CA2

NANYANG PRIMARY SCHOOL

PRIMARY 5 SCIENCE

SECOND CONTINUAL ASSESSMENT 2005

Name : _____ ( ) Date : _____

Class : Primary 5 ( ) Duration : 1 h 45 min

Parent's signature: _____ Score : ____/80

Section A (25 x 2 marks = 50 marks)
For each question from 1 to 25, 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 provided.

1. Which of the following statements about photosynthesis is/are true?

A Oxygen is produced.
B All coloured leaves can photosynthesize.
C Light energy from the Sun is trapped by the cell cytoplasm.
D Without photosynthesis, all life on Earth would eventually die.

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

2. Which of the following groups of living things obtain their food indirectly from plants?

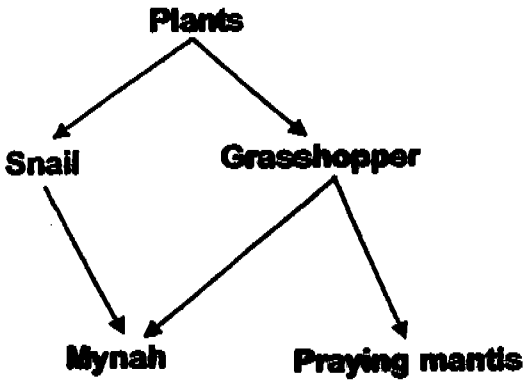
A frogs, lizards and snakes
B leopards, ladybirds and eagles
C butterflies, squirrels and caterpillars
D mudskippers, chimpanzees and aphids

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

3. Michelle set up an experiment to study photosynthesis using two similar pots of plants, Pot A and Pot B. She removed all the leaves from Pot A. She then placed these two pots at the same area of her garden and watered them daily. She continued to remove any new leaves growing in Pot A. Which of the following observations and conclusions would she be able to make at the end of the 2 weeks?

	Observation	Conclusion
(1)	The plant in Pot A died while the plant in Pot B remained alive.	The leaves are needed for photosynthesis to take place.
(2)	The plant in Pot A remained alive while the plant in Pot B died.	The leaves are needed for photosynthesis to take place.
(3)	The plants in both Pot A and Pot B remained alive.	The leaves are needed for photosynthesis to take place.
(4)	The plants in both Pot A and Pot B died.	The leaves are needed for photosynthesis to take place.

4. The diagram below shows the food web of living things in a particular habitat.



A group of students studied the food web above and made the following comments based on it.

Student A: If all the snails die, the number of grasshoppers will start to decrease.
Student B: If all the praying mantis die, the number of grasshopper will start to increase.
Student C: If the number of grasshoppers increases, the number of plants will start to increase.
Student D: If the number of mynahs increases, the number of snails will increase.

Which students had made the correct statements?

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

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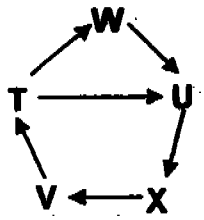
5. Jason studied a food web and made the following statements based on it.

T is the prey of V.
T is the predator of U.
T and U consume W.
X is the predator of U and V.

Which one of the following food webs was Jason studying?

(1)



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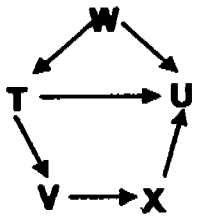

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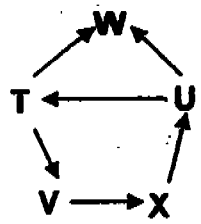

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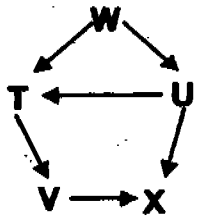

6. Su Lee placed several pots of plants near the window in her room. Her sister, Aimee, told her that it was a bad idea to do so as she has a habit of closing her door and windows at night. Which one of the following statements should her sister give as the best reason for not keeping the plants in her room?

(1) Plants take in oxygen in the day and Su Lee will have to compete with the plants for oxygen to breathe.

(2) The plants would not be able to photosynthesize in Su Lee's room and therefore they will die.

(3) Plants are still undergoing respiration at night and Su Lee will have to compete with the plants for oxygen to breathe while sleeping.

(4) The plants cannot undergo respiration since Su Lee would have used up all the oxygen for breathing. Therefore, the plants will die.

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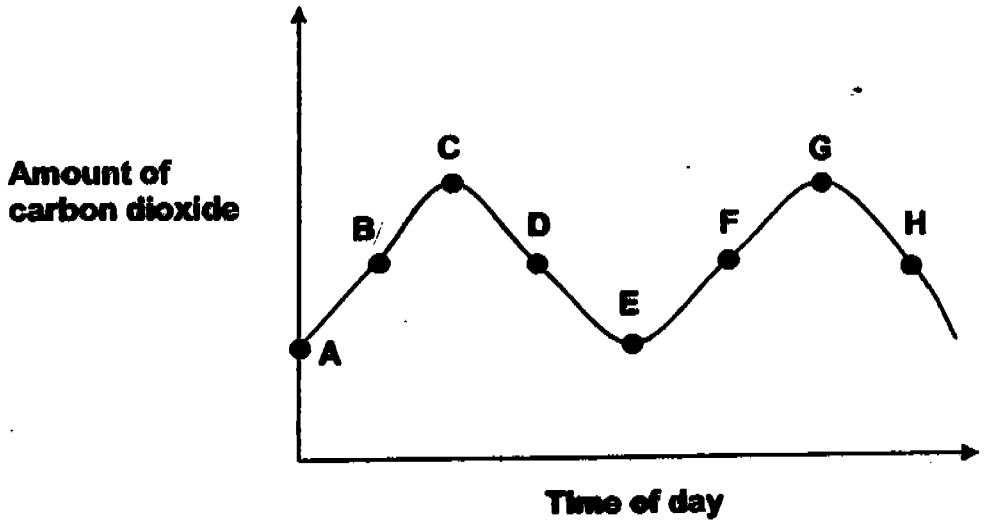
7. The graph below shows the amount of carbon dioxide given out by plants over a period of time.



Which points of the graph show that the plants are undergoing respiration but not photosynthesis?

(1) A and E
(2) B and F
(3) C and G
(4) D and H

8. Study the table below.

X	Y	Z
wooden table metal cabinet sunglasses	crystal glass mirror clear plastic bag	tracing paper frosted glass cellophane paper

Which of the above objects are classified wrongly?

(1) wooden table and crystal
(2) sunglasses and glass mirror
(3) frosted glass and sunglasses
(4) glass mirror and frosted glass

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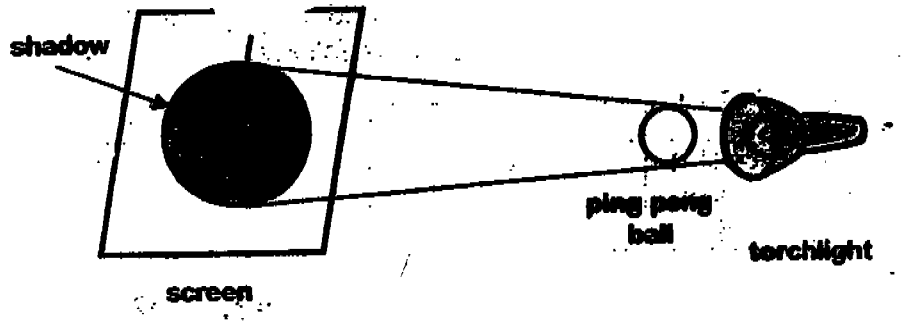
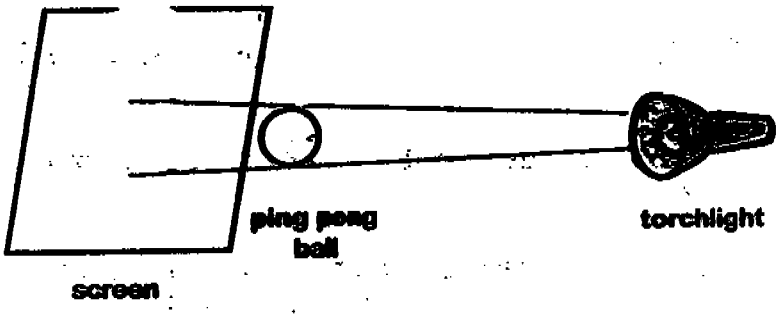
9. Melvin set up an experiment using a torchlight, a ping-pong ball and a screen as shown below.

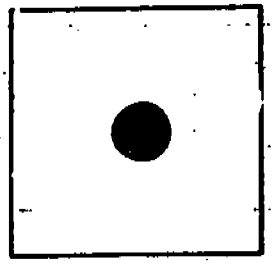


He observed the shadow cast by the ping-pong ball and repeated the experiment by changing one variable as shown below.

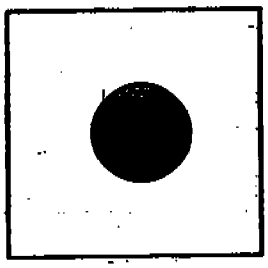


He made his observation and drew the shadow of the ping-pong ball as seen on the screen. Which one of the following diagrams does not show the correct size of the shadow?

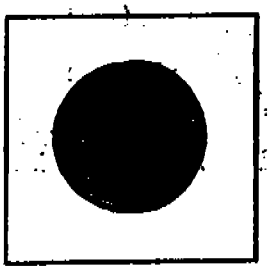
(1)



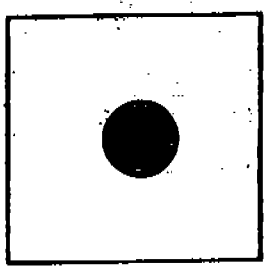
(2)



(3)



(4)



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10. Lauren and Rebecca carried out an experiment. They each had a beaker of 5 ml of limewater and a straw. Using the straw, they both blew into their limewater and stopped blowing the moment their limewater turned cloudy. They also counted the number of breaths they had taken. They tabulated their results as follows.

	Lauren	Rebecca
Number of breaths before limewater turned cloudy	5	8

What could be the possible reasons for their observation?

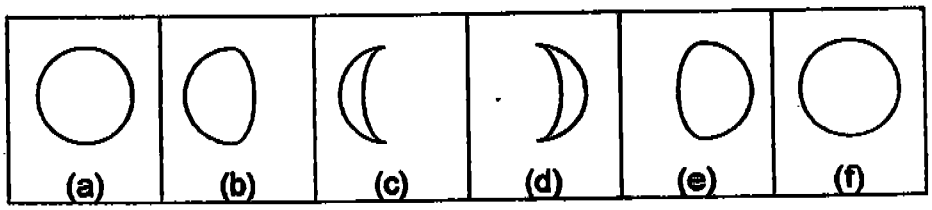
A Lauren breathed out more oxygen than Rebecca.
B Lauren had a higher rate of respiration than Rebecca.
C The limewater slowed down Rebecca's rate of respiration but not Lauren's.

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

11. Four pupils were watching the sun rise. Who made the correct statement?

(1) Ali said: Sunrise is caused by the Sun orbiting the Earth.
(2) Bala said: Sunrise is caused by the Earth orbiting the Sun.
(3) Deqi said: Sunrise is caused by the Earth spinning from West to East.
(4) Jacky said: Sunrise is caused by the Earth spinning from East to West.

12. Amy observed that the shape of the Moon changes every night. She recorded the dates of these changes in her diary.



Which one of the following sets of dates corresponded to the shapes of the moon in the diagram shown above?

	(a)	(b)	(c)	(d)	(e)	(f)
(1)	14 Jan	14 Feb	14 Mar	14 Apr	14 May	14 Jun
(2)	14 Jan	15 Jan	16 Jan	17 Jan	18 Jan	19 Jan
(3)	14 Jan	17 Jan	20 Jan	23 Jan	26 Jan	29 Jan
(4)	14 Jan	19 Jan	27 Jan	2 Feb	11 Feb	14 Feb

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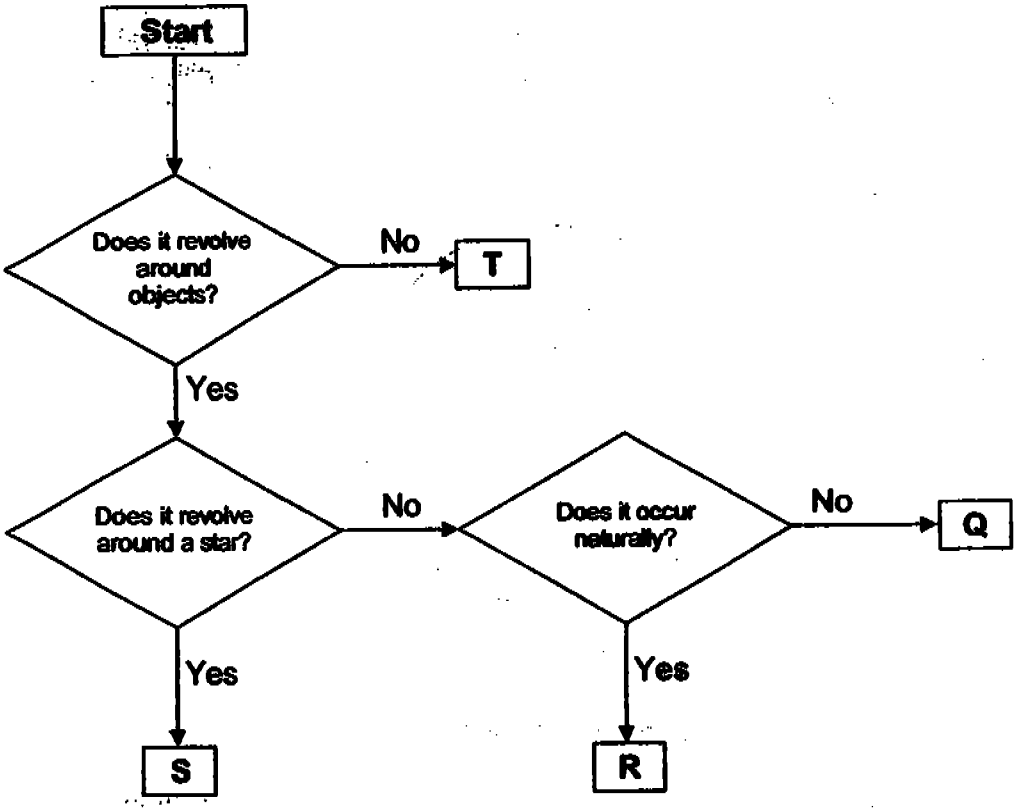
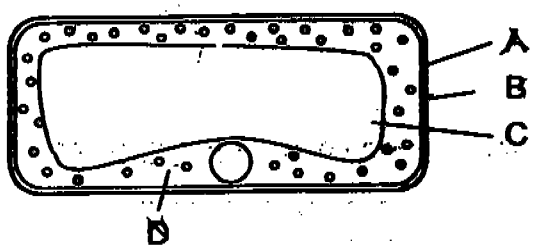
13. Study the flow chart below.



Which of the objects below represent T, Q, R and S?

	Q	R	S	T
(1)	Moon	Communications Satellite	Earth	Sun
(2)	Communications Satellite	Sun	Venus	Moon
(3)	Communications Satellite	Moon	Uranus	Sun
(4)	Sun	Earth	Moon	Communications Satellite

14. The diagram below shows a plant cell.



Which part(s) keeps/keep it firm and maintains/maintain its shape?

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

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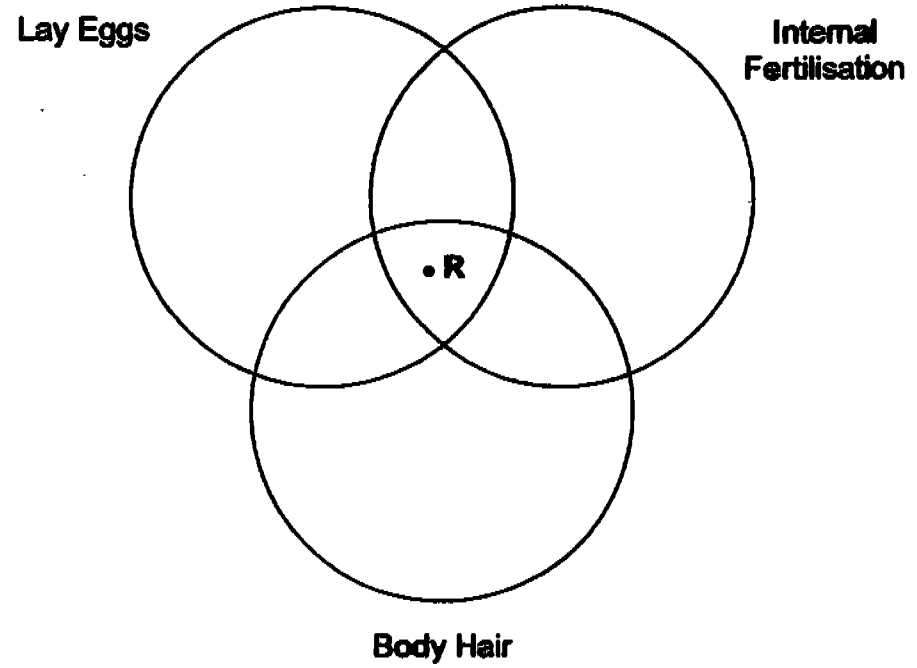
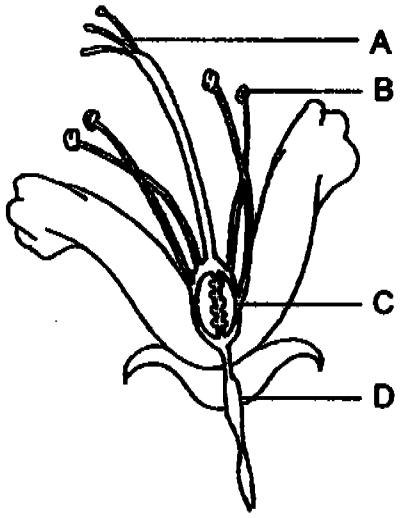
15. Study the Venn diagram below.



Which one of the following animals does R represent?

(1) Ostrich
(2) Penguin
(3) Platypus
(4) Crocodile

16. Look at the longitudinal-section of the morning glory flower.



Which one of the following parts is wrongly matched to its function?

	Part	Function
(1)	A	Attracts insects
(2)	B	Produces pollen grains
(3)	C	Develops into a fruit
(4)	D	Holds and supports the flower

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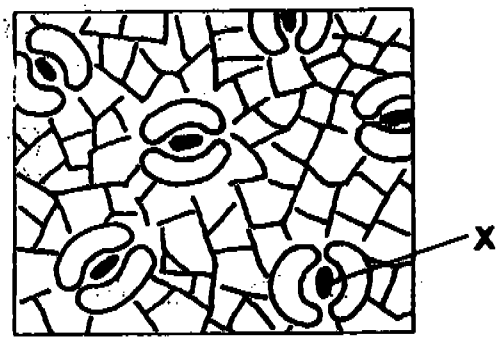
17. Which one of the following correctly shows the stages of development in a plant?

(1)	flower	→	seedling	→	adult plant	→	fruit
(2)	flower	→	fruit	→	seedling	→	adult plant
(3)	adult plant	→	fruit	→	seedling	→	flower
(4)	seedling	→	fruit	→	adult plant	→	flower

18. The diagram below shows how a leaf appears under a microscope. Which one of the following correctly describes the function of part X?



A the exchange of gases
B water to be absorbed during photosynthesis
C excess water to be released during transpiration
D the chloroplasts to trap sunlight during photosynthesis

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

19. The following activities involved the use of forces.

A Pressing the doorbell.
B Wringing a wet T-shirt.
C Lifting a carton box from the ground.
D Stopping a trolley that is moving towards you.

Which one of the following activities involved only a pushing force?

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

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20. The diagram below shows a fishing rod.

Which of the following statement(s) is/are true about the fishing rod?

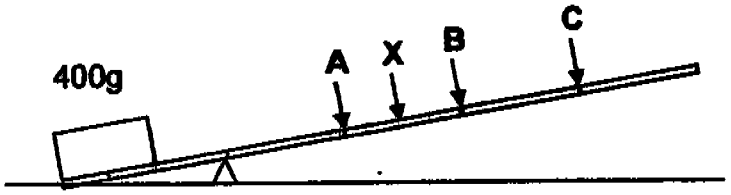
A It changes the direction of the force.
B It reduces the effort needed to lift the load.
C The load moves a longer distance than the effort.

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

21. Which one of the activities does not involve the use of an inclined plane?

(1) Raising the school flag
(2) Splitting wood with an axe
(3) Climbing up a flight of stairs
(4) Tightening a screw with a screw driver

22. Ali applied a force at three different points A, B and C of a lever. For each point, he measured the smallest effort that was needed to overcome the load.



Mininmum effort used (g)		
A	B	C
240	120	80

What would be the smallest effort that can overcome the load if the effort was applied at X?

(1) 100g
(2) 160g
(3) 320g
(4) 410g

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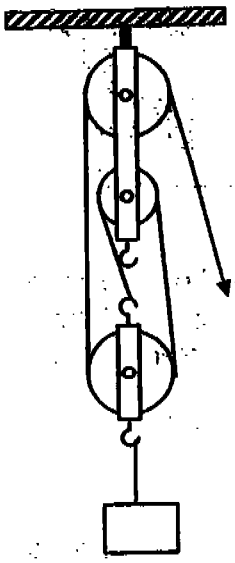
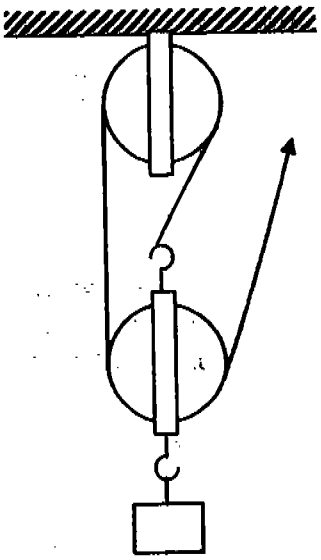
23. At a construction site, a worker from the ground floor had to get a wooden block to his supervisor who was on a higher floor.
Which one of the following pulley systems would he choose to help him do the work most easily?

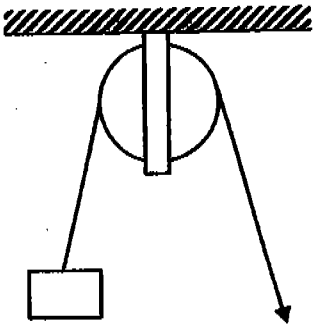
(1)



(2)



(3)



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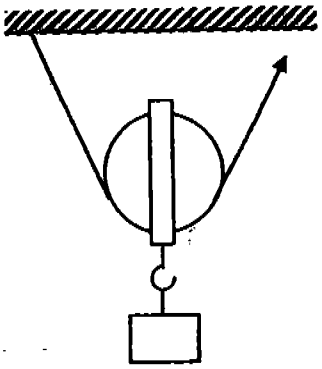

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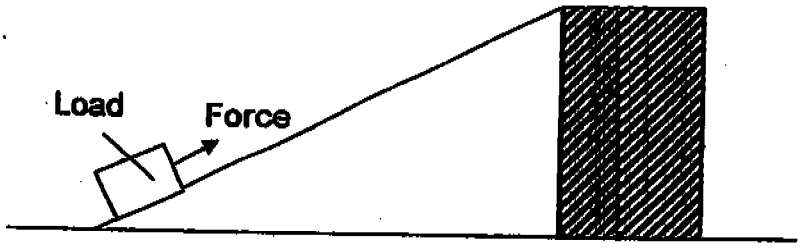
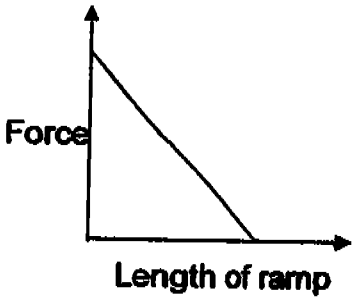
24. A ramp is used to lift a load as shown below.



An experiment has been carried out to find out how the force applied to pull the load up the ramp varies with the length of the ramp. Which one of the following graphs below shows the correct result?

(1)



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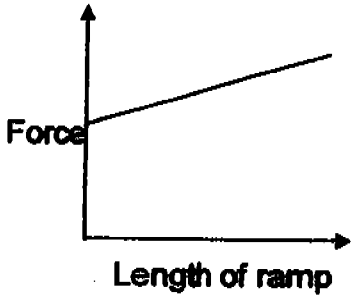

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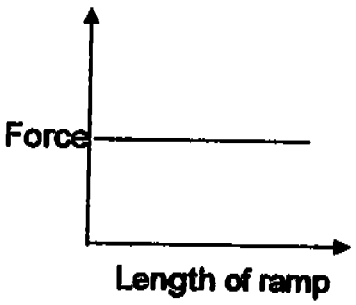

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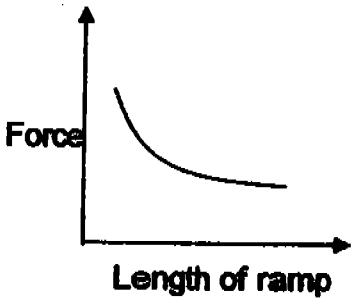

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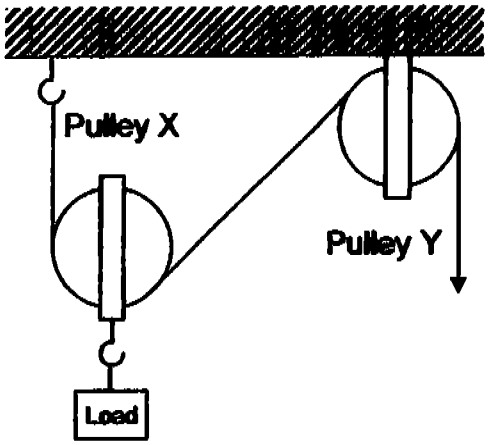
25. The diagram below shows a pulley system set up by Dave.



Which of the following statements are true about the above set-up?

A A smaller effort is needed to pull the load.
B Pulley Y does not move but Pulley X does.
C The effort and the load move in the same direction.

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

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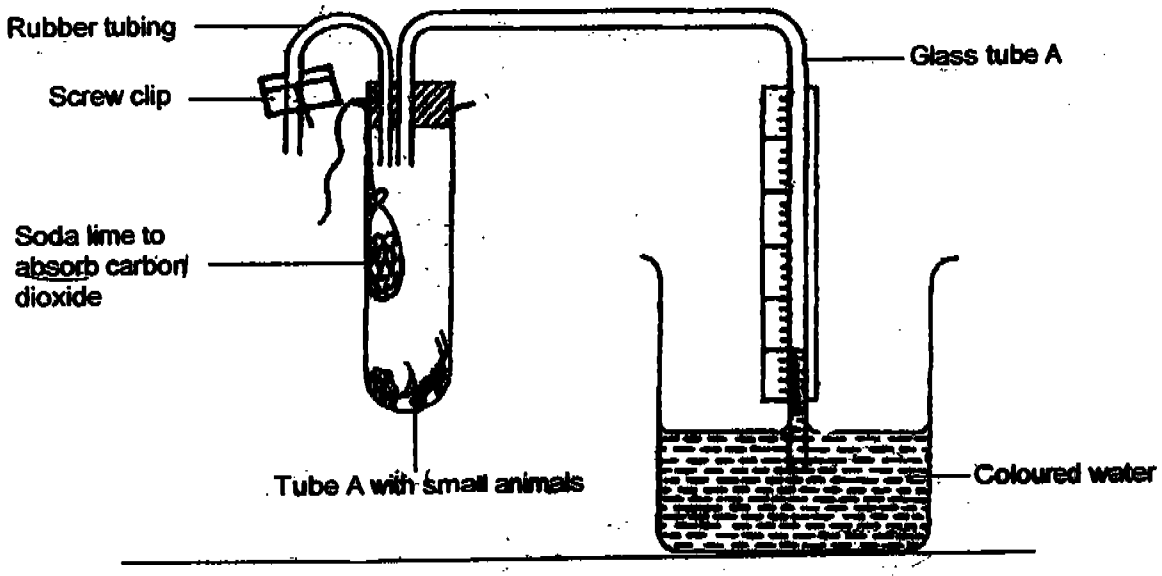
Name : _____ Date :

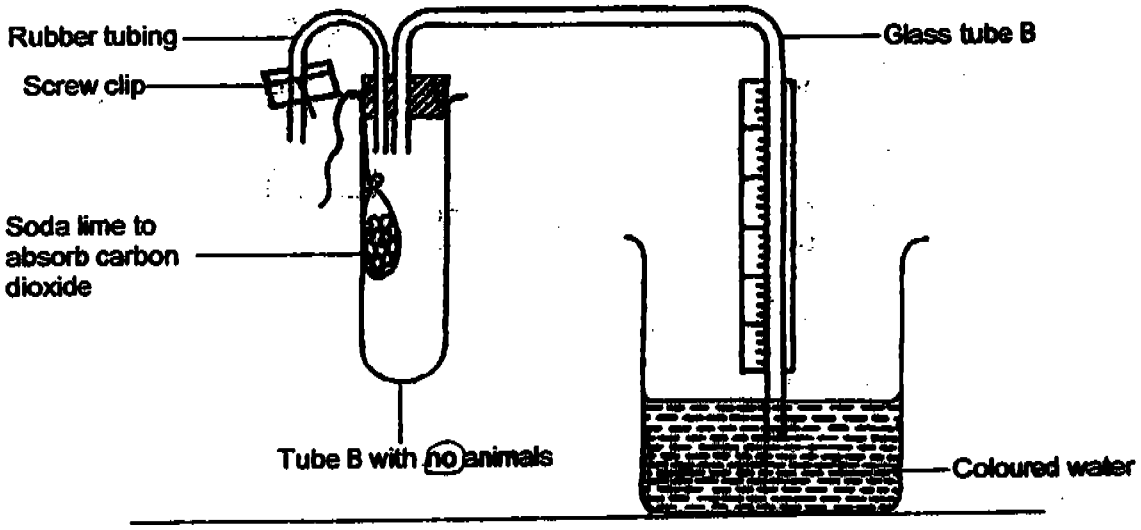
Class : Primary 5 ( )

Section B (30 marks)

Write your answers to questions 26 to 36 in the spaces provided.
Marks will be deducted for misspelt key words.

26. Kumar wanted to study the process of respiration in animals. He set up an experiment using some apparatus and some small animals. He provided the small animals in Tube A with food and water. After a week, he made observations of his experiment as shown in the set ups below.





(a) What observation would he make at the end of the experiment? (1 mark)

_____

(b) Explain the observation in (a) (1 mark)

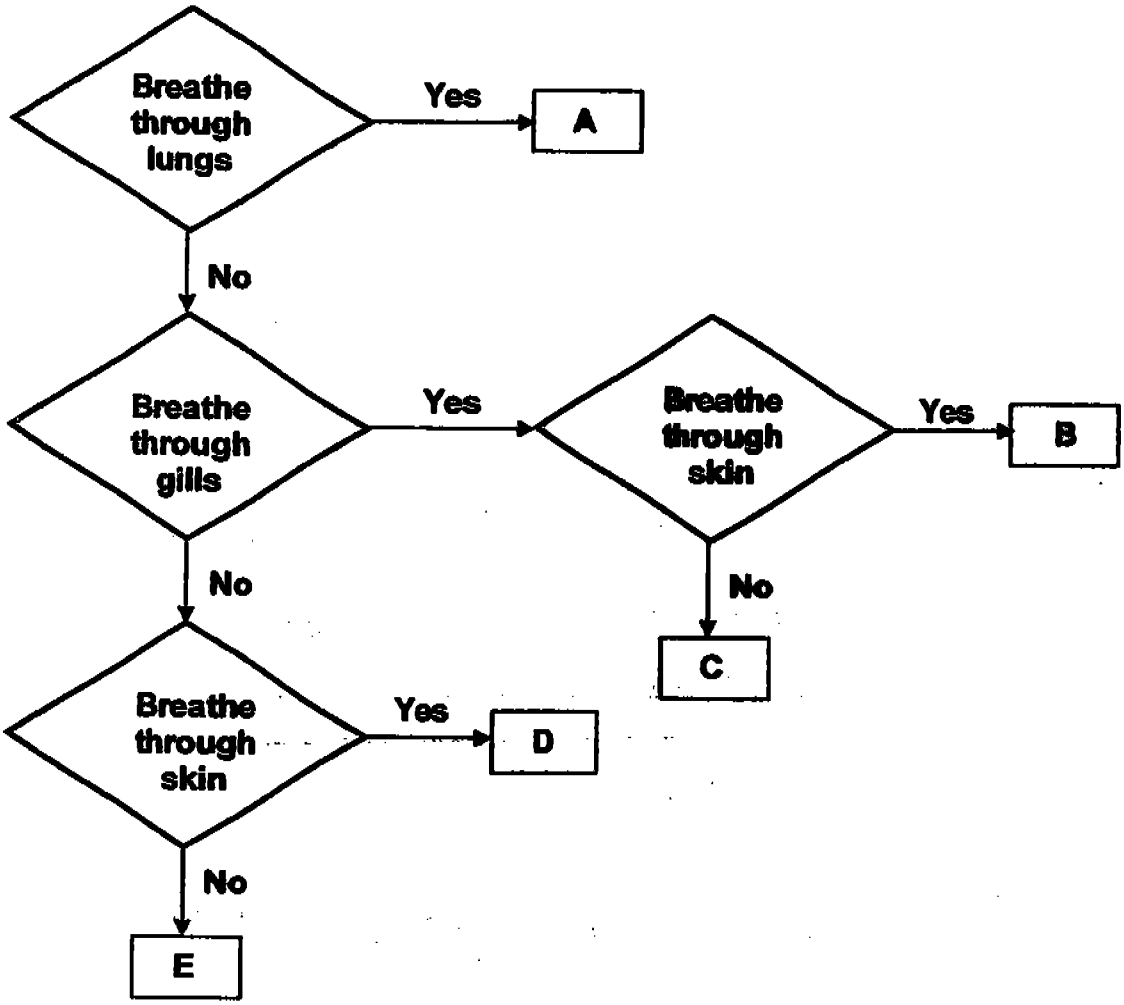
_____

_____

(c) Why did he set up Tube B for this experiment? (1 mark)

_____

27. Study the chart below.



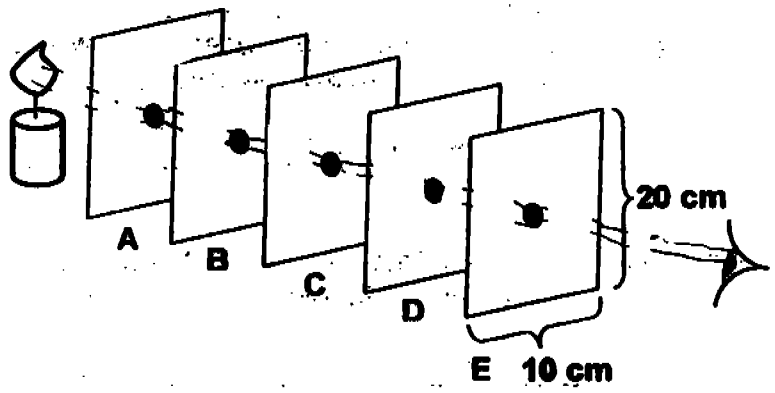
(a) Which letter would represent an earthworm? (1 mark)

_____.

(b) Give an example of animal C. (1 mark)

_____.

28. Jasmine was given a candle and cardboards of equal size to conduct an experiment on light. She made holes in the middle of each cardboard and placed them in a row. She then placed the lighted candle in front of the first cardboard and looked through the hole of the last cardboard. After making her observation, she moved Cardboard C so that the holes are no longer in line. Again, she looked through the hole of the last cardboard.



The following are several statements based on her experiment. In the answer column, write 'T' for a true statement, 'F' for a false statement and 'N' for a statement that could not be concluded from this experiment. (2 marks)

	Statements	Answer
(a)	The aim of her experiment was to show that light travels in a straight line.	
(b)	If Cardboard C was changed to a clear plastic sheet without a hole in the middle, she would not be able to see the light.	
(c)	If she had added more cardboards to the row, it would have been difficult for her to see the candle.	
(d)	If Cardboard C was turned 90° clockwise instead, Jasmine would still be able to see the light from the candle.	

29. Alvin had 5 pots of adult tapioca plants. He weighed them, kept them in a dark room and watered them daily. After 2 weeks, he noticed that all the plants were still alive. At the 3rd week, he noted that the plants were still alive. He weighed them again and recorded the mass of the tapioca plants in the table below.

	Mass of the pots of tapioca (kg)				
	Pot 1	Pot 2	Pot 3	Pot 4	Pot 5
At the beginning of the experiment	10.2	10.3	10.2	10.1	10.4
At the end of the experiment	9.9	9.0	9.8	9.8	10.1

(a) Next, Alvin removed the plants from the soil and observed the roots of the tapioca plant. What observation would he make about the roots? (1 mark)

_____

(b) Alvin's sister told him that he should have a control for his experiment. How should Alvin have set up his control? (1 mark)

_____

_____

(c) How were the plants able to stay alive for two weeks in the dark?

_____

_____

30. (a) Photosynthesis and respiration are processes that take place in plants. State one similarity between photosynthesis and respiration. (1 mark)

_____

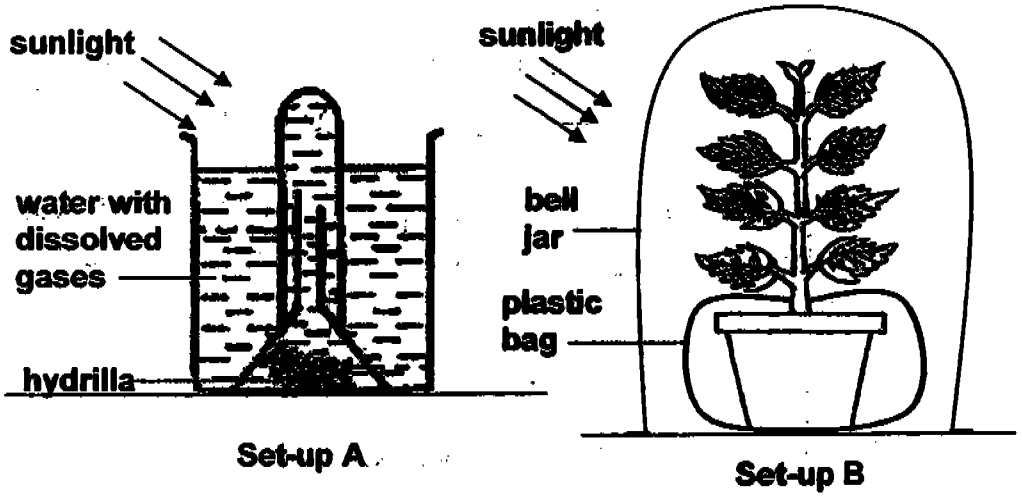
_____

(b) State one difference between photosynthesis and respiration. (1 mark)

_____

_____

31. Janice wanted to study the process of photosynthesis. She was shown 2 experimental set-ups as shown below.



Set-up A

Set-up B

(a) Which is a better set-up for measuring the rate of photosynthesis? (1 mark)

_____

(b) Explain your answer in (a) (1 mark)

_____

_____

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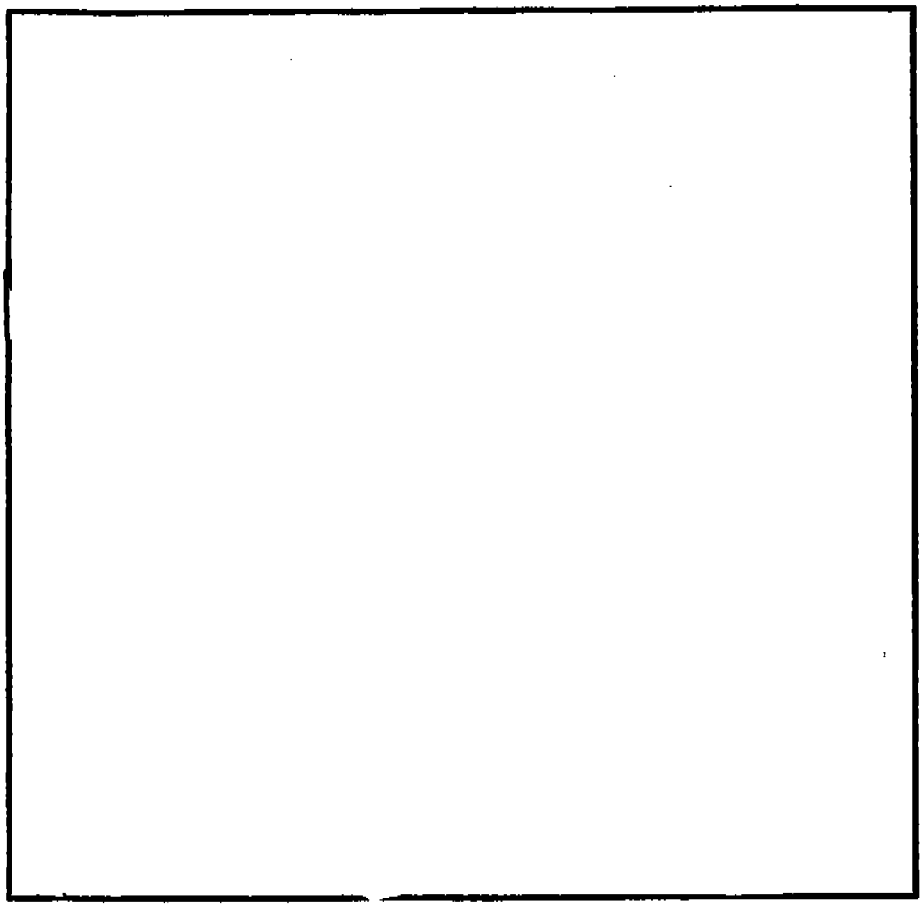
(c) Draw and label the control for the set-up that you have chosen in the box provided. (2 marks)



32. Fill in the blanks with the correct word(s). (2 marks)

Water enters the roots of a plant through fine _____.

The water travels through the _____ in the stem. From the stem the water travels to the branches and finally to the _____.

Here the water and carbon dioxide that is absorbed from the air are used for the process of _____

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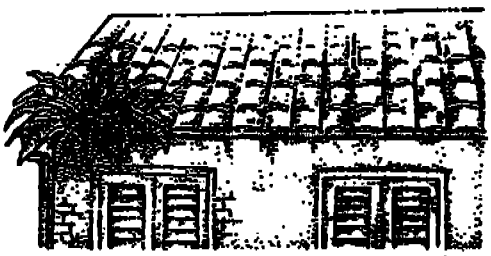
33. As Minah was looking up the roof of a house, she spotted a Bird's nest fern growing as shown in the diagram below.



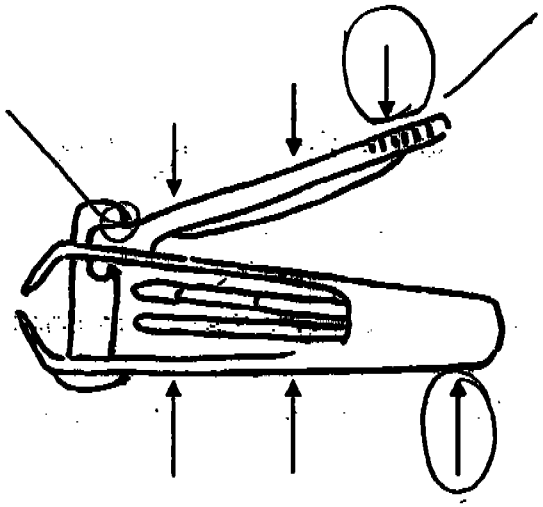
(i) No one planted the plant on the roof. How did this plant manage to grow on top of a roof? (1 mark)

_____

(ii) How did the plant obtain water for survival on top of the roof? (1 mark)

_____

34. The diagram shows the position where Miss Kwek applied an effort on a nail clipper to cut her finger nails.



(a) At which position would she apply her force so as to use the least effort to cut her nails?
Circle the arrows where she applied her effort and label on the diagram where the 'fulcrum' is. (2 marks)

(b) Name the two simple machines that are made use of in the above nail clipper. (2 marks)

(i) _____

(ii) _____

72

35. There were 6 heavy cartons which had to be carried up a truck to be sent out for delivery.

(a) Which simple machine should we make use of to get the cartons up the truck easily? (1 mark)

_____

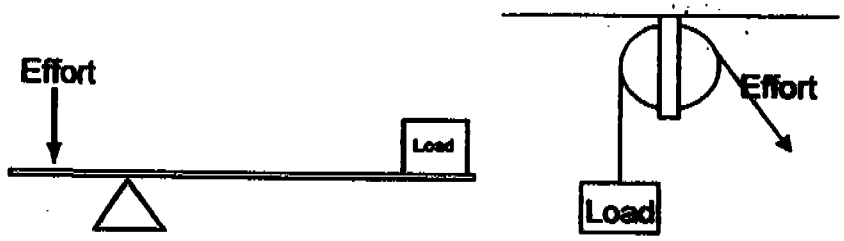
(b) List one advantage of making use of the simple machine you have chosen. (1 mark)

_____

(c) List one disadvantage of using this simple machine. (1 mark)

_____

36. The diagrams below show a lever and a fixed pulley.



(a) State 1 similarity between the 2 simple machines. (1 mark)

_____

(b) State 2 differences between the 2 simple machines. (2 marks)

(i) _____

_____

(ii) _____

_____

----------END OF PAPER----------

Setters: Mrs Tan Yoke Cheng
Ms Yasmeen Mohamad

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Nanyang Primary School

Primary 5 Science CA2 (2005)

[redacted]

Answer Sheets

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
2	1	1	1	4	3	3	2	3	2
Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
3	4	3	4	3	1	2	2	3	3
Q21	Q22	Q23	Q24	Q25					
1	2	1	4	2					

26a. The coloured water in glass tube A will rise.

26b. The animals take in oxygen and the carbon dioxide that is given out is absorbed by the soda lime. Therefore the coloured water in Tube A rises to take over the space left by the absence of these gases.

26c. It is the control set-up to show that any change is due to the presence of the animals in set-up A.

27a. D would represent an earthworm.
27b. Goldfish.

28a. True
28b. False
28c. True
28d. False

29a. The roots became smaller.
29b. Alvin should have two or three plants in another room that has a lot light.
29c It used up the energy stored in the roots to obtain energy for growth during respiration.

30a. Both processes involve the exchange of gases with the surrounding.
30b. Photosynthesis occurs in the presence of light energy will respiration occurs all the time.

31a. Set-up A.

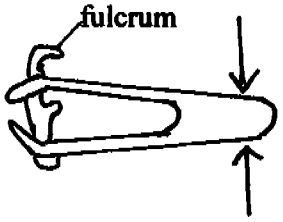
31b. If photosynthesis occurs in Set-up A, oxygen will be produced and the water level will decrease but even if oxygen is produced in set-up B, there is now ay to tell how much oxygen is produced.

32 Hairs
Xylem
Leaves
photosynthesis

33a. (i) Spores are carried by wind to the roof top.

(ii) The plant depends on the rainwater collected at the centre of the Bird's nest fern.

34a.



34b. (i) Lever

(ii) Inclined plane

35a. Inclined plane

35b. Less effort is needed to overcome a greater load.

35c. Effort has to travel a longer distance than load.

36a. Both simple machines change the direction of force.

36b. (i) The effort has to travel a shorter distance than the load in the lever while the effort has to travel the same distance as the load in the fixed pulley.

(ii) A greater effort is needed to overcome the load in the lever while the same amount of effort is needed to overcome the load in the fixed pulley.