AI TONG SCHOOL

2008 SEMESTRAL ASSESSMENT (1)

PRIMARY FIVE SCIENCE

DURATION : 1hr 45 min

DATE: 9th May 2008

INSTRUCTIONS

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

Name : _____( )

Class : Primary_____

Parent's Signature : _____

Date : _____

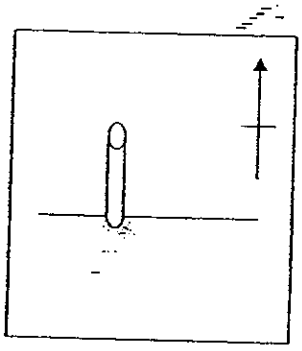
MARKS	/100

Section A (30 x 2 marks)

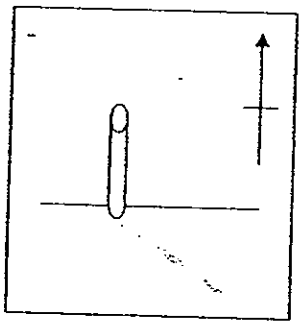
For each question from 1 to 30, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). **Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.**

1. Elma took some pictures of a stick at different times on a sunny day. Which one of the following pictures was taken at 9.45 a.m. on that day?

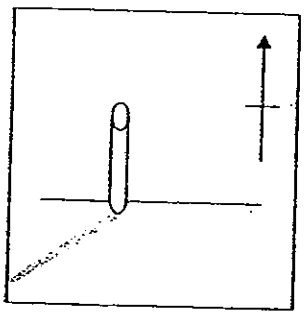
(1)



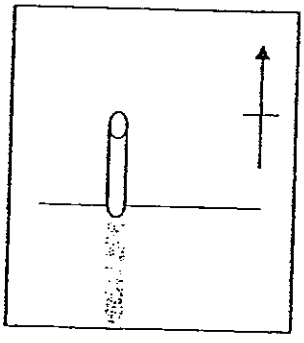
(2)



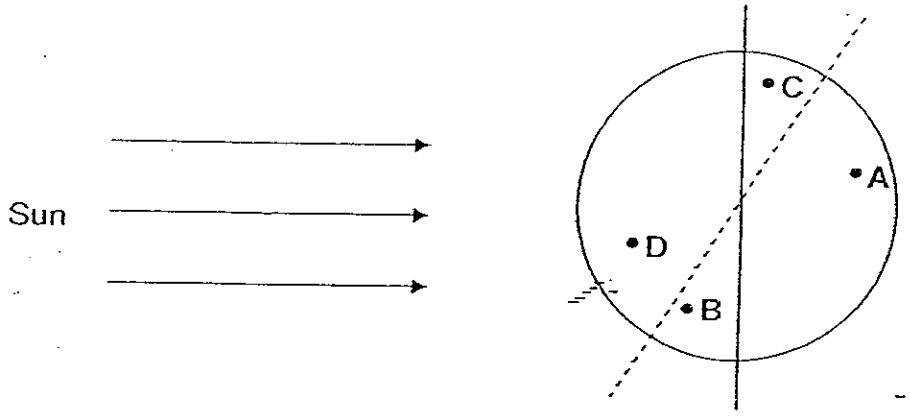
(3)



(4)



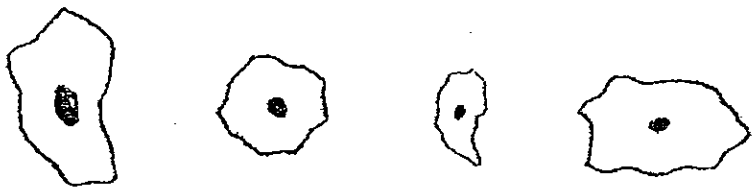
2. Ken and Pete were talking over the telephone. Ken told Pete that it was daytime from where he was. However, Pete said he was experiencing night time.



Based on the diagram of the Earth above, where would Ken and Pete be when they were talking over the phone?

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

3. The diagram below shows some cells found in the body parts of Animal X.



Which of the following statements about the cells are <u>true</u>?

A Each cell has cytoplasm.
B Each of the cell has cell wall.
C Each of the cell is a unit of life.
D They come in different shapes and sizes.

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

4. How many cells will be produced from a parent cell after 4 cell divisions?

(1) 8
(2) 10
(3) 16
(4) 32

5. Which of the following statements about cell division are true?

A Only animal cells undergo cell division.
B The process allows more cells to be reproduced.
C The process takes place continuously in living things.
D The process allows replacement of old and damaged cells in our bodies..

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

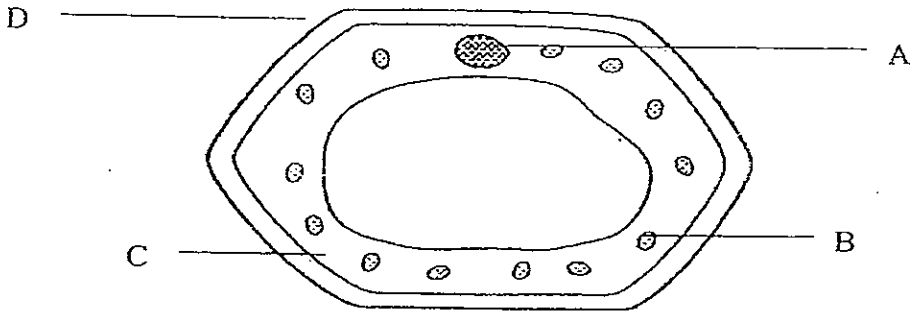
6. Both Jason's parents do not have double eyelids but Jason has. Which of the following person could have passed the inheritable trait to him?

(1) brother
(2) stepfather
(3) sister
(4) paternal grandfather

7. Which of the following is **not** a characteristic that can be passed on from parents to their children?

(1) small eyes
(2) thick lips
(3) attached earlobes
(4) long fingernails.

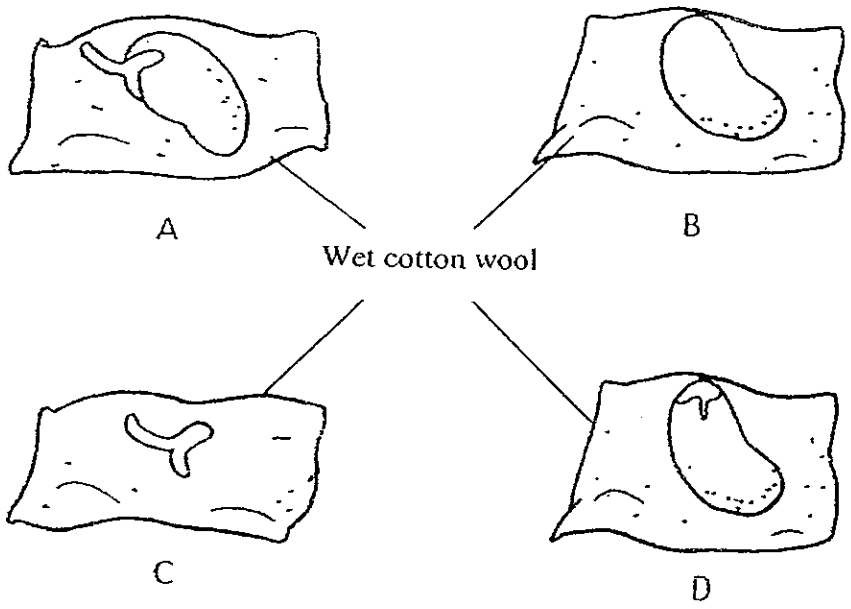
8. Study the cell shown below.



Which is the part that contains inheritable traits that could be passed onto the young?

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

9. Jack carried out an experiment with 3 bean seeds. He separated the 2 seed leaves of one seed as shown in Diagram A and B. He removed the baby plant from the second seed as shown in Diagram C. He placed the third seed on a piece of cotton wool as shown in Diagram D.



Which of the diagram(s) above will grow into a new plant?

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

10. Which one of the following does not disperse its seeds in the same way as the others?

(1) lalang
(2) shorea
(3) angsana
(4) mimosa

11. Plants scatter their seeds in order to _____.

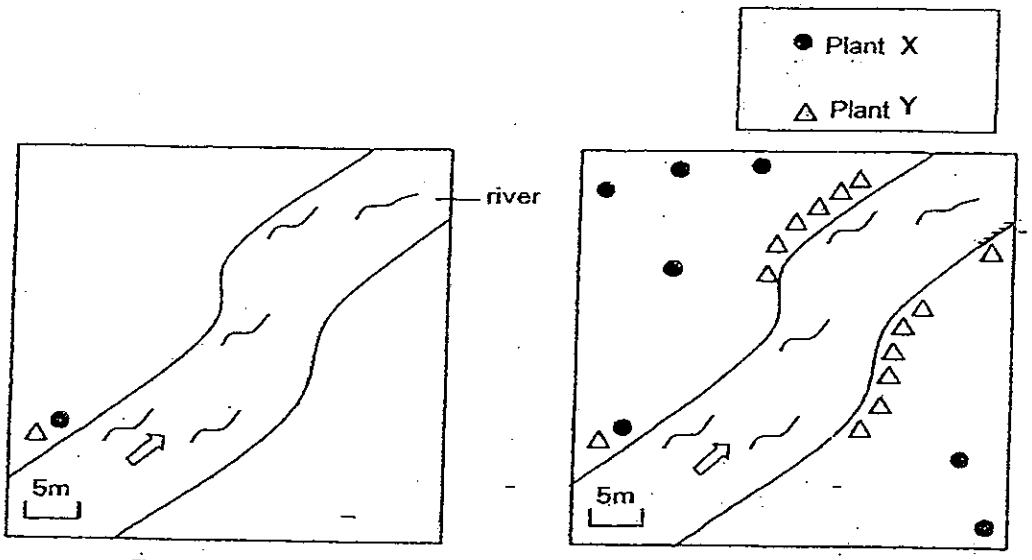
A prevent competition for nutrients
B avoid overcrowding
C produce more varieties of flowers
D ensure that fertilization can take place

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

12. Which of the following sequence of events shows the correct order of the development of a flowering plant?

(1) adult plant → fruits → germination → young plant → seed
(2) adult plant → fruits → fertilization → germination → seed
(3) seed → germination → young plant → fertilization → adult plant → fruits
(4) seed → germination → young plant → adult plant → fertilization → fruits

13. A scientist recorded the number of wild plants X and Y on a piece of land. After a few months, he visited the piece of land again. His observations are shown in the diagrams below.



First observation

After a few months

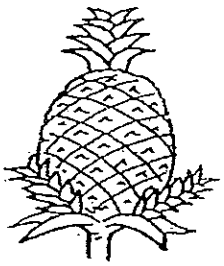
What are the characteristics of the fruits of plants X and Y respectively?

	Plant X	Plant Y
(1)	stiff hairs	wing-like structures
(2)	wing-like structures	fibrous husk
(3)	fibrous husk	bright red outer covering
(4)	bright red outer covering	stiff hairs

14. In sexual reproduction,

(1) a cell from only one parent is needed.
(2) the cells increase in size.
(3) the fusion of male and female cells take place.
(4) a cell divides twice to form six cells.

15. The picture below shows an edible plant.



Which of the following plants can also reproduce from the same plant part as the plant shown above?

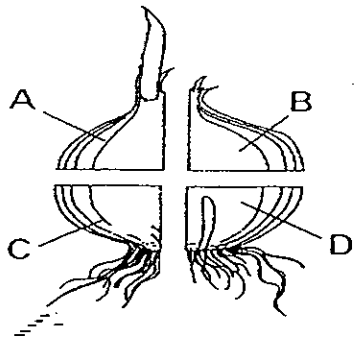
(1) heliconia
(2) potato
(3) African violet
(4) ginger

16. Brian cut up a potato and realized that there were no seeds in it. He observed that there were buds and leaf scars on the potato. He buried the potato in the ground and watered it for a fortnight. Soon, a young plant was growing from the ground. Which of the following conclusions about the potato can he make?

A It is a non-flowering plant.
B The potato is a fruit without seeds
C The potato reproduces from the roots.
D The potato reproduces from the underground stem.

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

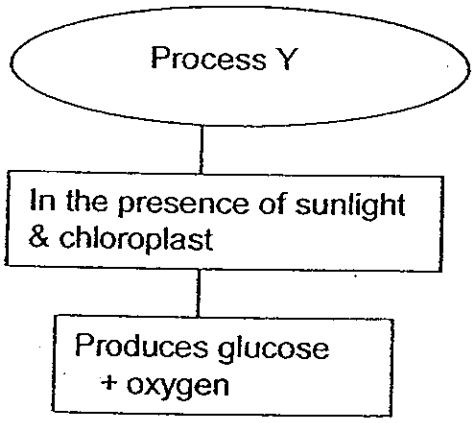
17. An onion bulb is cut into four pieces A, B, C and D as shown in the diagram below.



Which one of the four pieces can reproduce?

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

18. Study the chart below

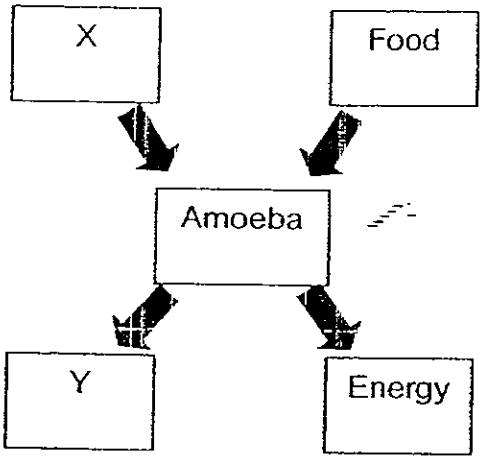


Which of the following organisms can carry out process Y?

A moss
B banana plant
C rain tree
D toadstool

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

19. The flow chart below shows how an amoeba released energy from food.



What are X and Y?

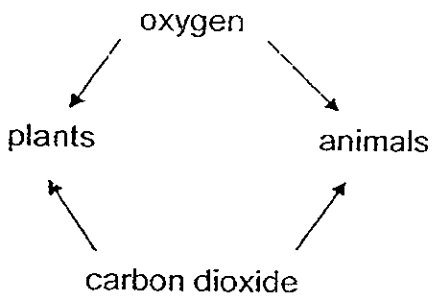
	X	Y
(1)	carbon dioxide	water
(2)	oxygen	carbon dioxide
(3)	oxygen	glucose
(4)	water	glucose

20. Which of the following is a source of energy for plants?

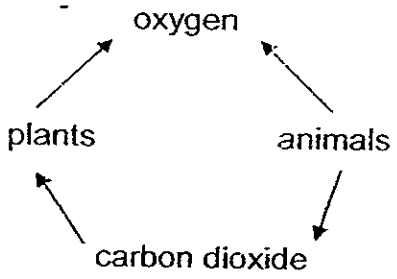
(1) sun
(2) oxygen
(3) glucose
(4) carbon dioxide

21. Which one of the following diagrams correctly shows the exchange of gases between living things and the environment in the day?

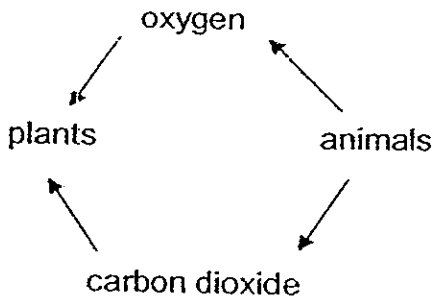
(1)



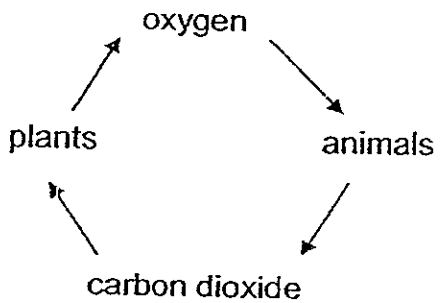
(2)



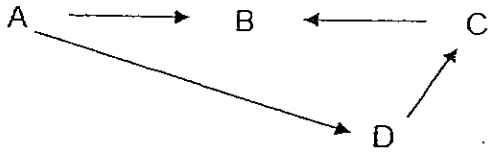
(3)



(4)



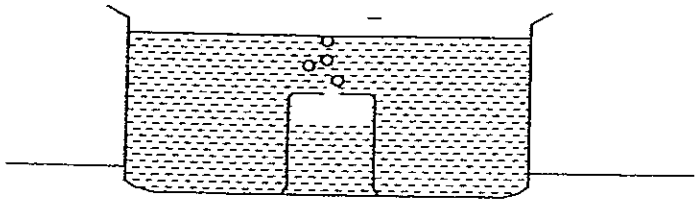
22. The diagram below shows how energy is transferred from one organism to another.



Which one of the organisms, A, B, C and D feeds on plants only?

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

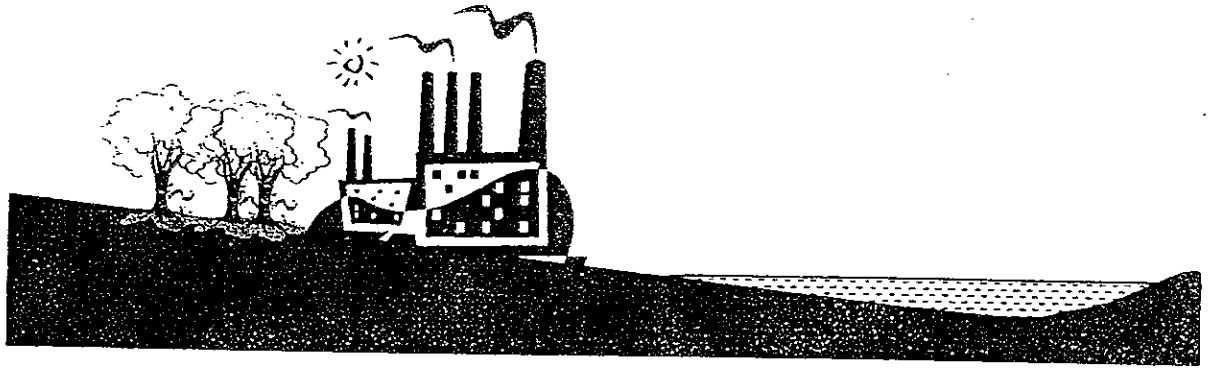
23. The setup below shows a plastic cup that is immersed into a tub of water. A hole was made at the base of the cup. Air bubbles are seen to be coming out through the hole and the water level in the cup is slowly rising.



Which one of the following statements is likely to be the hypothesis of the experiment?

(1) Air occupies space.
(2) Air has a definite volume.
(3) Water has no definite shape.
(4) Water has a definite volume.

24. The picture below shows a factory located near a lake. Two days ago, an accident happened in the factory and a large amount of green toxic chemical waste was spilled into the lake.

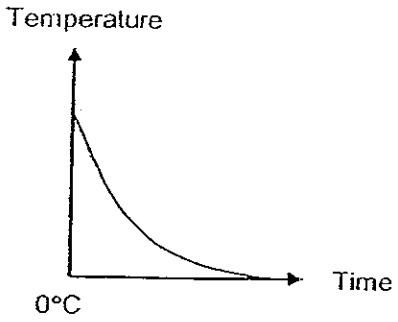


Which one of the following describes the condition of the water in the lake now?

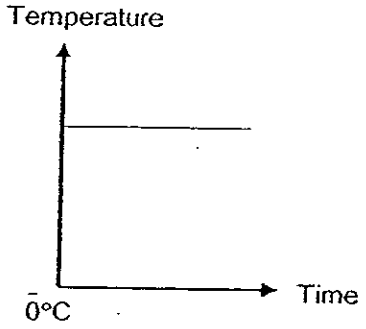
	Presence of living organisms	Colour	Odour
(1)	Yes	No	No
(2)	No	Yes	Yes
(3)	No	No	Yes
(4)	Yes	Yes	No

25. A hot cup of tea is left on the table in a room. Its temperature is measured at every one minute interval. Which one of the following graphs best shows the temperature of the hot tea over a period of time?

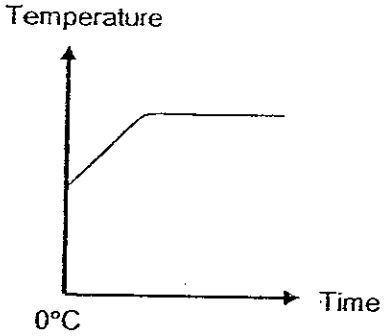
(1)



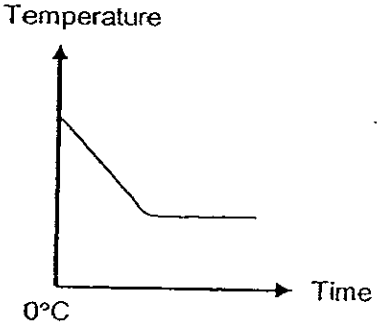
(2)



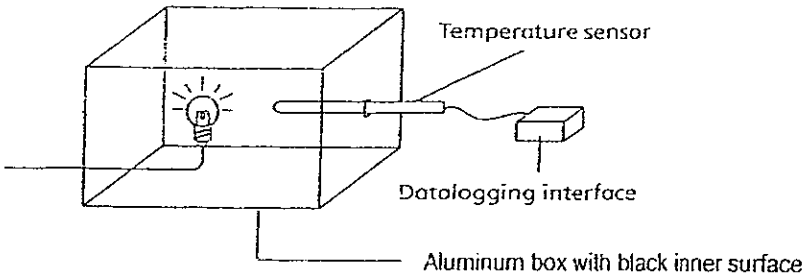
(3)



(4)



26. Tom set up the following experiment in the Science lab.



He turned on the light bulb and recorded the temperature for ten minutes. Then he repeated the experiment using the following boxes of the same size.

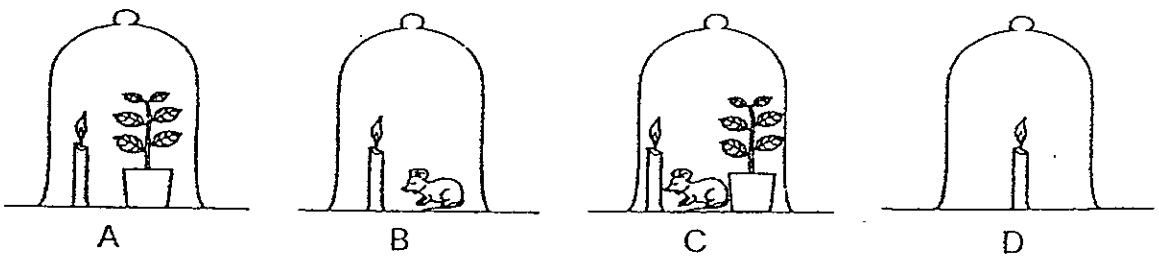
Material of Box	Colour of the inner surface of box
aluminum	white
aluminum	green

Which of the following statements are true of the above experiment?

A The light bulb is the source of heat.
B This is not a fair experiment as only one variable has been changed.
C The results of the experiment will be different if it is conducted in an open field.
D The experiment aims to find out if the size of the box affects the temperature inside it.

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

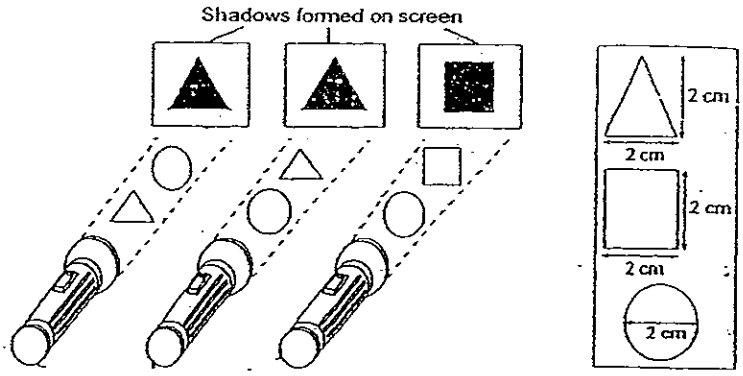
27. Zhi Jie conducted an experiment by setting up bell jars A, B, C and D in a dark room.



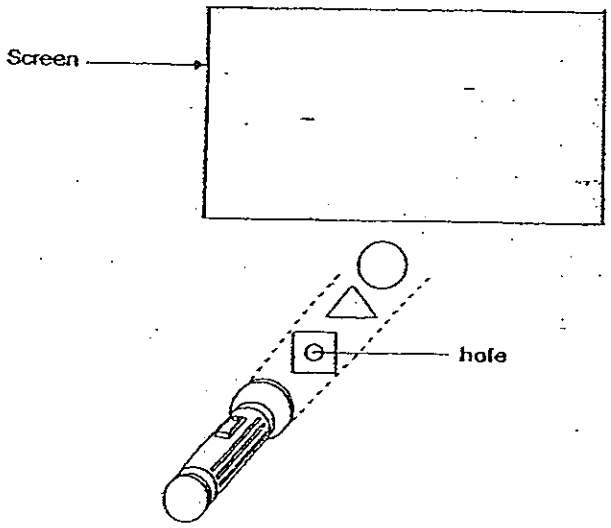
Which candle would go off first?

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

28. The diagram below shows the shadow produced when two different objects were placed at different positions between a screen and a torch at any one time.



A hole is then cut from the square object. The square, triangular and circular objects are then set up as shown in the diagram below.



Which one of the following shadows will appear on the screen?

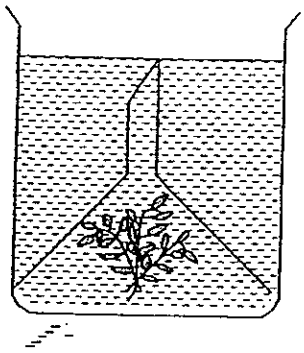
(1) 

(2) 

(3) 

(4) 

29. A class carried out an experiment on photosynthesis. They set up the apparatus as shown below. When they put the set up under the light, they observed bubbles in the water.



What can affect the number of bubbles produced by the plant?

A The brightness of the light.
B The amount of starch.
C The amount of water.
D The amount of oxygen.

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

30. Kate wants to find out which type of liquid will take the shortest time to boil over a gas burner. Which variables must she keep the same?

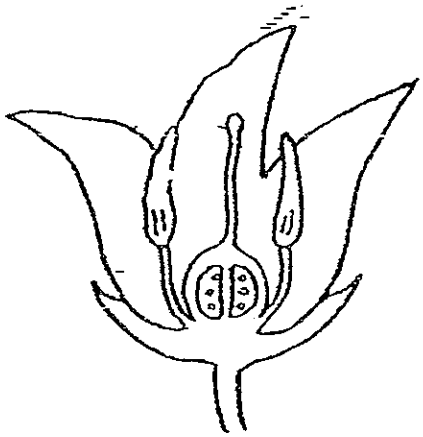
A Type of liquid used.
B Amount of liquid used.
C Type of container used to hold the liquid.
D Temperature of liquid at the start of the experiment.

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

Name: _____ ( )
Class P5 ( )

Section B: 40 marks
Read the questions carefully and write down your answers in the spaces provided.

31. The diagram below shows a picture of a flower.



(a) Label "anther" in the diagram above. [1]

(b) What is the role of the anther in the process of pollination? [1]

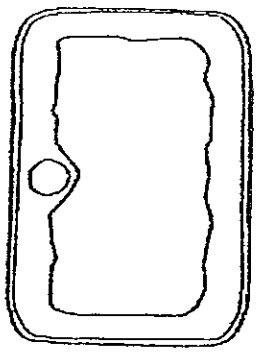
_____

32. The following short statements describe either respiration or photosynthesis in plants. Write either 'Photosynthesis' or 'Respiration' in the box beside each description. [2]

Food is manufactured	
Carbon dioxide is produced	
Light is required	
Oxygen is taken in	

4

33. Ms Lee, the Science teacher shows her class a cell from a green plant.



(a) From which part of the plant do you think Ms Lee could have extracted the cell? [1]

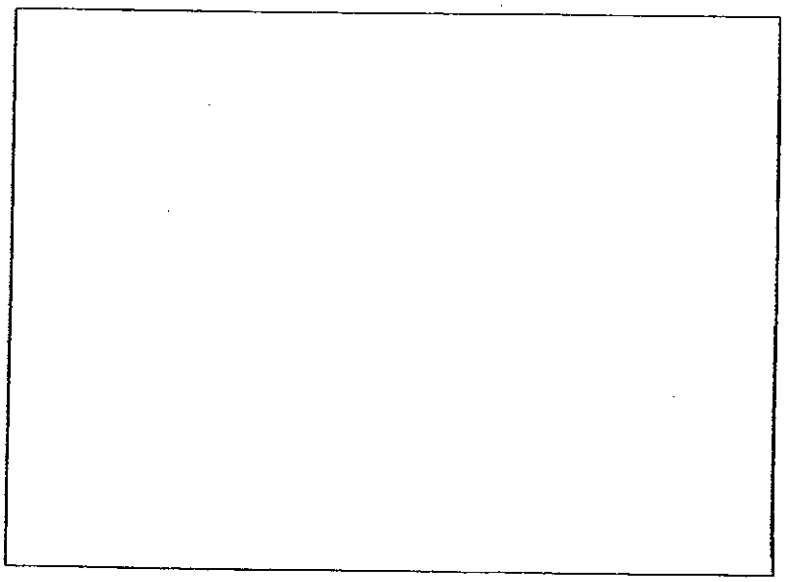
_____

_____

(b) What can a leaf cell do that the cell in (a) cannot. [1]

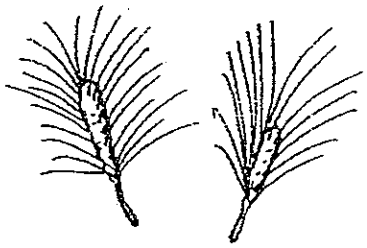
_____

(c) Draw a cell taken from a leaf in the box below.
Label the part that gives the leaf its green colour. [1]



3

34. Study the plant part shown below.



(a) Based on your observation, how do you think they are dispersed? Explain your answer. [1]

_____

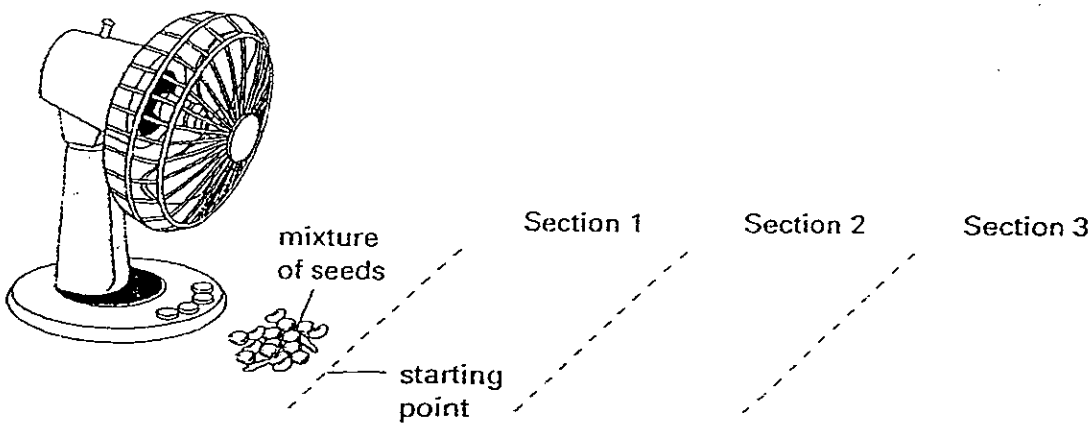
(b) Name another plant which has fruits and seeds of the same characteristics and disperse in the same way. [1]

_____

_____

2

35. Jared had three types of seeds, A, B and C that are dispersed by wind. He took ten seeds of each type, mixed them together and placed them on a table in front of a fan for 30 seconds. Then he counted the number of each type of seed in the sections he had marked out on the tabletop.



His results are recorded in the table below.

Type of seeds	Average mass of seed (g)	No. of seeds		
		Section 1	Section 2	Section 3
A	1	0	1	9
B	1.6	2	8	0
C	2.1	7	3	0

(a) Does the mass of the seeds affect the distance the seeds are blown? Why do you say so? [1]

_____

_____

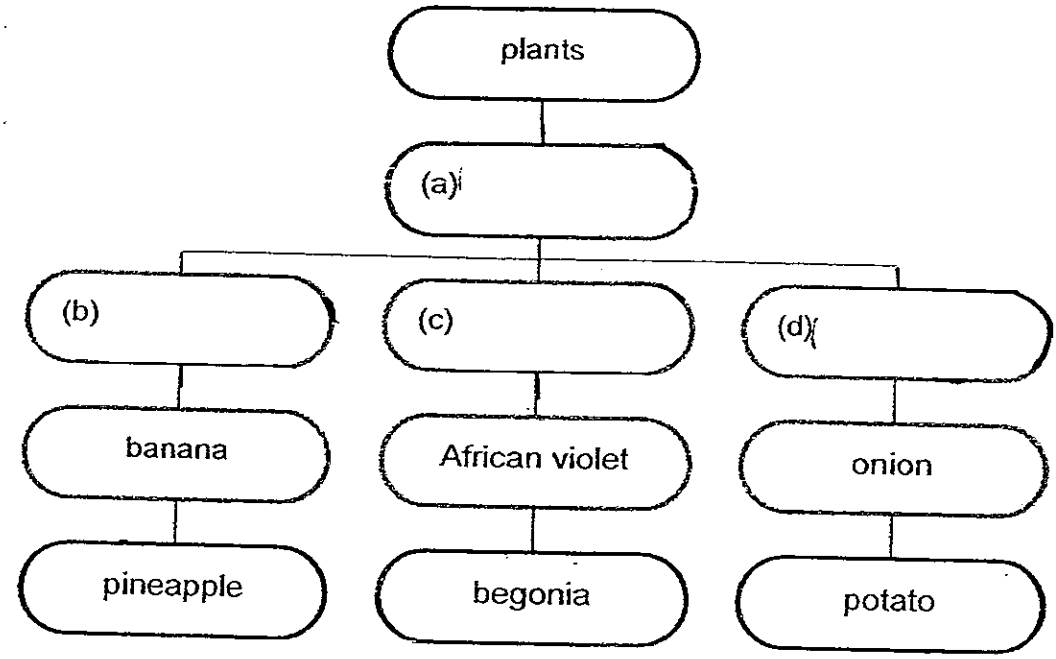
(b) How can Jared ensure the accuracy of his results? [1]

_____

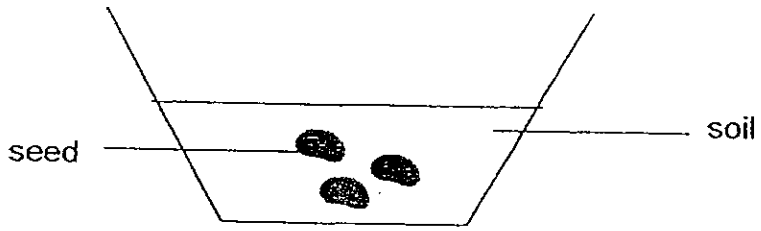
_____

2

36. Complete the chart to show how plants can be classified. [2]



37. Mary collected some string bean seeds from her Science teacher in school. She placed them into a small container and covered them with moist soil as shown in the diagram below.



The container was left in a dark room for a few days. Soon, Mary noticed that the root and shoot had appeared.

(a) What is the **process** that has taken place? [1]

_____

(b) What were the conditions that made the process in part (a) possible? [1]

_____

_____

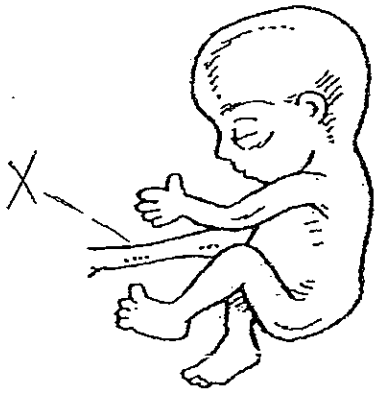
(c) How are seed leaves important to the seedling? [1]

_____

_____

3

38. Mrs Lim is pregnant. The diagram below shows her foetus.



(a) Name X [1]

_____

_____

(b) Why is X important to the foetus? [2]

_____

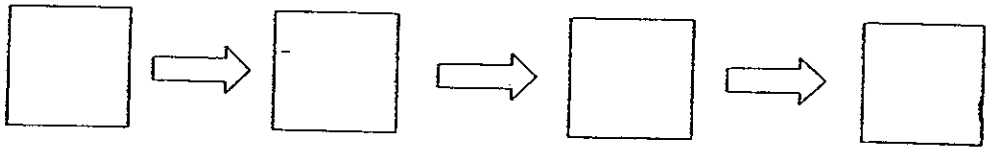
_____

3

39. S, T, U and V are 4 organisms found in the garden.

(a) Based on the information given below, fill each box with the correct letters to show the energy path. [1]

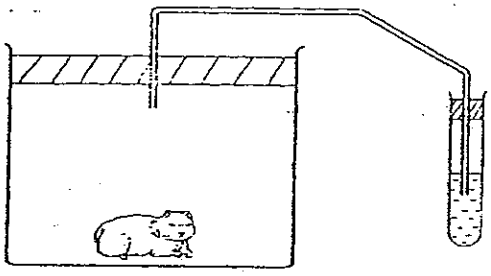
S	An animal eater
T	A herbivore
U	A plant
V	Feeds on S



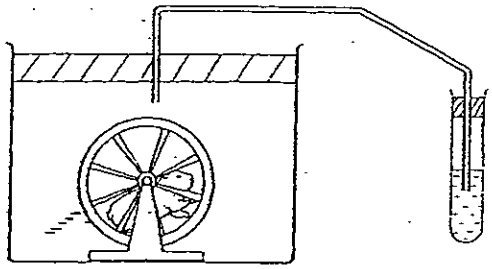
(b) If the plants died, how would the population of T be affected? [1]

2

40. Carol wanted to carry out an experiment with her hamster and set up her investigation as shown in the diagram below.



Setup A



Setup B

(a) What was Carol's hypothesis for the experiment? [1]

_____

_____

(b) Identify the liquid in the test-tubes in setups A and B. [1]

_____

_____

(c) How is the appearance of the liquids in setups A and B different at the end of her experiment? [1]

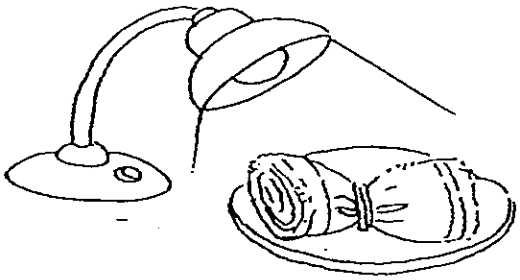
_____

_____

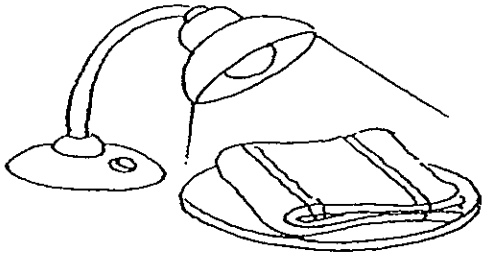
3

41. The diagrams below show two identical towels, A and B. They have been soaked in 60 ml of water and the initial mass of each towel is recorded.

Then towel A is rolled up, tied with a string and placed on a plastic plate. Towel B is folded and put on a plastic plate. Both towels are placed under a table lamp. The masses of towels A and B are measured again after two hours.



towel A



towel B

(a) What is the aim of the experiment? [1]

_____

_____

(b) Identify two variables that have been kept constant in the above experiment.

(i) _____ [1]

(ii) _____ [1]

(c) The results of the above experiment are recorded in the table below.

Towel	Mass in the beginning (g)	Mass after 2 hours (g)
A	65	52
B	65	48

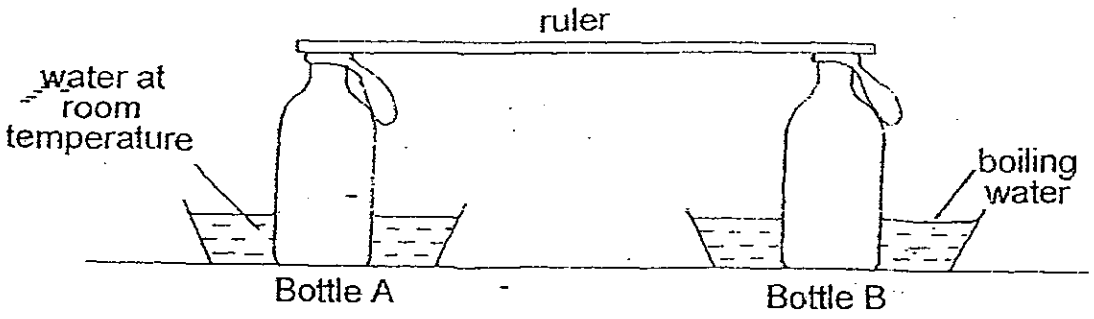
Based on the results table above, what process has taken place to result in a difference in mass of the two towels after two hours? [1]

_____

_____

42. A wooden ruler is balanced on two bottles, A and B. The opening of each bottle is covered with a deflated balloon as shown in the diagram below.

Water at room temperature is then poured into the basin containing Bottle A and boiling water is poured into the basin containing Bottle B.



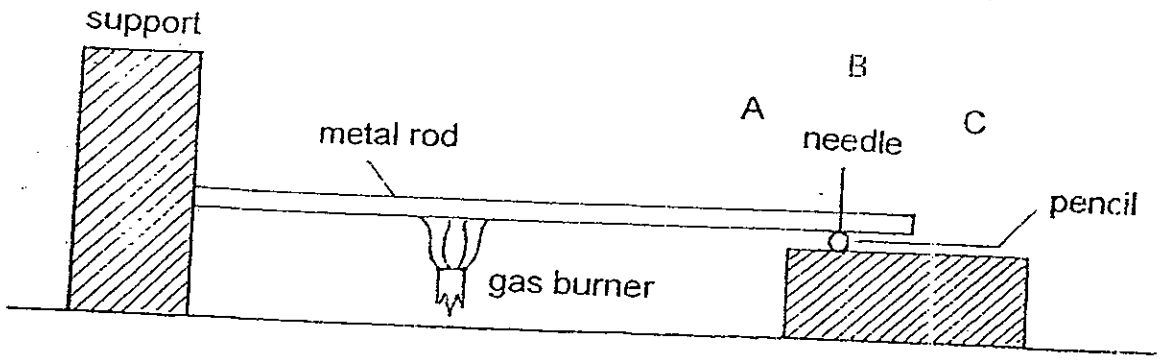
(a) Describe what would happen to the wooden ruler. [1]

(b) What is the first observation he can make when boiling water is poured into the basin containing bottle B?

[1]

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

43. The set up below shows an iron rod which is fixed at one end to a support. The other end of the iron rod is resting on a pencil which has a needle attached to it.



(a) After heating the metal rod for 10 minutes, which position, A, B or C will the needle be pointing at? Explain your answer. [1]

(b) What will happen to the needle soon after the gas burner is removed? [1]

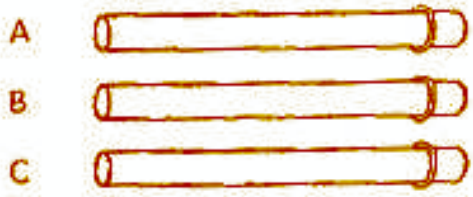
(c) What does the result in your answers for (a) and (b) show? [1]

(i) for (a)

(ii) for (b)

3

44. Helen set up an experiment as shown in the diagram below. She placed a ring of wax a one end on three similar rods, A, B and C, made of different materials.



Then she heated each rod at the opposite end till the ring of wax on the rods melted and dropped off. The time taken for the ring of wax to melt and drop off is shown in the table below.

Rod	Duration of heating
A	40 seconds
B	1 min 30 seconds
C	2 minutes 5 seconds

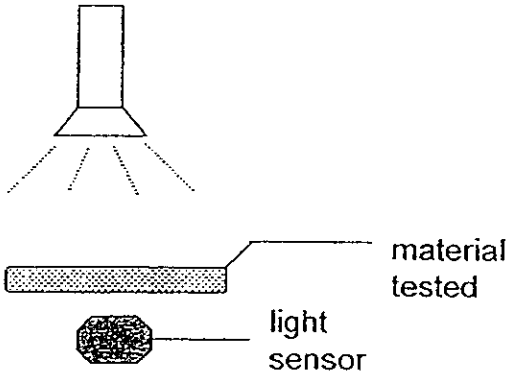
(a) Helen concluded that rod A is the best conductor of heat because its ring of wax took the shortest time to melt. Explain Helen's conclusion. [1]

(b) Helen's friend, Lixin conducted a similar experiment with three rods, D, E and F made of the same material as that of Helen's experiment. The rings of wax around each rod are also similar and equal in amount to those of Helen's experiment. However, Lxin found that all the rings of wax on all her three rods took a longer time to melt.

What could have caused the rings of wax on all the three rods in Lixin's experiment to take a ~~loner~~ longer time to melt? [1]

2

45. Adam set up an experiment in a dark room in which a light sensor is used to find out the degree of transparency of different materials. The setup is shown below.



He placed three materials P, Q and R under the light source one at a time and recorded the readings on the light sensor in the table below.

	P	Q	R
Reading on the light sensor (lux)	0	150	440

(a) Name a material that P could be. [1]

_____

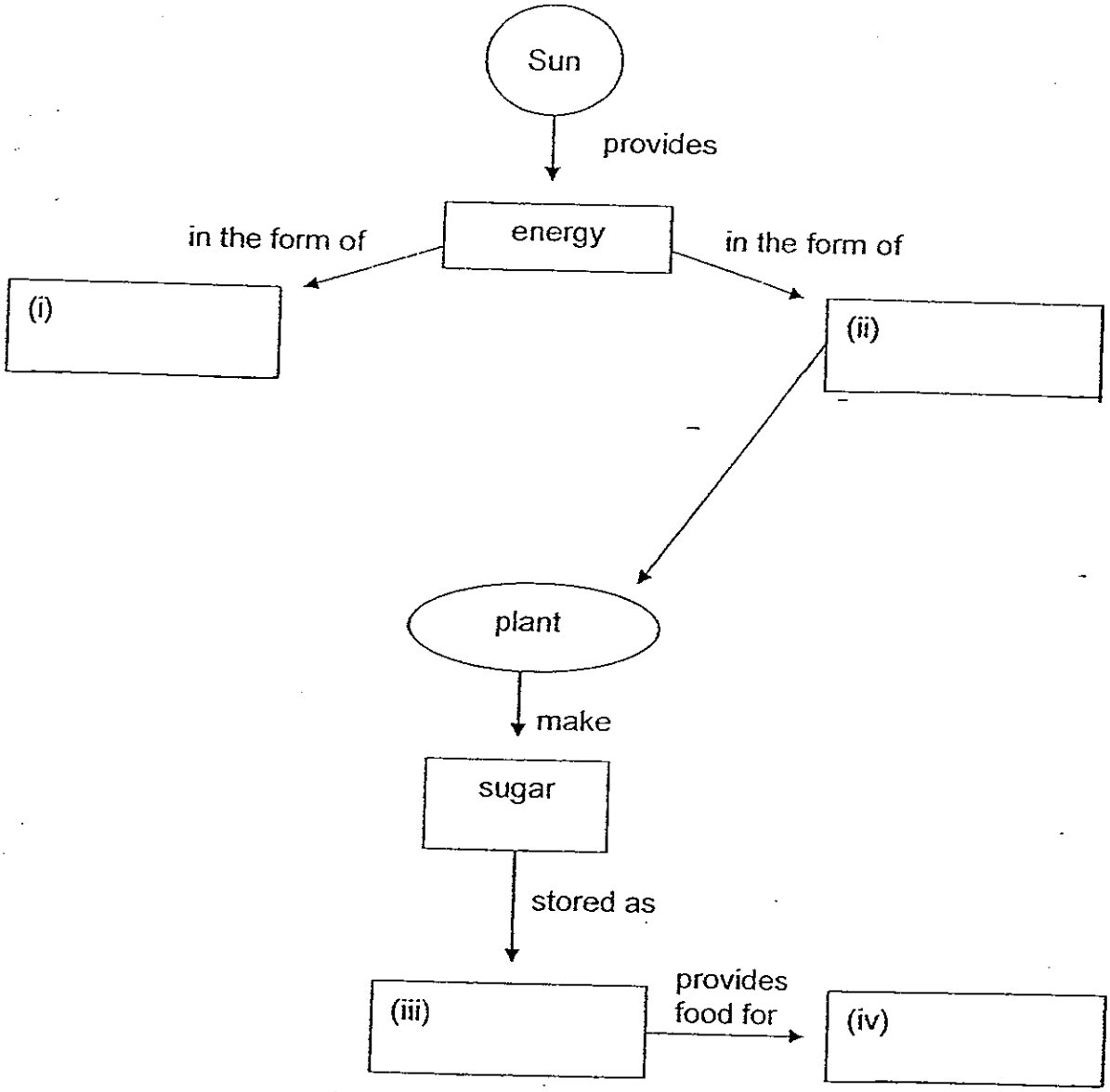
(b) Explain the difference in the reading taken by the light sensor between Q and R. [1]

_____

_____

2

46. The diagram below shows how the Sun provides energy for living things on Earth. Complete the diagram by writing an appropriate word in each of the boxes. [2]



2

ANSWER SHEET

EXAM PAPER 2008

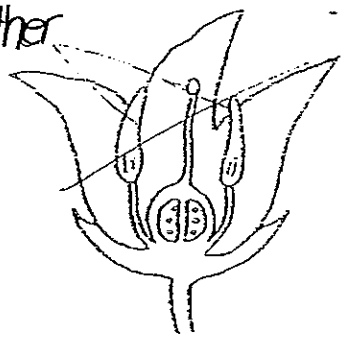
SCHOOL : AITONG PRIMARY SCHOOL
SUBJECT : PRIMARY 5 SCIENCE

TERM : SA 1

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

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

31)a) anther

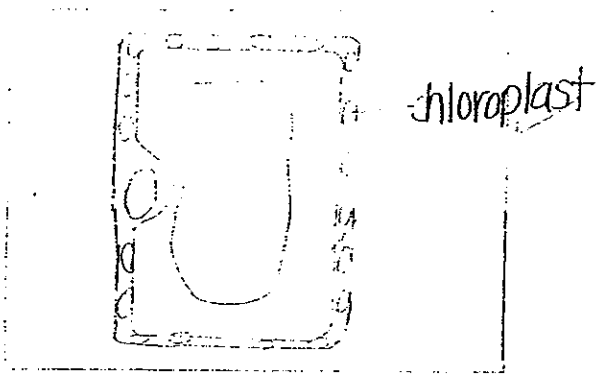


b)It is to produce pollen grains in order to carry out pollination.

32)Photosynthesis
Respiration
Photosynthesis
Respiration

33)a)seed
b)A leaf cell can make food but the cell in (a) cannot.

33)c)



34)a)They are dispersed by wind. They have a wing-like structure and is dry and light.
b)dandelion.

35)a)Yes. A seed with a greater mass travels a shorter distance.
b)By repeating the experiment.

36)a)Plant parts b)Suckers
c)Leaves d)Underground stems

37)a)The process is germination.
b)The presence of air, water and warmth made it possible.
c)They help to store food for the seedling to grow.

38)a)Umbilical cord.
b)X helps to carry food and oxygen from the mother to the foetus and remove waste material from the foetus to the mother.

39)a)U→T→S→V
b)It will decrease.

40)a)It is exercising by the hamster will produce more carbon dioxide.
b)Limewater.
c)The liquid in set-up B will be more chalky than the liquid in set-up A.

41)a)To find out if the expend surface area affects the rate of evaporation.

b)i)The amount of light.

ii)The type of towel used .

c)Evaporation must have taken place to result a difference in mass of the two towels.

42)a)It would tilt towards the side of Bottle A.

b)The balloon on Bottle B inflates.

c)It shows that air expands when gains heat.

43)a)At position C. The metal rod increases in length.

b)The needle will go back to position B.

c)i)The metal rod expands when cooled.

ii)The metal rod contracts when cooled.

44)a)The best conductor of heat allows heat to travel through it the fastest.

b)Lixin could have put it in a cooler place than Helen.

45)a)Wood

b)Q allows less light to pass through it than R.

46)i)heat ii)light iii)starch iv)plant