Anglo-Chinese School (Primary)

MID-YEAR EXAMINATION 2009

SCIENCE

BOOKLET A

PRIMARY FIVE

Name: _____ ( ) Class: Primary 5 ___

Date: 14 May 2009 Duration of paper: 1 h 45 min

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Parent's/Guardian's signature

INSTRUCTION TO CANDIDATES

1. This question paper consists of 24 printed pages.
2. Do not turn this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Shade your answer on the Optical Answer Sheet (OAS) provided.

PART I

For each of the following questions 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.

(30 x 2 marks)

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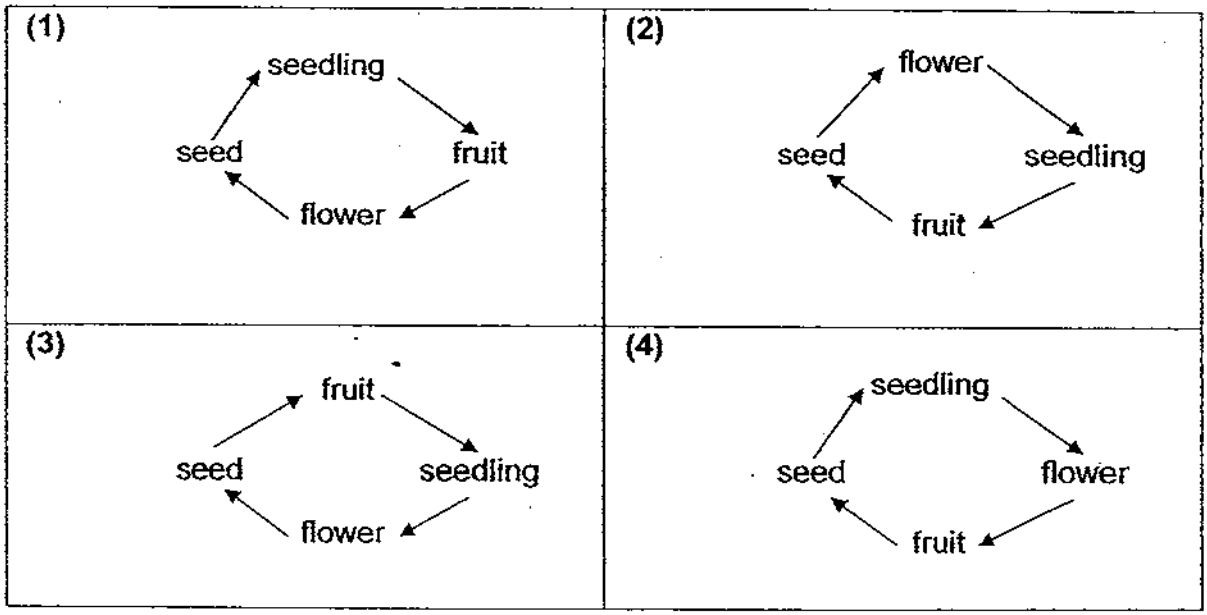
1 Which one of the following best shows the life cycle of a plant?



2 Plants transport food from their leaves. Where is the food transported to?

A roots
B flowers
C stem
D fruits

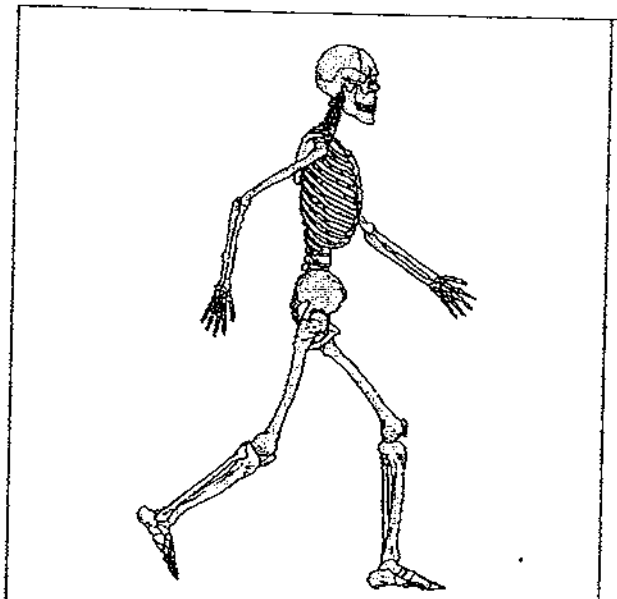
(1) D only

(2) B and D only

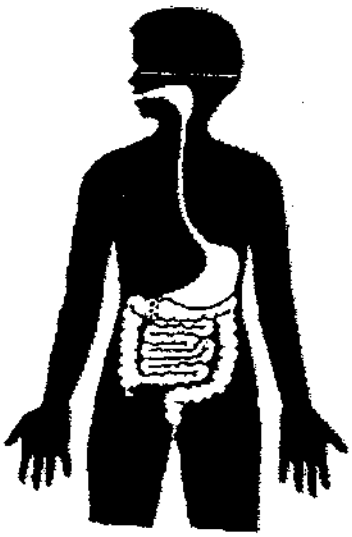
(3) B, C and D only

(4) A, B, C and D

3 Which of the following systems, A, B, C and D, are involved in the bending and straightening of the arm?

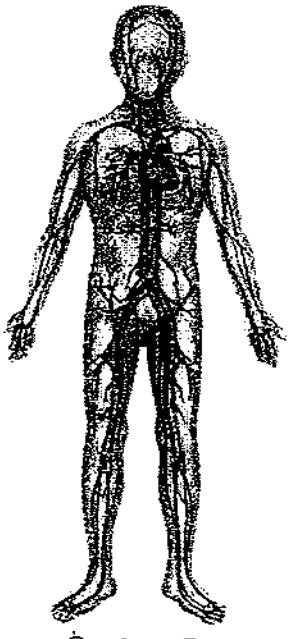


System A



System B

System C



System D

(1) A and B only

(2) A and C only

(3) C and D only

(4) A, B, C and D

4 Jamie planted two balsam plant seeds each into four identical pots. Each pot, J, K, L and M, was exposed to different conditions as shown in the table below.

Pot	Conditions			
	Water	Air	Sunlight	Temperature (°C)
J	✓	✓	×	30
K	✓	×	✓	30
L	×	✓	✓	5
M	✓	✓	✓	1

Which of the following pot(s) will you find germinating seeds?

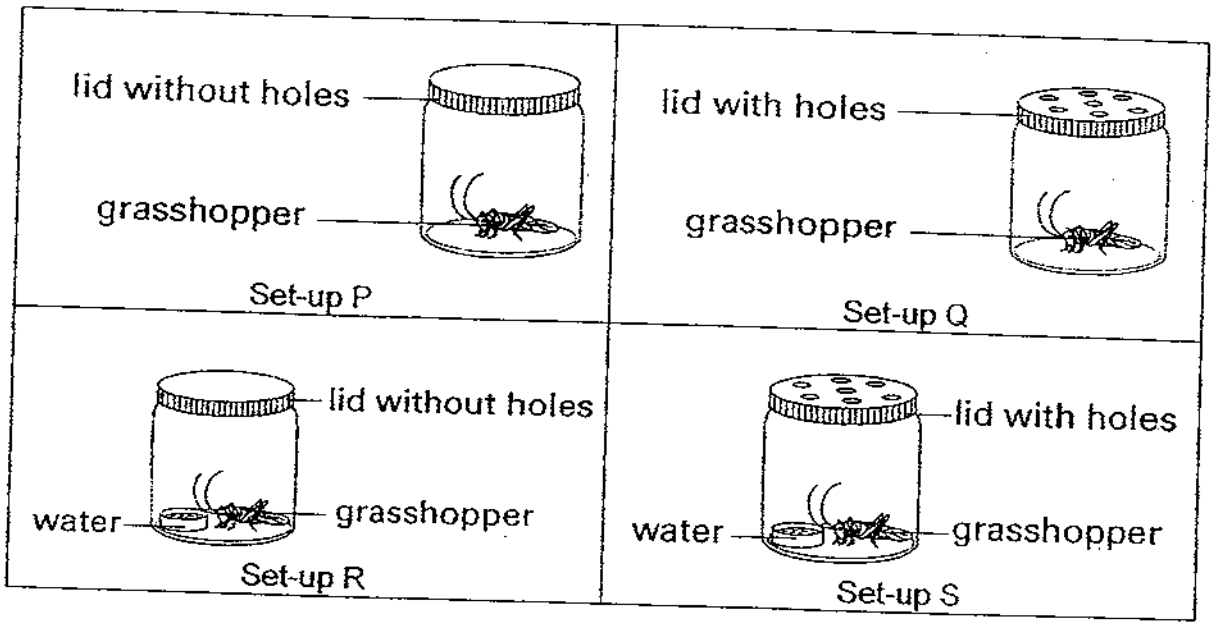
(1) J
(2) K
(3) L
(4) J and M

5 Which of the following show the similarities between a fern and a fungus?

A Both are poisonous.
B Both reproduce by spores.
C Both have stems and roots.
D Both do not produce flowers.
E Both are plants that can make their own food.

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

6 Daniel set up four jars, P, Q, R and S, as shown in the diagram below.



Daniel wants to find out whether a grasshopper needs air to survive. Which of the following set-ups should he use?

(1) P and R only

(2) R and S only

(3) Q and R only

(4) Q and S only

7 Four pupils made the following statements about the characteristics of living things.

Tim : A mouse runs when it sees a cat.
Anne : A mimosa plant folds its leaves when it is touched.
John : I screamed when I accidentally hit my fingers with the hammer.
Zach : The shark senses the movement of its prey in water and swims after it.

Which characteristic of living things are they referring to?

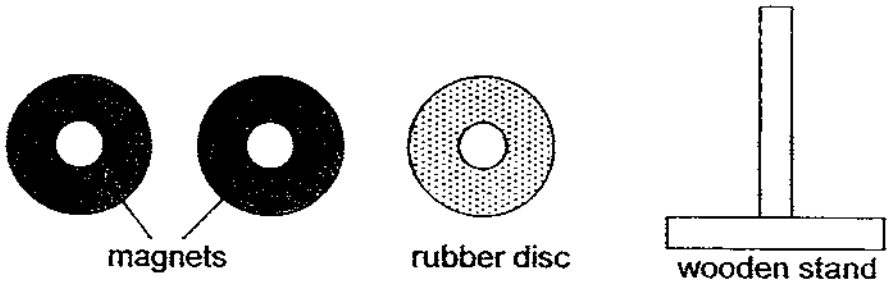
(1) Living things grow.

(2) Living things eventually die.

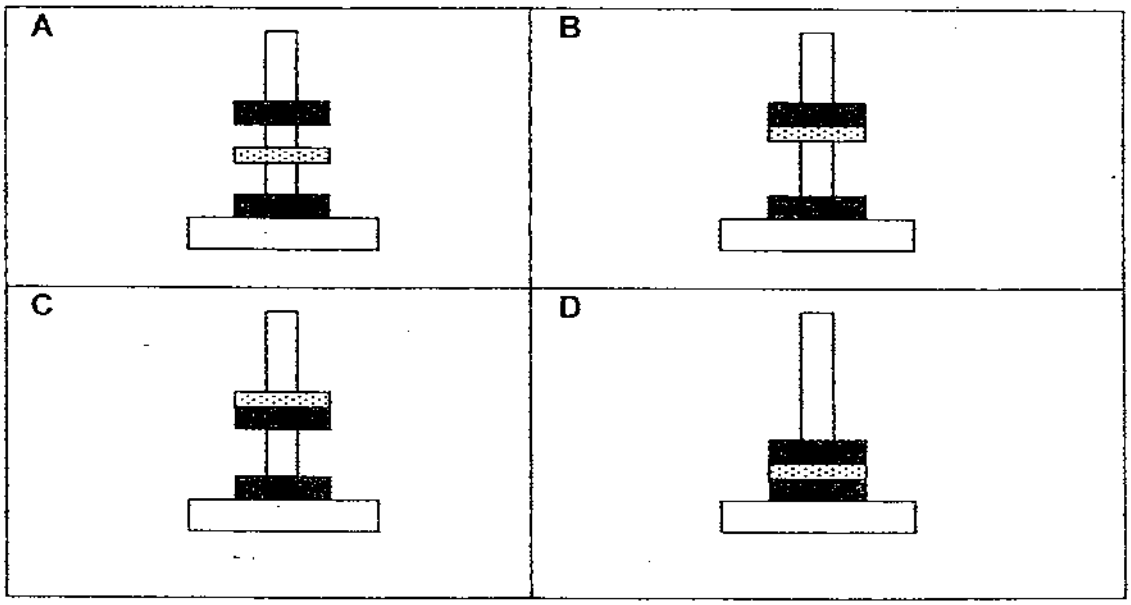
(3) Living things need food and water to survive.

(4) Living things respond to changes around them.

8 The diagram below shows three discs, each with a hole at its centre. Two of the discs are magnets and one is a thin sheet of rubber. All three discs can be slotted through the wooden stand.



Which of the following discs arrangements are possible?



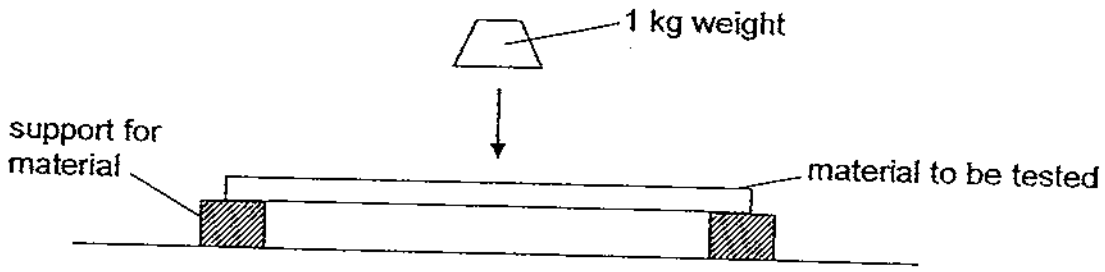
(1) A only

(2) B only

(3) C and D only

(4) A, C and D only

9 Jason dropped a 1kg weight on five different materials from a fixed height as shown in the diagram below.



He recorded the number of times the weight was dropped before the materials broke into two pieces in the table below.

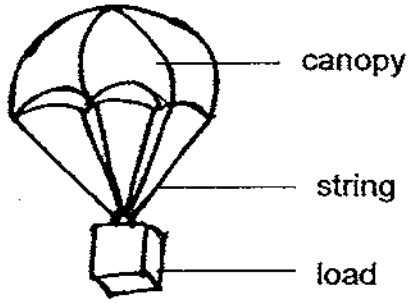
Material tested	Number of times the weight was dropped before material broke into two pieces
P	30
Q	24
R	50
S	44
T	65

Based on the results above, which of the following statement(s) is/are true?

A Material T is a metal.
B Material P is the strongest.
C Material T broke into two pieces first.
D Material R is stronger than material P.

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

10 An investigation is carried out to find out the effectiveness of various parachutes. The diagram below shows the general parachute design which was dropped from 15 metres above the ground.



The table below shows the data collected in the investigation.

Trial	Material used for canopy	Area of material used for canopy (cm^2)	Length of string lines (cm)	Time taken to reach the ground (second)
1	Plastic	225	40	30
2	Plastic	400	25	33
3	Paper	225	25	25
4	Paper	400	25	32
5	Cloth	225	40	28
6	Cloth	400	25	35

Which of the trials above provide a fair test to find out how different materials used in the canopy affects the time to fall in 15 metres?

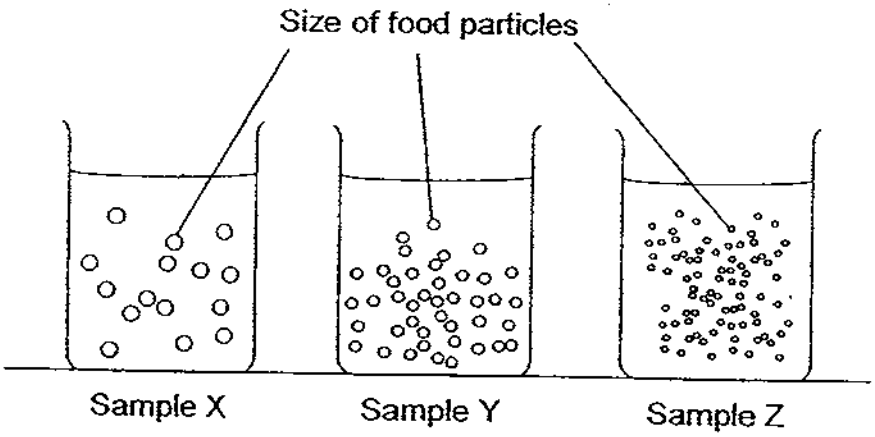
(1) 1, 3 and 5 only

(2) 1, 4 and 5 only

(3) 2, 3 and 6 only

(4) 2, 4 and 6 only

11 Three samples of partially digested food, X, Y and Z were taken from three different parts of the digestive system.



If Sample Y was taken from the stomach, where could Samples X and Z be taken from respectively?

	Sample X	Sample Z
(1)	Small intestine	Gullet
(2)	Mouth	Gullet
(3)	Gullet	Small intestine
(4)	Large intestine	Small intestine

12 What is the function of the fruit in a plant system?

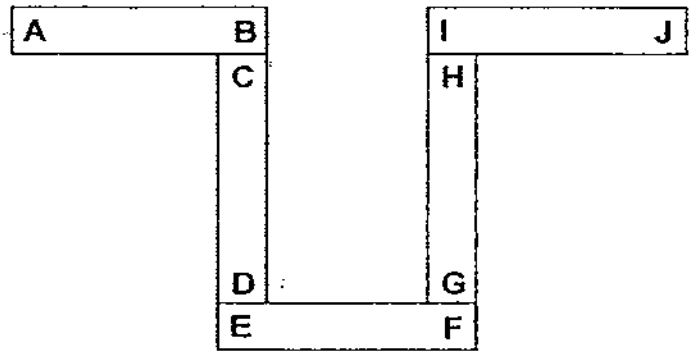
(1) Provides food for the plant.

(2) Attracts insects to the plant.

(3) Protects the seeds in the fruit.

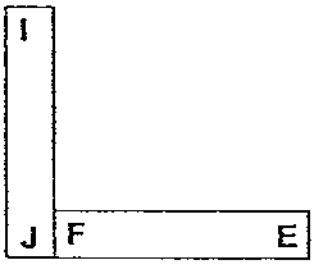
(4) Keeps animals away from the plant.

13 Five bar magnets with their ends marked A to J can be arranged as shown below.

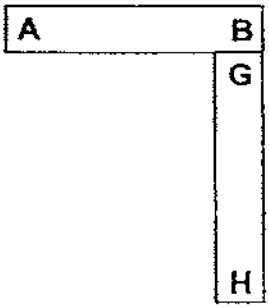


Which one of the following diagrams shows a possible arrangement of two of the magnets?

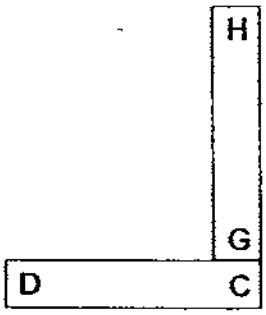
(1)



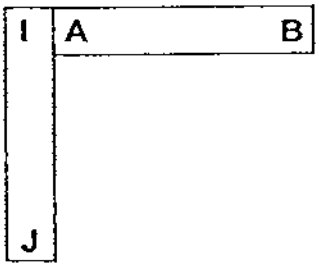
(2)



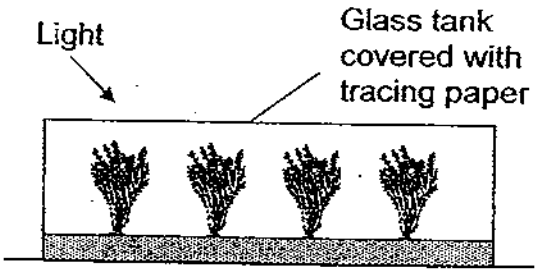
(3)

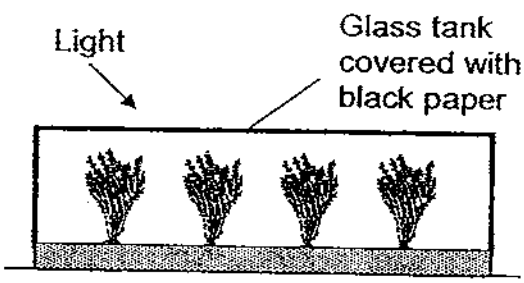


(4)



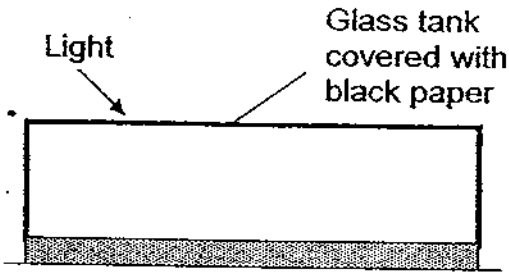
14 Joseph wanted to investigate if the amount of light affects the growth of a plant. The diagram below shows each of his set-ups in a clear glass tank.



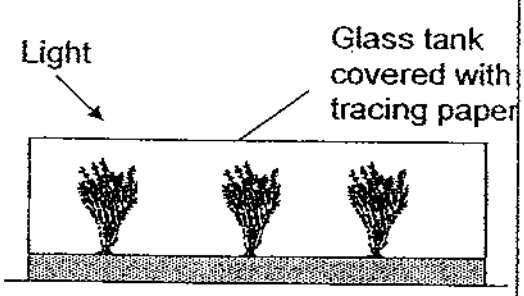


Which one of the following could be used as a control for his experiment?

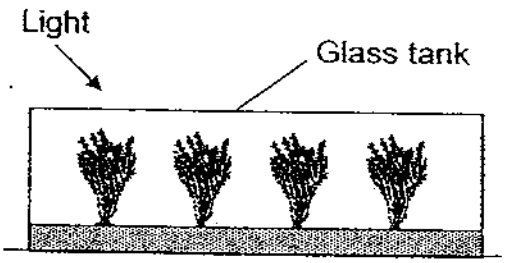
(1)



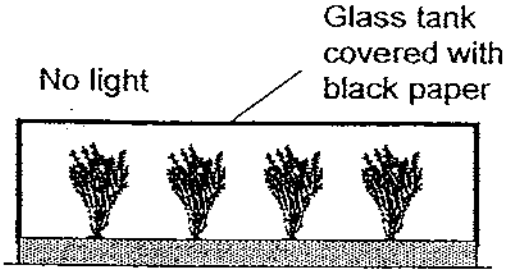
(2)



(3)



(4)



15 Which one of the following statements about the function of the lungs is true?

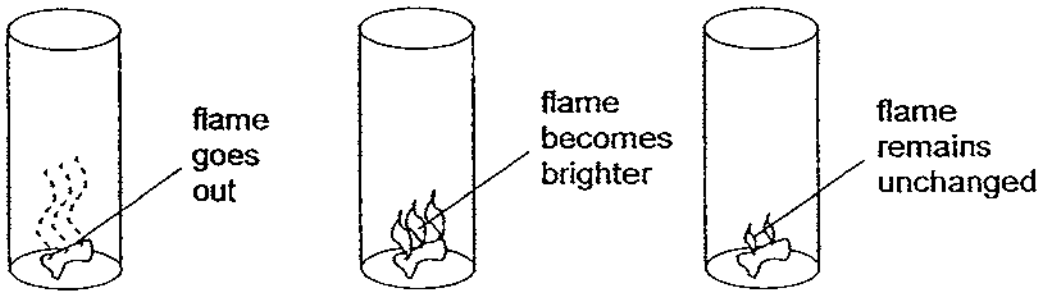
(1) The lungs remove oxygen from the body.

(2) The lungs remove carbon dioxide from the body.

(3) The lungs transport oxygen produced by the heart.

(4) The lungs transport carbon dioxide produced by the heart.

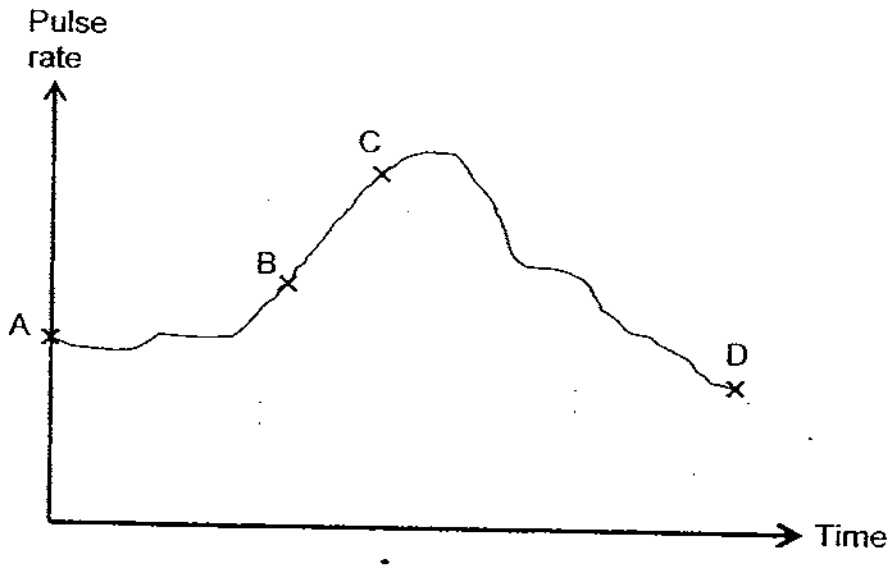
16 Jar A, B and C contained different types of gases. A burning piece of paper was placed into each jar and the following shows what happened to the paper immediately after it was placed in the jar.



Which one of the following shows the most possible type of gases in the jars?

	Jar A	Jar B	Jar C
(1)	carbon dioxide	oxygen	nitrogen
(2)	nitrogen	carbon dioxide	oxygen
(3)	nitrogen	oxygen	air
(4)	air	oxygen	nitrogen

17 The graph below shows the pulse rate of a boy doing different activities over a period of time.



Which one of the following shows correctly the boy's activity at A, B, C and D?

	A	B	C	D
(1)	sleeping	running	walking	sitting
(2)	walking	sleeping	running	sitting
(3)	running	sitting	sleeping	walking
(4)	sitting	walking	running	sleeping

18 Which one of the following statements is correct?

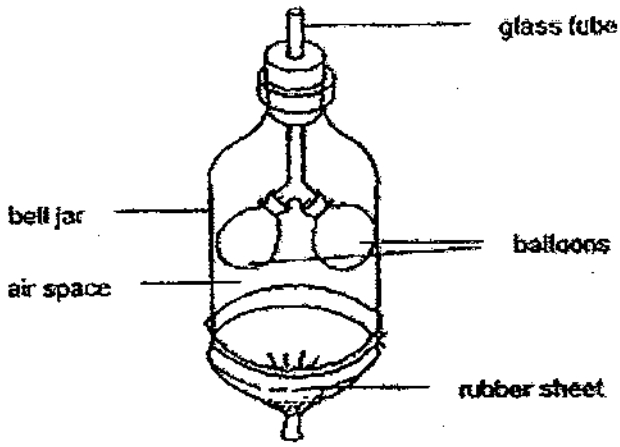
(1) Cells die after some time.

(2) Two parent cells are needed in cell division.

(3) Only the nucleus divides into two during cell division.

(4) New cells produced have special functions which are always different from that of their parent cell.

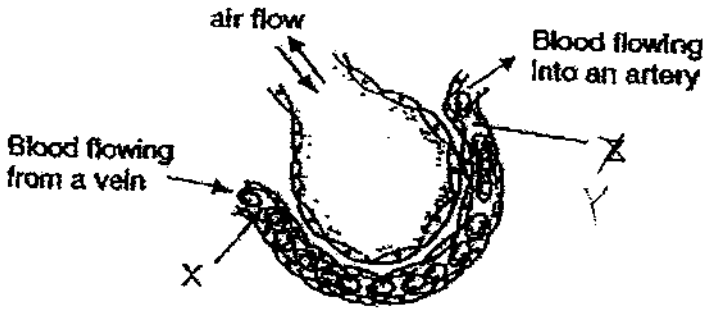
19 The diagram below shows a model of the human respiratory system.



What do the glass tube, bell jar, balloons and rubber sheet represent?

	glass tube	bell jar	balloons	rubber sheet
(1)	rib cage	lungs	windpipe	diaphragm
(2)	windpipe	rib cage	lungs	diaphragm
(3)	rib cage	windpipe	diaphragm	lungs
(4)	diaphragm	lungs	rib cage	windpipe

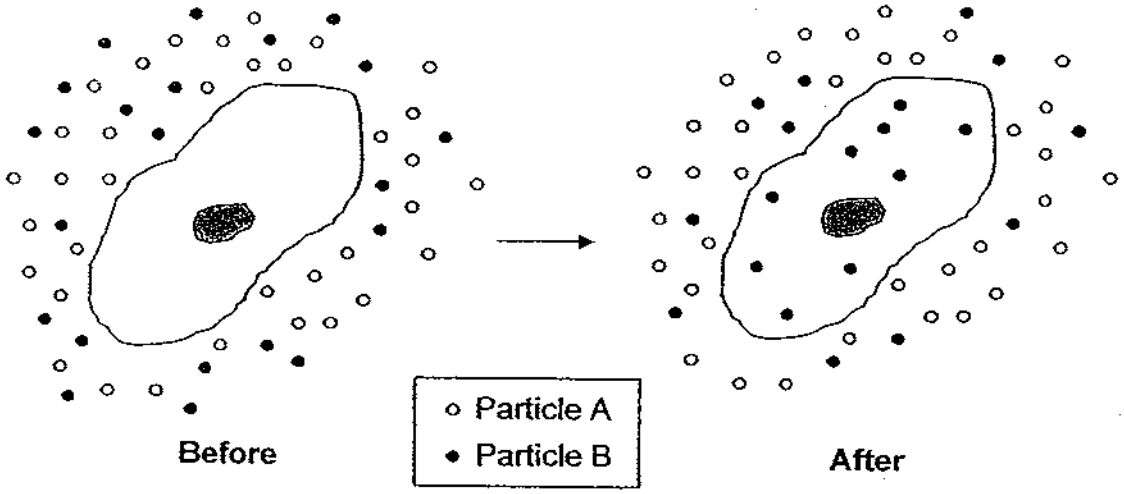
20 The diagram below shows an air sac in the human lungs.



Which one of the following correctly describes the amount of carbon dioxide at X and Y?

	X	Y
(1)	High	High
(2)	Low	High
(3)	High	Low
(4)	Low	Low

21 The diagram below shows a cell with Particles A and B.



Which one of the following best explains the above observation?

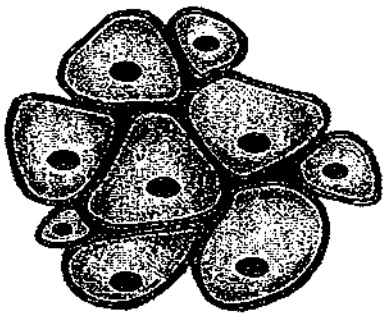
(1) Only Particles A can move into the cell.

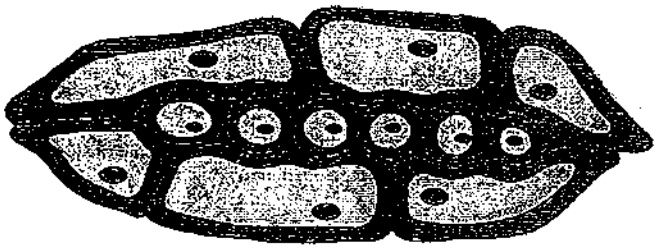
(2) Only Particles B can move into the cell.

(3) Particles A and B can move into the cell.

(4) Particles A and B ~~and~~ can move into and out of the cell.

22 The diagrams below show two different types of cells.





Which one of the following statements provides the best possible description of the cells?

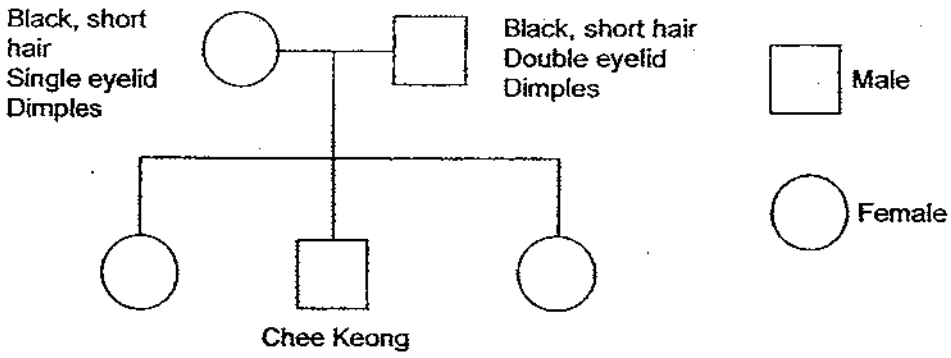
(1) They are all plant cells as they have cell walls.

(2) They are all animal cells as they have cytoplasm.

(3) They are all plant cells as they have chloroplasts.

(4) They are all animal cells as they have cell membrane.

23 The diagram below show's Chee Keong's family tree.



Which one of the following statements about Chee Keong and his family is most probably correct?

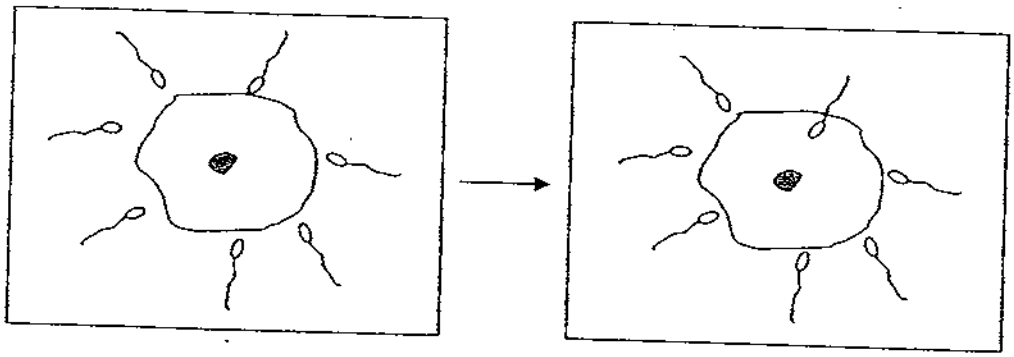
(1) Chee Keong has short hair and he inherited it from his parents.

(2) Chee Keong has dimples and he inherited them from his parents.

(3) Chee Keong has a brother and sister who inherited black hair from their parents.

(4) Chee Keong has two sisters who have single eyelid and they inherited them from their father.

24 The diagrams below show the first two stages of fertilisation.



Stage 1 Stage 2

Which one of the following statements is true?

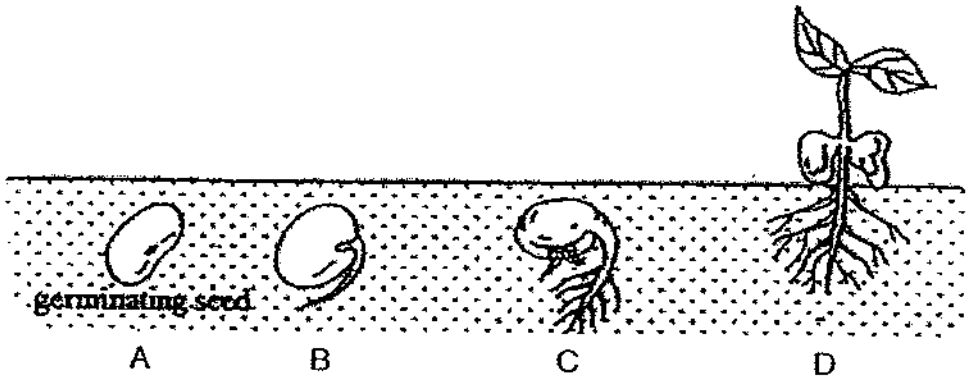
(1) The ovum is fertilised at stage 1.

(2) The sperm cell will divide in the ovum.

(3) After stage 2, the ovum will not allow any other sperms from entering it.

(4) After stage 2, the ovum will still allow other sperms to enter it to produce twins.

25 The diagram below shows the various stages as a seed germinates into a young plant.



At which stage(s) does the germinating seed need to take in oxygen?

(1) D only

(2) C and D only

(3) B, C and D only

(4) A, B, C and D

26 Susan wants to find out the effect of overcrowding on the growth of balsam plant.

Pot	Number of seeds	Type of soil	Size of pot
A	3	loamy soil	small
B	5	garden soil	small
C	5	garden soil	medium
D	5	loamy soil	medium
E	5	garden soil	big
F	10	garden soil	big

Which three pots given in the table above should Susan use to carry out a fair test?

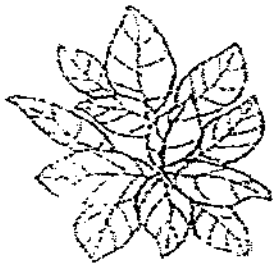
(1) A, B and D only

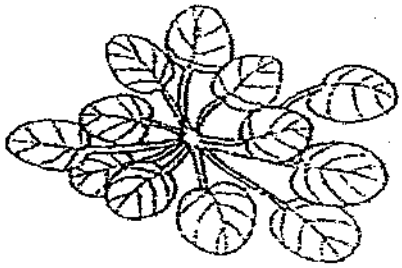
(2) A, D and F only

(3) B, C and E only

(4) C, E and F only

27 The diagrams below show the arrangement of leaves of two plants as seen from above.





What could be the most likely reason for the leaves to be arranged this way?

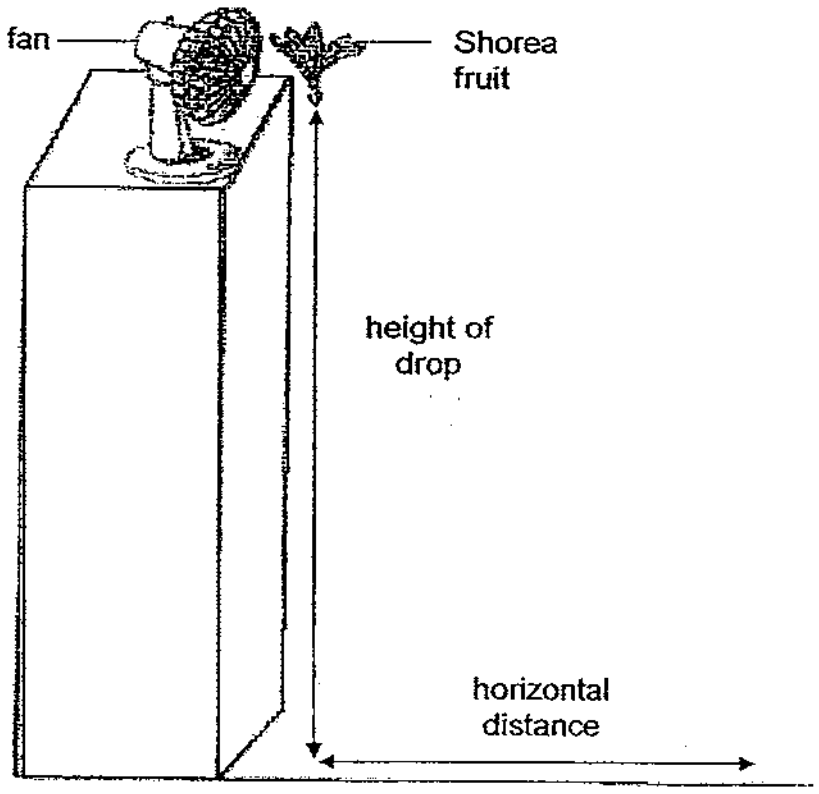
(1) To prevent loss of water.

(2) To prevent overcrowding.

(3) To provide shelter for insects.

(4) To enable the leaves to capture the most sunlight.

28 Mary wanted to investigate if the number of wings of a shorea has an effect on the horizontal distance traveled by the seed. She released the seed from a height as shown below.



Which variable(s) must be kept constant throughout her investigation?

A Height of drop
B Wind speed
C Number of wings of shorea
D Horizontal distance

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

29 The relationship between litter size (number of rabbits at birth) and the average weight of each rabbit at birth is shown in the table below.

Litter size	Average mass of each rabbit at birth (g)
1	55.4
2	50.3
3	47.0
4	43.2
5	41.3
6	39.9
7	39.4

Which one of the following statements best shows the relationship between litter size and average mass of each rabbit at birth?

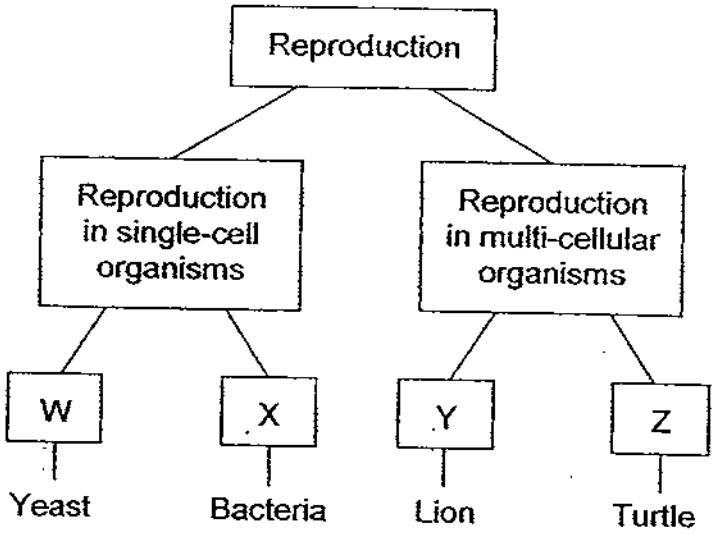
(1) As the litter size increases, the average mass of each rabbit at birth decreases.

(2) As the litter size increases, the average mass of each rabbit at birth increases.

(3) There is no direct relationship between litter size and average mass of each rabbit at birth.

(4) As the litter size increases, the average mass of each rabbit at birth decreases and then increases.

30 Study the classification chart shown below.



Identify the headings for W, X, Y and Z.

	W	X	Y	Z
(1)	budding	cell division	giving birth	laying eggs
(2)	cell division	budding	giving birth	laying eggs
(3)	cell division	budding	laying eggs	giving birth
(4)	budding	cell division	laying eggs	giving birth

- End of Booklet A -

Anglo-Chinese School (Primary)

MID-YEAR EXAMINATION 2009

SCIENCE

BOOKLET B

PRIMARY FIVE

Name: _____ ( ) Class: Primary 5 ____

Date: 14 May 2009 Duration of paper: 1 h 45 min

Booklet	Maximum marks	Marks obtained
A	60	
B	40	
Total	100	

_____
Parent's/Guardian's signature

INSTRUCTION TO CANDIDATES

1. This question paper consists of 15 printed pages.
2. Do not turn this page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.

PART II

For questions 31 to 44, write your answers in this booklet.
The number of marks available is shown in brackets [ ] at the end of each question or part question.

(40 marks)

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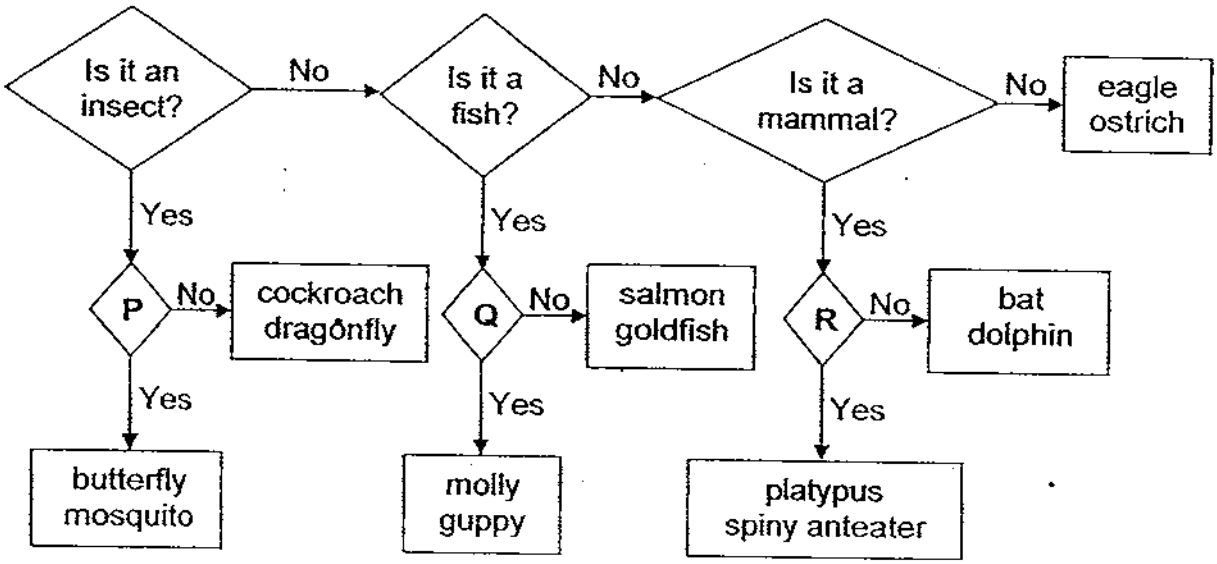
31 The diagram below shows how different animals are classified based on their characteristics.

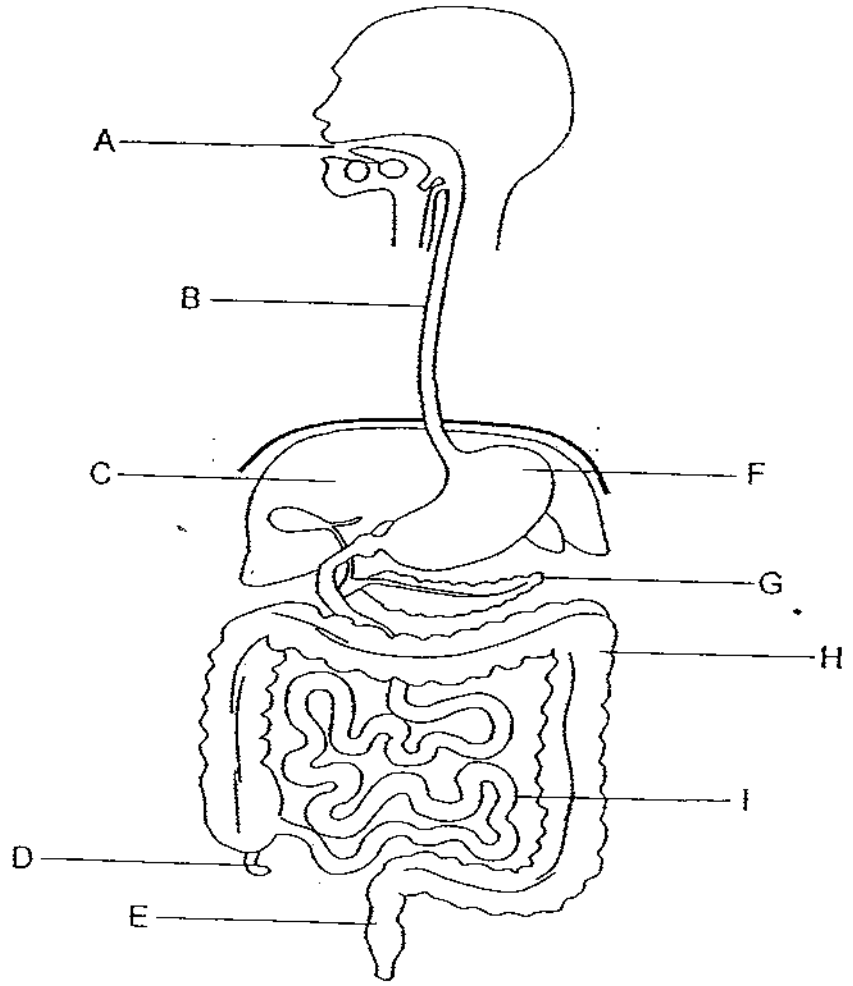


P, Q and R each represents a different question that helps to classify the animals. Write the correct letter, P, Q and R in the appropriate boxes below to indicate which question each letter represents. [3]

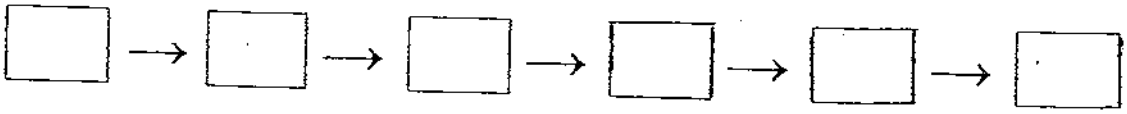
Question	Letter
Does it lay eggs?	
Does it have wings?	
Does it live in water?	
Does it have three body parts?	
Does it give birth to young alive?	
Does it have four-stage life cycle?	

3

32 The diagram below shows some organs in the human body.



(a) Use the appropriate letters, A to I, to show the route that food takes in the digestive system. [1]

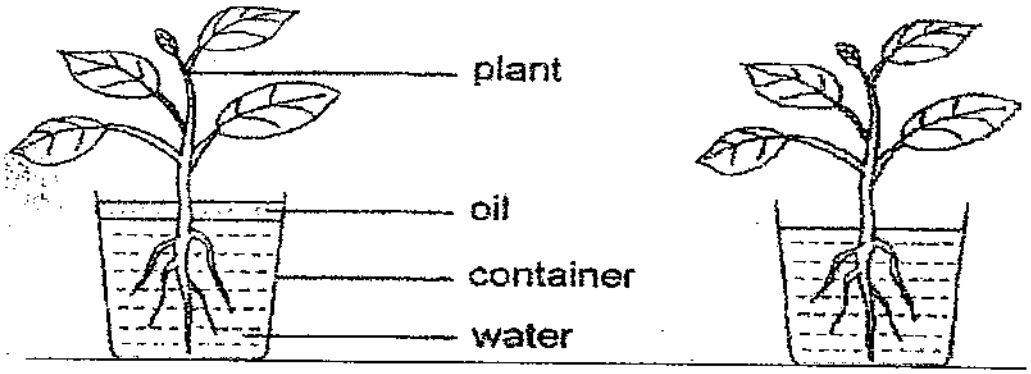


(b) In which part(s) of the system, A, B, C, D, E, F, G, H and/or I does digestion occur? [1]

_____

2

33 Muthu set up an experiment as shown in the diagram below to show that water is absorbed through the roots of the plant.



(a) There are mistakes in Muthu's control set-up. What are the mistakes? [1]

_____

_____

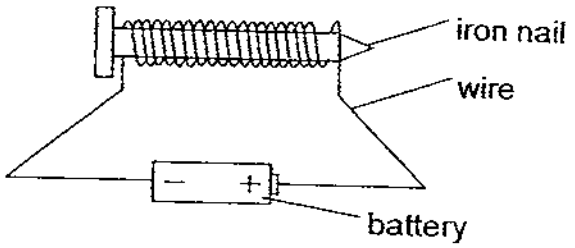
(b) What is the purpose of the control set-up? [1]

_____

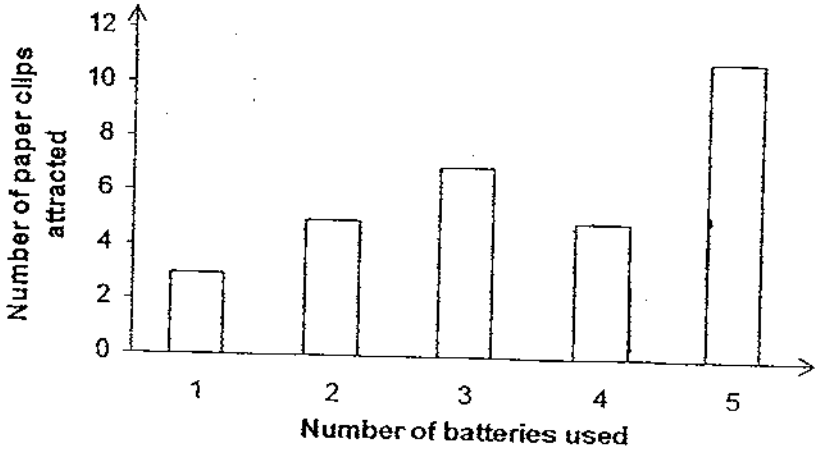
_____

2

34 Peter wanted to find out how the number of batteries affects the number of paper clips attracted to the electromagnet as shown in the diagram below.



He drew a graph based on the results of his experiment.



(a) At the end of the experiment, Peter realised that he had made a mistake while recording the data. Put a "X" in the bar graph column where he had most likely made the mistake. [1]

(b) Based on the results shown above, what is the relationship between the number of batteries and the number of paper clips attracted? [1]

_____

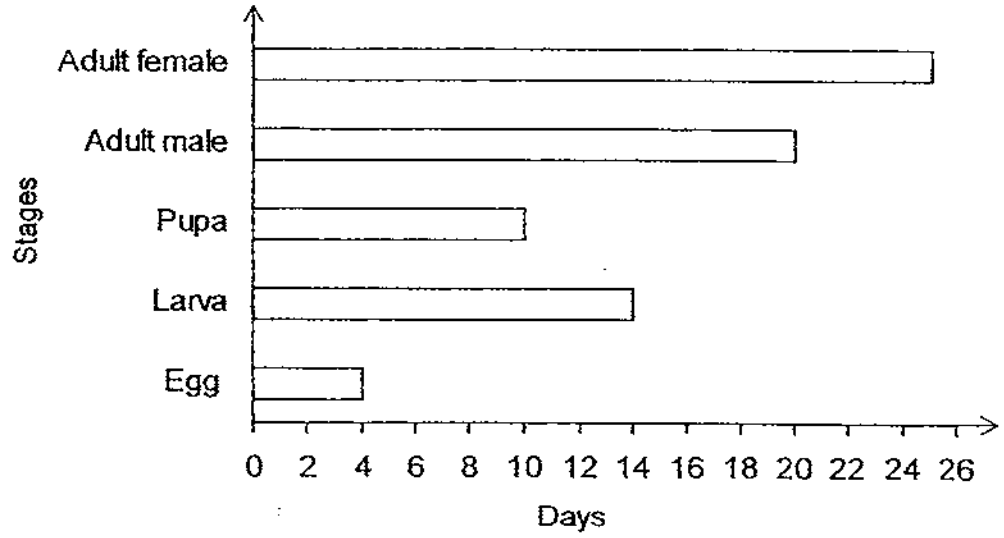
_____

(c) With only one battery in the electromagnet, predict how many paper clips will be attracted if the iron nail is changed to a copper nail. [1]

_____

3

35 The graph below shows the number of days each stage in the life cycle of an insect lasts.



Based on the graph, put a tick (✓) in the appropriate boxes to indicate whether the statements are 'True', 'False' or 'Not possible to tell'. [2]

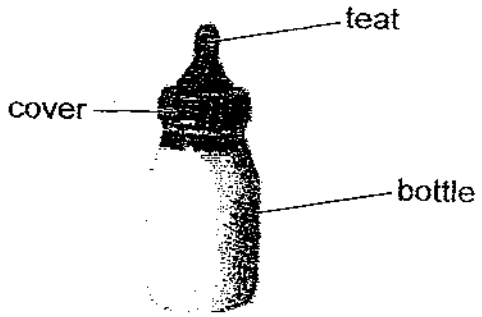
	Statement	True	False	Not possible to tell
(a)	There are four stages in the life cycle of this insect.			
(b)	The female insect lives longer than the male insect.			
(c)	The male insect dies soon after it fertilises the eggs.			
(d)	The insect takes 28 days to develop from an egg to a pupa.			

(e) How many days would it take for the hatched egg to become an adult insect? [1]

_____

3

36 Mary wanted to test whether materials P, Q or R would be the best material to make a baby's feeding bottle (without the cover and the teat).



The table below records what she had found out about these materials.

Material	P	Q	R
Can it bend?	No	Yes	No
Is it waterproof?	Yes	Yes	Yes
Can it be stretched?	No	Yes	No
Does it break when dropped?	Yes	No	No

(a) Which material, P, Q or R do you think is the most suitable for making a baby's feeding bottle? [1]

_____

(b) What is material P most likely to be? [1]

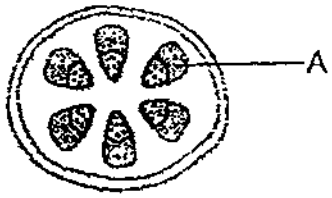
_____

(c) Name one object which can be made of material Q. [1]

_____

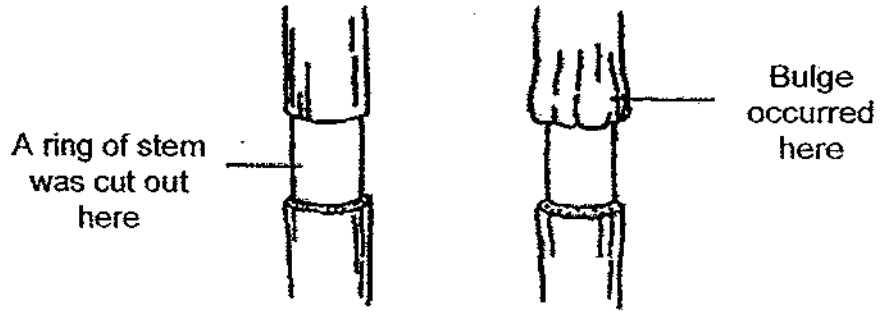
3

37 The diagram below shows a cross-section of a stem. The outer ring was labelled A.



(a) What is the function of the part labelled A? [1]

A ring of stem was cut out and a bulge was observed above the ring after a few days and eventually the plant died.



(b) Why did the plant die after the ring of stem was cut out? [2]

3

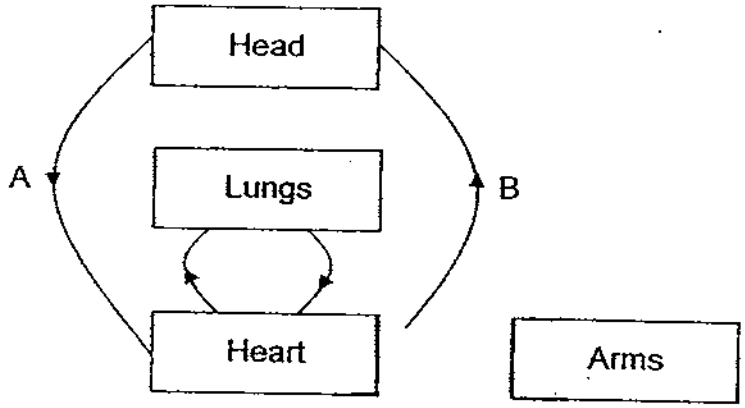
38 When we breathe, air is inhaled (taken in) and exhaled (given out). Complete the table below by showing three differences between inhaled air and exhaled air. The first one has been done for you.

	Differences between	
	inhaled air	**exhaled air**
1	contains more oxygen	contains less oxygen
2		
3		
4		

[3]

3

39 The diagram below shows how blood flows in certain parts of the body.



(a) The blood at B contains a greater amount of a certain substance than at A. What is the substance? [1]

_____

(b) Draw two arrows to represent the blood flow between the heart and the arm. [1]

(c) In terms of gas exchange only, explain why there is a need for blood to circulate throughout the body. [1]

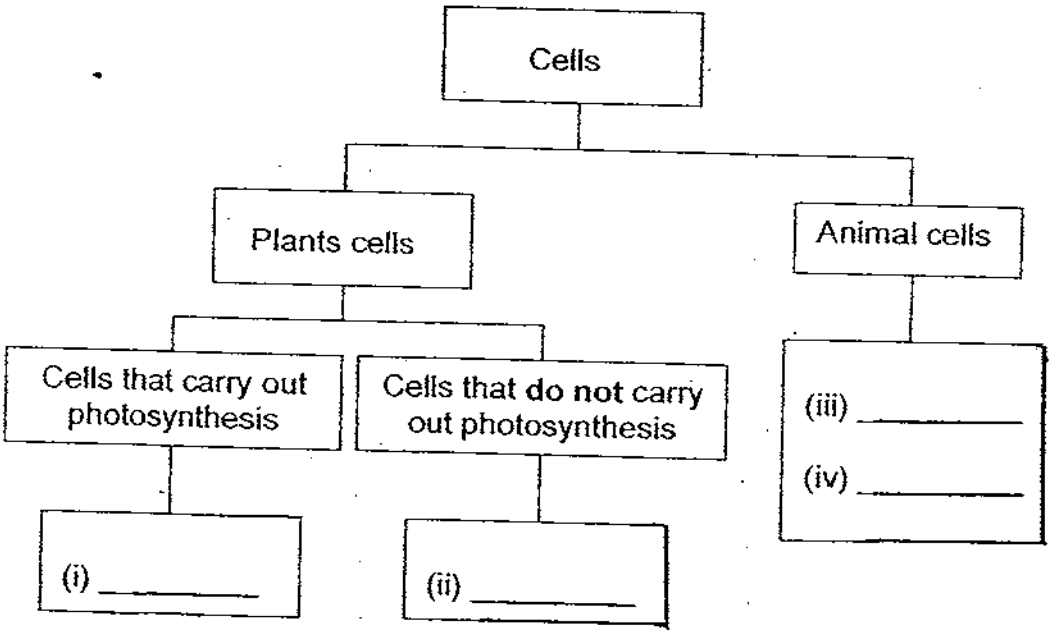
_____

3

40 The table below shows parts of a cell that are present in cells P, Q, R and S.

Part of Cell	Cell P	Cell Q	Cell R	Cell S
Cell wall	✓	×	✓	×
Cell membrane	✓	✓	✓	✓
Chloroplast	✓	×	×	×
Cytoplasm	✓	✓	✓	✓
Nucleus	✓	✓	✓	×

(a) Based on the table, group the cells correctly in the classification chart below. Write the letters P, Q, R and S in the correct boxes. [2]

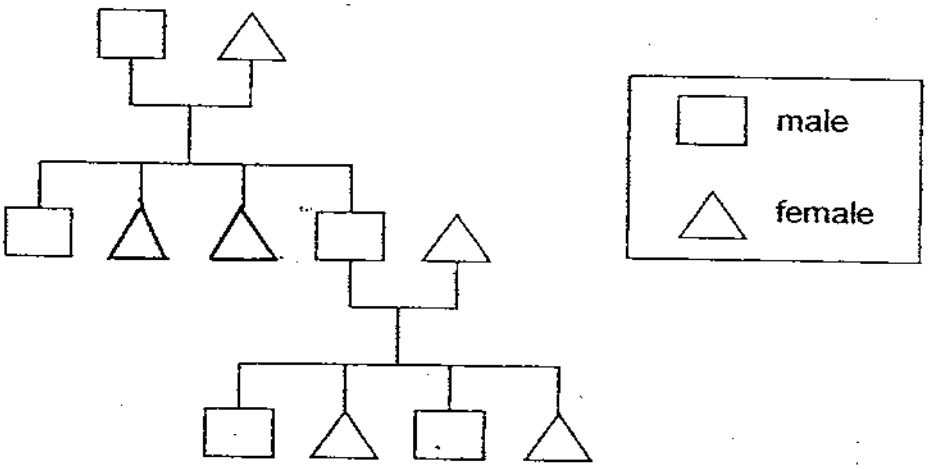


(b) Why is there a need for cells to undergo cell division? [1]

_____

3

41 Cathy drew her family tree to trace back her origin.



(a) Which side of her parent's family tree did Cathy draw? [1]

_____

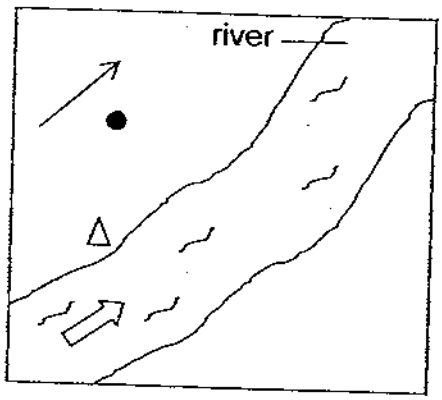
(b) How many siblings does Cathy have? [1]

_____

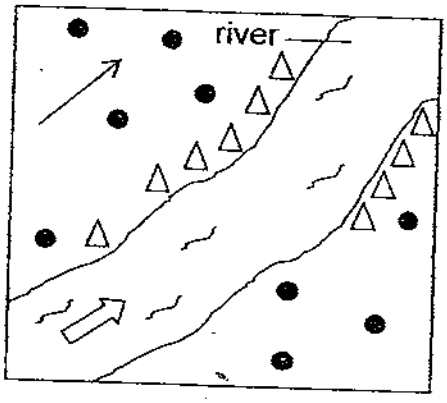
(c) Shade the symbol(s) that represent(s) Cathy's aunt(s). [1]

3

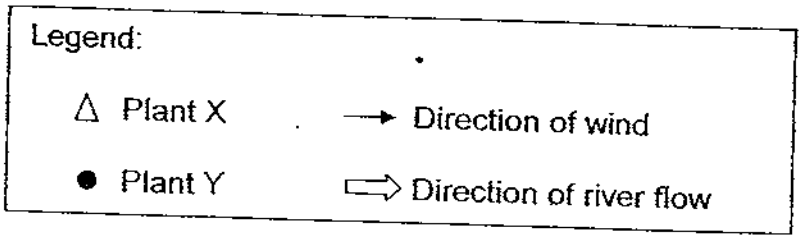
42 Daniel counted the number of plants X and Y on a piece of land. After a few months, he looked at the same piece of land again. His observations are shown below.



First observation



After a few months



(a) What is the most possible method of dispersal of Plant X and Y? [2]

Plant X: _____

Plant Y: _____

(b) Name one characteristic of Plant Y's seeds for them to be dispersed as shown in the above diagram. [1]

_____

3

43 Joanna wanted to find out how the amount of water affects the height of seedling. She planted five balsam seedlings of height 10 cm each in five similar pots A, B C, D and E. Each pot contained the same amount and type of soil. She watered each seedling with different amounts of water daily and measured the height of each seedling at the end of ten days. She recorded her observations in the table below.

Pot	Daily amount of water (ml)	Height of seedling in cm after 10 days
A	50	11
B	60	12
C	70	13
D	80	14
E	90	15

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

_____

_____

(b) What can she conclude from her experiment? [1]

_____

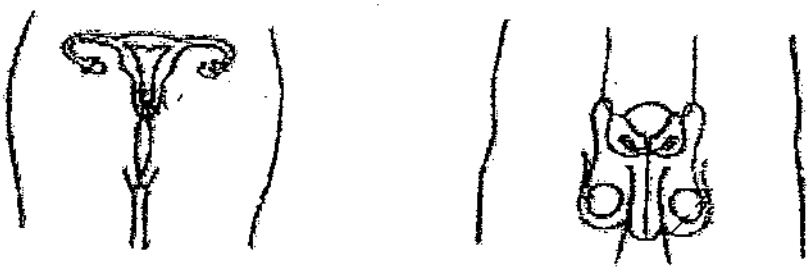
_____

(c) Name one other variable that must be kept constant throughout the experiment to make it a fair test. [1]

_____

3

44 The diagrams below show the male and female reproductive organs.



(a) Name and label: [2]

(i) the part where the female sex cells are produced.

(ii) the part where the male sex cells are produced.

(b) If one of the testes is damaged due to an accident, will he still have the chance to reproduce? Give a reason for your answer. [1]

_____

_____

3

- End of Paper -

- Have you checked your answers? -

ANSWER SHEET

EXAM PAPER 2009

SCHOOL : ACS 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
4	4	2	1	2	2	4	3	1	4	3	3	2	3	2	3	4

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

31)Does it lay eggs ? -→R
Does it give birth to young alive ?-→Q
Does it have four-stage life cycle ?-→P

32)a)A→B→F→I→H→E
b)A, F and I

33)a)The control set-up should not have a plant with a layer of oil on the water.
b)It is to ensure that the water is taken in by the roots of the plant.

34)a)

b)The more the number of batteries used, the more number of paper clips attracted to the iron nail.
c)Zero

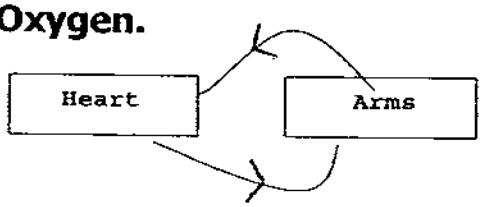
35)a)T b)T c)Not d)F e)24 days

36)a)Material R.
b)Glass.
c)Eraser.

37)a)It transport food from the leaves to rest of the plant.
b)The phloem have been cut out and the food produced from the leaves could not reach the rest of the plants, hence the plant died.

38)2)Contains less carbon dioxide. / Contains more carbon dioxide.
3)Less warm. / More warmth.
4)Contains less water vapour. / Contains more water vapour.

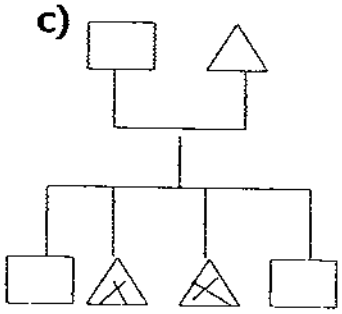
39)a)Oxygen.
b)

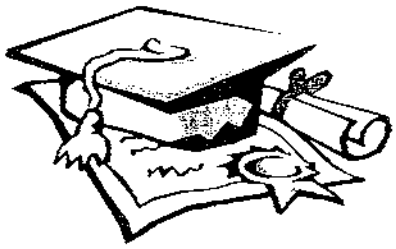


c)To transport oxygen and to remove carbon dioxide from the body.

40)a)i)Cell P ii)Cell R iii)Cell S iv)Cell Q
b)For growth, reproduction and replacement of old and damaged cells.

41)a)Her father side family tree. (paternal side).
b)3 siblings.
c)

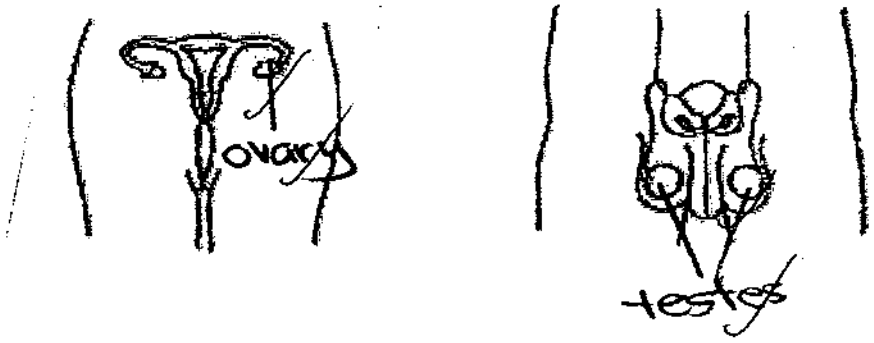




42)a)X: Water-dispersal method.
Y: Animal-dispersal method.
b)Hard/not easily digested.

43)a)To find out how the amount of water affects the height of seedling.
b)The more the amount of water she watered for the plants the taller they grow.
c)The location of the pots.

44)a)i)ii)



b)Yes. The other testis coil still be able to produce sperm for reproduction.