched it.

These examples show that living things _____.

(1) move to escape danger
(2) move from place to place
(3) are afraid of other living things
(4) respond to changes around them

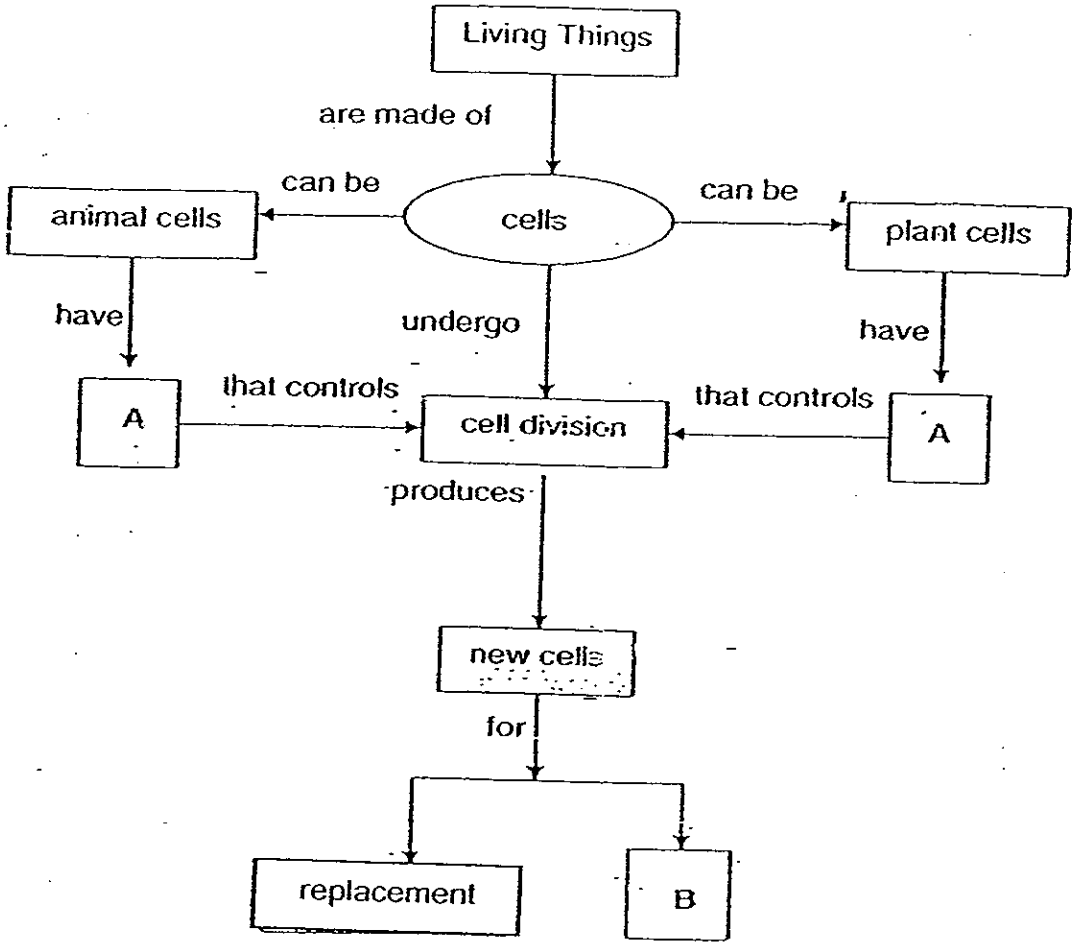
2) The diagram below shows the life cycle of an animal.



Which one of the following shows the correct life cycle of this animal?

	Stage W	Stage X	Stage Y	Stage Z
(1)	Adult	Pupa	Larva	Egg
(2)	Adult	Egg	Larva	Pupa
(3)	Adult	Egg	Nymph	Adult
(4)	Adult	Nymph	Pupa	Egg

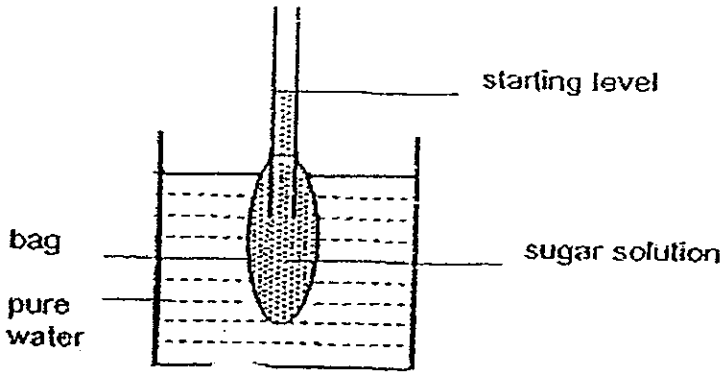
3) The diagram below shows a concept map



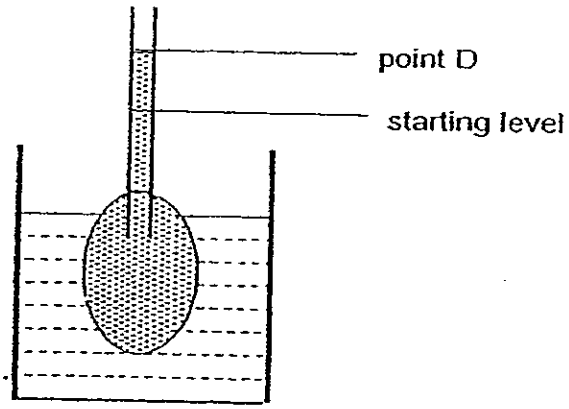
Which of the following best represents A and B?

	A	B
(1)	Cell wall	Reproduction
(2)	Nucleus	Growth
(3)	Chloroplast	Fertilisation
(4)	Cytoplasm	Growth

4) The experiment as shown in diagram below was set up by Kimberly. She noted the starting level of the liquid in the glass tube.



After 3 hours, she observed that the liquid level in the glass tube had risen to point D.



With comparison to a plant cell, which part of the cell has the same property as the material of the bag?

(1) Cell wall
(2) Cytoplasm
(3) Chloroplast
(4) Cell membrane

5) The following statements describe the stages of cell division.

A: The cell grows to a certain size
B: The cell divides into two identical halves
C: The nucleus separates into two new nuclei
D: The nucleus of the parent cell makes a copy of itself

Which one of the following shows the correct order of the stages of cell division?

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

6) Josephine conducted a study on two organisms. The table below records how the two organisms reproduce.

	Organism A	Organism B
Development of egg is completed outside the mother's body	Yes	Yes
Eggs are laid in water	Yes	No
Fertilisation takes place internally	No	Yes

With reference to the table above, what could Organism A and B be?

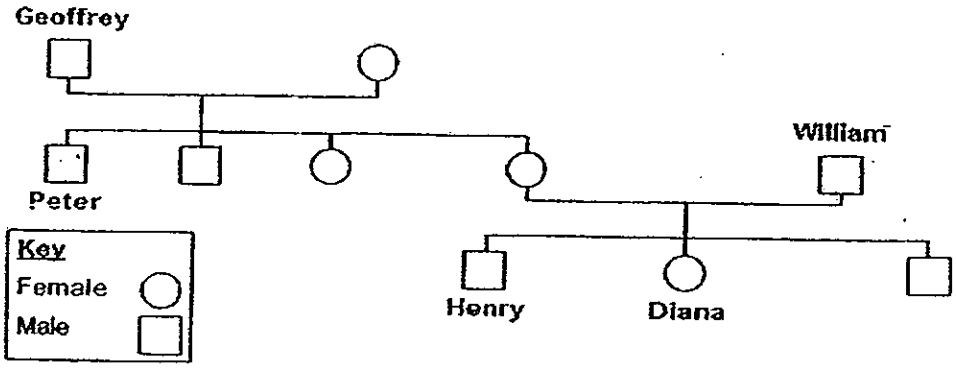
Organism A	Organism B
(1) Goldfish	Hen
(2) Grasshopper	Duck
(3) Snail	Frog
(4) Toad	Dragonfly

7) Which of the following statements about heredity are true?

A: The offspring can inherit traits from both parents
B: A female parent cannot pass her traits to a male child
C: Heredity is the passing on of characteristics from offspring to parents
D: Inherited traits sometimes do not show in one generation but may reappear in the next generation

(1) A and D only
(2) B and C only
(3) A, C and D only
(4) All of the above

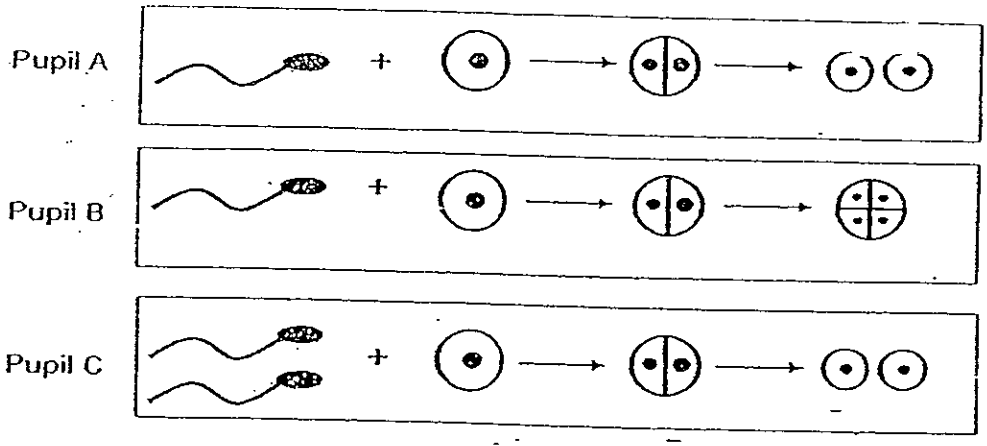
8) The diagram below shows Diana's family tree.



Based on the family tree, _____ is Diana's Uncle.

(1) Peter
(2) Geoffrey
(3) William
(4) Henry

9) The diagram below shows 3 conclusions made by pupils A, B and C.
Which of the above pupils had shown the possible process(es) of fertilisation?



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

10) The table below shows the characteristics of 2 dogs and their puppy.

Characteristics	Male Dog	Female Dog	Puppy
Long fur	No	Yes	Yes
Short tail	Yes	No	Yes
Black spots	Yes	No	No

Which of the following statement(s) based on the above table is/are true?
The puppy _____

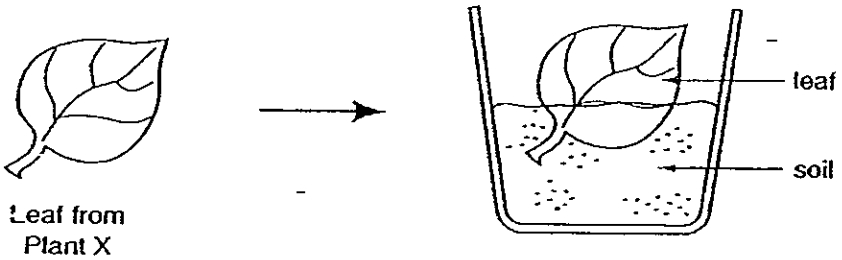
A: inherited its father's long fur
B: inherited 2 traits from its mother
C: did not inherit its father's black spots.
D: inherit at least 1 trait from both of its parents.

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

11) Mould ensures that there will always be its own kind around by producing _____.

(1) fruits
(2) seeds
(3) spores
(4) flowers

12) The diagram below shows how the leaf of Plant X grows into a new plant.

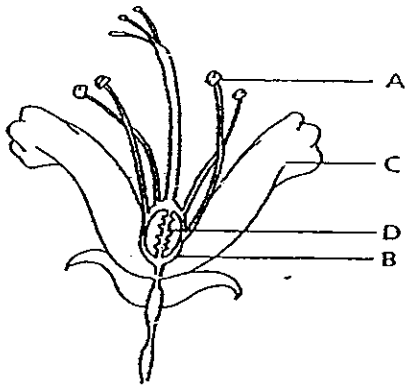


Leaf from Plant X

What can Plant X be?

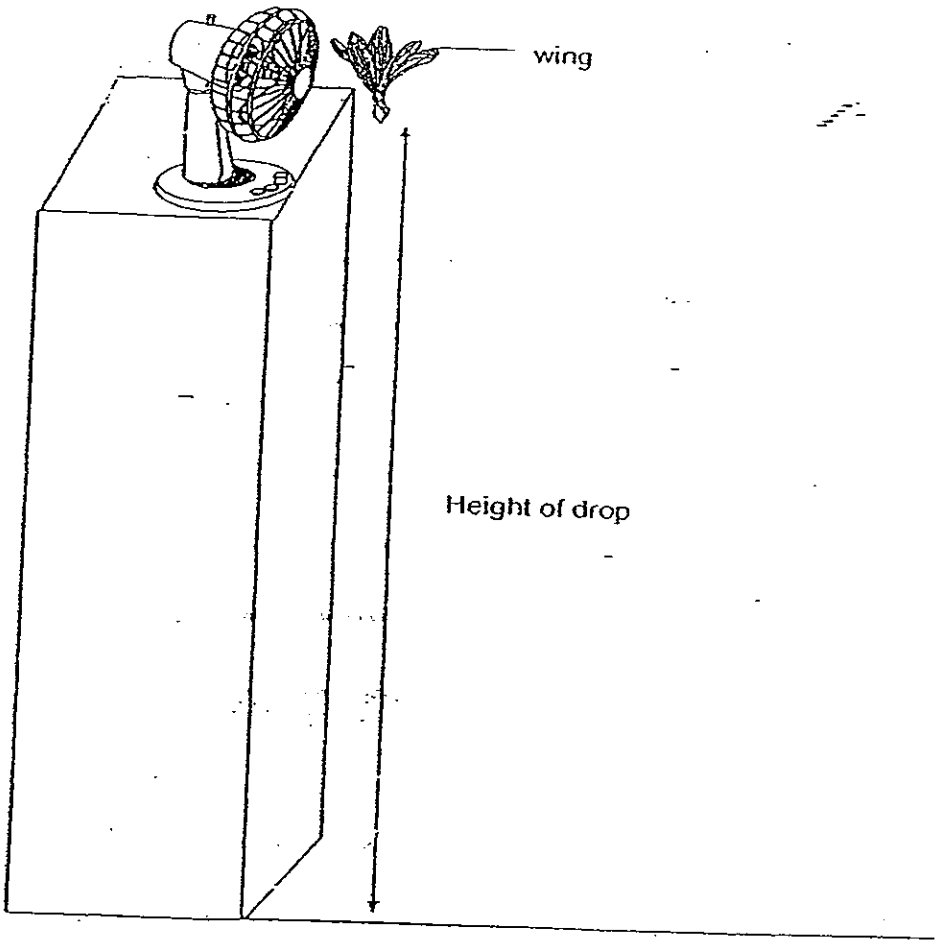
(1) Ginger
(2) Pineapple
(3) Bryophyllum
(4) African Tulip

13) Which of the following labelled parts of a flower will develop into a fruit after fertilisation?



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

14) Amy wanted to investigate if the length of the wing of a shorea has an effect on the rate of its fall. She released the fruit from a **fixed** height as shown below.

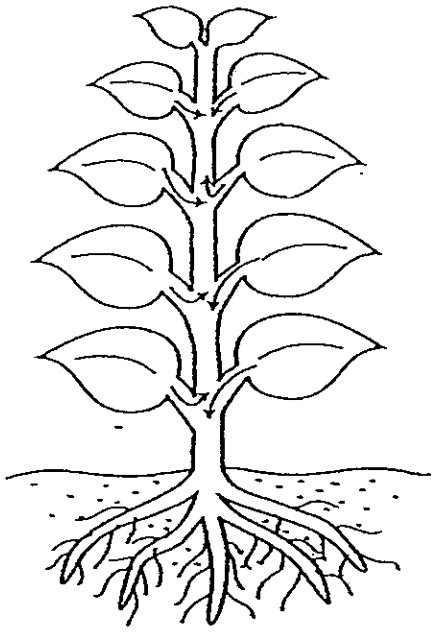


Which two changeable variables must be measured for her investigation?

A: The length of the wing
B: The height the fruit was dropped
C: The distance it was dispersed from the fan
D: The time taken for the fruit to land on the ground

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

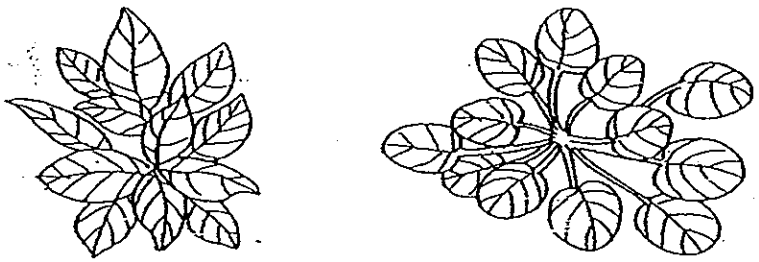
15) The diagram below shows the transport of _____ in plants.



A: water
B: food
C: minerals
D: carbon dioxide and oxygen

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

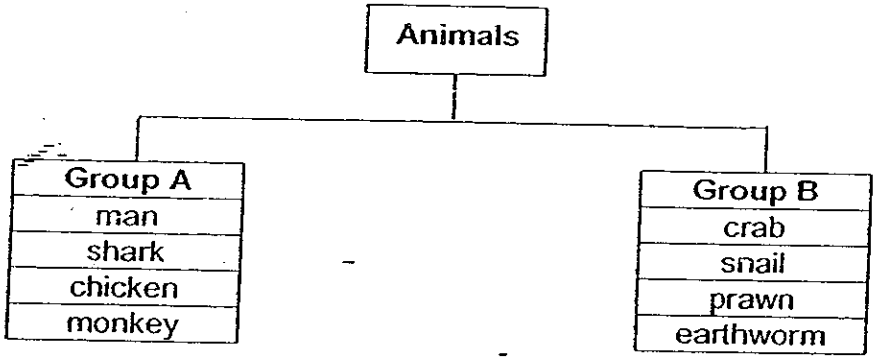
16) The diagrams below show the arrangement of leaves of two plants.



Why are the leaves arranged in this manner?

(1) To prevent overcrowding
(2) To provide more shelter for insects
(3) To get as much sunlight as possible
(4) To catch as much rainwater as possible

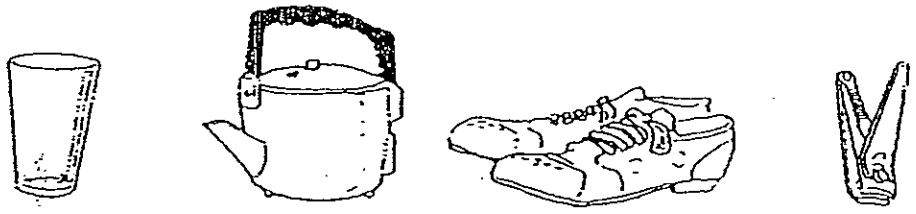
17) Study the classification of some animals below.



How are the animals grouped?

Group A	Group B
(1) Cannot swim	Can swim
(2) Have hair	Do not have hair
(3) Live on land	Live in water
(4) Have backbone	No backbone

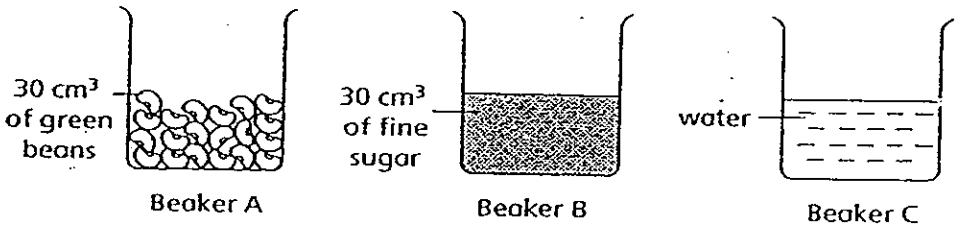
18) Look at the objects below.
Which objects are made of two or more materials?



R S T U

(1) S only
(2) S and T only
(3) R, S and T only
(4) R, S and U only

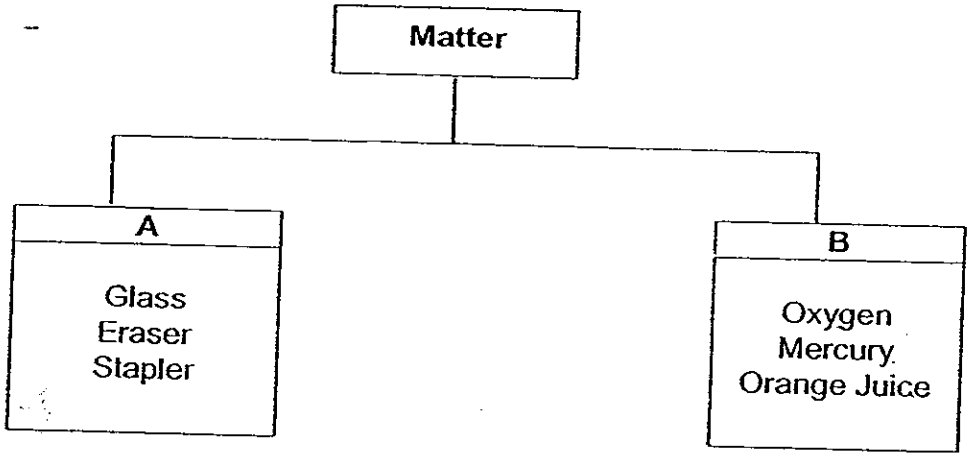
19) Beaker A contains 30 cm^3 of green beans, Beaker B contains 30 cm^3 of fine sugar. Beaker C contains 30 cm^3 of water.



What would be the possible volume if the contents of Beaker A and B are poured into Beaker C?

(1) 50 cm^3
(2) 60 cm^3
(3) 80 cm^3
(4) 90 cm^3

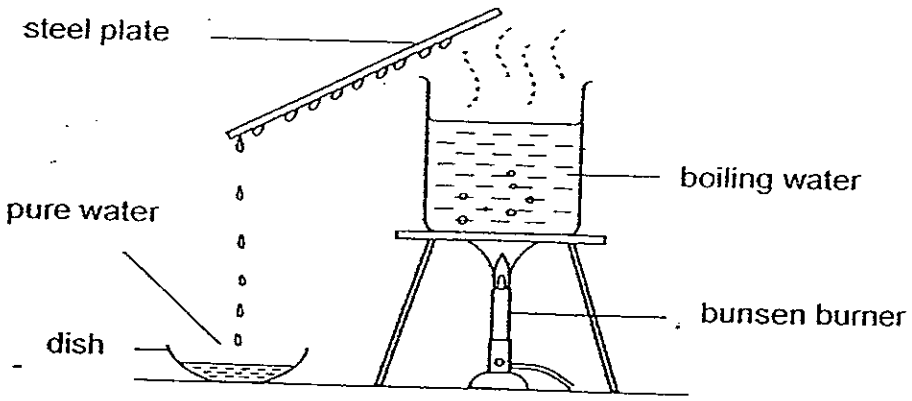
20) Andy classified the six objects into two groups using the classification chart below.



Which of the following is the most suitable heading for A and B?

A	B
(1) Has mass	Has no mass
(2) Cannot be compressed	Can be compressed
(3) Has a definite shape	Has no definite shape
(4) Has a definite volume	Has no definite volume

21) Linda sets up the experiment as shown below.

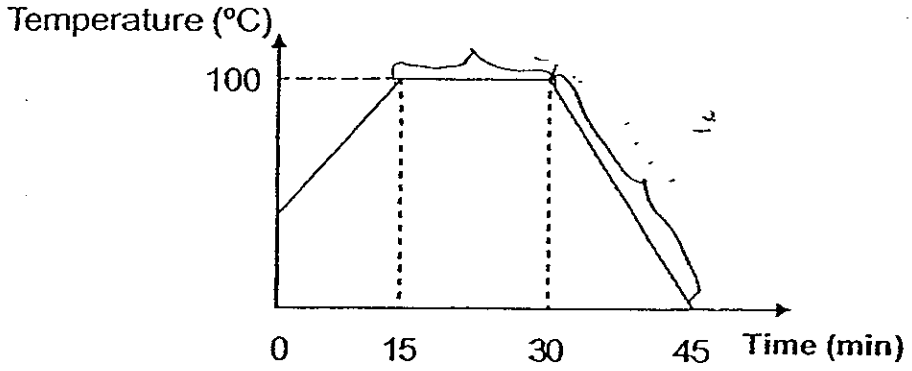


From the experiment, Linda is able to conclude that _____

A: water changes into water vapour only at 100 degree Celsius
B: water vapour loses heat during condensation
C: pure water can be obtained through ~~evaporation~~ condensation,
D: steam is formed when water boils.

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

22) The graph below shows the changes in temperature of some water when it was heated and then cooled.

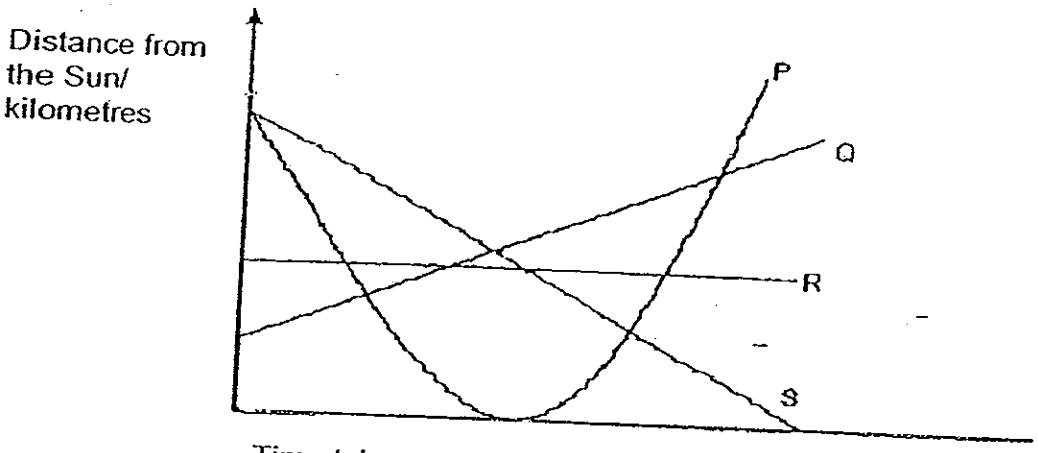


Which of the following descriptions about the water is correct?

0 to 15 min	15 to 30 min
(1) The water was boiling.	Some water was changing to water vapour.
(2) Some water was changing to water vapour.	The water was boiling.
(3) The water was boiling.	The water remained at a constant temperature.
(4) The water was gaining heat.	The water was cooling and becoming ice.

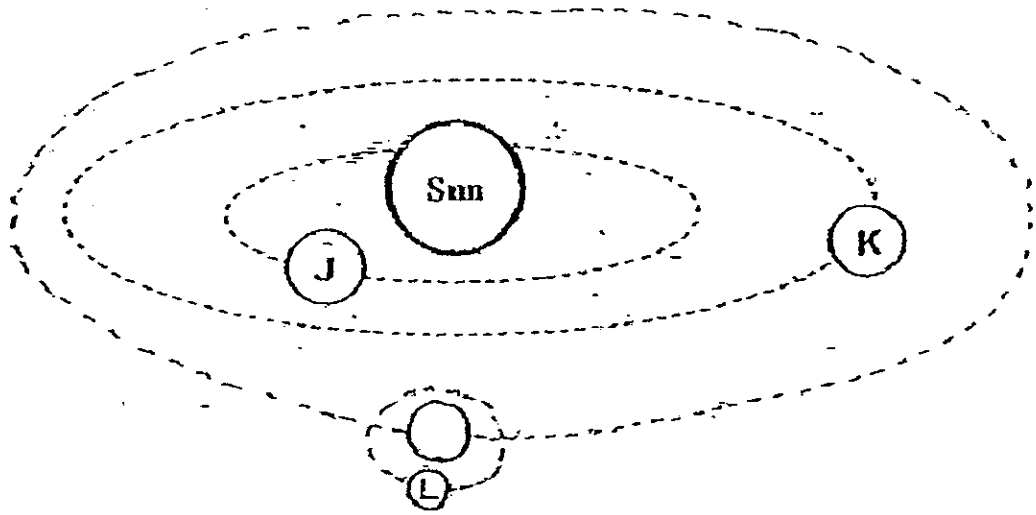
23) Look at the graph below.

Which one of the following graphs represents the relationship between the distance the planets are from the Sun and the time taken for them to revolve around the Sun once?



(1) P
(2) Q
(3) R
(4) S

24) The diagram below shows some objects and their orbits in the Solar System.

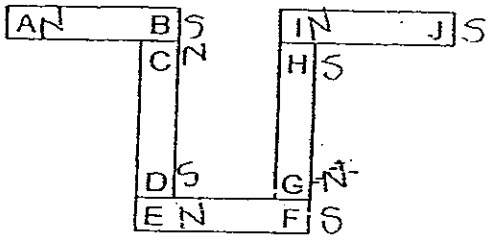


Which of the following statements can you infer based on the diagram only?

A: L is a man-made satellite.
B: J and K revolve around the Sun.
C: J will have a lower surface temperature than K.
D: J will take a shorter time than K to complete one revolution around the Sun.

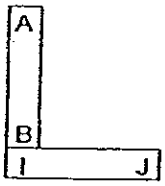
(1) A and C only
(2) A and D only
(3) B and D only
(4) C and D only

25) Five bar magnets with their ends marked A to J can be arranged as shown below.

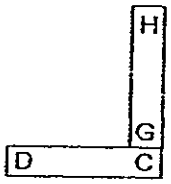


Which one of the following diagrams shows a possible arrangement of two of the magnets?

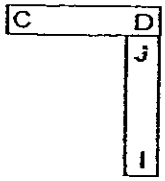
(1)



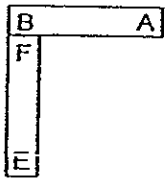
(2)



(3)



(4)



26) Roy found a bar magnet. He labelled one end "X" for north-seeking pole and the other end "Y" for south-seeking pole. Which of the following is/are ways to confirm that he has labelled correctly?

A: "X" would repel the north-seeking pole of another correctly labelled magnet.

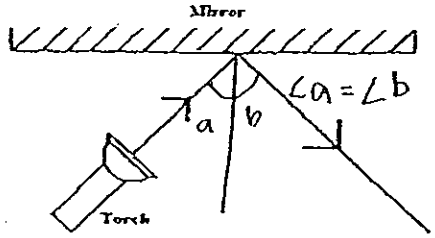
B: "Y" would attract the south-seeking pole of another correctly labelled magnet.

C: "X" would cause the needle of a compass to move when it is slowly brought to the north-seeking end of the needle.

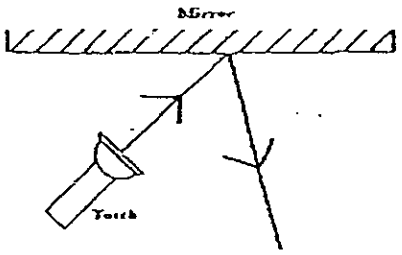
(1) A and B only
(2) B and C only
(3) A and C only
(4) A, B and C

27) A ray of light falls on a mirror. Which of the following diagrams shows the correct path taken by the reflected ray?

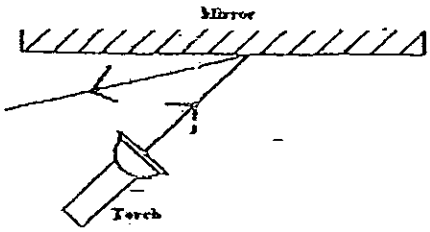
A.



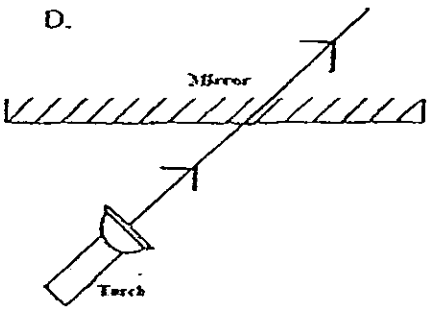
B.



C.

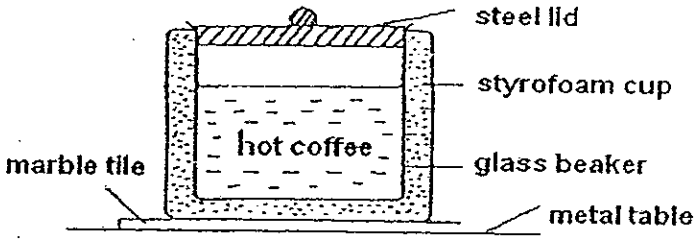


D.



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

28) Look carefully at the diagram below.

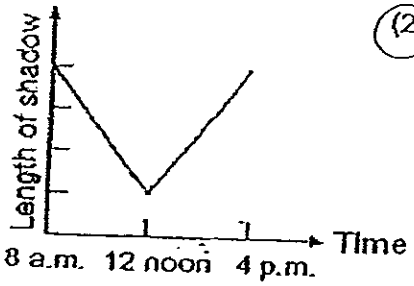


Most of the heat from the hot coffee is lost to the surroundings through the _____.

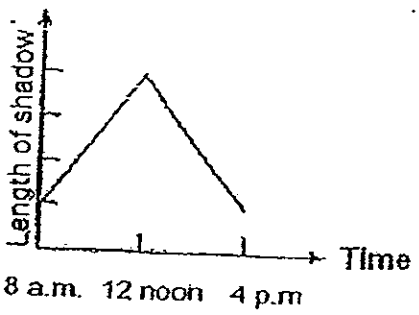
(1) steel lid
(2) styrofoam cup
(3) marble tile
(4) metal table

29) Anabel wanted to plot a graph to show the changes in the length of shadow cast. Which one of the following graphs correctly shows the changes in the length of a shadow cast during the day?

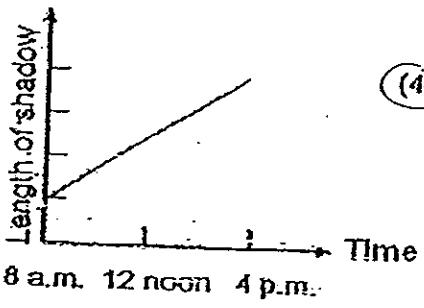
(1)



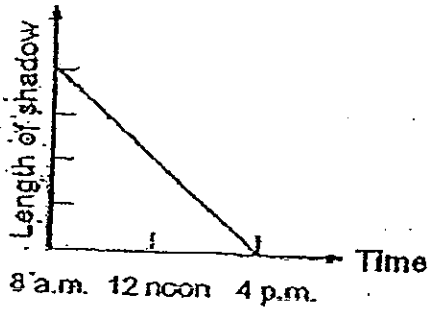
(2)



(3)



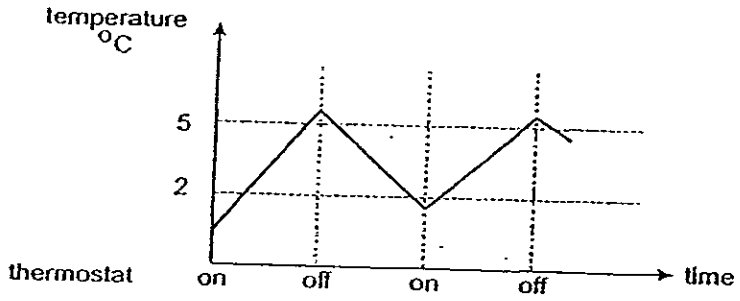
(4)



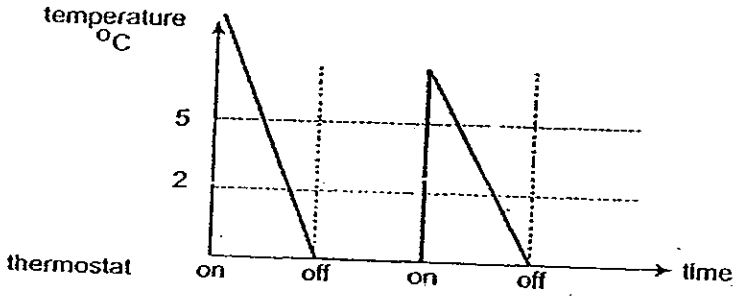
30) A special switch called a thermostat is used in a refrigerator to control its temperature. The thermostat switches on the refrigerator system when the temperature rises to above 5 degrees and switches it off when the temperature falls below 2 degrees.

Which graph below shows how the temperature inside the refrigerator changes over time?

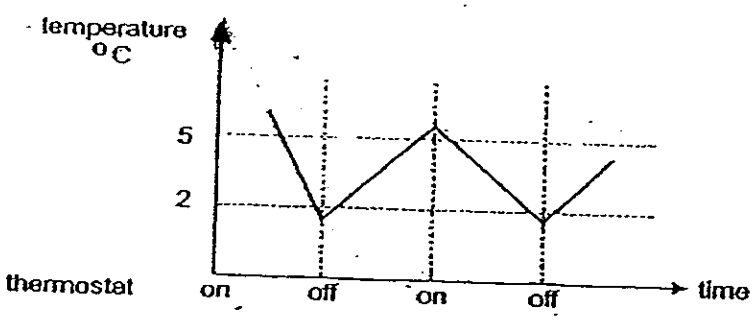
(1)



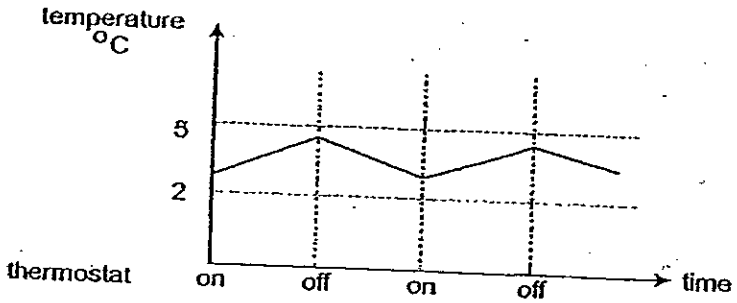
(2)



(3)



(4)



NAME _____ ( )

CLASS : _____

METHODIST GIRLS' SCHOOL (PRIMARY)

MID -YEAR EXAMINATION 2008

PRIMARY FIVE

SCIENCE

BOOKLET B

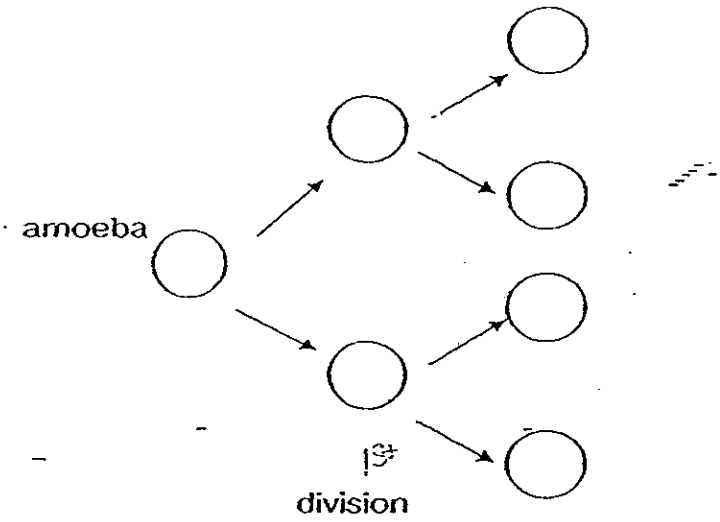
BOOKLET	MARKS
A	/ 60
B	/ 40
TOTAL	/100

Total time for Booklets A and B : 1 hr 45 min.
Booklet B : 16 Questions (40 marks)

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
FOLLOW ALL INSTRUCTIONS CAREFULLY.

For questions 31 to 46, write your answers in the blanks provided.

31. The diagram below shows how a microscopic animal, the amoeba, reproduced by dividing itself into two.



The table below shows the number of amoebae produced after each division.

Division	Number of amoebae
1st	2
2nd	4
3rd	12
4th	16
5th	32

a) There is an error in the table. Which ~~splitting~~ shows the wrong number of amoeba produced? What should be the correct number of amoebae?

(1 m)

_____

_____

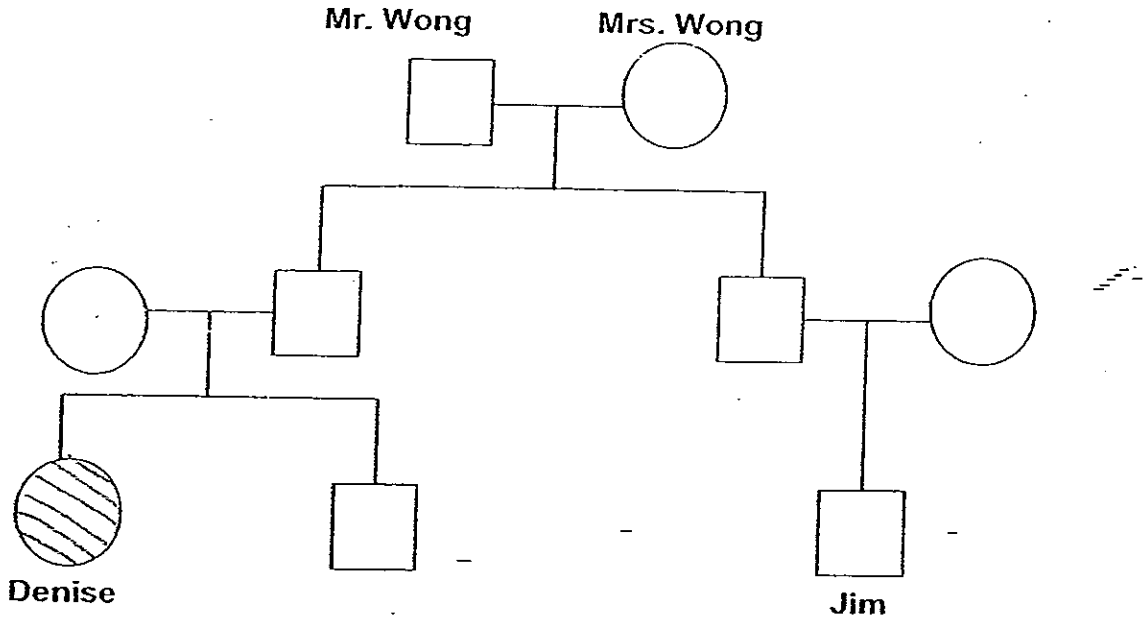
b) Is this method of reproduction known as "sexual "or "asexual" reproduction? Why?

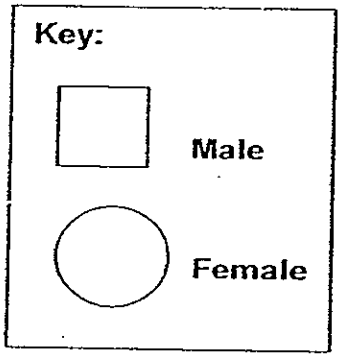
(1 m)

_____

_____

32. Study the family tree below.



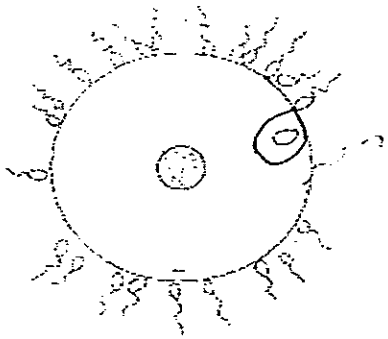


a) How is Jim related to Denise? (1 m)

_____

b) Mrs. Wong has osteoporosis which can be genetically inherited and **females** in particular, are prone to contracting it. Shade the member(s) of the family tree that is/are prone to having osteoporosis. (1 m)

33. Study the diagram below.



a) The diagram shows the process of _____

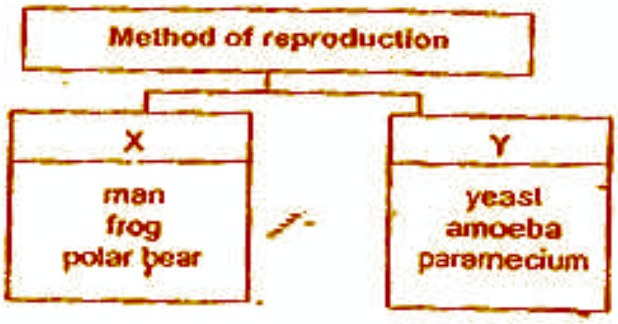
(1 m)

b) In the diagram above, circle the male reproductive cell that will complete the process stated in part (a). (1 m)

c) What happens in the process stated in part (a)? (1 m)

_____

34. The classification chart below shows how some organisms reproduce.

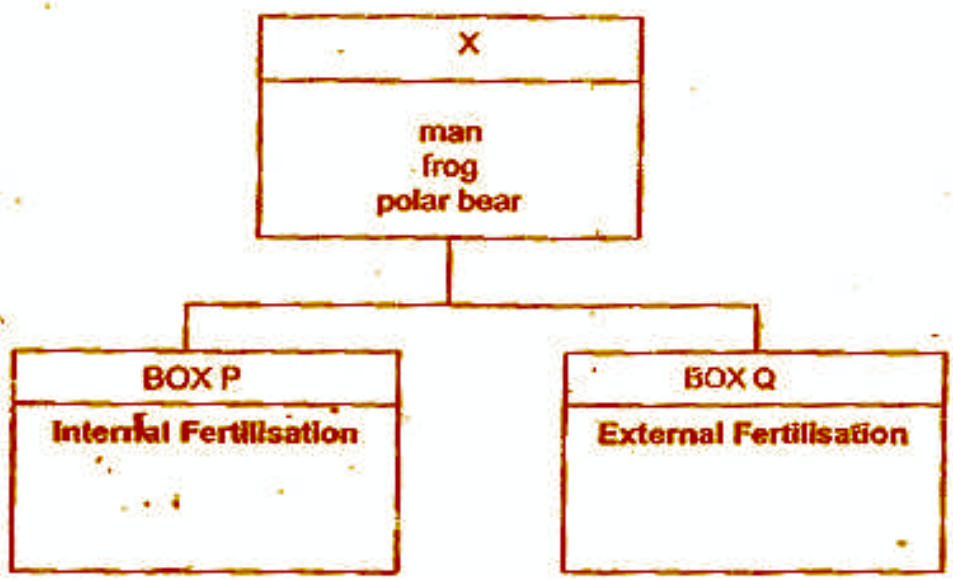


Based on the chart above, answer the following questions:

a) What is the main difference between the two methods of reproduction, X and Y? (1 m)

b) Classify the organisms in X according to the new sub headings by regrouping them in Boxes P and Q.

(1 m)



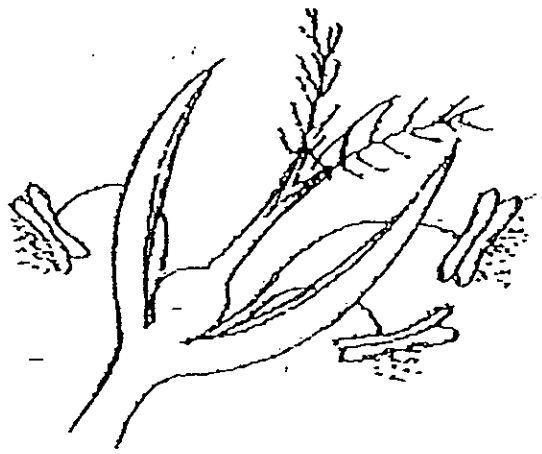
35a) Pollination is a process in which pollen grains are transferred from the anther to the stigma. How does pollination help in the continuity of a plant's own kind? (1 m)

_____

_____

_____

b)Study the diagram of the flower below carefully.



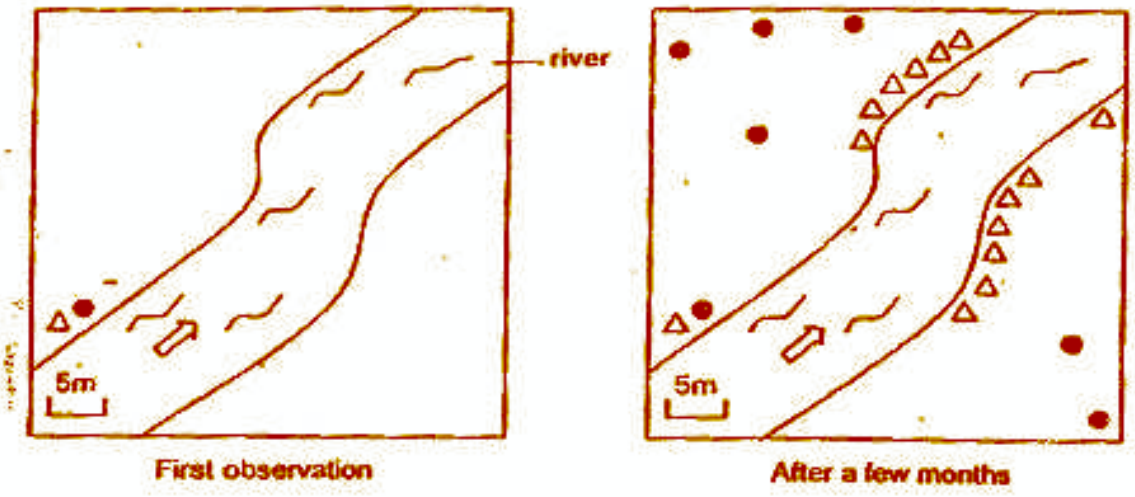
Based on the diagram above, why do you think the male parts of the flower are hanging out? (1 m)

_____

_____

_____

36. Shelia counted the number of wild plants X and Y on a piece of land. After a few months, she looked at the same piece of land again. Her observations are shown below.



First observation

After a few months

△ Plant X
● Plant Y

a) State the methods of dispersal for plants X and Y. (2 m)

(i) X: _____

(ii) Y: _____

b) Give a reason for your answer to (a)(i). (1 m)

_____

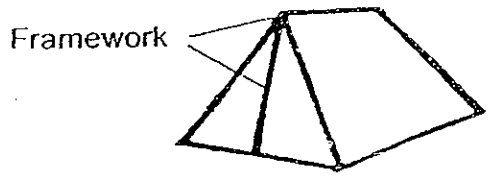
_____

c) Name one characteristic of the fruit of plant X. (1 m)

_____

_____

37. The diagram below shows the framework of a tent.



a) Which one of the body systems has the same function as that of the framework of a tent? (1 m)

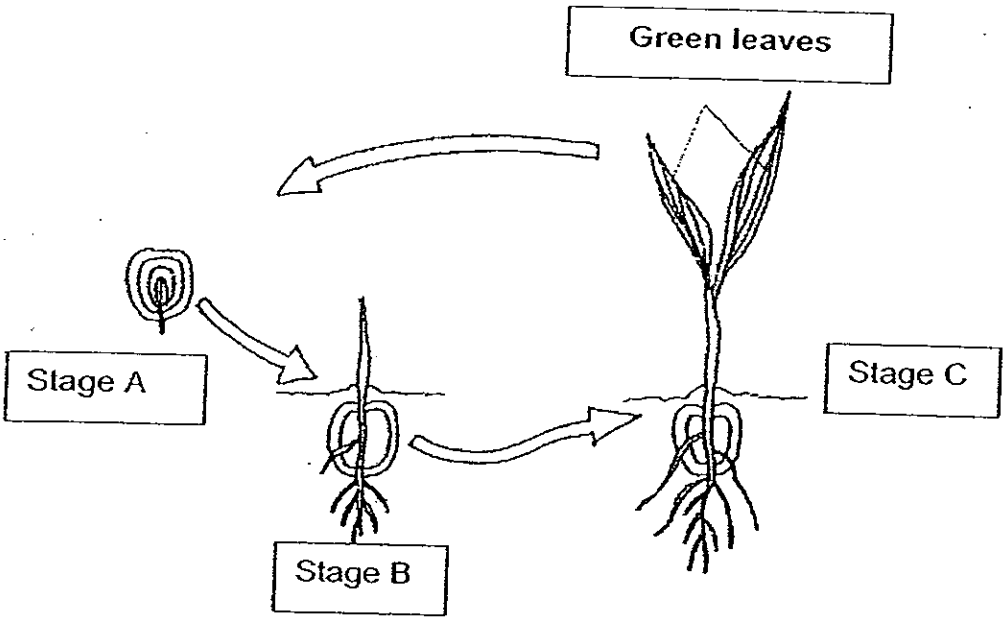
_____

b) Name one function of the body system mentioned in (a). (1 m)

_____

_____

38.



The above diagram shows some stages through which a maize seed undergoes until its first green leaves appear.

a) Where does the young plant at Stage B obtain its food for growth? (1 m)

_____

_____

b) At which Stage A, B or C is the maize plant able to make its own food? (1 m)

_____

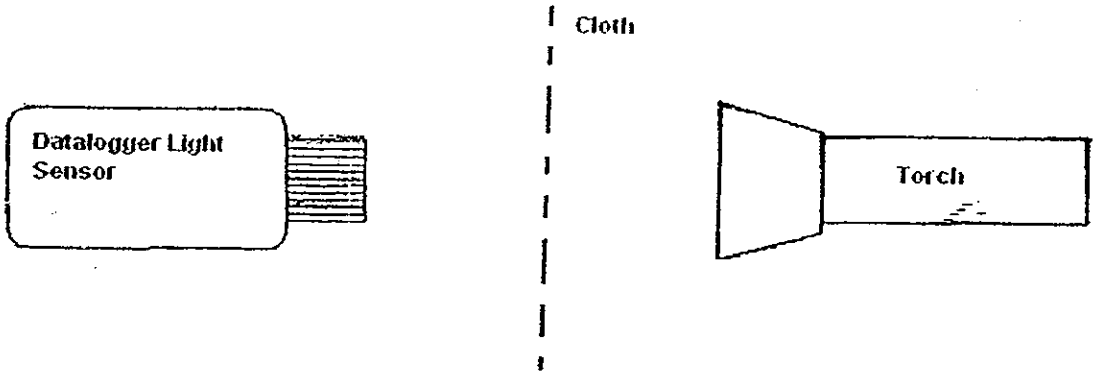
_____

c) Name three conditions necessary for the maize seed to grow into a young plant. (1 m)

_____

_____

39. James wanted to find out how much light can pass through different cloths. He set up an experiment as shown below.



By shining a beam of light on one side of a cloth, he took readings from a data logger light sensor on the other side. He repeated the experiment using different types of cloth and recorded the data as shown. The unit, Lux, was used to measure the intensity of light.

Types of Cloth	Unit of light (Lux)
Cloth A	10
Cloth B	50
Cloth C	24
Cloth D	15

a) To ensure the test was fair, state two variables that should be kept constant.

(1 m)

_____

_____

b) Mrs. Tan wanted to use the above cloths to make curtains for her bedroom which will block off the most amount of light. Which cloth should she choose?

(1 m)

_____

_____

40. Lenny washed three handkerchiefs and wrung out most of the water. She placed each of them on a clothesline in the way specified in the table.

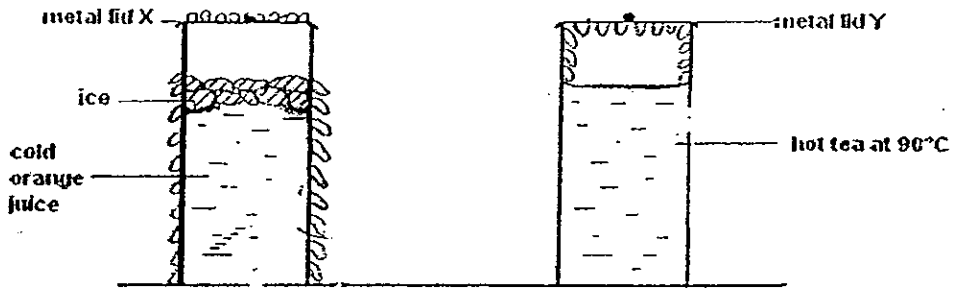
Handkerchief	Description	Time taken to dry (min)
A	Not folded at all	10
B	Folded twice	20
C	Folded thrice	30

a) What is the relationship between the number of folds and the time taken for the handkerchief to dry? (1 m)

b) Give a reason to explain why handkerchief C took the longest time to dry. (1 m)

c) Suggest one method by which all the above drying time could be shortened. (1m)

41. In the diagram below, the glass of orange juice and the glass of tea are covered with metal lids X and Y respectively.



The 2 glasses are left undisturbed on a table. After a few minutes, it is observed that water droplets are formed on the metal lids.

a) (i) Draw on the diagrams the water droplets formed on **metal lid X.** (½ m)

(ii) Give a reason for your answer to (a) (i). (1 m)

_____

_____

_____

b) (i) Draw on the diagrams the water droplets formed on **metal lid Y.** (½ m)

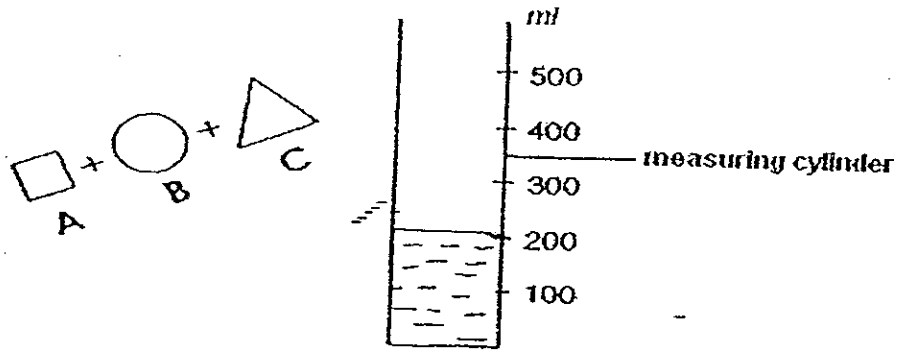
(ii) Give a reason for your answer to (b) (i). (1 m)

_____

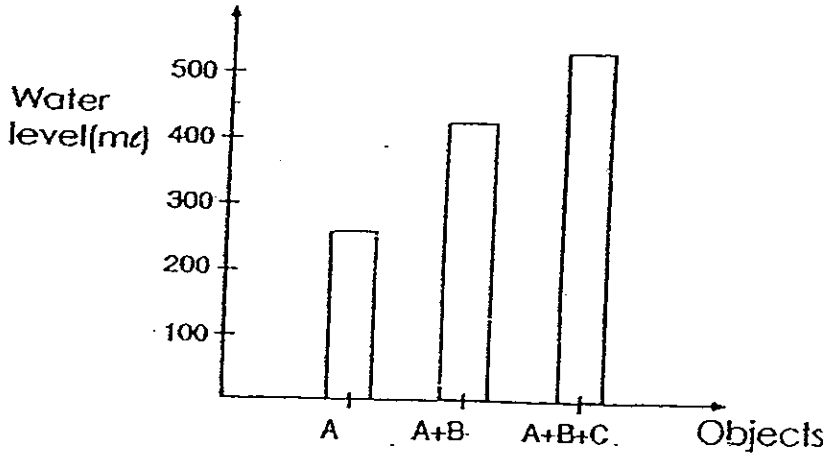
_____

_____

42. Melvin set up an experiment as shown below.



Melvin put ~~four~~ three objects, A, B and C into the measuring cylinder one after another and recorded the rise in the water level each time he added one more object. He tabulated the results in a graph as shown below.



(a) Which object has the smallest volume? (1 m)

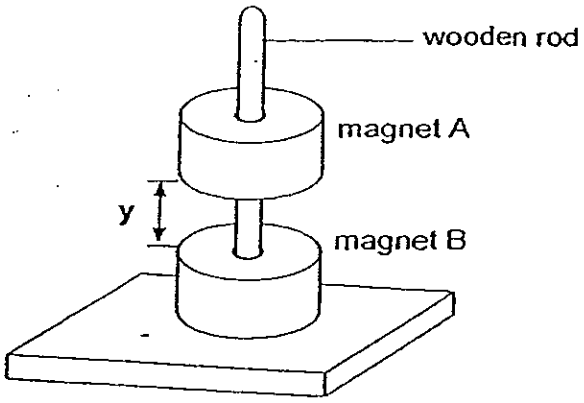
_____

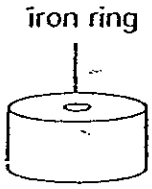
(b) State one property the three objects must have for the volume to be measured accurately. (1 m)

_____

_____

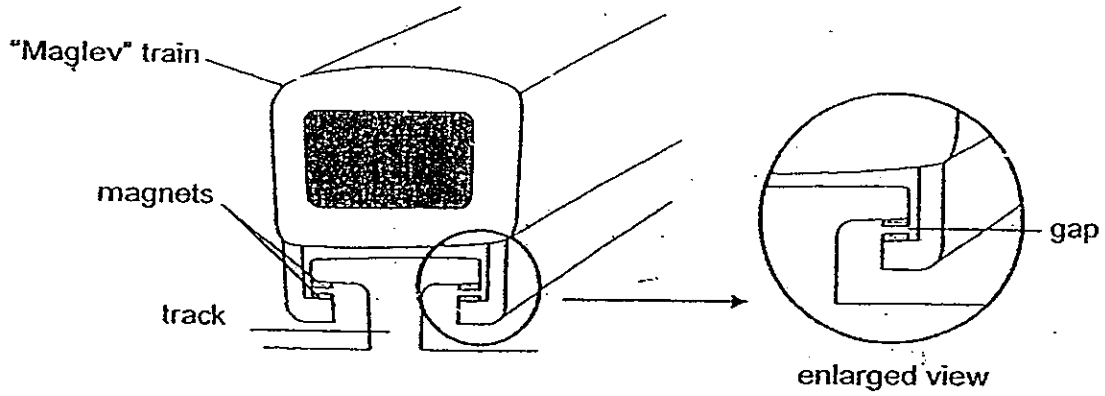
43. Mary placed two identical ring magnets A and B, through a wooden rod as shown in the diagram below. She observed that magnets A and B were at a distance, y cm, from each other.





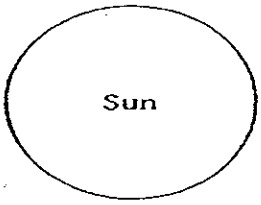
a) When an iron ring is placed on top of magnet A, it is observed that the distance, y, decreases. Give a reason for your answer. (1m)

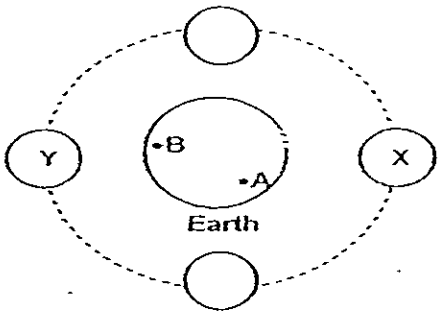
A "Maglev" is a special train that floats a few centimetres above the track while it is moving. This is made possible by the use of very strong magnets.



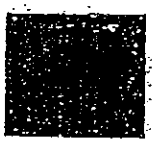
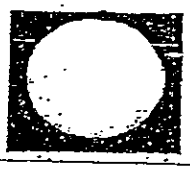
b) Explain why the train "floats" a few centimetres above the track. (1m)

44. The diagram below shows the Sun, Earth and 4 possible positions of the Moon.





a) Tick the box that shows the correct phase of the moon at position X observed from A in the table below. Name the phase. (2 m)

	Tick if correct	Name of the phase
		
		
		
		
		

b) What will the people on Earth observe at position B when the moon is at position Y? (1m)

_____

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

_____

_____

45. During one clear morning, Tricia observed that the Sun appeared to be of the same size as the moon she saw the night before. She then concluded that both the Sun and the Moon are of the same size. However, her classmate, Ron told her that she is **incorrect.**

If you were Ron, how would you explain to Tricia that the sun is larger than the Moon even though they appear to be of the same size? (2m)

_____

_____

_____

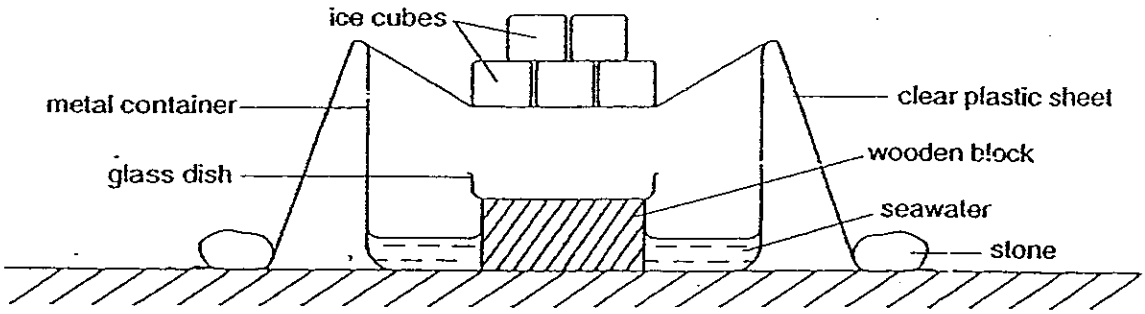
_____

_____

_____

_____

46. Peter placed a glass dish on a wooden block. The wooden block and the glass dish were then put into a big metal container with seawater. He covered the whole metal container with a plastic sheet and put some ice on top of the sheet. Next, he weighed the sheet down with two stones.



a) What will be observed on the plastic sheet (the side facing the glass dish and the wooden block) after a while? (1m)

_____

_____

b) What is the purpose for putting ice cubes on top of the plastic sheet? (1m)

_____

_____

END OF PAPER
HAVE YOU CHECKED YOUR WORK!

ANSWER SHEET

EXAM PAPER 2008

SCHOOL : MGS HIGH PRIMARY SCHOOL
SUBJECT : PRIMARY 5 SCIENCE

TERM : SA 1

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

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

31)a)The 3rd division. There should be 8 amoebae.
b)Asexual. Only one parent is needed to reproduce.

32)a)Jim is Denise's cousin.
b)

Denise

33)a)fertilization.
b)The nucleus of the will fertilise the nucleus of the egg.

34)a)For X, it needs parents of two different sexes while for Y to reproduce, it only needs one parent.
b)P: Man polar bear. Q: frog.

35)a)It helps to carry the pollens from the anthers to the stigma, then the pollens will travel down the style to fertilise the eggs that will eventually develop into new plants.
b)It is to make it easier for wind to carry the pollens produced by the anthers to the stigma.

36)a)X: by water. Y: by wind

b)Plant X is planted near the water thus it is dispersed by water. Plant Y is planted on both sides of the land and are placed widely from one another thus it is dispersed by wind.

c)Have fibrous husk.

37)a)Skeletal system. b)It supports the body.

38)a)Its seed leaves.

b)Stage C.

c)Water, oxygen and warmth.

39)a)1)The distance of the torch from the cloth.

2)Intensity of the torch.

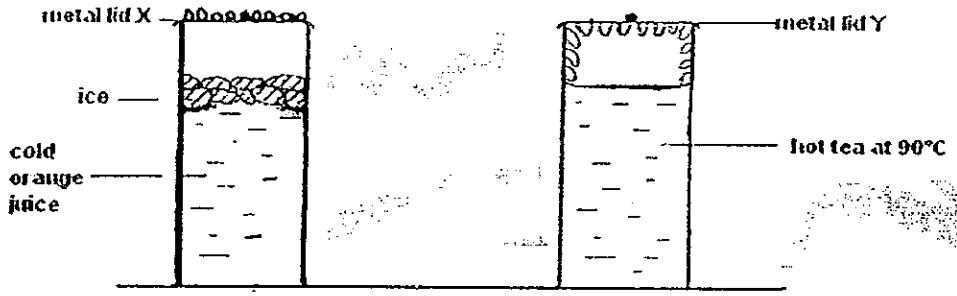
b)Cloth A.

40)a)The more times it is folded, the longer it will take to dry.

b)Handkerchief C has the smallest exposed surface area.

c)Put the handkerchiefs in a windy place.

41)a)i)b)i



ii)Metal lid X loses heat to the cold orange juice and cools down. This results in water vapour from the surrounding air condensing to from water droplets on the upper surface.

b)ii)The water vapour in the glass loses heat to the cool surface of metal lid Y and condenses to from water droplets on the underside of the lid.

42)a)A
b)Objects must sink.

43)a)Iron ring pushes the magnet A down.
b)The magnets repel.

44)a) √ Full moon.
b)New Moon.
c)The side of the Moon that is lit, is facing away from position Y.

45)The sun is further away from Earth and the Moon is nearer to the Earth.

46)a)She would observe water droplets on the plastic sheet.
b)It is to cool the surface of the plastic sheet and encourage condensation of water vapour.