

Pei Chun Public School  
Semestral Assessment 2 – 2005  
Science  
Primary 5

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

Date : 31 October 2005

Class : Pri. 5 ( )

Parent's Signature : \_\_\_\_\_

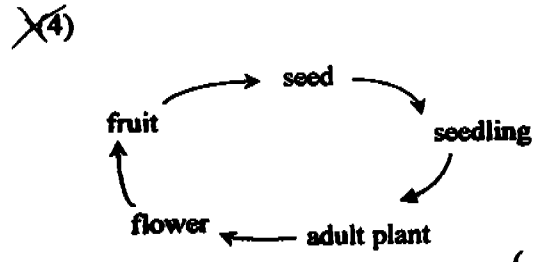
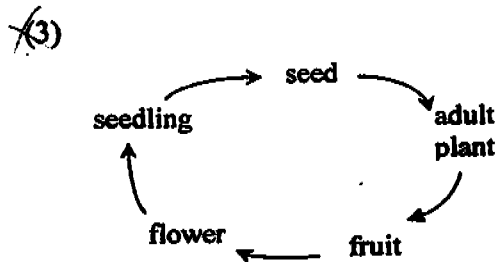
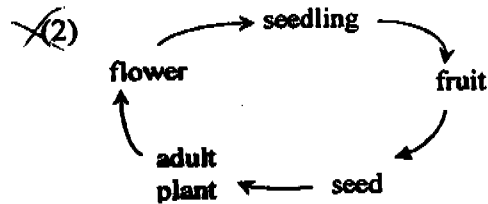
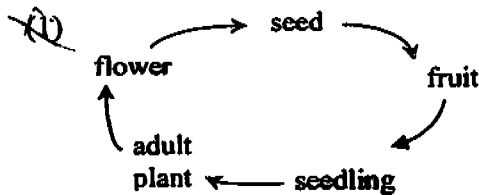
Science Teacher : \_\_\_\_\_

Time : 1 hr 45 min

**Section A (25 × 2 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) and shade the correct oval on the Optical Answer Sheet (OAS).

1. Which of the following diagrams shows the correct order in which a plant grows?



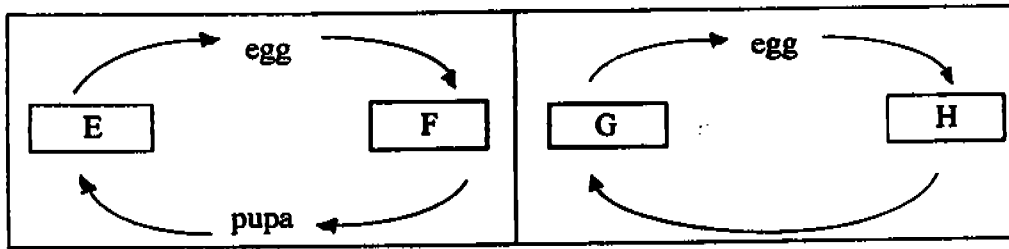
2. Which of the following are the functions of leaves?

- A: take in and give out gases
- B: trap sunlight to make food
- C: remove excess water from the plants
- D: transport food to other parts of the plants

- ~~(X)~~ A and B only  
~~(X)~~ A, B and C only

- ~~(X)~~ B and D only  
~~(X)~~ A, B and D only ( )

3. The diagrams show the life cycles of 2 different insects.



Which of the following correctly matches E, F, G and H in the 2 life cycles?

	E	F	G	H
(1)	butterfly	caterpillar	mosquito	wiggler
(2)	mosquito	wiggler	cockroach	nymph
(3)	cockroach	nymph	grasshopper	nymph
(4)	grasshopper	nymph	butterfly	caterpillar

( )

4. During a blackout, Nancy ~~groped~~ ~~into the dark kitchen~~ and found a torch. Her cat was also ~~mewing~~. Which sense(s) helped her find the torch?

A: sight  
~~C~~: hearing

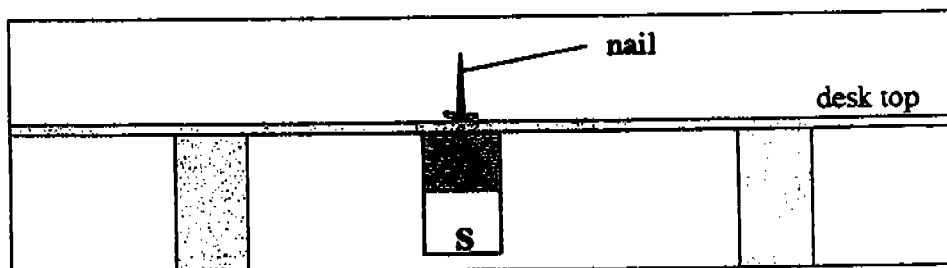
B: smell  
~~D~~: touch

~~(1)~~ D only  
~~(2)~~ C and D only

~~(3)~~ A and D only  
~~(4)~~ A, B and C only

( )

5. An iron nail is placed on a desktop and a magnet is brought near it under the desk as shown in the diagram below.



What kind of materials is the desk top likely to be made of to allow the magnet to attract the iron nail?

A: iron  
 B: glass  
 C: wood  
 D: aluminium

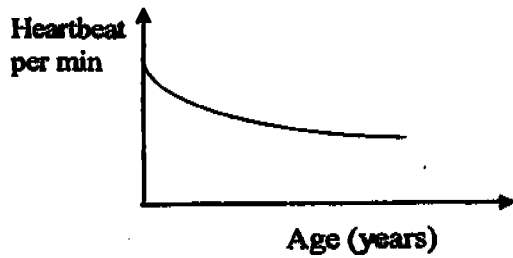
~~(1)~~ A only  
~~(2)~~ B or C only

~~(3)~~ A or D only  
~~(4)~~ B, C or D only

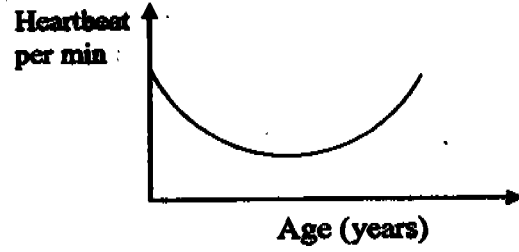
( 22 )

6. Which of the following graphs correctly traces the change in our heartbeat as we increase in age?

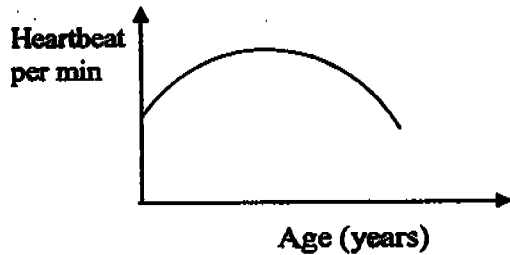
~~(A)~~



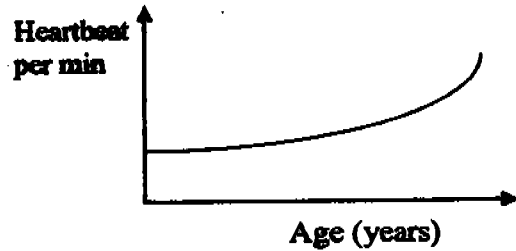
~~(B)~~



~~(C)~~

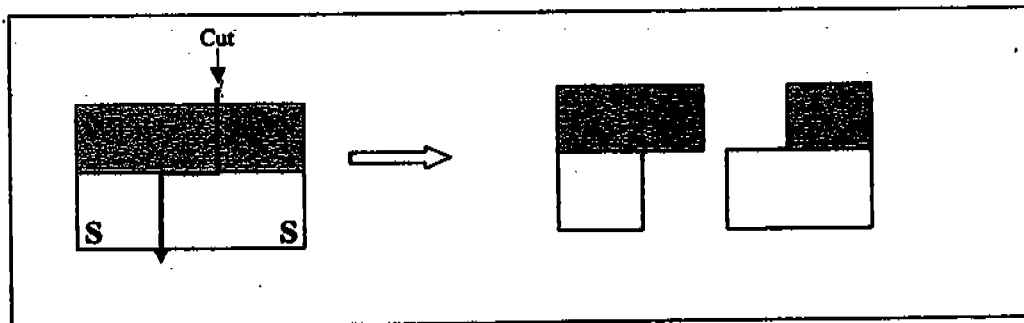


~~(D)~~



( )

7. The diagram below shows a magnet that is cut into 2 identical pieces.



Which of the following diagrams shows the possible arrangement of the 2 smaller magnets?

~~(A)~~



~~(B)~~



~~(C)~~



~~(D)~~



( )  
23

8. Which of the following statements about the Sun are true?

- A: The Sun gives us food, light and warmth.
- B: The Sun is the source of all energy chains.
- C: The Sun's energy is trapped by the stomata to make food.
- D: The Sun gives out heat to ensure the continuity of the water cycle.

- (3) A and B only
- B and D only

- (2) A, B and C only
- B, C and D only

( )

9. Which of the following statements about the Earth are correct?

- A: The Earth's moon moves round it only at night.
- B: The Earth takes one day to complete one rotation.
- C: The Earth rotates from East to West on its own axis.
- D: The revolution of the Earth round the sun results in four seasons.

- (1) A and B only
- A, B and C only

- (2) B and D only
- (4) B, C and D only

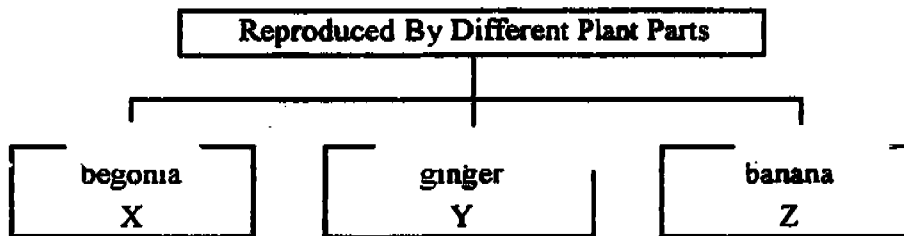
( )

10. Which of the following functions is correctly matched to the part of a plant cell?

Parts of a plant cell	Functions
<input checked="" type="checkbox"/> nucleus	Controls everything that happens within the cell.
<input checked="" type="checkbox"/> cell wall	Controls the substances that go in or out of a cell.
<input checked="" type="checkbox"/> cytoplasm	<u>Fills up the cell and keeps it firm</u> .
<input checked="" type="checkbox"/> cell membrane	Allows food and oxygen to move around within the cell

( )

11. The classification table below shows how some plants are grouped.

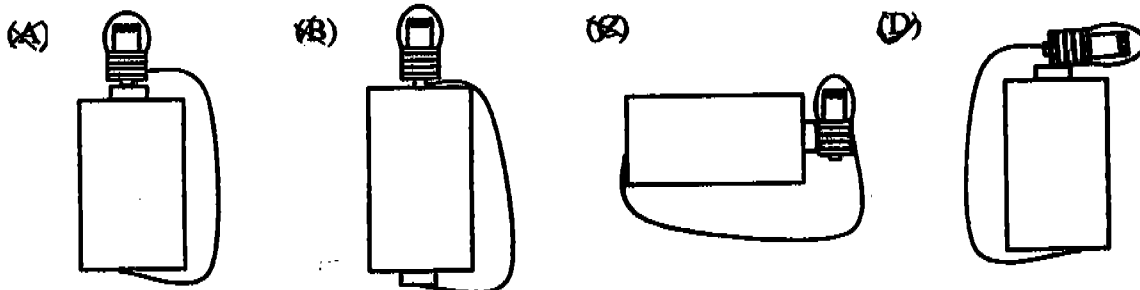


Which of the following correctly matches X, Y and Z ?

	X	Y	Z
(1)	African tulip	onion	bamboo
(2)	bryophyllum	tapioca	sugar cane
(3)	African daisy	sweet potato	rattan
(4)	African violet	potato	pineapple

20  
)

12. Which of the bulbs in the following circuits will light up?

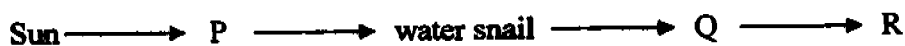


- (1) A and B only  
 (3) A, B and D only

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

( )

13. The chain shows how energy from the Sun is transferred to animals. What organisms are P, Q and R likely to be?

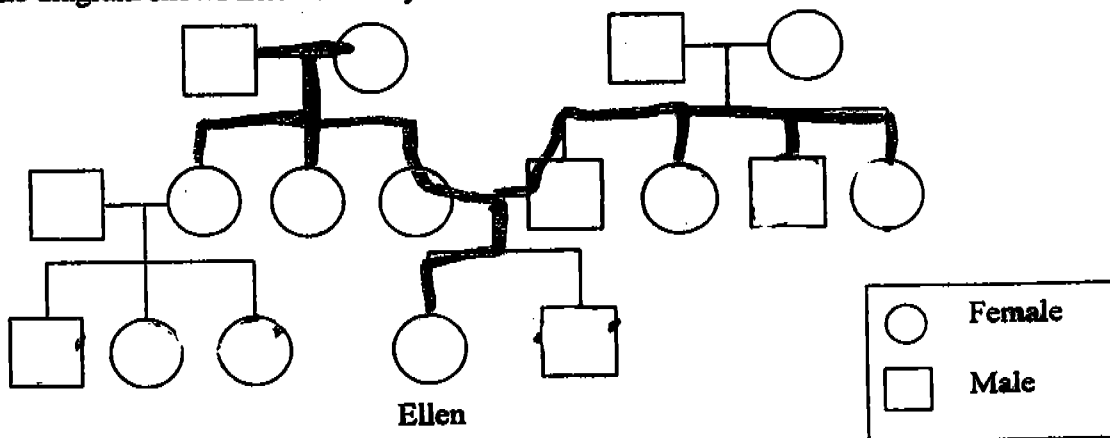


	P	Q	R
(1)	grass	rabbit	fox
(2)	grass	chicken	crocodile
(3)	elodea	frog	snake
(4)	algae	duck	eagle

- (1)  
 (2)  
 (3)  
 (4)

( )

14. The diagram shows Ellen's family tree.



Which of the following statements are true about Ellen's family?

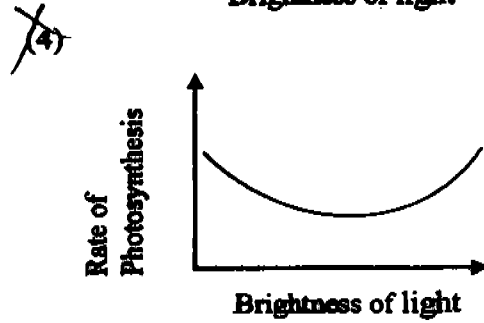
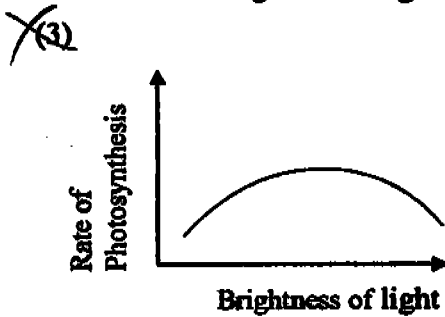
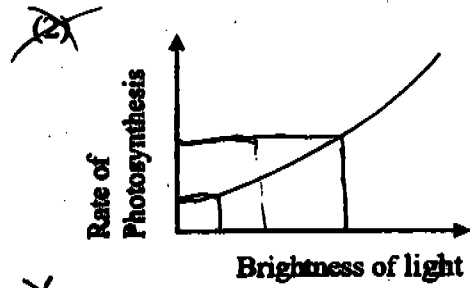
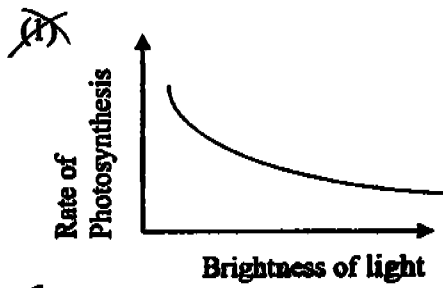
- A: Ellen has 4 aunts and 3 uncles.  
 B: Ellen's mother has 1 brother and 2 sisters.  
 C: Ellen's father has 2 sisters and 1 brother.  
 D: Ellen's maternal grandparents have 2 grandsons and 3 granddaughters.

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

- (2) B and C only  
 (4) C and D only

( )

15. An experiment was conducted to find out the rate of photosynthesis in relation to the brightness of light. Which of the following graphs correctly shows the results of the experiment?



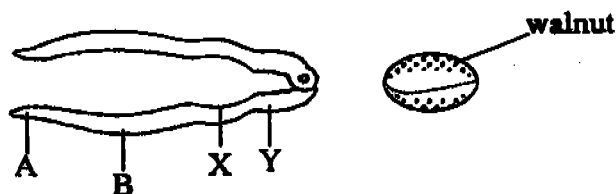
16. The plants in the table below are grouped according to the plant parts where starch is stored. Which group of plants is wrongly grouped?

Group A	Group B	Group C	Group D
carrot	yam	banana	corn
radish	sweet potato	cucumber	barley
turnip	ginger	papaya	groundnut
potato	water chestnut	pumpkin	maize

- ~~(1)~~ A and B only  
~~(2)~~ A and D only

- ~~(3)~~ B and C only  
~~(4)~~ C and D only
- ( )

17. The diagram below shows a nutcracker.



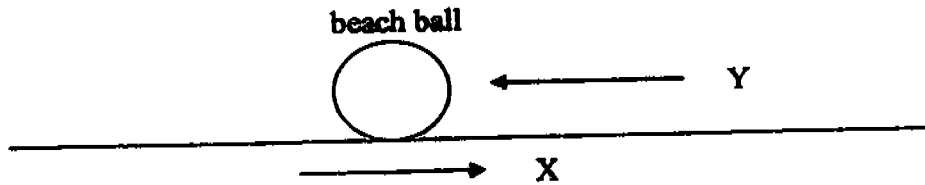
Which of the following positions will require the least effort to crack the nut?

~~(1)~~  
~~(2)~~  
~~(3)~~  
~~(4)~~

Put walnut at Position	Apply effort at Position
X	A
X	B
Y	X
Y	B

26

18. A beach ball is moving in direction X as shown in the figure below.



Which of the following are the possible outcomes if a force is applied on the ball in direction Y?

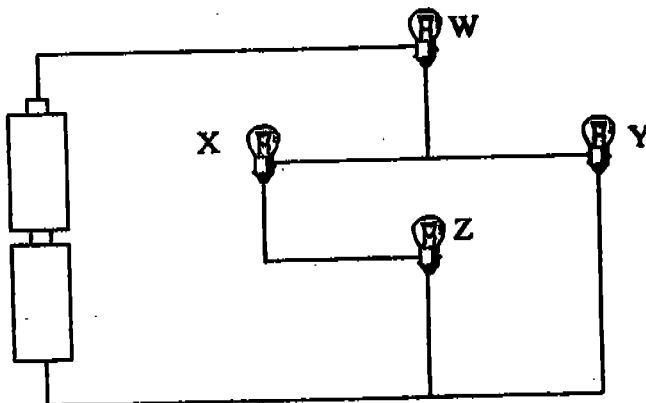
- A: The ball slows down
- B: The ball stops moving
- C: The ball bounces upwards
- D: The ball moves in direction Y

A and B only  
 A, B and D only

A and C only  
 B, C and D only

( )

- 19.



In the above set-up, which bulb will still light up when Bulb X fuses?

- (1) W and Y only
- (3) Y and Z only

- (2) W and Z only
- (4) W, Y and Z only

( )

20. Which of the following statements about forces is/are incorrect?

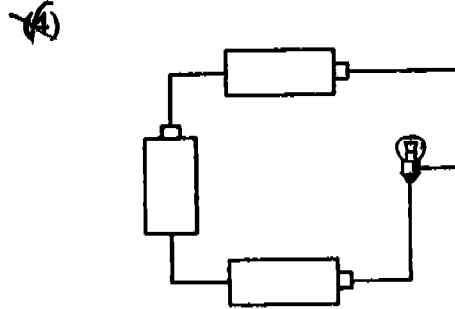
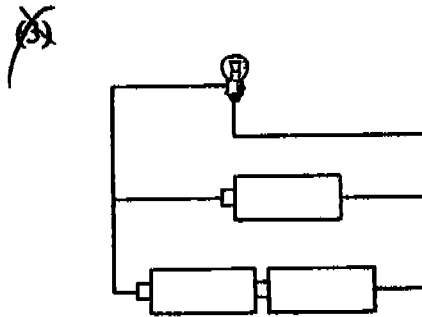
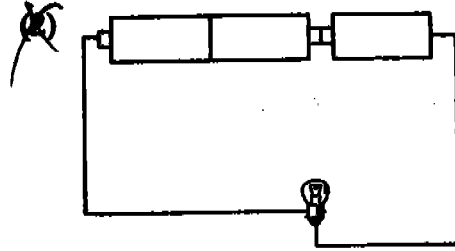
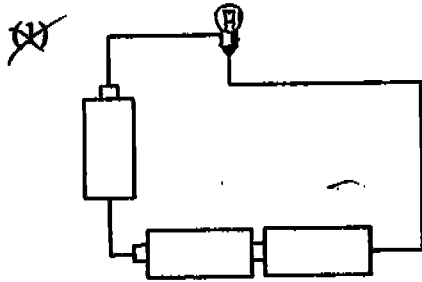
- A: A force can be felt but not seen.
- B: A force can only be exerted by touching the object.
- C: A force must be exerted to make a simple machine do work.
- D: A small force is able to overcome a larger force after moving over a short distance.

A and B only  
 C and D only

B and C only  
 B and D only

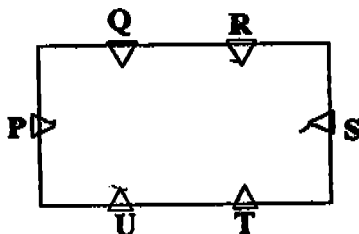
( )

21. The diagrams below show how 3 new identical batteries are arranged in 4 different ways to light up a bulb. Which one of the following will produce the brightest light from the bulb?



( )

22. The circuit card shown below was tested with a circuit tester. The table shows the results.



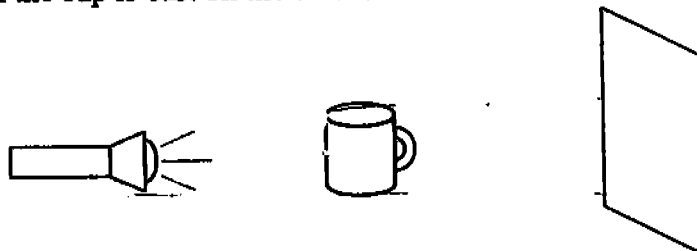
Clips tested	Circuit Tester
P and R	Bulb lit up
Q and S	Bulb did not light up
S and U	Bulb lit up
T and R	Bulb did not light up

Which two clips on the card are not connected by any wire?

- (1) P and S
- (2) Q and T
- (3) T and R
- (4) S and Q

( )

23. The shadow of the cup is cast on the screen when a torch is shone on it.



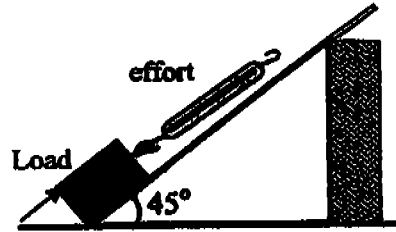
If the object is moved further from the torch, the shadow formed will become \_\_\_\_\_.

- (1) bigger and blurrier
- (2) bigger and sharper
- (3) smaller and sharper
- (4) smaller and blurrier

( )



24. Sally wanted to compare the amount of effort needed to move different loads up an inclined plane.



What variables should she keep the same in the experiment?

- A: weight of the load
- B: spring balance used
- C: steepness of the incline plane
- D: surface texture of the inclined plane

- (1) A only
- (2) C and D only

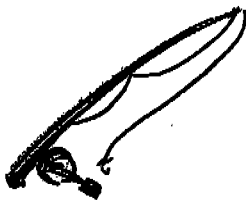
- (3) B and C only
- (4) B, C and D only ( )

25. The picture shows a worker about to throw the bricks off a wheelbarrow.



Which of the following simple machines works in the same way as the wheelbarrow?

(1)



(2)



(3)



(4)



( )

For Questions 26 to 30 please refer to Booklet K.

End of Section A

29

**Pei Chun Public School**  
**Semestral Assessment 2- 2005**  
**Science**  
**Primary 5**

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

Date : 31 October 2005

Class : Pri. 5 ( )

Time : 1h 45 min

Science Teacher : \_\_\_\_\_

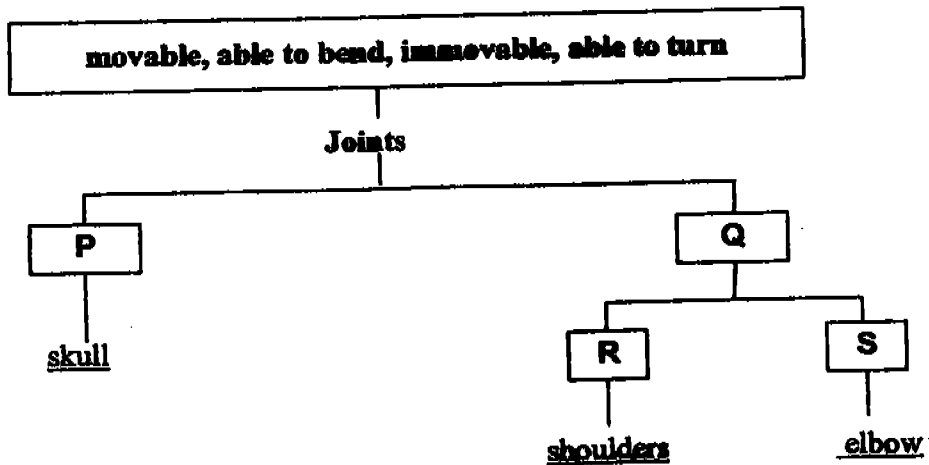
Parent's Signature : \_\_\_\_\_

Marks for Section A	60
Marks for Section B	30
Marks for Booklet K (exclude Section A Qns. 26 to 30)	10
Total marks	100

**Section B (30 marks)**

For questions 31 to 42, write your answers in the spaces provided.

31. Study the classification table below.



a) What are the most likely headings for P, Q, R and S? (2 m)

P : \_\_\_\_\_

Q : \_\_\_\_\_

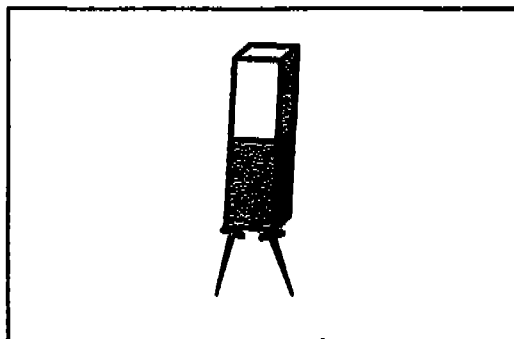
R : \_\_\_\_\_

S : \_\_\_\_\_

b) Another example of your body parts where S can be found is \_\_\_\_\_ . (½ m)

30

32. Two pins are attracted to a magnet as shown in the diagram.



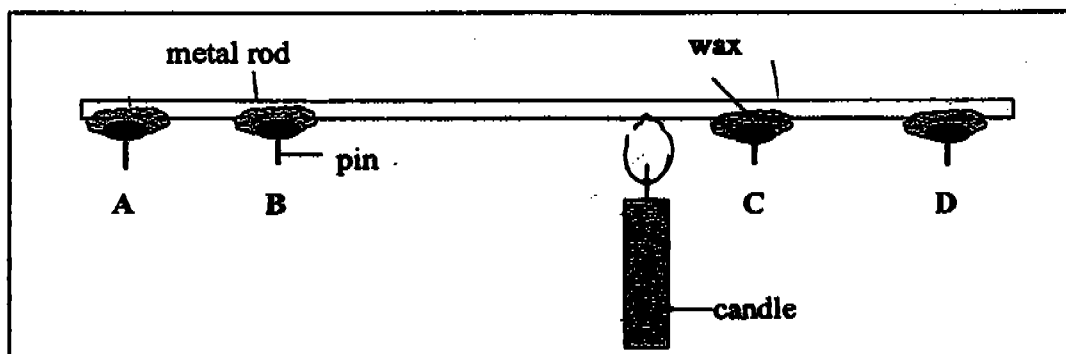
Explain why the pointed ends of the pins move away from each other. (1 m)

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33. Peter set up an experiment as shown. He used a stopwatch to record the time taken for the first pin to drop.



- a) Arrange the pins in order, beginning with the pin that will drop first. (½ m)

→  →  →

- b) What conclusion could Peter draw from the experiment? (1 m)

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- c) Peter repeated the experiment with a glass rod and recorded the time taken for the first pin to drop. He compared the results with the first experiment. What was the aim of this second experiment? (1 m)

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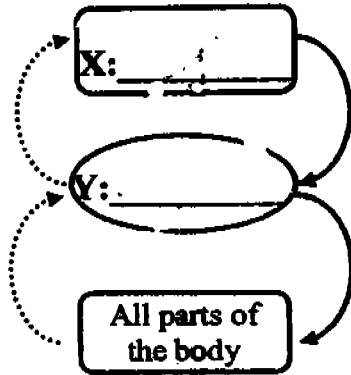


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34. The diagram below shows the pathways of blood, carrying either oxygen or carbon dioxide. Letters X and Y represent 2 organs of the body. The arrows represent the movement of blood in the body.

a) Complete the diagram by filling in the names for X and Y in the boxes. (1 m)

b) Complete the Key by writing the names of the gases carried by the blood. (1 m)



Key	Movement of blood carrying gases
→	Blood rich in _____
⋯→	Blood rich in _____

35. Mala wants to conduct a starch test on the leaves of 2 similar pots of plants, P and Q, to find out the effect of light on photosynthesis. The steps of preparation are listed below but not in the correct order.

- A: Remove the leaves and wash them in hot water.
- B: Place a pot of plant P in the sun for 2 days and a pot of plant Q in a dark room.
- C: Boil the leaves in hot water for a minute.
- D: Drop some iodine solution on both leaves.
- E: Pluck a leaf from each pot of plant.
- F: Remove the leaves and soak each leaf in a test tube of alcohol placed in hot water.

a) Rearrange the steps in the correct order. (1 m)

1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>	6 <sup>th</sup>

b) Write the results of the iodine test below. (1 m)

Leaf P: \_\_\_\_\_

Leaf Q: \_\_\_\_\_

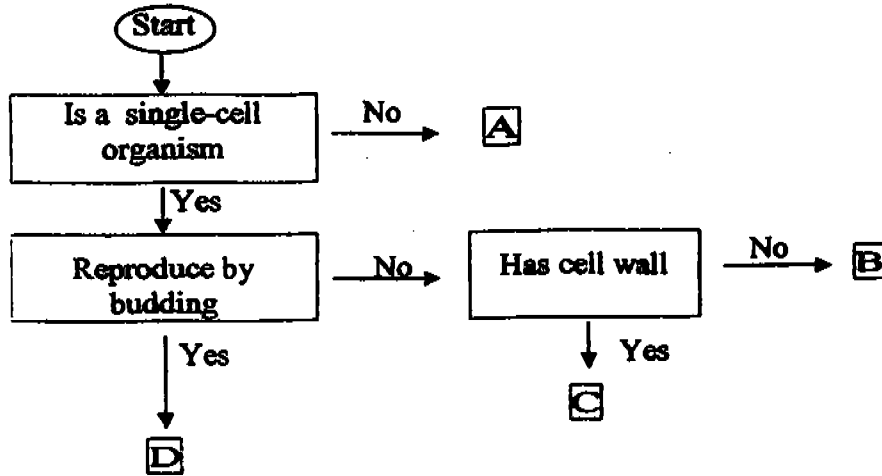
c) Explain in detail your answer in (b). (2 m)

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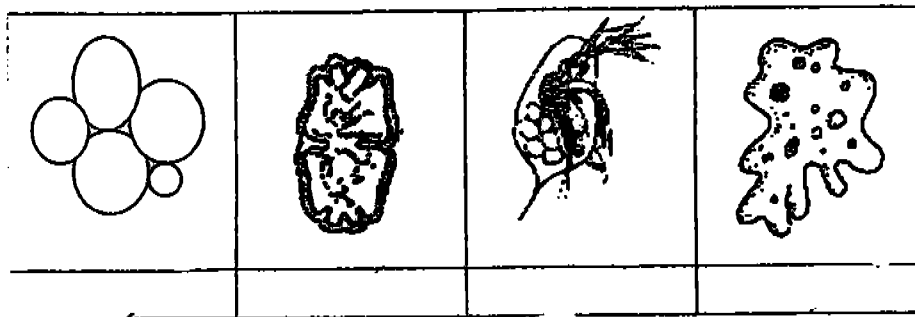


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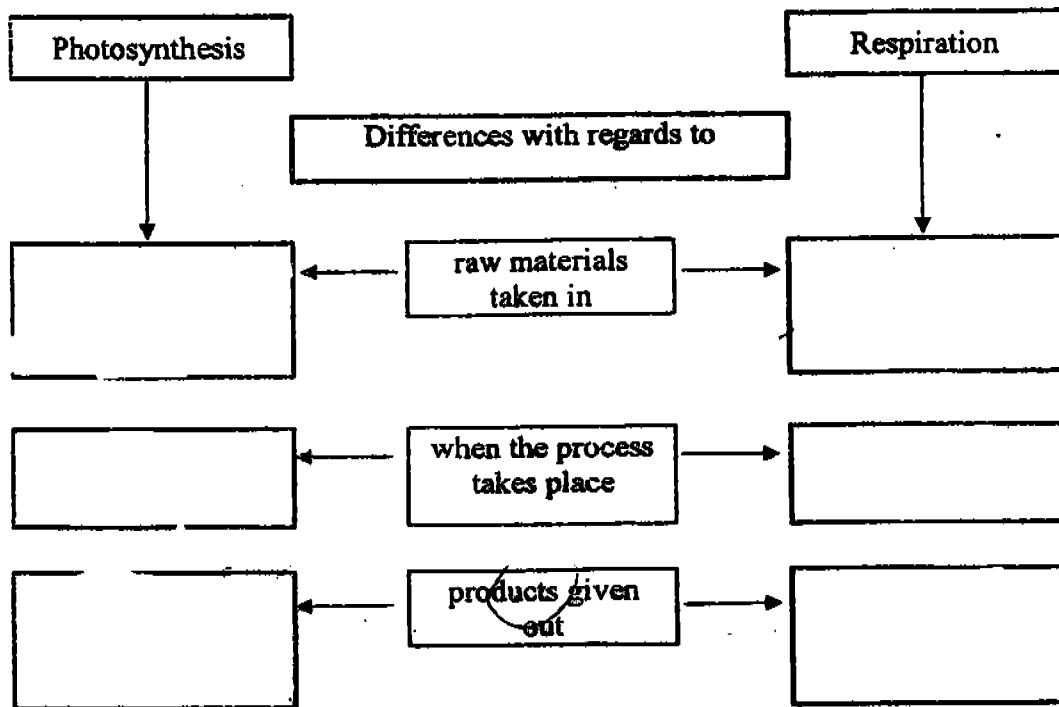
36. In the flowchart below, A, B, C and D represent 4 different organisms.



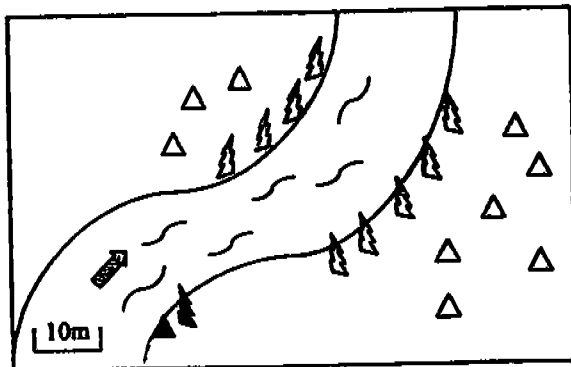
Identify the letters that represent each of the organisms in the diagram. Write the letters, A, B, C or D, below the correct organism. (2 m)



37. The organization chart compares the differences between respiration and photosynthesis. Complete the chart by writing your answers in the correct boxes. (3 m)



38. The diagram shows 2 types of wild plants, F and G, growing on a piece of land by the river.



Key	Parent Plant	Young Plant
Plant F	▲	△
Plant G	▲ 	△ 

a) State the method of seed dispersal for the 2 plants. (1 m)

i) Plant F: \_\_\_\_\_ ii) Plant G: \_\_\_\_\_

b) Explain your answer to part (a). (1 m)

\_\_\_\_\_

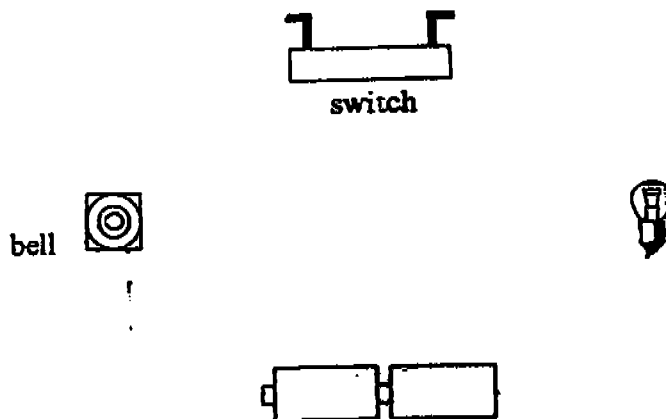
\_\_\_\_\_

c) Give one characteristic of the fruit/seed of plant G. (1 m)

\_\_\_\_\_

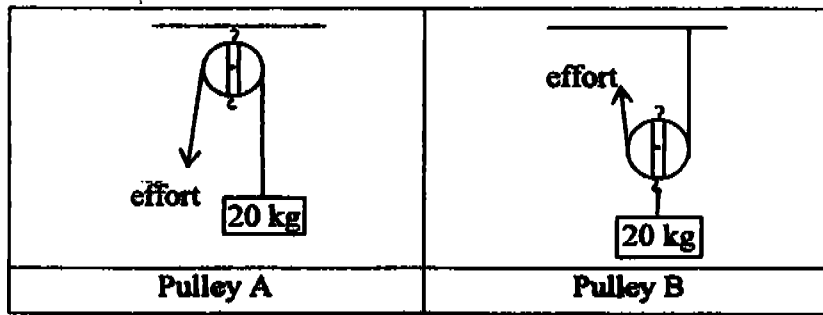
\_\_\_\_\_

39. The diagram below shows 2 batteries, a bell, a bulb and a switch. In the space below, draw 4 lines to show how the above items can be connected together such that the bell will ring and the bulb will light up at the same time when the switch is closed. (2 m)



34

40. John is given 2 pulleys, A and B, to lift up a 20 kg load to the same height. He has to use them to do the task with the least effort and in the most convenient way.

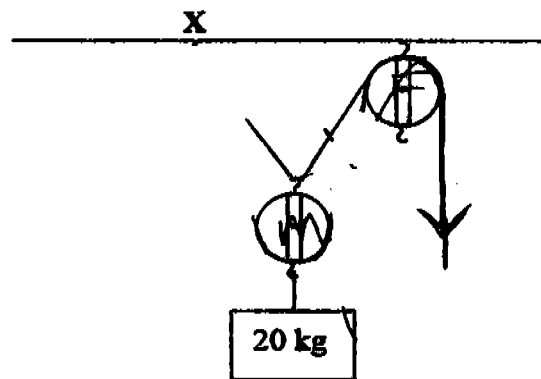


a) John considers the advantages <sup>and</sup> disadvantages of pulleys A and B.

i) State an advantage of using pulley A as compared to pulley B. (1 m)

ii) State one disadvantage of using pulley A as compared to pulley B. (1 m)

b) To tap both advantages of pulleys A and B, John used both pulleys to form a combined pulley system below. Complete the system by drawing in the missing string, tied to point X. Show in your diagram the direction of the effort on the string. (1 m)



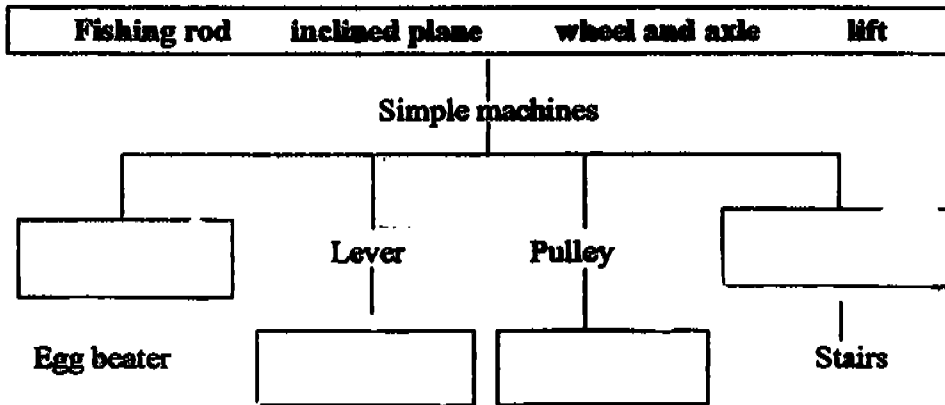
c) How much effort is needed to lift the 20kg load (~~ignoring frictional force~~)? (½ m)

d) What is the distance moved by the load, when the effort moves a distance of 1 metre? (½ m)

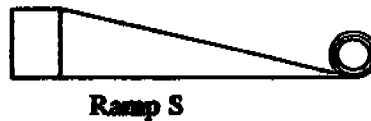
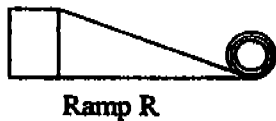
35

41. Complete the classification table below with the words in the box.

(2 m)



42. Ali has to roll a bundle of vinyl up into his shop. He chooses to use ramp S, even though he knows that there is an advantage in using ramp R.



a) Why does he choose to use ramp S? (1 m)

\_\_\_\_\_ of vinyl up  
 \_\_\_\_\_

b) What is the advantage to Ali if he uses Ramp R instead of Ramp S? (1 m)

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

For Questions 43 to 46 please refer to Booklet K.

~~End of Paper~~

Set by : Ms Jasmine Wong  
 Vetted by: P5 Science Committee Teach

36



Pei Chun Public Primary School  
Primary 5 Science SA2 Exams (2005)

*Exam Series*

**Answer Sheets**

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

- 31a.      P : immovable                  Q : movable  
             R : able to turn                S : able to bend
- 31b.      Knees
32.      The two pins become temporary magnets / magnetized and like poles and 2 pins repel when face each other.
- 33a.      C D B A
- 33b.      The nearer the pin is to the candles, the faster it will drop.
- 33c.      To find out if the glass rod or the metal rod is a better conductor of heat.
- 34a.      X : lungs                                  oxygen  
             Y : heart                                Carbon dioxide

35a. B E C F A D

35b. The iodine turns dark blue in colour.  
The iodine remains the same.

35c. Leaf P is able to photosynthesize as it is left out in the sun for two days while Leaf Q is being put in the dark where it cannot photosynthesize.

**\*\*Iodine turns dark blue in the presence of starch. Therefore, the iodine dropped on Leaf P turned dark blue as there is starch in it, while Leaf Q does not have starch, therefore the iodine does not turn dark blue.**

36. D C A B

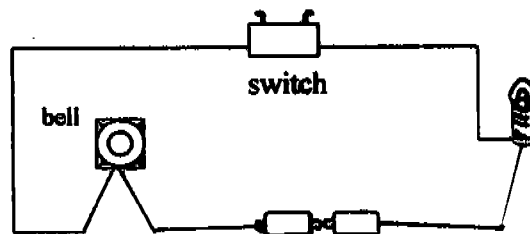
37.	Carbon dioxide	Oxygen
	Water	glucose
	When there is light	All the time
	Oxygen	Water vapour,
	sugar	Carbon dioxide, energy

38a. (i) Wind  
(ii) Water

38b. Plant F is dispersed by wind as it is only found in 2 places as it follows the direction of the wind while Plant G is by the river.

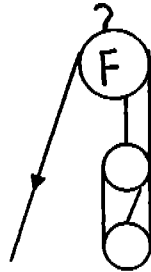
38c. It has a fibrous husk.

39.



- 40a. (i) Pulley A changes the direction of the force, whereas Pulley B moves in the same direction as the load.  
 (ii) Pulley A uses the same amount of effort or slightly more effort to lift the same load, while Pulley B uses less effort to overcome a same load.

40b.



- 40c. 10kg  
 40d. 50cm

41. wheel and axle      fishing rod      lift      inclined plane

42a. He would need less effort to roll the bundle of vinyl up ramps.

42b. He would have to move a shorter distance if we were to use Ramp R instead of Ramp S.