

CA2

NANYANG PRIMARY SCHOOL

PRIMARY 5 SCIENCE

SECOND CONTINUAL ASSESSMENT 2004

Name : \_\_\_\_\_ ( ) Date : \_\_\_\_\_

Class : Primary 5 ( ) Duration : 1 h 30 min

Parent's signature: \_\_\_\_\_

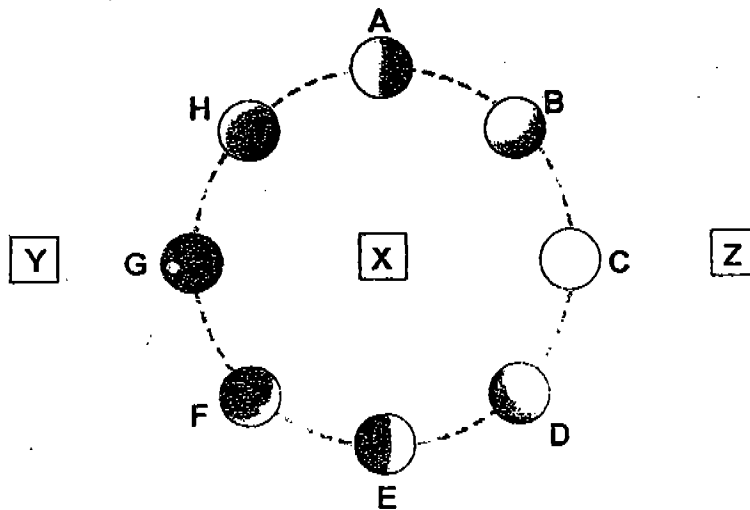
Score :

80
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**Section A** (25 x 2 marks = 50 marks)

For each question from 1 to 20, 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. The diagram below shows the phases of the Moon and its shape.



When the Moon is at point G, where will the Earth and the Sun be?

	Earth	Sun
(1)	Y	X
(2)	Z	Y
(3)	X	Y
(4)	Z	X

2. Which of the following show examples of underground stem?

- (1) Carrot and onion
- (2) Ginger and potato
- (3) Onion and sweet potato
- (4) Water chestnut and radish

3. Which one of the following statements correctly describes the human body parts and their functions?

- (1) The large intestine produces digestive juices.
- (2) Muscles are thick stretchy bands that cover the organs.
- (3) The hipbone protects organs in the lower abdomen area.
- (4) The skin contains nerve endings that are sensitive to bright light.

4. "The stem of the plant transports \_\_\_\_\_ from the roots to the rest of the plant and \_\_\_\_\_ from the leaves to the rest of the plant for usage and storage."

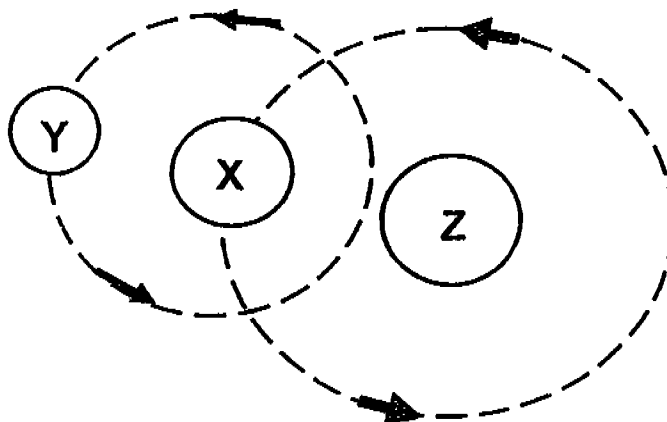
Which one of the following correctly completes the statement above?

- (1) water ; food
- (2) food ; oxygen
- (3) water ; oxygen
- (4) carbon dioxide; water

5. An amoeba is a single-cell animal. It reproduces by binary fission, where it divides into two cells after one cell division. These two cells become four cells after a second cell division. If you have started with one amoeba, how many amoebae would you have after six cell divisions?

- (1) 12
- (2) 32
- (3) 36
- (4) 64

6. In the diagram shown below, X, Y and Z represent three planets that are part of the solar system. X is revolving around Z and Y is revolving around X.



Which planets do X, Y and Z represent?

	X	Y	Z
(1)	Moon	Sun	Earth
(2)	Moon	Earth	Sun
(3)	Sun	Earth	Moon
(4)	Earth	Moon	Sun

7. Which one of the following groups of living things obtains their food directly from plants?

- (1) Frog, Monkey and Squirrel
- (2) Caterpillar, Aphid and Snail
- (3) Chicken, Lizard and Butterfly
- (4) Spider, Grasshopper and Rabbit

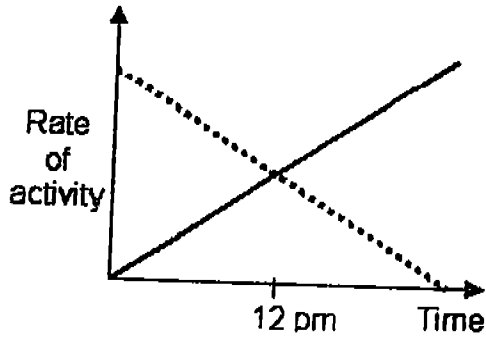
8. Which of the following statements about plant respiration are true?

- A Energy is released.  
 B Sunlight is required.  
 C Food is broken down.  
 D Carbon dioxide is given out and oxygen is taken in.

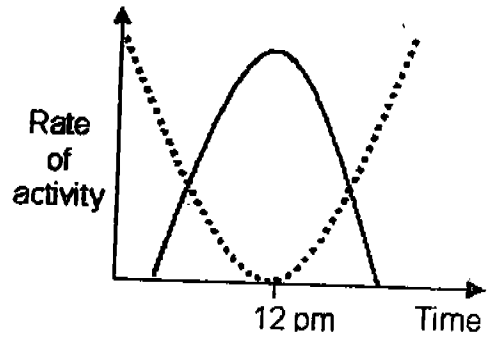
- (1) A, B and C only
- (2) A, B and D only
- (3) A, C and D only
- (4) B, C and D only

9. The graphs below show how the change from night to day affects the rate of photosynthesis and respiration of a green plant. Which one of the graphs correctly shows the change in the rate of activities?

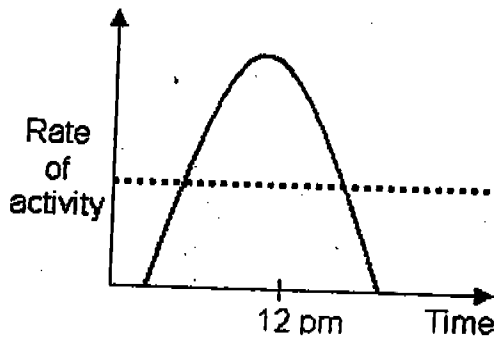
(1)



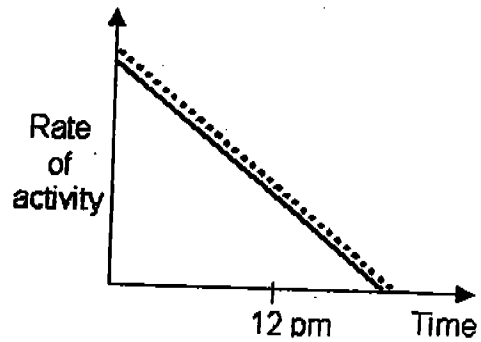
(2)



(3)



(4)

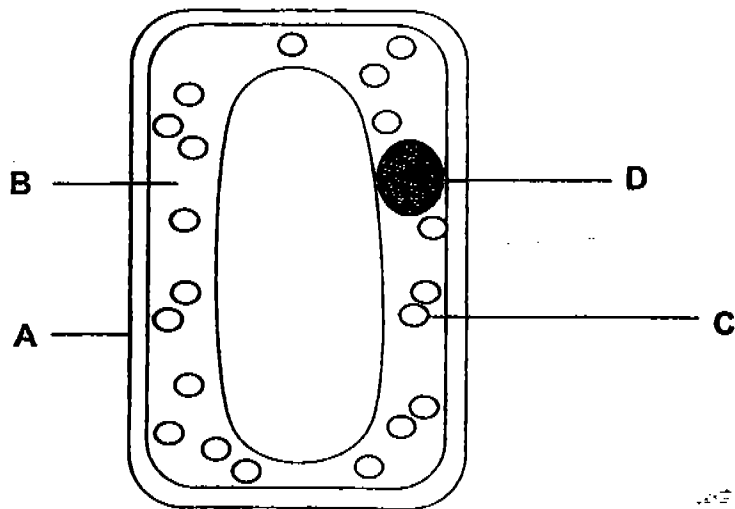


**Key:**

———— = Photosynthetic rate

..... = Respiration rate

10. The diagram below shows the different parts of a cell.



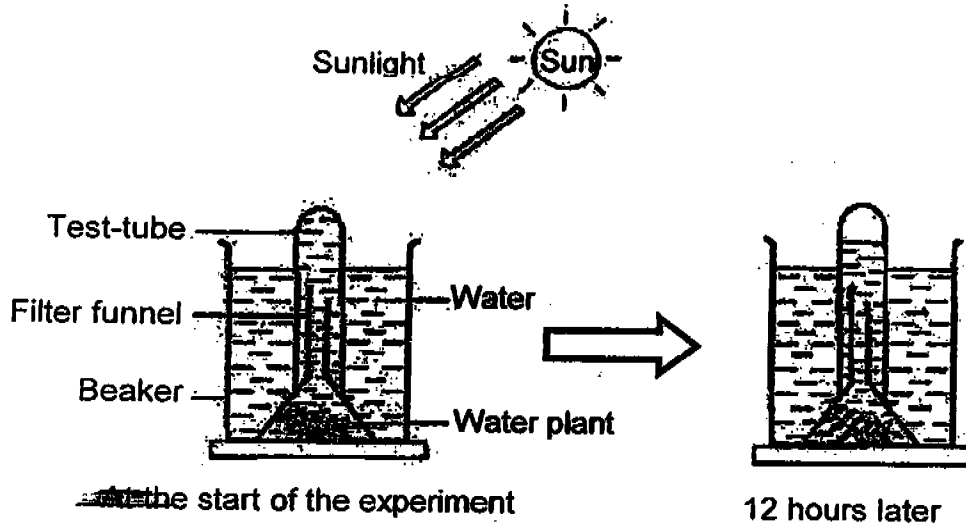
Name the parts labelled A, B, C and D.

	A	B	C	D
(1)	Cell wall	Cytoplasm	Nucleus	Chloroplast
(2)	Cytoplasm	Cell membrane	Chloroplast	Nucleus
(3)	Cell wall	Cytoplasm	Chloroplast	Nucleus
(4)	Cell membrane	Cytoplasm	Nucleus	Chloroplast

11. Which pair of the following animals has the same breathing organ as the turtle?

- (1) dolphin and seal
- (2) whale and goldfish
- (3) shark and seahorse
- (4) earthworm and sparrow

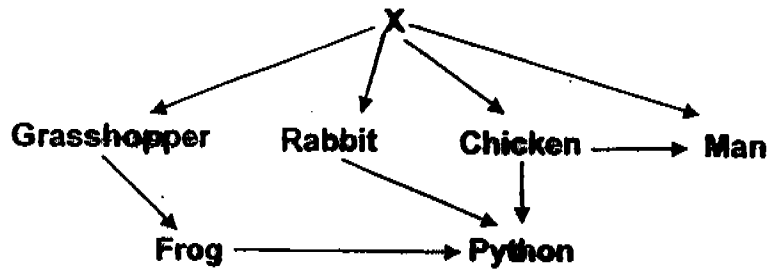
12. Jenny carried out an experiment as shown below.



- After 12 hours, she observed bubbles forming on the water plants and rising to the top of the inverted test-tube. The gas in the tube causes a glowing splinter to glow more brightly. What does this experiment show?

- (1) Plants give off oxygen during photosynthesis.
  - (2) Plants give off carbon dioxide during respiration.
  - (3) Plants give off carbon dioxide during photosynthesis.
  - (4) Plants absorb water, therefore reducing the amount of water in the test-tube.
13. Jerome spread a layer of cooking oil on the stem, leaf stalks and both surfaces of the leaves of a plant. The plant was then placed in the sun and watered every day. After a few days, he noticed that the plant had died. What are the likely reasons for this?
- A The layer of oil prevents the chlorophyll from trapping sunlight.
  - B The layer of oil affects the uptake of mineral salts from the ground.
  - C The layer of oil has blocked the stomata, preventing gaseous exchange.
  - D The layer of oil has blocked the stomata, preventing water from escaping to the environment.
- (1) A and B only
  - (2) A and D only
  - (3) B and C only
  - (4) C and D only

14. The diagram below shows the flow of energy in a food web.



Which of the following statements based on the above food web are true? .

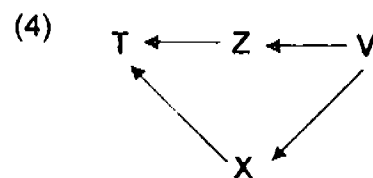
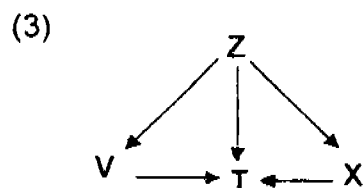
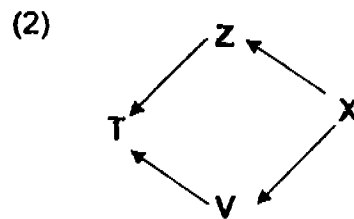
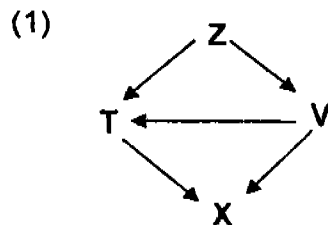
- ~~A~~ The python has received the most energy.
- ~~B~~ There are five food chains in the food web.
- C X contains green pigments to trap light energy.
- D There will be more frogs when there are fewer grasshoppers.

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

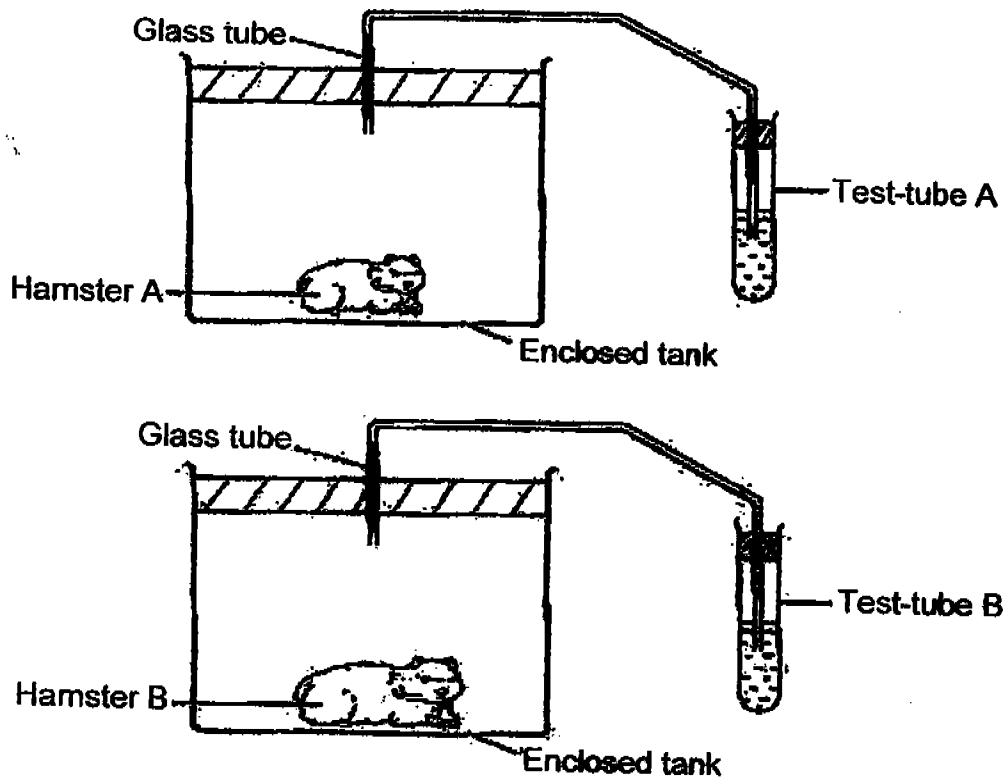
15. Read the sentences below carefully.

V feeds on Z.  
 T feeds on V and Z.  
 X feeds on T and V.  
 Z is a food producer.

Which one of the following food webs below correctly represents the relationship of the organisms above?

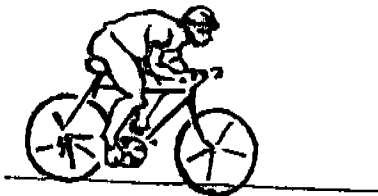


16. Ricky set up an experiment to compare the rate of respiration between 2 hamsters as shown below.



He noticed that the limewater in the test-tube B turned cloudy faster than that in test-tube A. Which one of the following statements about his experiment is true?

- (1) Both hamsters have the same rate of respiration.
  - (2) The size of the hamster will affect its rate of respiration.
  - (3) Hamster A has a higher rate of respiration than hamster B.
  - (4) The amount of limewater used will affect the rate of respiration.
17. The diagram below shows Zili cycling to school.



He decides to cycle harder so that he will not be late for school. This shows that \_\_\_\_\_

- (1) a force is required to make an object move
- (2) a force is required to stop a moving object
- (3) a force is required to overcome gravity when going uphill
- (4) a force is required to change the speed of a moving object

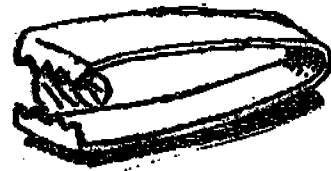


18. Study the simple machines as shown in the diagrams below. Which one of these shows that the load is between the fulcrum and the effort?

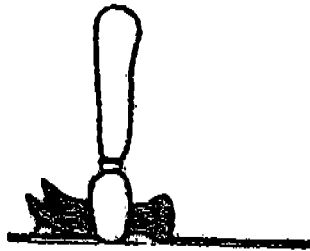
(1)



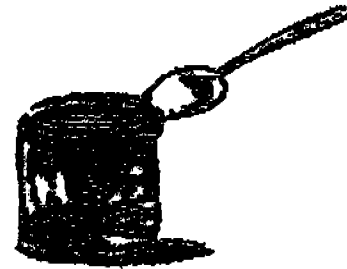
(2)



(3)

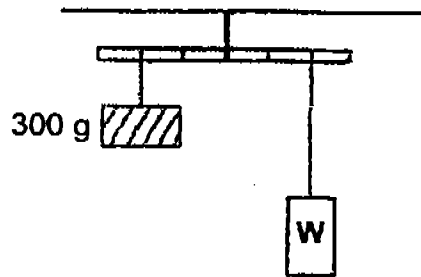


(4)

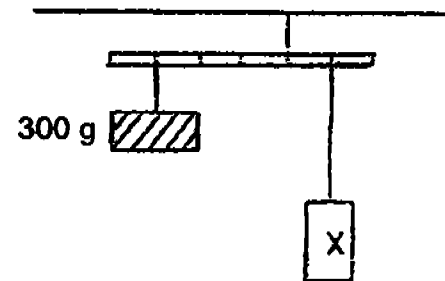


19. Gary used four objects of different mass, W, X, Y and Z to balance a 300g weight as shown in the diagrams below. Which object is the heaviest?

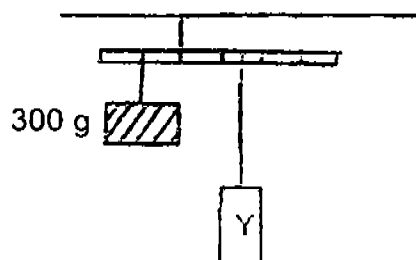
(1)



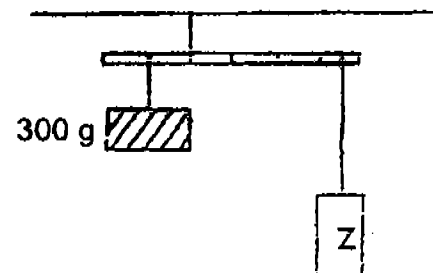
(2)



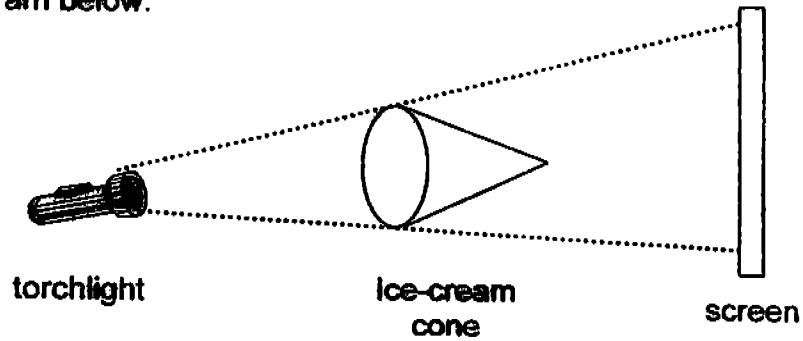
(3)



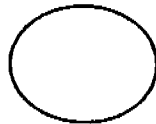
(4)



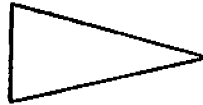
20. Jane shines a torchlight on an ice-cream cone, as shown in the diagram below.



Which of the following shadows shown below can be obtained?



A



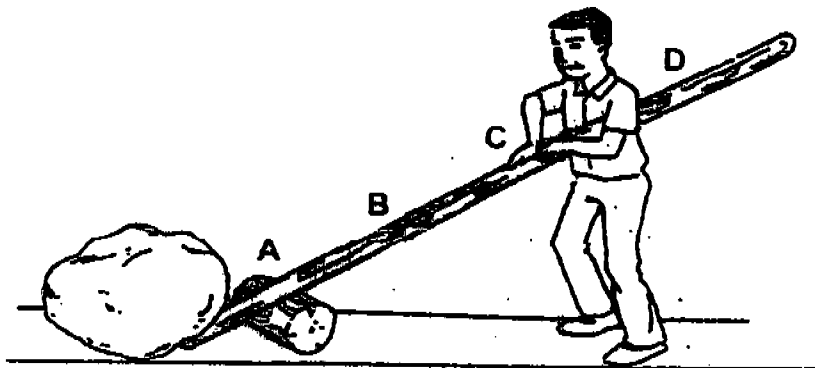
B



C

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

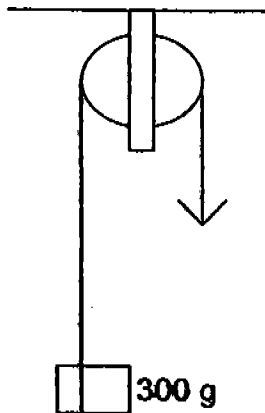
21. The diagram below shows Mr Li using a pole as a lever to move a rock but he is unable to do so.



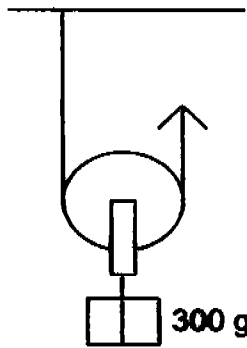
What should he do to enable him to lift the rock most easily? He should \_\_\_\_\_

- (1) shift the fulcrum to B and apply force at C.  
 (2) shift the fulcrum to B and apply force at D.  
 (3) apply force at B with the fulcrum positioned at A.  
 (4) apply force at D with the fulcrum positioned at A.

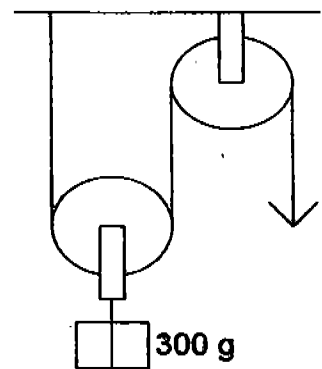
22. The diagrams below show 3 pulley arrangements.



set-up A



set-up B

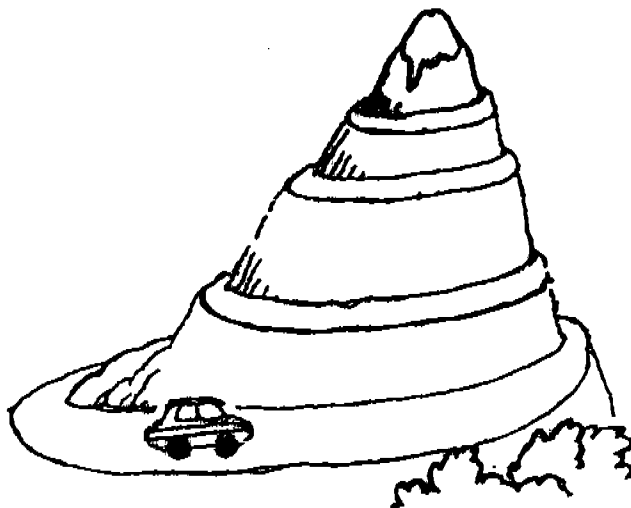


set-up C

In each set-up, an effort is applied to lift the same load of 300 g. Which of the arrangements will require an effort of less than 300 g to lift the load ?

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

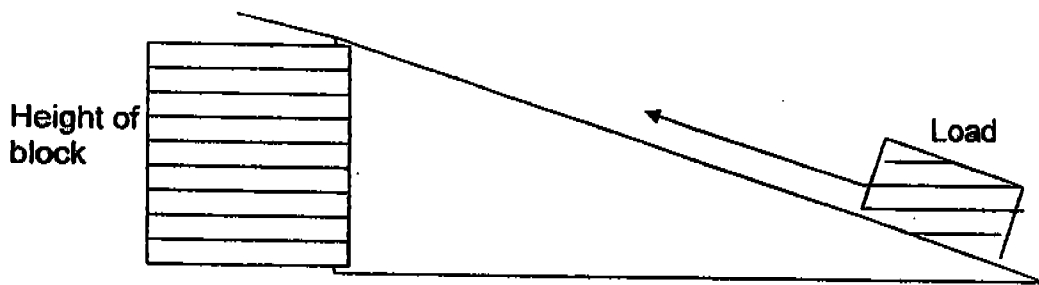
23. The diagram below shows a car travelling along a mountain road.



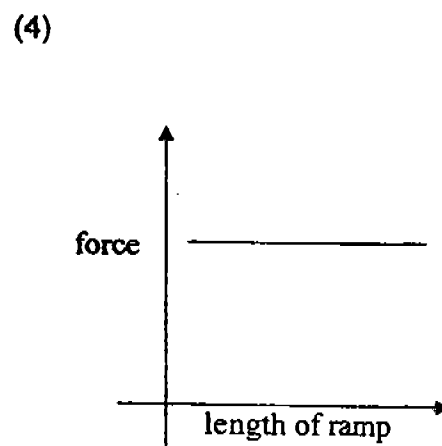
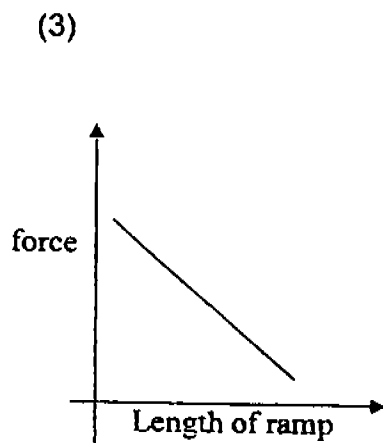
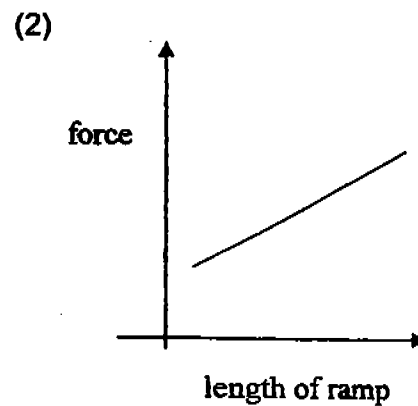
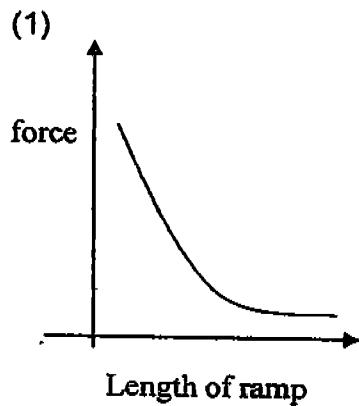
Which one of the following pairs of simple machines works the same way as the mountain road ?

- (1) pliers and broom
- (2) ladder and screw
- (3) axe and fishing rod
- (4) nutcracker and knife

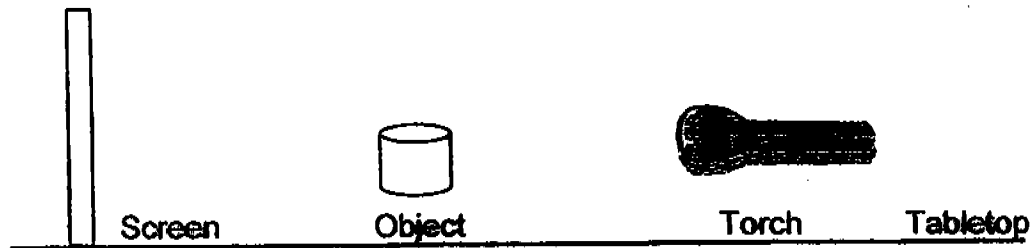
24. Linda carried out an experiment to find out the relationship between the length of the ramp and the force applied to pull the load up the ramp, as shown in the diagram below.



Which one of the following graphs best illustrates her results?



25. The diagram below shows the positions of a light source, an object and a screen. When the torchlight is shone on the object, a shadow is formed on the screen.



What can be done to obtain a bigger shadow ?

- A Bring the object nearer to the screen.
- B Bring the object further away from the screen.
- C Bring the torch nearer to the object.
- D Bring the torch further away from the object.

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

Name : \_\_\_\_\_ ( ) Date : \_\_\_\_\_

Class : Primary 5 ( )

**Section B (30 marks)**

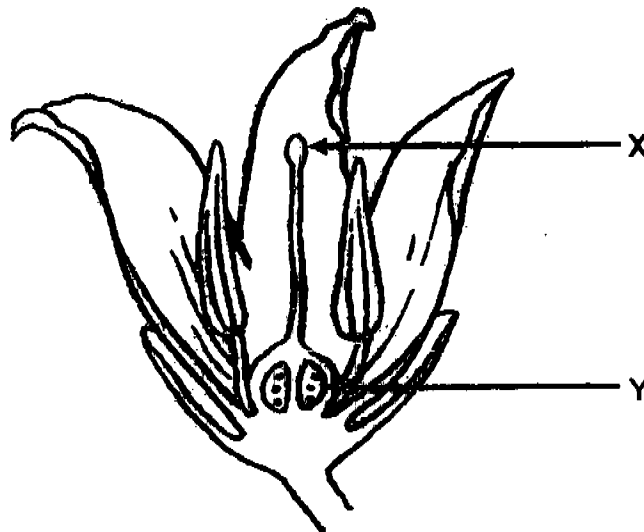
Write your answers to questions 26 to 36 in the spaces provided/  
Marks will be deducted for misspelt key words.

26. Fill in each blank with the correct word.

(a) \_\_\_\_\_ is a process whereby the pollen grain  
from the anther is transferred to the stigma. (1 mark)

(b) The passing on of characteristics from parents to offspring is  
known as \_\_\_\_\_ (1 mark)

27. The diagram below shows the reproductive parts of a flower.



(a) What is the part labelled Y? (1 mark)

\_\_\_\_\_

(b) If part X is cut off, will fertilization still take place at Y?  
Explain your answer. (1 mark)

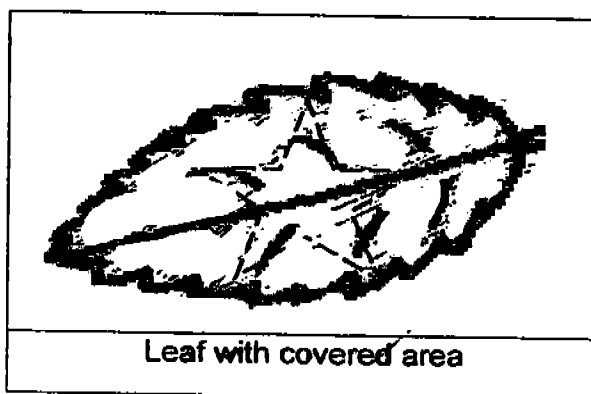
\_\_\_\_\_  
\_\_\_\_\_

28. Puspa carried out an experiment using a pot of plant. After the plant has been destarched, she used a piece of aluminium foil to cover a leaf from the plant as shown below.



She placed the pot of plant under sunlight for a few hours. She then plucked the above leaf as well as a non-covered leaf from the same pot of plant and removed their green colour using alcohol and heat. She carried out the iodine test on both leaves to test for the presence of starch.

- (a) In the diagram, shade the region of the leaf where the iodine turned dark blue. (1 mark)



- (b) Why did she have to use an uncovered leaf for the iodine test?

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- (c) Why must she pluck both leaves from the same pot of plant?

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29. Nora kept five types of animals, A, B, C, D and E in five cages of the same size. She gave 15 g of vegetables, 15 g of meat and 15 g of fruits to each animal. At the end of the day, she measured the amount of food left in every cage and recorded her results in a table as shown below.

Animals	Mass of food left (g)		
	Vegetables	Meat	Fruits
A	8	15	10
B	15	7	15
C	14	13	8
D	7	15	8
E	15	5	15

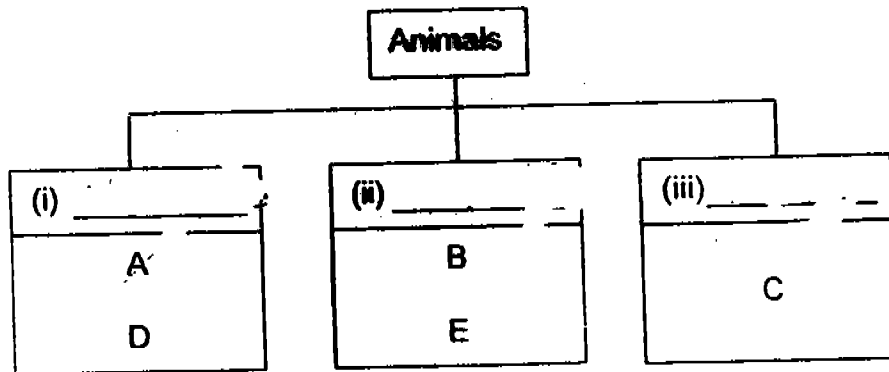
- (a) What is the aim of her experiment? (1 mark)

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- (b) Look at the classification table below. Give a suitable heading for each of the three groups. (1 mark)



- (c) In the space provided below, construct a food chain based on the diet of animals A, B, C, D and E. (1 mark)





30. Junxian was given two similar fish tanks, tank A and B, by his uncle. He used them to set up an experiment as follows:

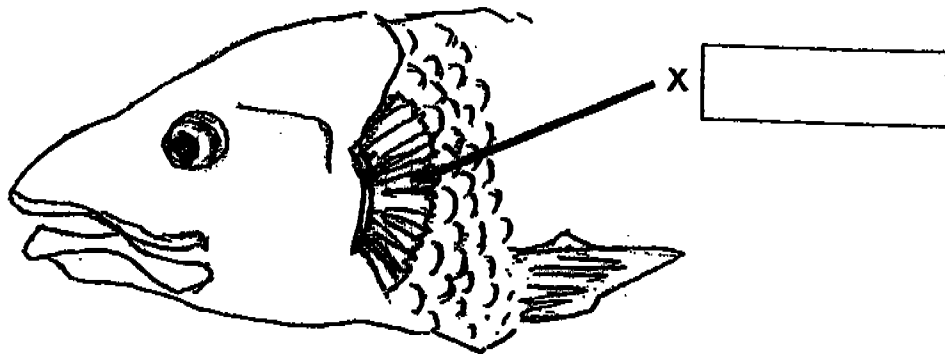
Variables	Tank A	Tank B
Amount of water (litres)	3	3
Nc. of similar sized guppies	10	10
Water plants in tank	Present	Absent
Location	Near a window	Near a window
Feeding	Once a day	Once a day

After several days, he noticed that some of the guppies in tank B had died but all the guppies in tank A were still alive and swimming about actively.

The following are several conclusions that he had made based on his observations. 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. (3 marks)

	Statements	Answer
(a)	The guppies in tank B had died from the lack of nutrients from the water plants.	
(b)	The guppies in tank A had been healthier than those in tank B.	
(c)	The water plants had kept the guppies alive by providing it with oxygen.	
(d)	The water plants in tank A had purified the water, preventing the death of the guppies.	
(e)	The water in tank B was heated up by the sunlight, causing the death of the guppies.	
(f)	The addition of a water plant might have helped to keep the guppies in tank B alive.	

31. The diagram below shows part of a fish.

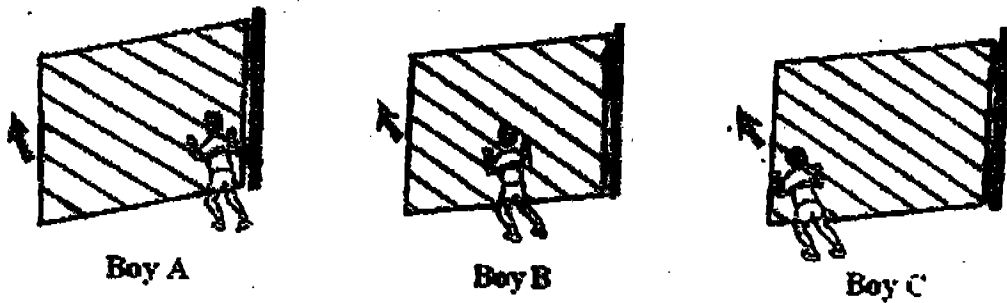


- (a) Label the part marked 'X'. (1 mark)
- (b) Explain the process that takes place in the part labelled 'X'.

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32. The diagrams below show three boys applying a force at different parts of the same gate to shut it.

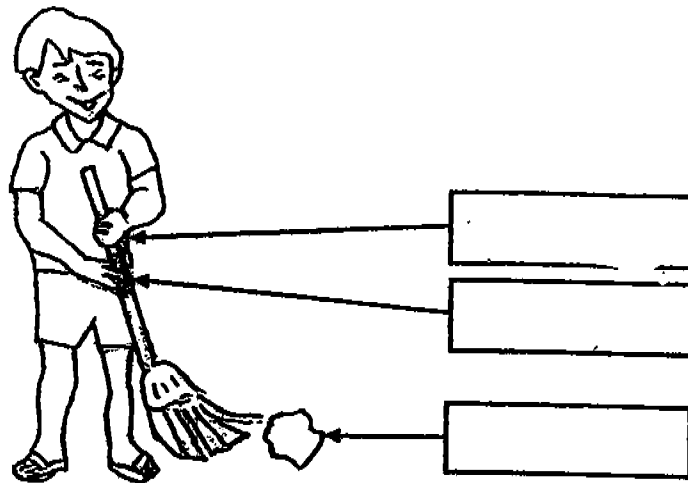


- (a) Which boy used the greatest effort to shut the gate? (1 mark)
- (b) Give a reason for your answer in ( a ). (1 mark)

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33. The diagram below shows Pengli using the broom as a lever.



- (a) Write the words 'Fulcrum' and 'Effort' in the correct boxes.  
(1 mark)
- (b) Explain how the lever shown above helps to make work easier.

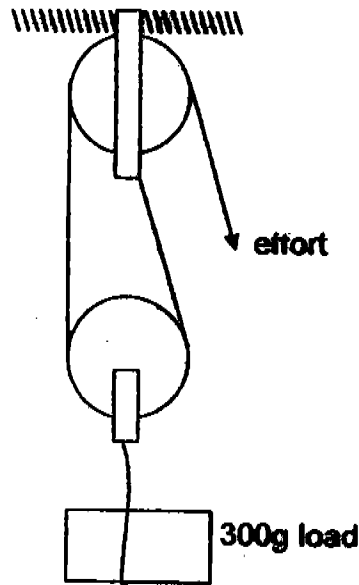
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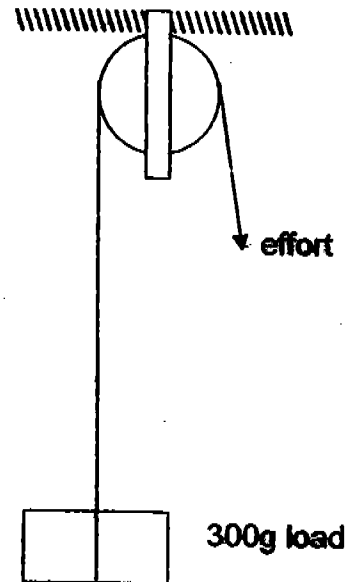
Give one example of a lever that works the same way as the broom.  
(1 mark)

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34. Pulley systems A and B are set up as shown in the diagrams below. In each system, an effort is applied to lift a load of 300 g.



Pulley system A



Pulley system B

- (a) Apart from using the same load of 300g, state one other similarity between pulley systems A and B. (1 mark)

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- (b) In lifting the load, what disadvantage does A have when compared to B? (1 mark)

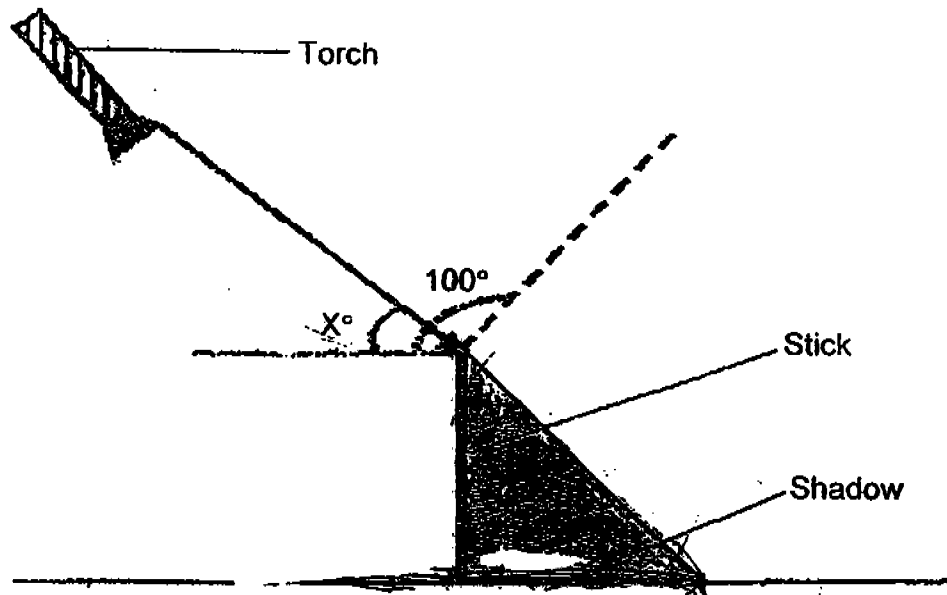
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- (c) In pulley system A, if the effort distance is 12cm, what will be the distance moved by the load? (1 mark)

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35. John placed his torchlight at an angle of  $X^\circ$  to shine at a stick as shown in the diagram below. Then he measured the length of the shadow.

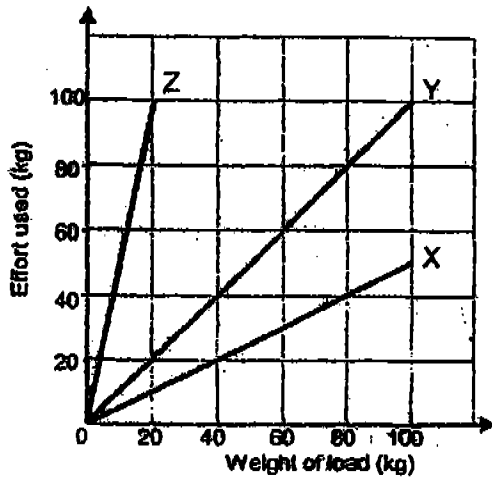


He repeated the experiment, increasing the angle of light source each time. Then he recorded his observation as follows :

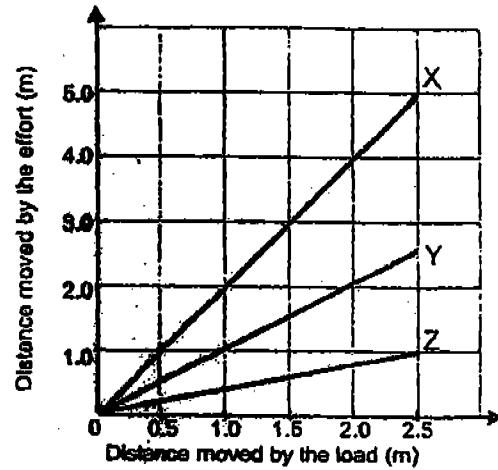
Angle of light source ( degrees )	Length of shadow (cm)
40	25
50	20
60	15
70	? <i>10</i>
80	5
90	0

- (a) Based on the results, what is the length of the shadow when the angle of the light source is at  $70^\circ$  ? (1 mark)
- 
- (b) From the results, what does he notice about the relationship between the angle of the light source and the length of the shadow formed ? (1 mark)
- 
- (c) Draw the shadow of the stick when the angle of the light source is at  $100^\circ$ . (1 mark)

36. Jessie used three different simple machines X, Y and Z to move different loads. She recorded the weight of the load, the amount of effort used and the distances moved by the effort and the load each time. Then she plotted the following graphs as shown below.



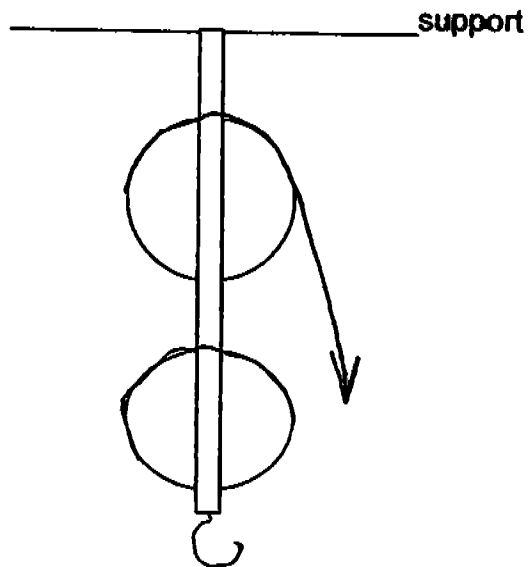
Graph (A)



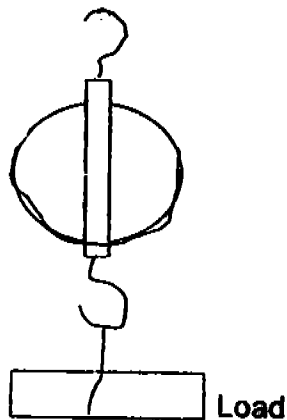
Graph (B)

- (a) Give an example of a simple machine that Y could represent. (1 mark)
- \_\_\_\_\_
- (b) Based on Graph (A), compare the amount of effort used when machines X and Y were used to move the load. (1 mark)
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

- (c) In the diagram shown below, complete the pulley system by drawing the string round the pulleys in order to lift the load. (1 mark)



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- (d) In what way does this pulley system make work easier? (1 mark)

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

Setters: Mrs Lynnette Wong, Ms Yasmeen Mohamad


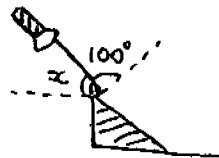
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c)



d) It makes work easier by using lesser effort to lift a load.

- 1) 3                    26) a) pollination    b) heredity
- 2) 2                    27) a) Ovary
- 3) 3                    b) No, Y will not be fertilised as pollination cannot take place without X.
- 4) 1
- 5) 4                    28) a)                     b) She used it as a control to show that any change of iodine is due to the lack of sunlight.
- 6) 4
- 7) 2                    c) She can have a fair test as the plant photosynthesize at the same time, if she takes a different leaf from a different plant, the amount of the starch would be different.
- 8) 3
- 9) 3                    29) a) She wants to know which animals are meat eater, vegetable eater and animal who eats fruit.
- 10) 3
- 11) 1                    b) i) Herbivore    ii) Carnivore    iii) omnivore
- 12) 1                    c) D    C    E
- 13) 4                    30) a) F    b) N    c) T    d) F    e) F    f) T
- 14) 3                    31) a) Gills
- 15) 1                    b) Dissolved oxygen is taken in and carbon dioxide is given off.
- 16) 2                    32) a) Boy A
- 17) 4                    b) He is standing nearest to the fulcrum and therefore using more strength.
- 18) 1
- 19) 2                    33) a) Fulcrum                    b) A small movement of the hand will enable the litter to move a longer distance across the floor
- 20) 1                    Effort                    -----
- 21) 4                    c) Fishing rod
- 22) 4                    34) a) Both load and effort move in opposite directions
- 23) 2                    b) The distance moved to lift the load in pulley A is longer than pulley B.
- 24) 1                    c) 6 cm
- 25) 3                    35) a) It is 10 cm                    c) 
- b) The bigger the angle of light source, the shorter the length of the shadow formed.
- 36) a) Fixed pulley
- b) In machine Y, less effort is used to overcome the load. The effort used is the same.    c) see above