

TAO NAN SCHOOL

PRIMARY 5 SCIENCE MID-YEAR EXAMINATION – 2009

Name: _____ () Date: 14 May 2009

Class: P5 _____

Duration: 1h 45min

BOOKLET A

INSTRUCTIONS TO CANDIDATES

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

Follow all instructions carefully.

Answer all questions.

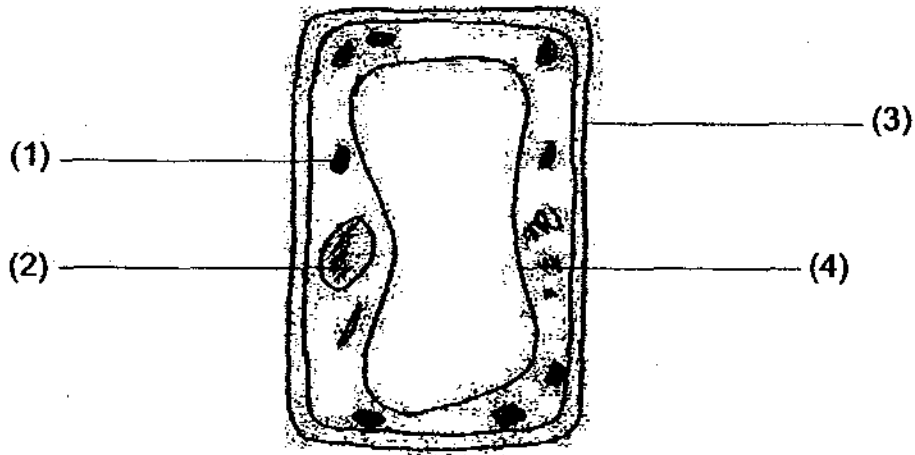
	Score	Marks
Section A		60
Section B		40
Total		100

Parent's signature: _____

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 a plant cell. Which part of the cell gives it a regular shape?



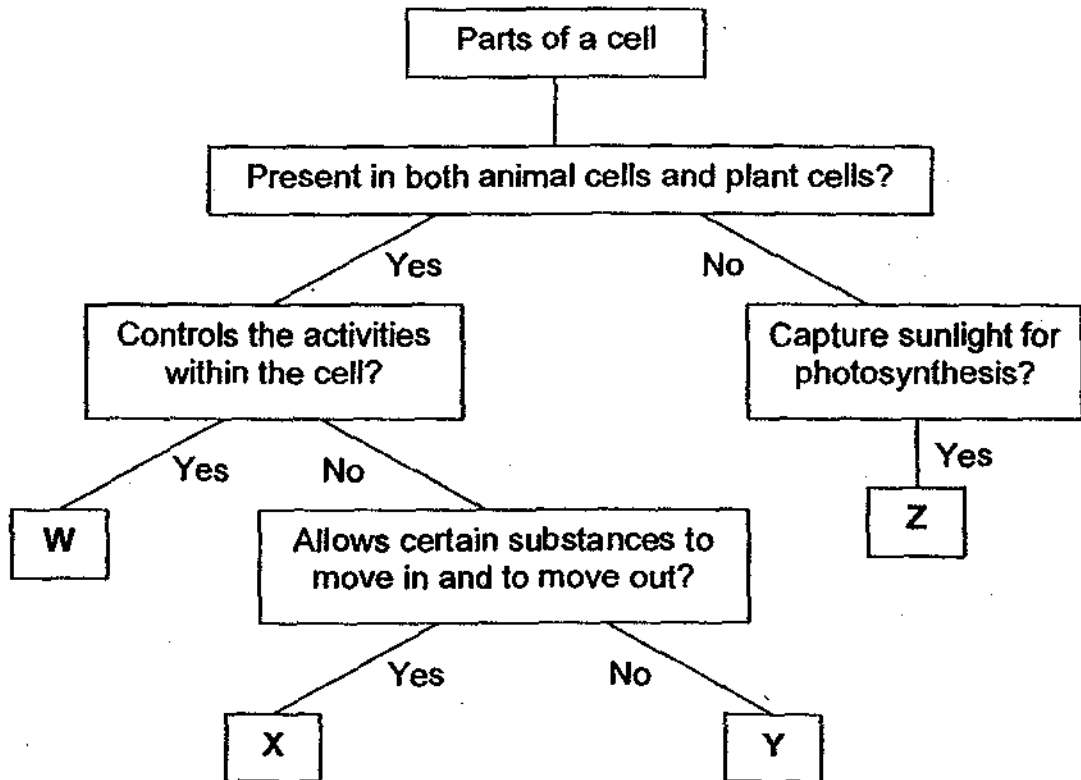
2. Study the table below. Which are plant cells?

Cells	Nucleus	Cell wall	Chloroplasts	Cytoplasm
A	√	√	√	√
B	√	X	X	√
C	X	X	√	X
D	√	√	X	√

Key: √ — structure present
 X — structure absent

- ~~1) A and B only~~
~~2) A and D only~~
~~3) B and C only~~
~~4) C and D only~~

3. Study the flow chart below.



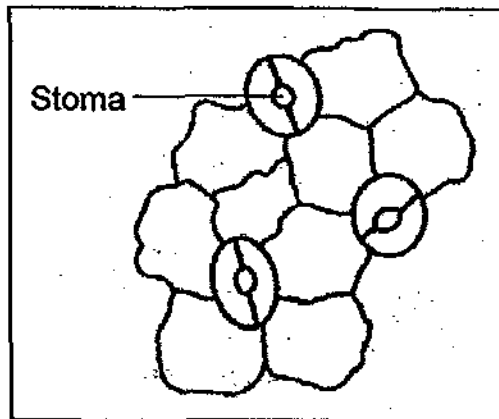
Which of the following parts of a cell represent W, X, Y and Z?

Parts of a cell				
	W	X	Y	Z
1)	Nucleus	Cell membrane	Cytoplasm	Chloroplasts
2)	Cytoplasm	Cell membrane	Nucleus	Chloroplasts
3)	Nucleus	Cytoplasm	Chloroplasts	Cell membrane
4)	Cell membrane	Cytoplasm	Nucleus	Chloroplasts

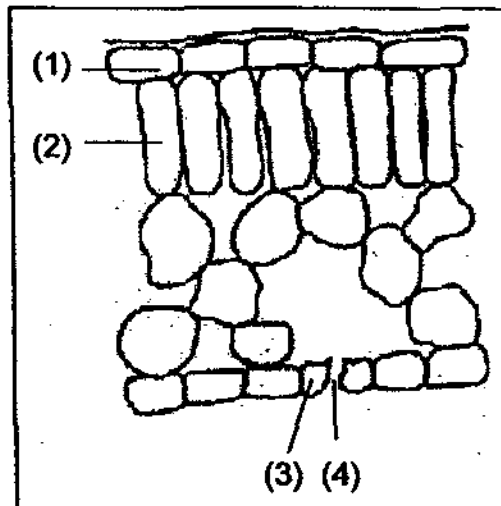
4. Which of the following statements about cells in an adult human body is true?

- 1) All cells have nuclei.
- 2) All cells undergo cell division.
- 3) All cells have a cell membrane.
- 4) All cells require oxygen, digested food and water to respire.

The diagram below shows the bottom view of a leaf. Use it to answer the questions, 5 and 6.

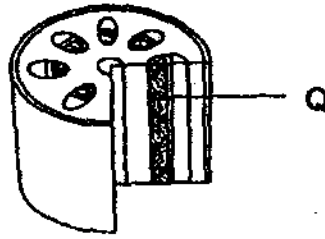


5. The diagram below shows the side view of the same leaf. Which is the stoma?



6. What is the function of a stoma in a leaf?
- 1) Makes food for the plant.
 - 2) Allows the exchange of gases.
 - 3) Traps sunlight for photosynthesis.
 - 4) Takes in water for photosynthesis.

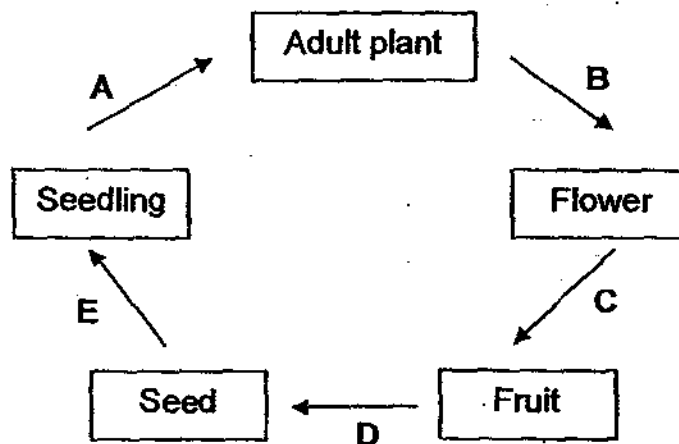
7. The diagram below shows the cross section of a stem.



Which is the main transport function of Q?

	Substance transported	Where the substance is carried from	Where the substance is carried to
1)	Sugar	Roots	Leaves
2)	Sugar	Leaves	Roots
3)	Water	Roots	Leaves
4)	Water	Leaves	Roots

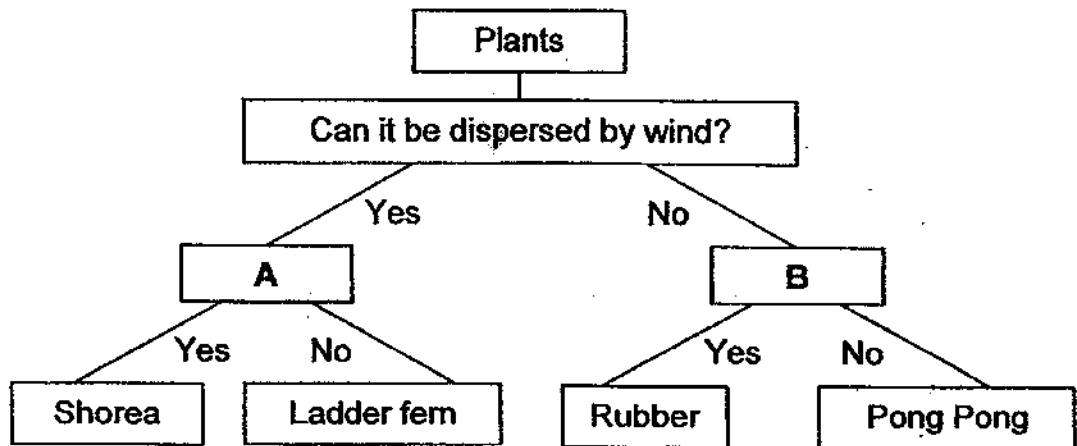
8. The diagram below shows the changes in the life cycle of a plant.



When do the processes of pollination, fertilisation and germination take place?

	Pollination	Fertilisation	Germination
✓	C	D	A
✓	B	B	E
✓	D	E	B
✓	C	C	E

9. Study the flowchart below.



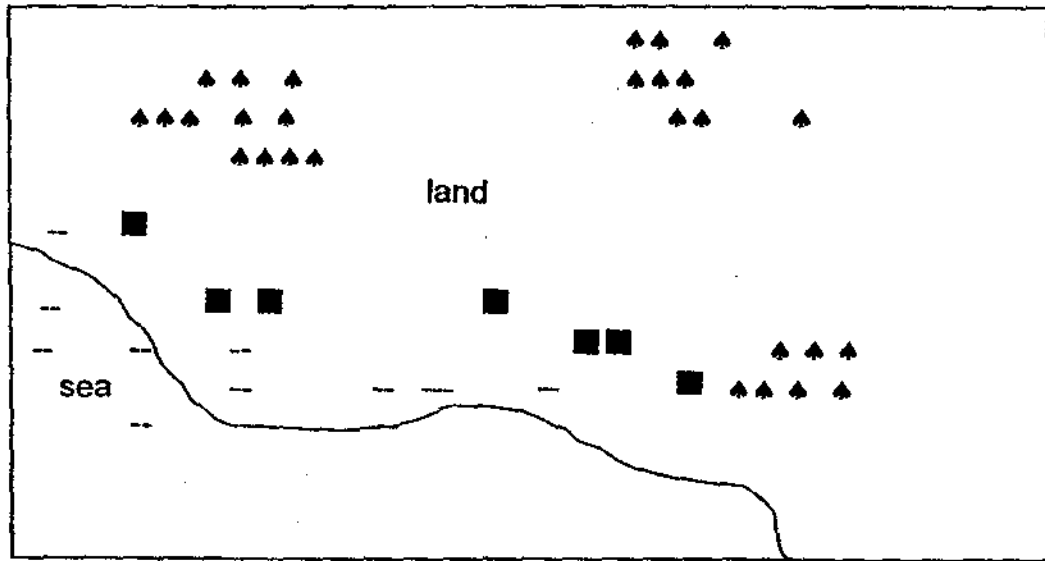
Which subheading best represent A and B in the flow chart?

	A	B
1)	Can it bear flowers?	Can it disperse its seeds far away?
2)	Can it reproduce from seeds?	Can it disperse its seeds by splitting?
3)	Does it have many spores?	Does it have a fibrous husk?
4)	Does it have a wing-like structure?	Does it have fleshy fruits?

10. Which of the following characteristics of insect-pollinated flowers and wind-pollinated flowers are correct?

	Insect-pollinated flowers	Wind-pollinated flowers
1)	Small, dull-coloured petals	Large, brightly-coloured petals
2)	Big and sticky pollen grains	Small and light pollen grains
3)	Absence of scent and nectarines nectaries	Presence of scent and nectaries
4)	Anther hangs outside the flower	Anther is found within the flower

11. The diagram shows part of an island where two types of plants (▲, ■) are growing.



How are the fruits or seeds of the two types of plants most likely dispersed?

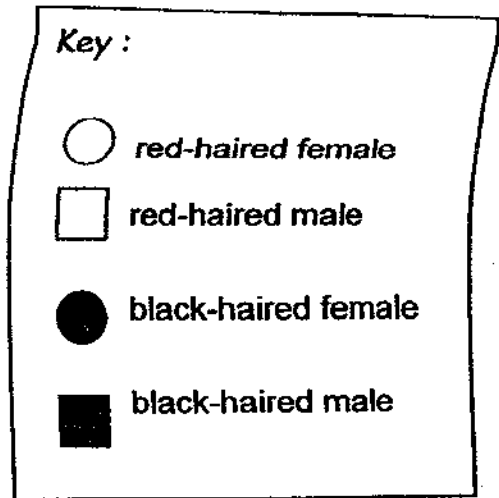
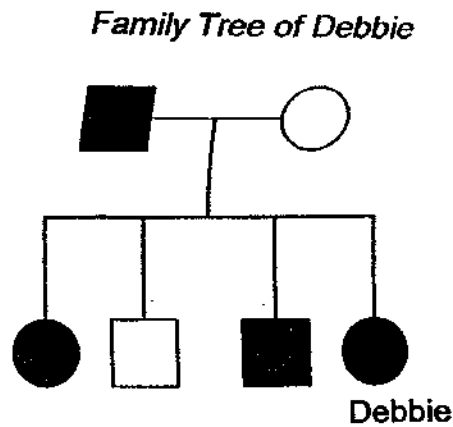
	▲	■
1)	By water	By splitting open forcefully
2)	By splitting open forcefully	By water
3)	By wind	By animals
4)	By animals	By wind

12. Which of the following conditions are necessary for germination?

- A Soil
- B Water
- C Oxygen
- D Carbon dioxide

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

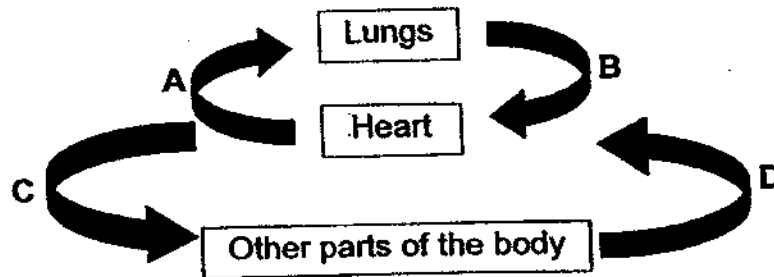
13. Hair colour is a visible characteristic that is passed on from parents to their young. Below shows the family tree of Debbie.



Which of the following statements about Debbie's family is correct?

- 1) Debbie has 2 sons and 2 daughters.
- 2) Debbie has 2 brothers and 2 sisters.
- 3) Debbie's sister has the same hair colour as her father.
- 4) Debbie's brothers have the same hair colour as her mother.

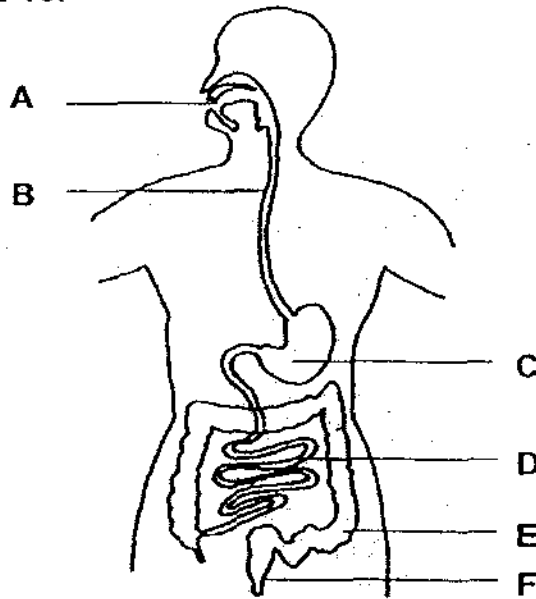
14. Study the diagram of a human circulatory system below.



Which of the arrows represent blood that is rich in carbon dioxide?

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

The diagram below shows the human digestive system. Use it to answer the questions, 15 and 16.



15. At which part is completely digested food absorbed into the bloodstream?

- 1) C
- 2) D
- 3) E
- 4) F

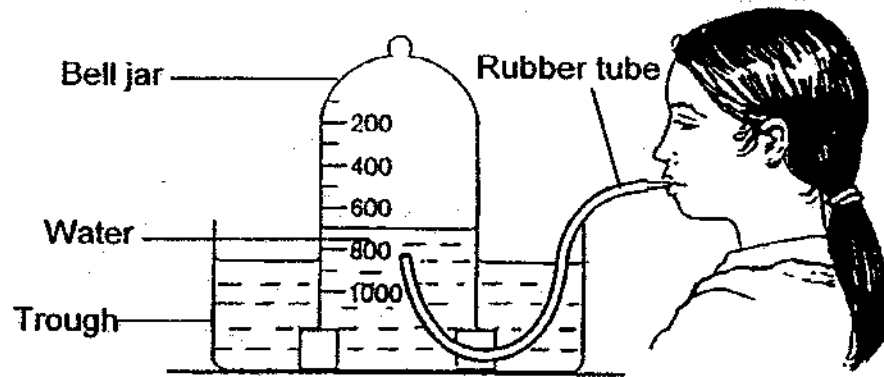
16. Which of the following shows the correct pathway food would take before it is passed out of the body?

- 1) A → C → D
- 2) A → C → D → E
- 3) A → B → C → D → E
- 4) A → B → C → D → E → F

17. Which of the following part of the human body is correctly matched to its function?

	Part of the human body	Function
1)	Brain	Protect the skull
2)	Gullet	Allow exchange of gases
3)	Ribcage	Protect the digestive system
4)	Blood vessels	Carry digested food, oxygen and carbon dioxide

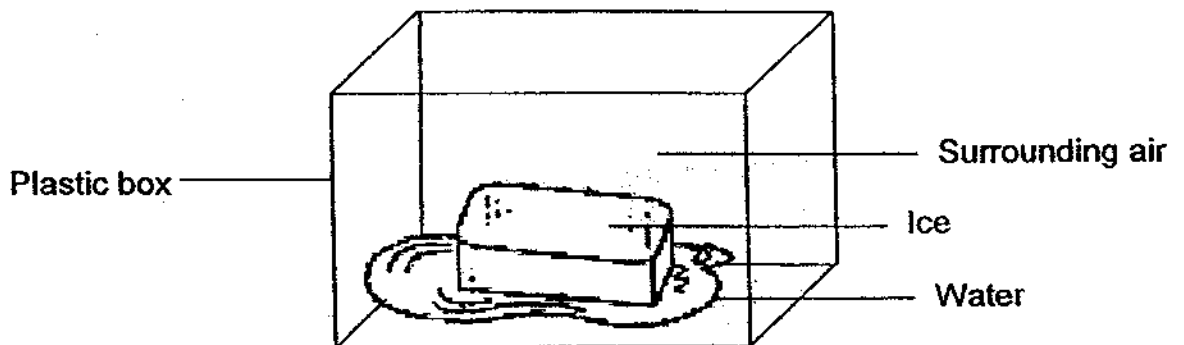
18. Mabel set up an experiment as shown below.



Which of the following changes would she observe when she exhaled into the rubber tube?

- 1) The water turned chalky.
- 2) The water level in the trough fell.
- 3) The water level in the bell jar fell.
- 4) The ~~volume~~ of water in the bell jar increases.
volume

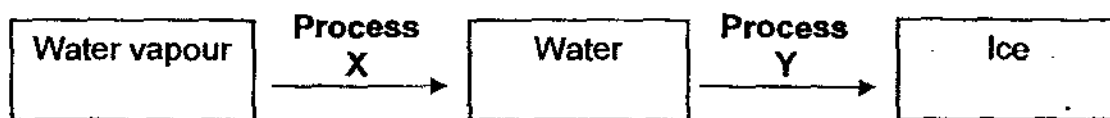
19. A big block of ice is left to melt in a plastic box as shown below.



Which of the following is true when the ice is melting?

	Temperature of the ice	Temperature of the plastic box	Temperature of the surrounding air
1)	Increases	Decreases	Decreases
2)	Increases	Decreases	Increases
3)	Remains constant	Increases	Decreases
4)	Remains constant	Decreases	Decreases

20. Water can change from one state to another as shown below.



Which of the following is true about Process X and Process Y?

- | | Process X | Process Y |
|----|-------------------------|------------------|
| 1) | Water vapour loses heat | Water gains heat |
| 2) | Water vapour gains heat | Water loses heat |
| 3) | Water vapour loses heat | Water loses heat |
| 4) | Water vapour gains heat | Water gains heat |

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

Substances	Melting point (°C)	Boiling point (°C)
A	45	87
B	32	189
C	-5	28

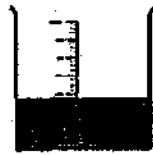
Which of the following observation is definitely correct when the temperature of the substances is 32°C?

- 1) The substance A is in the liquid state.
- 2) The substance B is in the gaseous state.
- 3) The substance C is in the gaseous state.
- 4) The substances, B and C, are in the liquid state.

22. Bob wanted to investigate how adding some substances will affect the boiling point of water. He heated three beakers of water and measured their boiling point.



Water



Water with salt



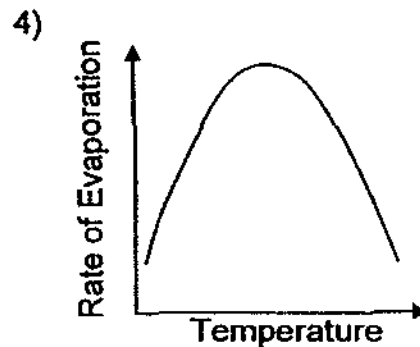
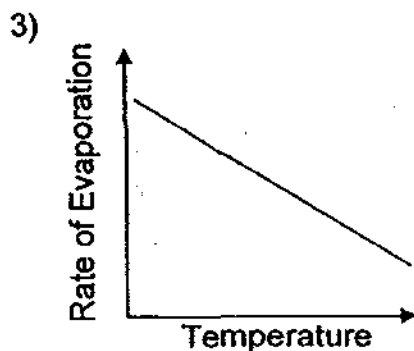
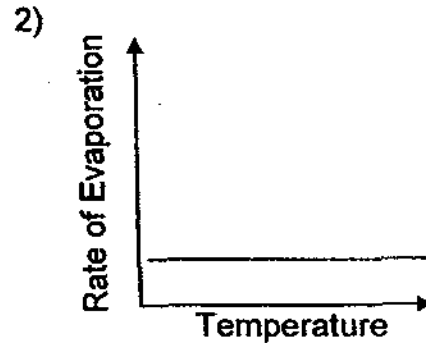
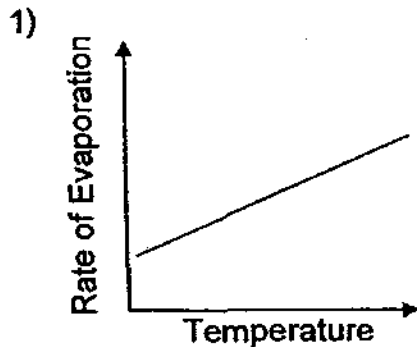
Water with pepper

What variables must he keep constant in order to carry out a fair test?

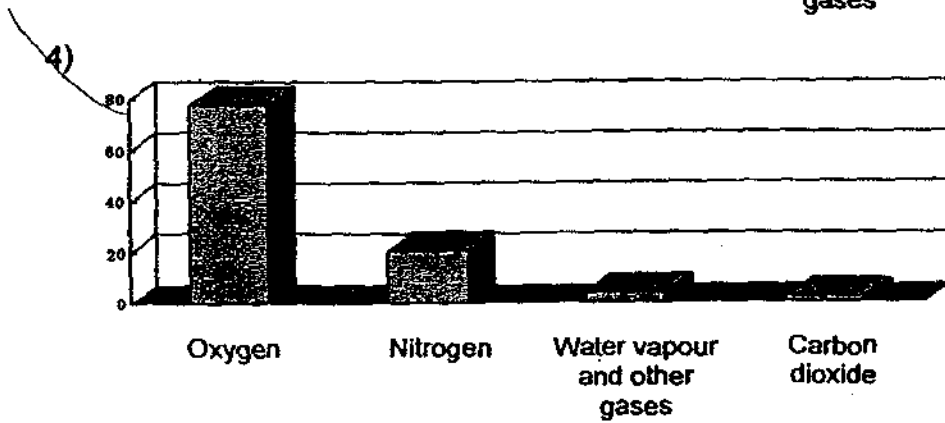
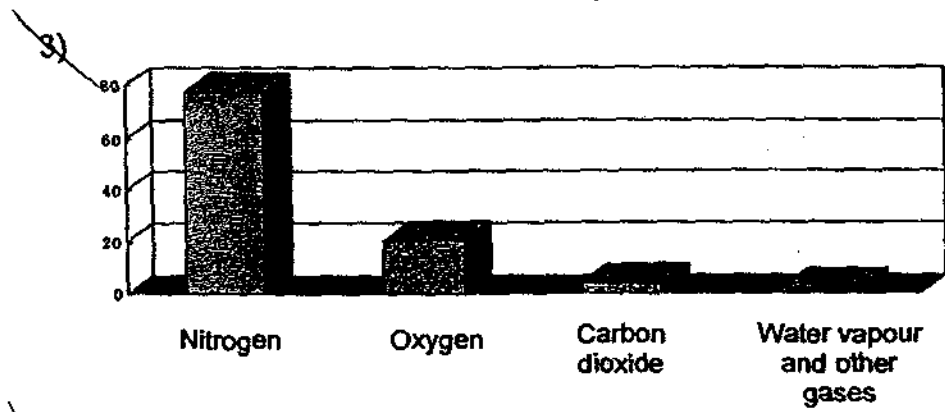
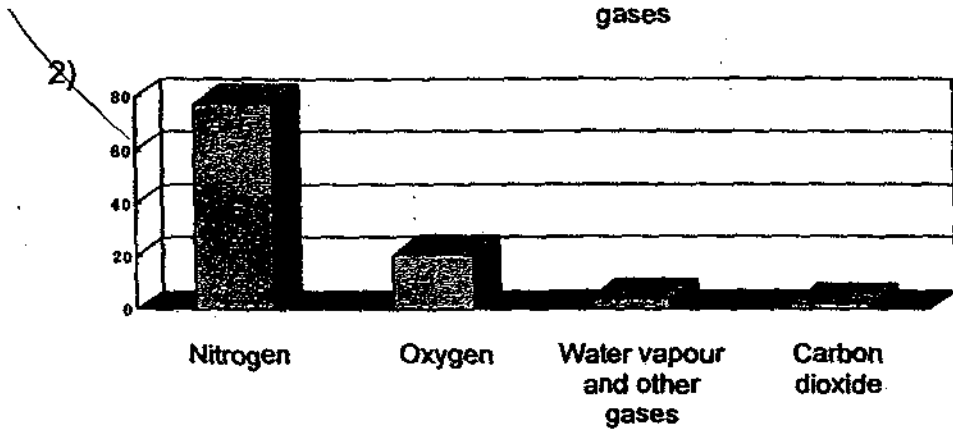
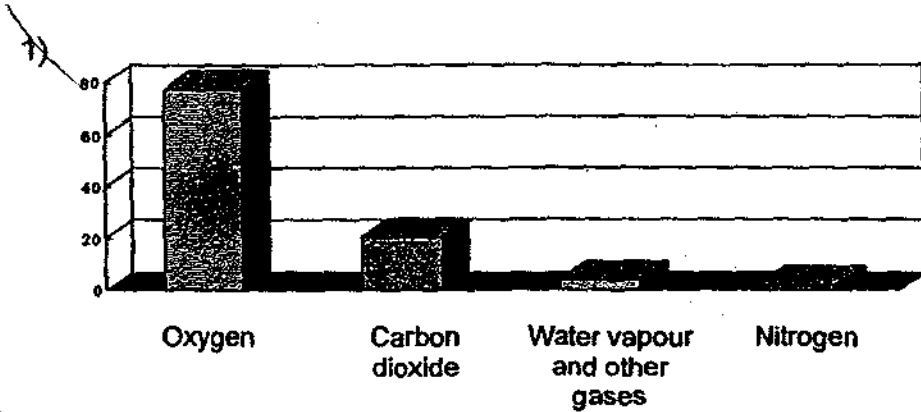
- A Amount of water
- B Mass of substance added
- C Boiling point of the solution
- D Initial temperature of the water
- E Time taken for the solution to boil

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

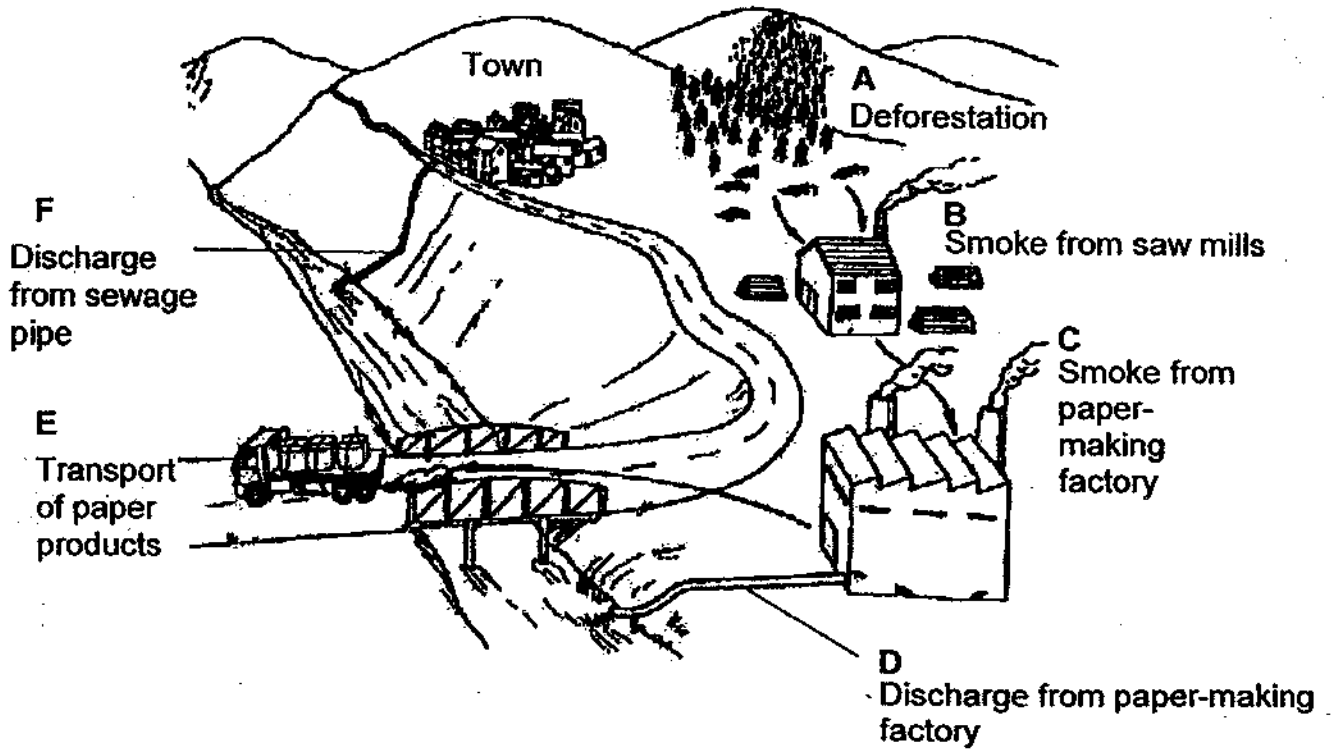
23. Which of the following graphs shows the effect of temperature on the rate of evaporation of water?



24. Which of the following bar graphs represents the composition of the gases in the atmosphere?

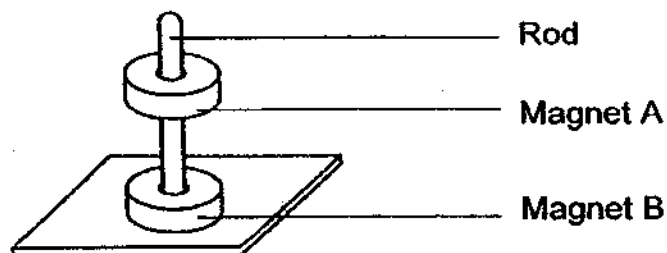


25. The picture below shows some sources of pollution which affect the environment.



Which are direct sources of water pollution?

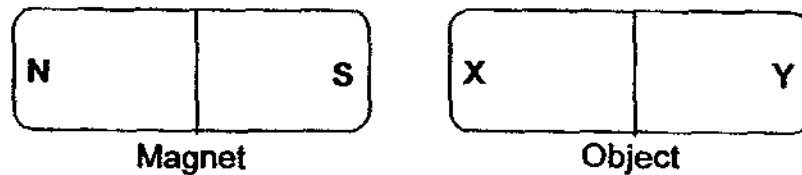
- 1) A and B only
 - 2) B and C only
 - 3) D and F only
 - 4) E and F only
26. Two ring magnets, Magnet A and Magnet B, are put through a rod as shown below.



Why is Magnet A suspended above Magnet B?

- 1) The magnets attract the rod.
- 2) Magnet A is lighter than Magnet B.
- 3) Magnet B is pulled down by gravity.
- 4) The like poles of both magnets are repelling each other.

27. Joe placed a bar magnet near three objects.



He recorded his observations in the table below.

Objects		When the N-pole of the bar magnet is placed near it	When the S-pole of the bar magnet is placed near it
A	End X	No reaction	No reaction
	End Y	No reaction	No reaction
B	End X	Attracted to it	Attracted to it
	End Y	Attracted to it	Attracted to it
C	End X	Attracted to it	Repelled from it
	End Y	Repelled from it	Attracted to it

Based on his observations, which of the following conclusions is definitely correct?

- 1) Object A is made of plastic.
- 2) Object B is made of cobalt.
- 3) Object C is a magnet.
- 4) Object C is made of a non-metal.

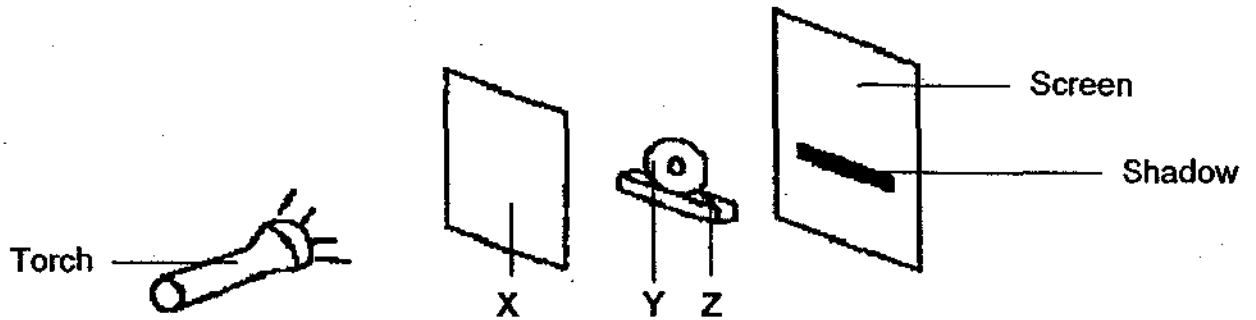
28. Eugene dropped some objects into a container of water. The diagram below shows the resting positions of the objects.



Which of the following is the most likely aim of Eugene's experiment?

- 1) To find out if the objects are light or heavy.
- 2) To find out if the objects will sink or float in water.
- 3) To find out if the objects are made of metals or non-metals.
- 4) To find out if the objects are made from things that were once alive.

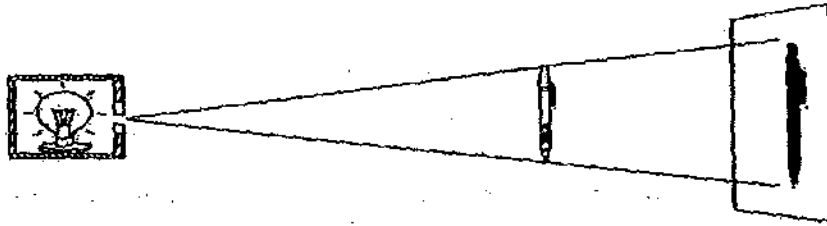
29. Michelle sets up an experiment to find out how much light is allowed to pass through the objects, X, Y and Z. When the torch is shone, she observed the following on the screen.



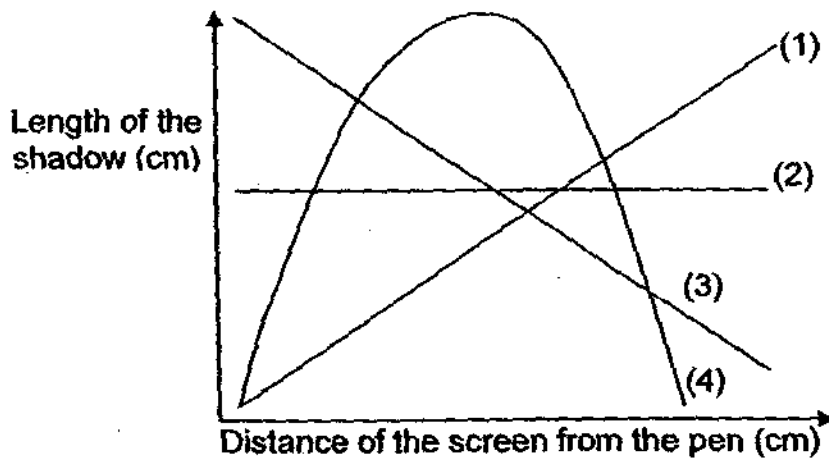
Which of the following sets of properties is correctly matched to the above objects?

	X	Y	Z
1)	Allows most light to pass through	Allows most light to pass through	Does not allow any light to pass through at all
2)	Allows some light to pass through	Allows most light to pass through	Does not allow any light to pass through at all
3)	Allows most light to pass through	Does not allow any light to pass through at all	Allows some light to pass through
4)	Does not allow any light to pass through at all	Allows most light to pass through	Allows some light to pass through

30. Study the following set-up.



Which of the following shows the relationship between the distance of the screen from the pen and the length of the shadow?



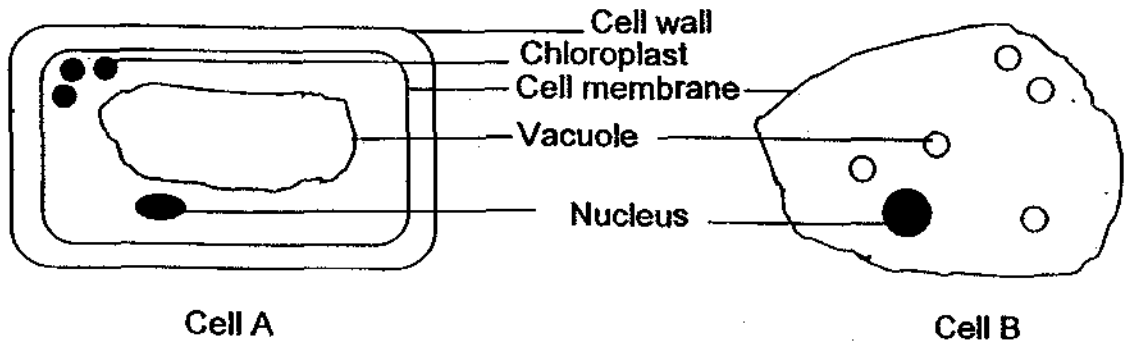
--- End of Booklet A ---

✓21

Section B (40 marks)

For the questions, 31 to 46, write your answers in the spaces provided:

31. Study the diagrams below.



a) Based on the diagrams, state 2 differences between Cell A and Cell B. [2]

Differences between Cell A and Cell B		
	Cell A	Cell B
(i)		
(ii)		

b) Based on your answers in (a), which of them is an animal cell? [1]

Cell _____

32. Plants have tubes that transport water and mineral salts from the

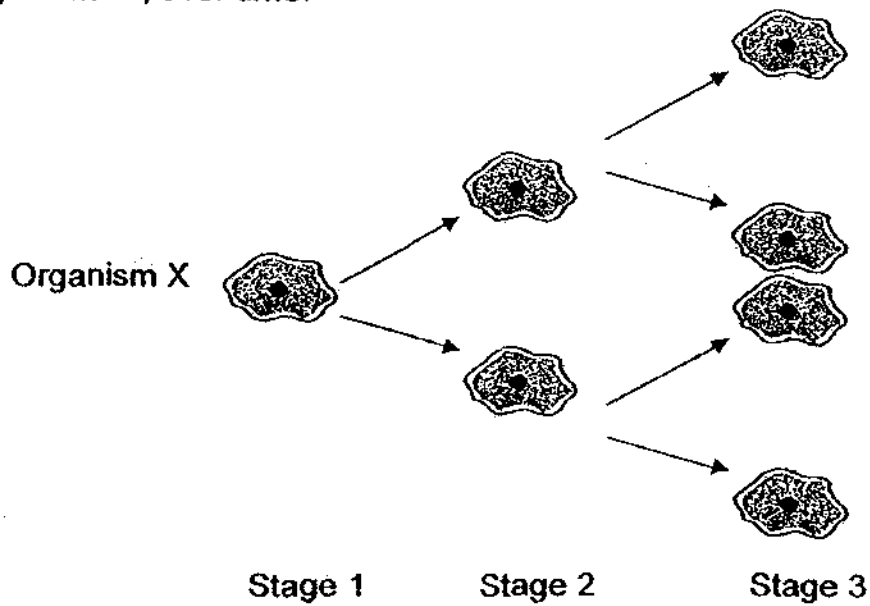
_____ to the rest of the plant. They are called

_____ tubes. They also have tubes that transport food from

the _____ to the rest of the plant. They are called

_____ tubes. [2]

33. Study the diagram below of what happens to a single-celled organism, "Organism X", over time.



a) What is the name of the process shown above? [1]

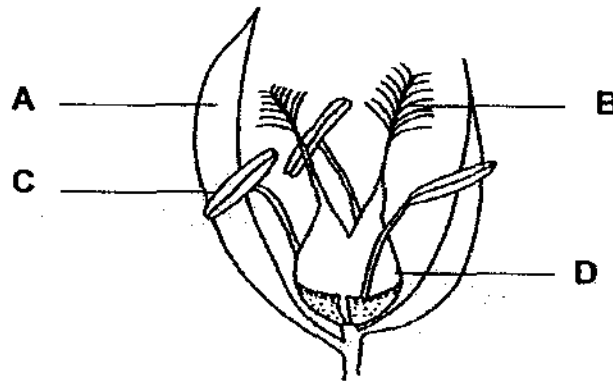
b) How many "Organism X" would there be at Stage 5? [1]

c) Why is this process necessary for "Organism X"? [1]

34. Sam classified some organisms into 2 groups. Complete the table with the headings, "Unicellular" and "Multicellular" and the organisms, "Elodea" and 'Mudskipper'. [2]

_____ Organisms	_____ Organisms
Amoeba	Staghorn's fern
Paramecium	Mushroom
Yeast	Ostrich

35. The diagram below shows the parts of a flower.



a) Which part, A, B, C or D, produces pollen grains and receives pollen grains during pollination respectively? [1]

Produces pollen grains : _____

Receives pollen grains : _____

b) Identify part D. What will it develop into after fertilisation? [1]

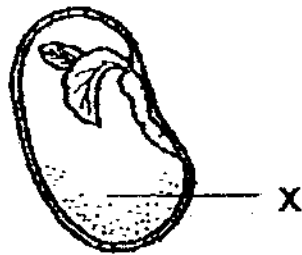
36. Study the diagram of a seed below.



a) How is the seed dispersed? [1]

b) Explain your answer in (a). [1]

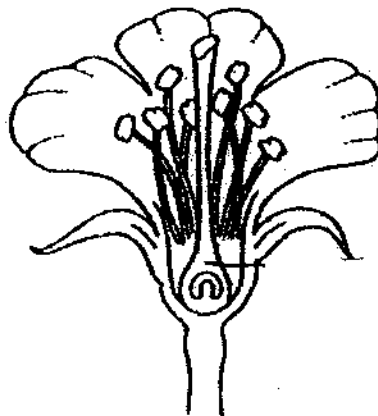
37. The diagram below shows a germinating seed.



a). Name the part labelled X. [1]

b) What is the primary function of X? [1]

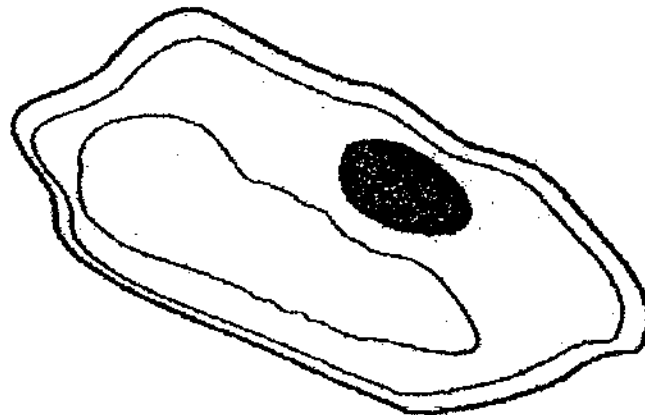
38. Study the cross section of a flower below.



a) When one of the parts of the flower is removed, the flower cannot be fertilised. Draw a line in the picture above to label this part and identify it. [1]

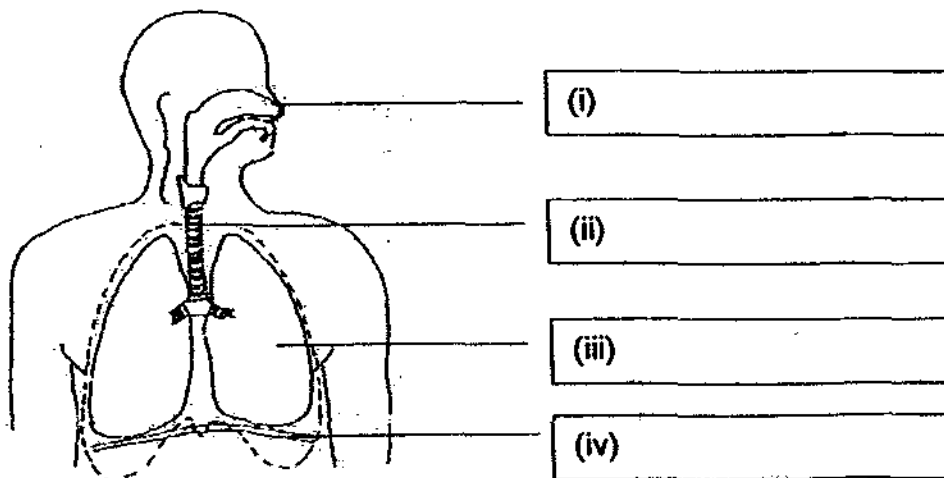
b) Explain your answer in (a). [1]

39. Robin observed a cell from a plant as shown in the diagram below.



In which part of the plant are you likely to find the cell? Give a reason for your answer. [2]

40. The diagram below shows the human respiratory system.



a) Label the parts of the human respiratory system in the boxes provided. [2]

b) Which part of the respiratory system will expand and which part will contract when a person breathes in? [2]

Expand: _____

Contract: _____

41. Complete the table about plant systems and human body systems. [4]

		Plant Systems	Human Body Systems
(a)	Materials that are transported by the transport systems	Water, mineral salts and _____	Oxygen, carbon dioxide and food
(b)	Parts that make up the transport systems	Xylem tubes and phloem tubes	Blood vessels, blood and _____
(c)	Gas that is given out during respiration in the day	_____	Carbon dioxide
(d)	Part which allows the exchange of gases	_____	Mouth and nostril

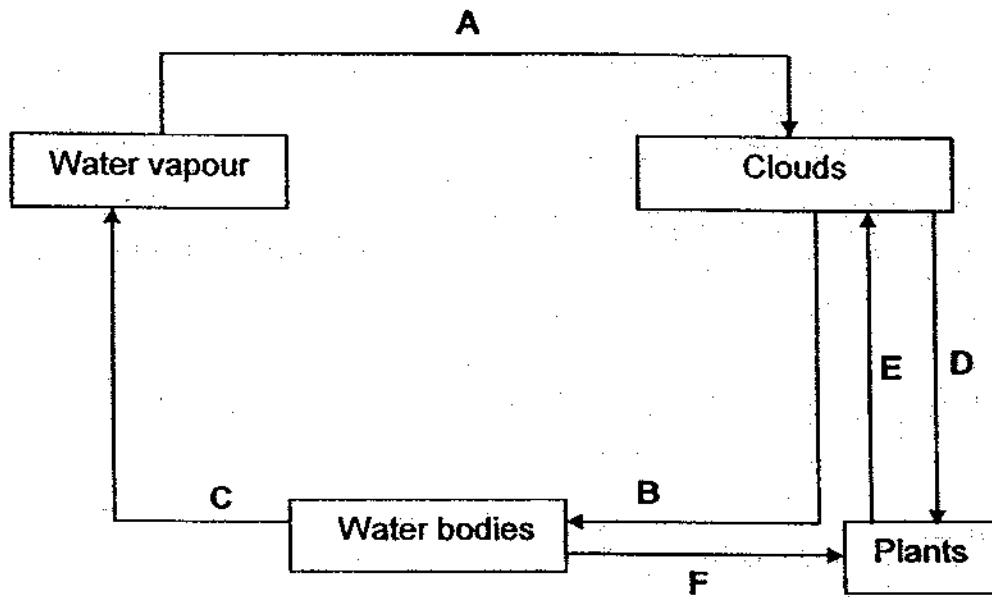
42. Mike, Caleb and Peter observed a kettle of boiling water. Each made an inference.

Mike : There is more water vapour in the air now.
 Caleb : The mist coming out from the spout is a gas.
 Peter : The temperature of the boiling water is rising.

a) Which boy(s) made the correct inference(s)? [1]

b) Explain why the other inference(s) was/(were) wrong. [2]

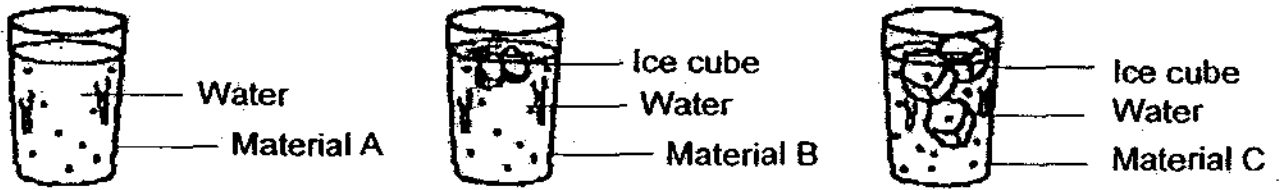
43. Study the water cycle below.



Fill in the blanks with the letters, A, B, C, D, E and F, to depict the processes of the water cycle. [3]

- a) Change from liquid state to gaseous state: _____
- b) Change from gaseous state to liquid state: _____
- c) No change in state: _____

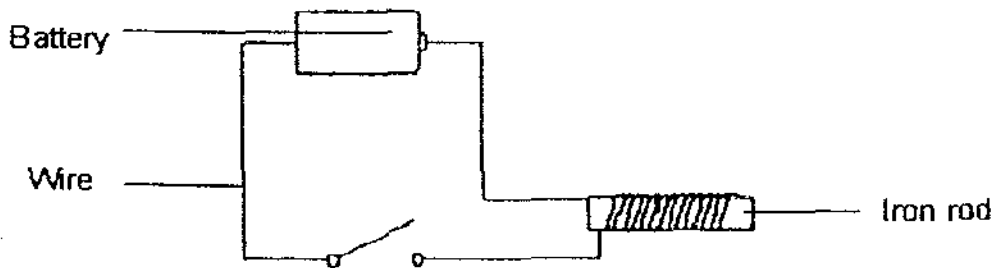
44. Matthew wants to investigate which material, A, B or C, is most suitable for keeping his drinks cold. He puts an equal amount of water and ice cubes in each cup made using the different materials. He places them in the science laboratory. The results after 10 minutes are shown below.



a) Which material, A, B, or C, is most suitable for keeping his drinks cold? [1]

b) Explain your answer in (a). [1]

45. May made an electromagnet as shown below.

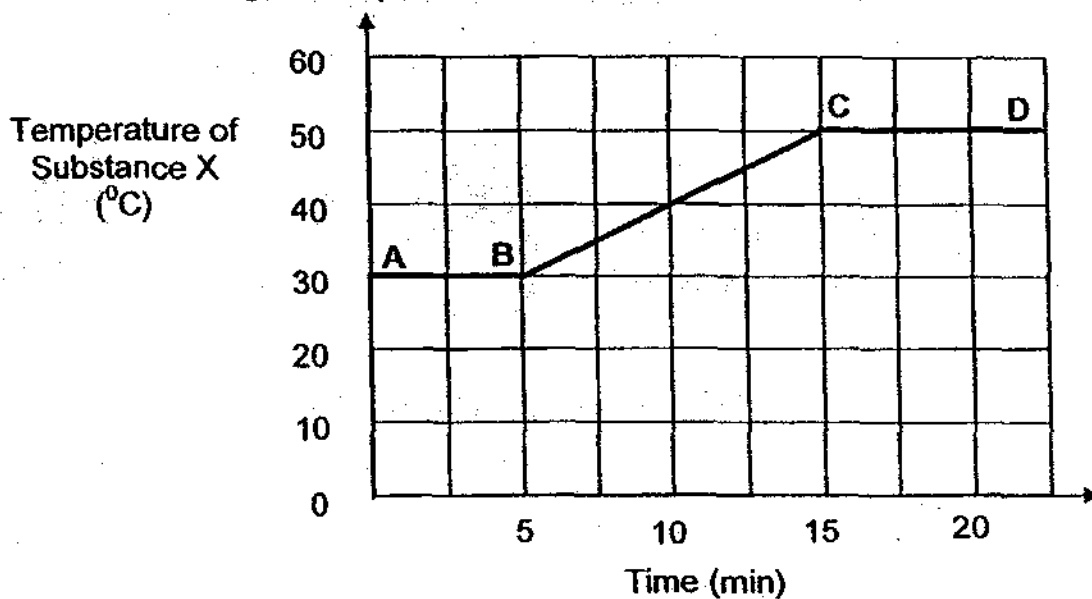


List two things that May can do to increase the strength of the electromagnet. [2]

a) _____

b) _____

46. Substance X was heated over a flame for 25 minutes. The graph below shows the change in temperature of Substance X.



- a) Identify the process at AB. [1]

- b) Identify the state of Substance X at BC. [1]

--- End of Booklet B ---

ANSWER SHEET

EXAM PAPER 2009

SCHOOL : TAO NAN PRIMARY
SUBJECT : PRIMARY 5 SCIENCE

TERM : SA1

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

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

31)a)i)Contains chloroplast.
Larger vacuole than cell B.
b)B.

Do not contain chloroplast.
Smaller vacuole than cell A.

32)roots, xylem, leaves, phloem

33)a)Cell division.
b)16.
c)To ensure the continuity of its own kind.

34)Unicellular Organisms

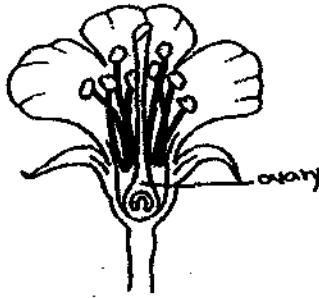
Multi-cellular Organisms
Mudskipper
Elodea

35)a)C, B
b)Ovary. Develops into a fruit.

36)a)By wind.
b)It has a thin papery piece attached to the seed helps it to catch the wind.

37)a)Seed led.
b)It provides food for the seedling.

38)a)



b)Ovary is the one that becomes a fruit when fertilized. If it is removed fertilization will not be able to take place.

39)Roots. It is found in the roots because the cell has no chloroplast which gives the plant its green colour. Roots are brown, so their cells do not contain chloroplast.

40)a)i)nose ii)windpipe iii)lungs iv)diaphragm

b)Expand: lungs.

Contract: diaphragm.

41)a)food b)heart c)carbon dioxide d)stomata

42)a)Mike.

b)Mist is a liquid and not a gas. The temperature of boiling water remains constant.

43)a)C b)A, E c)B, D

44)a)Material C.

b)The ice cubes in the cup that is made of material C melted the slowest among the three cups. This means that Material C is the poorest conductor of heat.

45)a)Put more batteries.

b)Increase the number of coils around the iron rod.

46)a)Melting.

b)Liquid.