

SAT

MAHA BODHI SCHOOL  
2004 SEMESTRAL ASSESSMENT 1  
SCIENCE  
PRIMARY 5 EM1 / 2

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

Date: 18 May 2004

Class: Primary 5 ( )

Course: EM 1 / 2

BOOKLET A

30 Questions

60 marks

Total Time for Booklets A & B: 1 h 45 min

Instructions to Candidates

Do not open this booklet until you are told to do so.

Follow all instructions carefully.

Check all the pages carefully to make sure that all the questions are in order.

Answer all the questions.

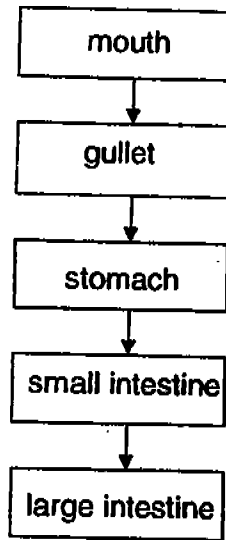
If a question is difficult, go on to the next one. Do not waste time.

This booklet consists of 16 pages.

**PART I (60 marks)**

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

1. The diagram shows the passage of food through the digestive system.

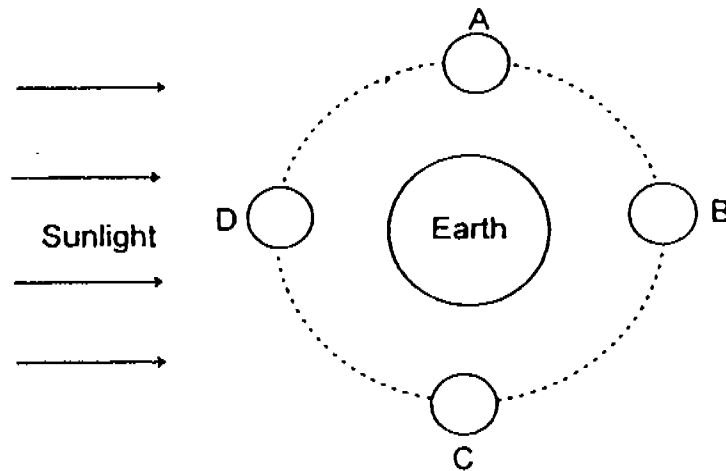


The digestion of food takes place at the \_\_\_\_\_.

- (1) small intestine and stomach only
  - (2) mouth, gullet, stomach and large intestine
  - (3) stomach, small intestine and large intestine
  - (4) mouth, stomach and small intestine
2. The table below shows the system that is involved with the problem. Which one of the following is incorrectly matched?

	Problem	System
(1)	John has diarrhoea and an upset stomach.	Digestive
(2)	Ann ran up the stairs and her heart was beating very fast.	Circulatory
(3)	Jack has difficulty in breathing. He is asthmatic.	Respiratory
(4)	Bala has sprained his ankle. It is swollen.	Skeletal

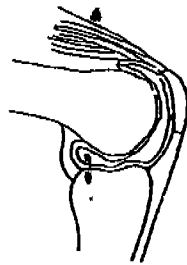
3.



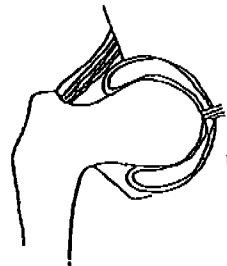
The Moon is always present in the sky but it may not be seen in the day.  
Look at the diagram above.  
When the Moon is at position \_\_\_\_\_, it **cannot** be seen by us.

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

4.



**Hinge Joint**



**Ball-and-Socket Joint**

Match each type of joint with its correct use.

	Hinge Joint	Ball and Socket Joint
(1)	Move our fingers and toes	Swing our arms
(2)	Move our legs in circles	Bend our lower arms and legs
(3)	Swing our arms	Move our fingers and toes
(4)	Move lower arms back and forth	Bend our legs

5. Justin used a dropper and dropped different liquids on his tongue. He tested these 4 different liquids: syrup, unsweetened coffee, lemon juice and salt water. He recorded his findings in the table below.

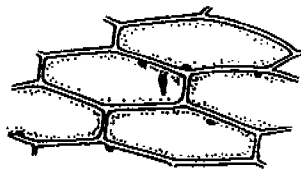
Position on the tongue	Can the taste be detected?			
	Syrup	Unsweetened Coffee	Lemon juice	Salt water
Tip	√			√
Side			√	
Back		√		

Which of the following conclusions made by Justin are correct?

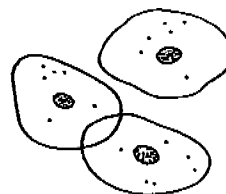
- A: Different tastes are detected by different parts of the tongue.  
 B: Bitter taste cannot be detected on the tip and side of the tongue.  
 C: Sour taste can be detected on the tip of the tongue.  
 D: The tip of the tongue can detect sweet taste.

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

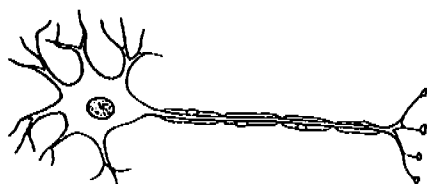
6. The diagram below shows four different kinds of cells. Which one of them is a plant cell?



(1)



(2)

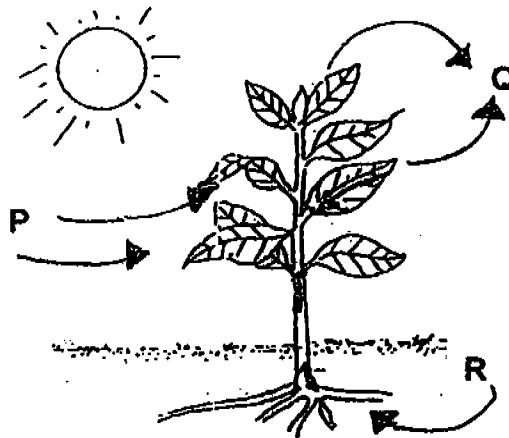


(3)



(4)

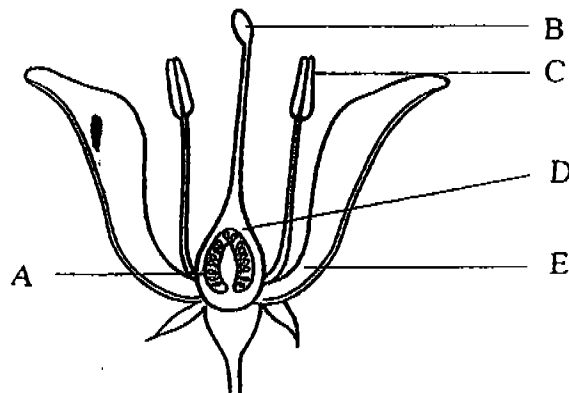
7. Study the diagram carefully. The plant is making food in the presence of sunlight.



Which one of the following lists shows correctly what P, Q and R stand for?

	P	Q	R
(1)	oxygen	carbon dioxide	water and mineral salts
(2)	oxygen	water vapour	carbon dioxide
(3)	water vapour	carbon dioxide	Fertilizer
(4)	carbon dioxide	oxygen	water and mineral salts

8.

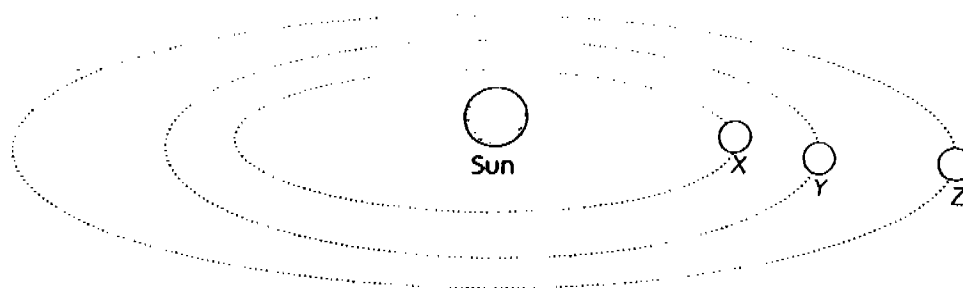


Study the diagram above.

The female parts of the flower are \_\_\_\_\_.

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

9.



The diagram above shows the Solar System with 3 objects X, Y and Z revolving around the Sun. The dotted lines show the paths taken by the objects as they go round the Sun.

Based on the diagram above, which of the following statements are **TRUE**?

- A: Object X, Y and Z are not planets.
- B: The Sun is in the centre of the Solar System.
- C: Z is the coldest of the three objects.
- D: Y takes a shorter time than X to complete one revolution round the Sun.

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

10. Which one of the following is **TRUE** of a germinating seed?

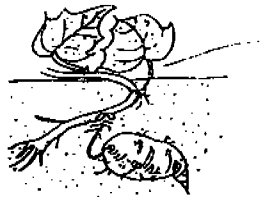
- (1) The young shoot appears before the root.
- (2) The seed leaves are the source of food for the baby plant.
- (3) As the seed germinates, more food is stored in the seed leaves.
- (4) The seed leaves provide water for the baby plant

11. Which one of the following parts of a plant **cannot** be used for growing new plants?

- (1) Flower
- (2) Seed
- (3) Stem
- (4) Leaf

12. Which one of the following does not produce new plants from an underground stem?

(1)



sweet potato

(2)



potato

(3)



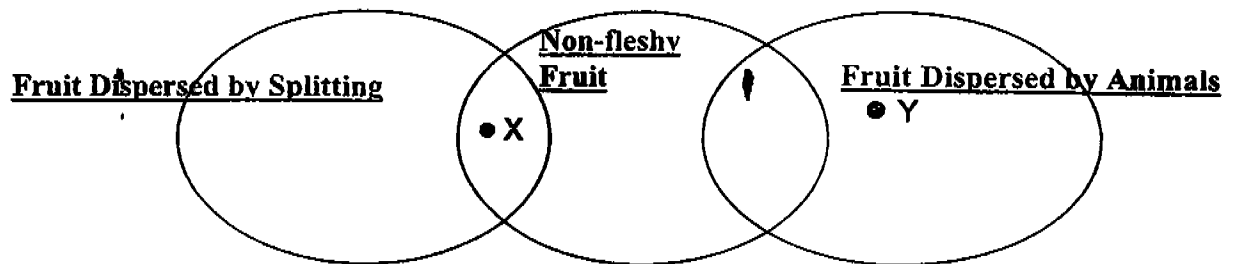
ginger

(4)



onion

13.

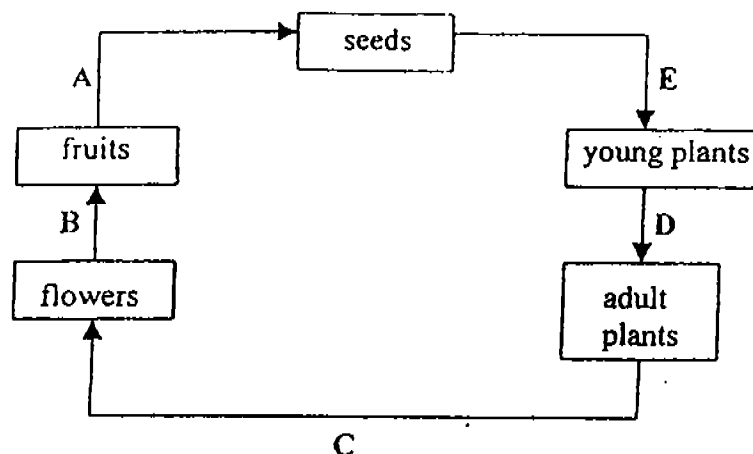


Study the Venn diagram above.

Suitable examples of X and Y are \_\_\_\_\_.

	X	Y
(1)	Saga	Lovegrass
(2)	Rubber	Mango
(3)	Balsam	Lalang
(4)	Flame of the Forest	Rain Tree

14.



The diagram above shows the stages of development of a plant. Fertilization and germination occur at stages \_\_\_\_\_ and \_\_\_\_\_ respectively.

	Fertilisation	Germination
(1)	A	E
(2)	B	E
(3)	C	A
(4)	D	B

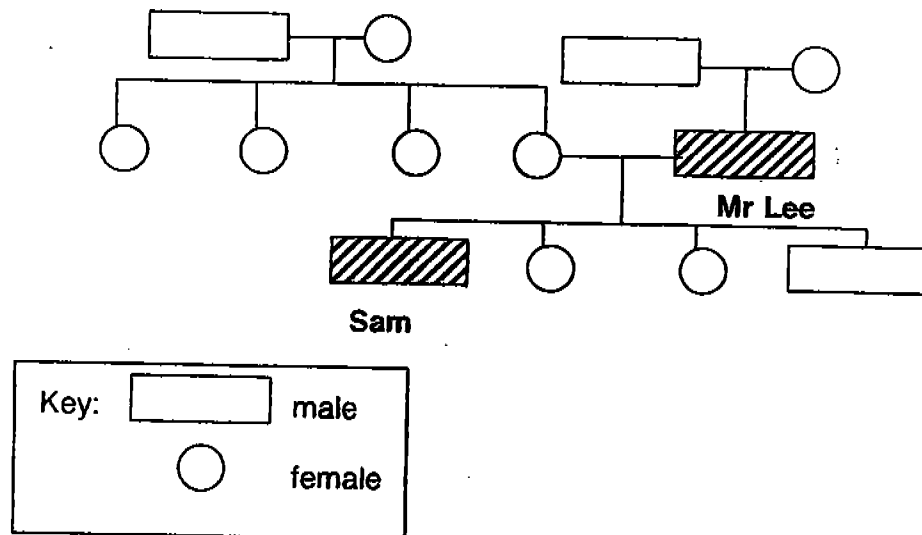
15. Which of the following statement/s is or are **TRUE** of human characteristics?

- A: Only visible characteristics are passed on from parents to their young.
- B: Identical twins are developed from cell nuclei which contain identical materials.
- C: The development of characteristics can also be affected by environmental factors.

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



16. Study the family tree below.



Based on the information given above, which one of the following statements is not possible to tell?

- (1) Sam has 2 sisters and a brother.
- (2) Sam's mother is the eldest child in her family.
- (3) Sam's father is an only child.
- (4) Sam has 3 aunts.

17. Which of the following statements is/are TRUE of sexual reproduction in both plants and animals?

- A: Pollination takes place before fertilization.
- B: Fertilization takes place when the male and female reproductive cells join together.
- C: The testes produce sperms while the ovaries produce eggs.
- D: Fertilization always takes place internally in the ovary.

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

18. The diagrams below show the fruits of 4 kinds of plants.



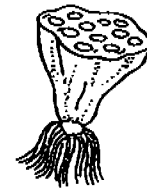
Plant A



Plant B

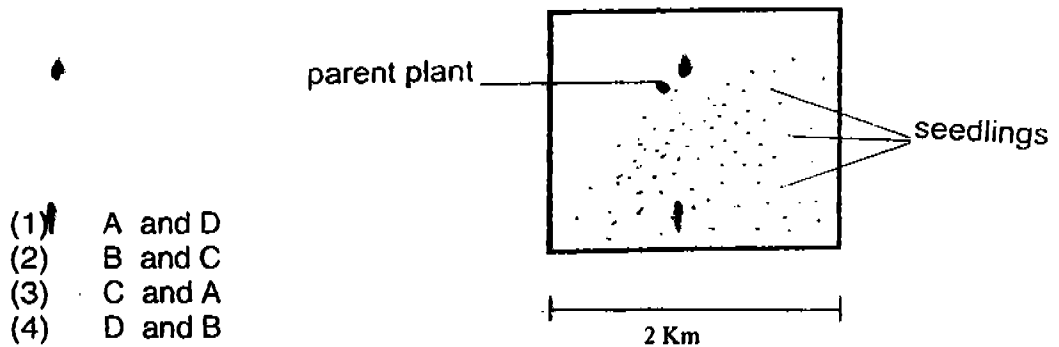


Plant C



Plant D

The map below shows the location of a parent plant and its seedlings after dispersal. The plants that could have dispersed their seeds in the way shown below are Plants \_\_\_\_\_



19. Why does our body need oxygen?

It needs oxygen to \_\_\_\_\_.

- A: break down digested food to provide the cells with energy
- B: convert waste materials into useful materials
- C: transport blood around the body

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

20. The two diagrams below show what happens in the respiratory system when air is inhaled (Diagram i) and exhaled (Diagram ii).

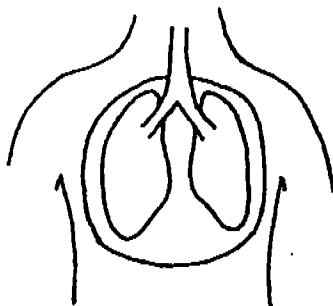


Diagram ( i )

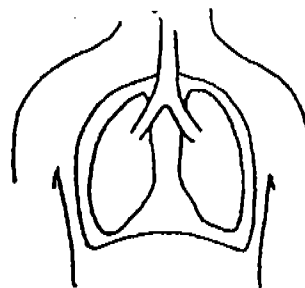


Diagram ( ii )

Which of the following actions are taking place in Diagram (i) but not in Diagram (ii)?

- A: Ribs move out and upwards.
- B: Diaphragm moves downwards.
- C: Air rushes into the body through the nose.
- D: Carbon dioxide passes through the blood vessels into the air sacs.

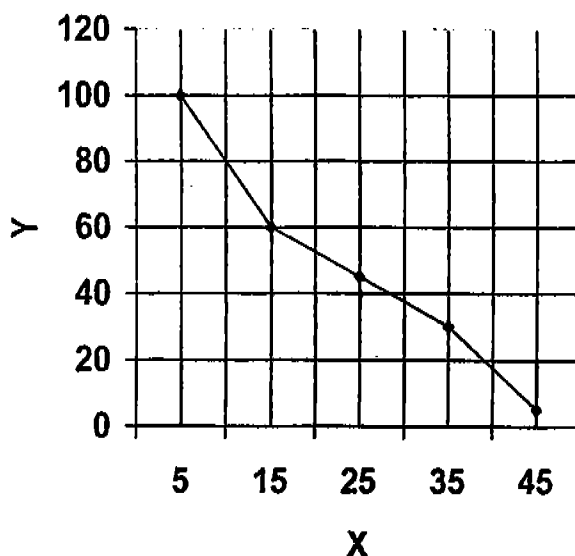
- (1) A only
- (2) D only
- (3) A, B and C only
- (4) A, B, C and D

21. The table below lists out the main differences between photosynthesis and respiration.

Which difference between the processes is not correct?

	Photosynthesis	Respiration
(1)	Occurs only in plants.	Occurs both in plants and animals.
(2)	Occurs only in light.	Occurs all the time.
(3)	Light energy is stored.	Heat energy is stored.
(4)	Uses carbon dioxide and water, releases oxygen.	Uses oxygen, releases carbon dioxide and water.

22. Susan and Jane conducted an experiment to find out if sugar dissolves faster in warmer or cooler water. They recorded their results in a table and then plotted the graph shown below.



They forgot to put the headings at the X and Y axes.

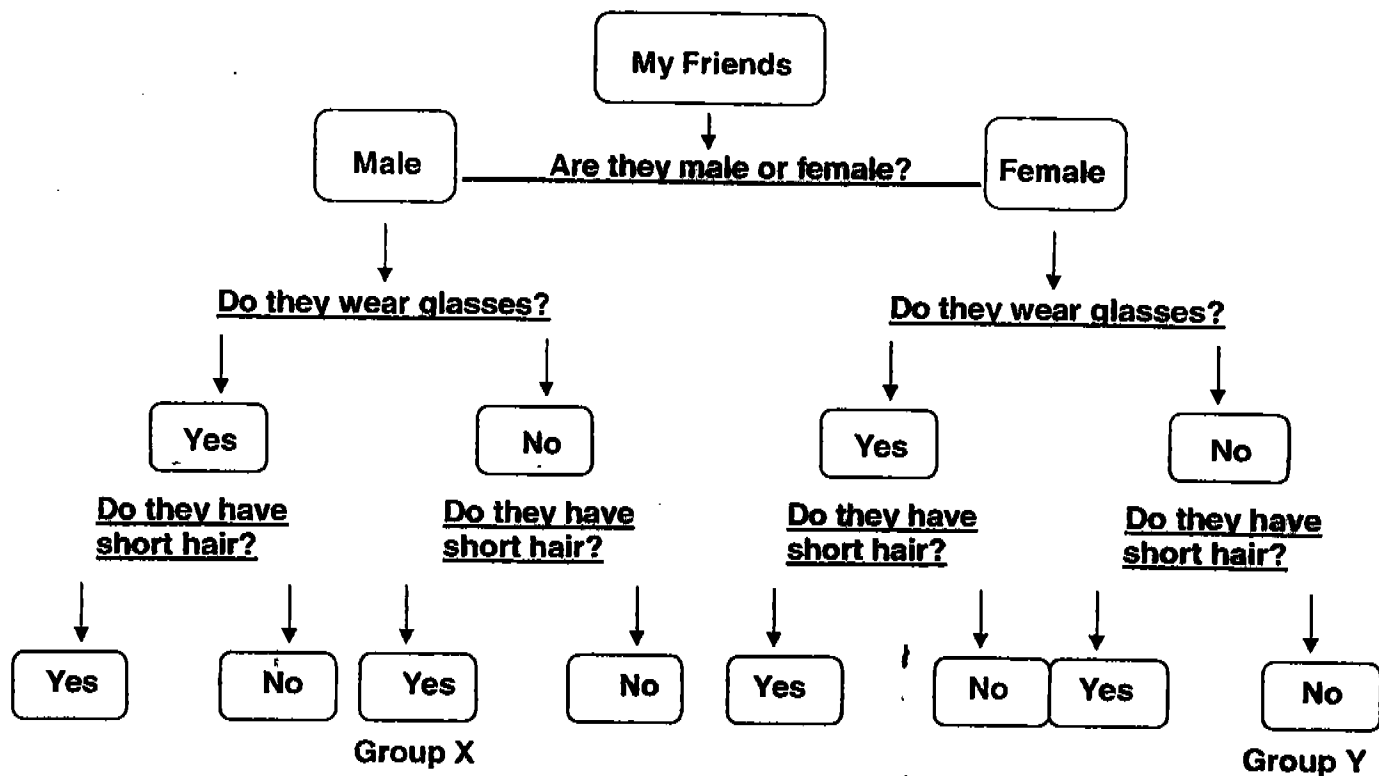
The correct pair of headings for X and Y is in List \_\_\_\_\_

	X	Y
(1)	Amount of sugar	Temperature of water
(2)	Amount of time the sugar takes to dissolve	Volume of water
(3)	Amount of time the sugar takes to dissolve	Temperature of water
(4)	Amount of sugar	Volume of water

23. In order for energy to be released in our bodies, glucose from food must react with \_\_\_\_\_

- (1) carbon dioxide
- (2) water vapour
- (3) nitrogen
- (4) oxygen

24. Study the classification diagram below.



Which of these statements are **TRUE** of the information found in the diagram?

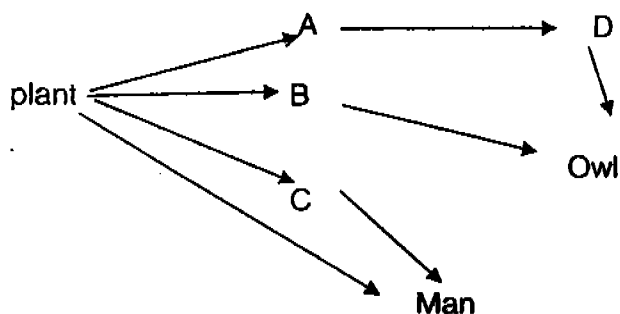
- A: There are 8 groups at the end of the classification exercise.
- B: Only Group X consists of friends who do not wear glasses and have short hair.
- C: Mrs Taylor belongs to Group Y



Mrs Taylor

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

25.



In the food web shown above, the cow is most likely the animal represented by the letter \_\_\_\_\_.

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

26. Which of these factors would affect the rate at which leaves make food in sunlight?

- A. Amount of water a plant takes in
- B. Amount of sunlight it receives
- C. Amount of carbon dioxide present in the air
- D. Amount of oxygen present in the air

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

27. Which one of the following statements is **TRUE** of a goldfish but **not** of a cat?

- (1) It breathes through gills as well as lungs.
- (2) It takes in dissolved oxygen
- (3) It breathes all the time.
- (4) It can see in the dark.

28. Which of the following chain diagrams show(s) the correct order in which energy is transferred?

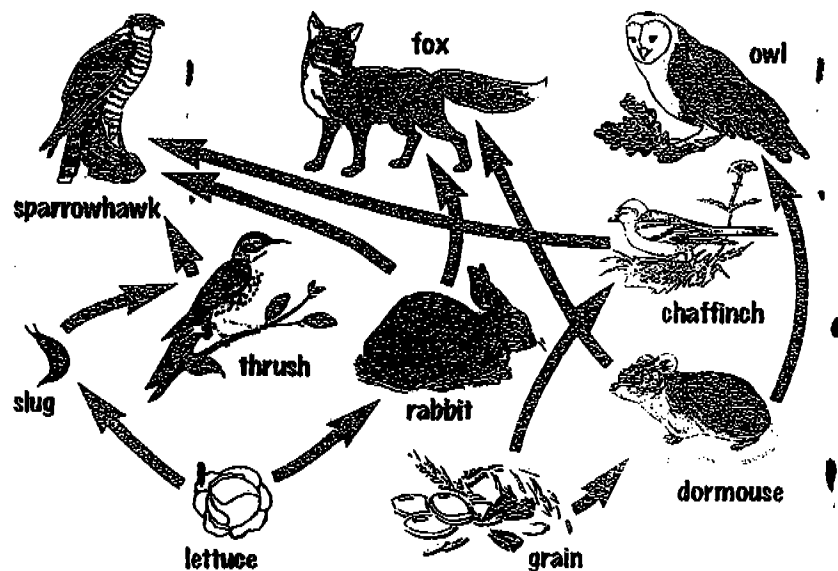
A: Sun → grass → praying mantis → grasshopper

B: Sun → fungi → butterfly → frog

C: Sun → algae → fish → penguin

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

29. Look at the food web below.



Which of the following statement(s) is/are **TRUE** of the information found in the above food web?

- A. There are two examples of food producers
- B. The chaffinch is both a predator as well as a prey.
- C. The sparrow hawk gets its energy from all the herbivores.
- D. There are six energy chains.

1. A and B only
2. A, B and C
3. A and D
4. B, C and D

30. A group of 4 pupils wanted to find out if the size of bean seeds would affect how far the seeds travelled when blown by the wind. They used a fan in their investigation. Each pupil used different sized bean seeds.

These were the steps they took in their investigation.

- (i) A seed was placed at the starting line.
- (ii) The fan was switched on to high speed.
- (iii) The distance travelled by the seed was measured.
- (iv) Steps (i), (ii) and (iii) were repeated twice.
- (v) The distances were measured and the average distance was calculated and recorded in a table.
- (vi) They did the experiment again three more times using the other three seeds.

Which one of the following tables did they use to record their results?

1.

Seed	Weight of seed	Distance travelled (m)		
A				
B				
C				
D				

2.

Seed	Length of seed	Distance travelled (m)		
A				
B				
C				
D				

3.

Seed	Weight of seed	Average distance travelled (m)		
A				
B				
C				
D				

4.

Seed	Length of seed	Average distance travelled (m)		
A				
B				
C				
D				

END OF PART I



SA1

MAHA BODHI SCHOOL  
2004 SEMESTRAL ASSESSMENT 1  
SCIENCE  
PRIMARY 5 EM1 / 2

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

Date: 18 May 2004

Class: Primary 5 ( )

Course: EM 1 / 2

BOOKLET B

16 Questions

40 marks

Total Time for Booklets A & B: 1 h 45 min

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This booklet consists of 14 pages.

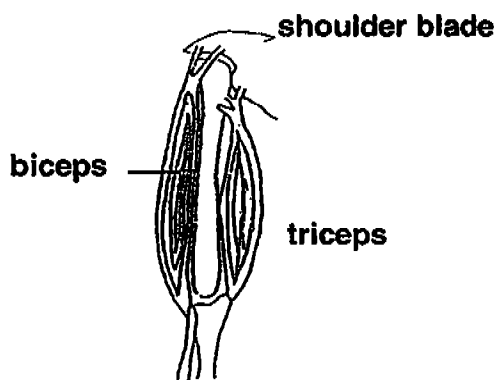
	Max. Marks	Actual Marks
Booklet A	60	
Booklet B	40	
Total	100	
Parent's Signature		

**PART II (40 marks)**

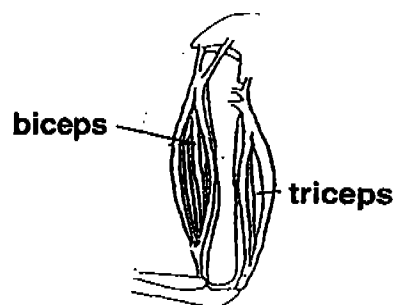
Write your answers to questions 31 to 46 in this booklet.

31. Muscles often work in pairs.

When the arm is straightened, the biceps relax and the triceps contract as shown in diagram A.



**Diagram A**



**Diagram B**

a. What happens to the muscles when the arm is bent as shown in diagram B?

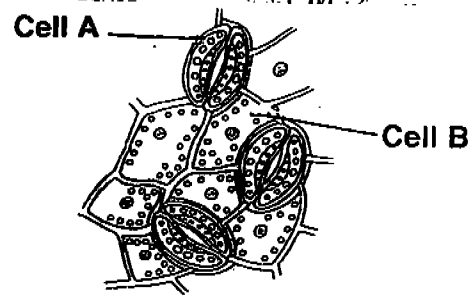
(1 mark)

b. Muscles and bones work together.

State the parts of the body where the muscles work when the following actions are done.

Action	Muscles found in
(i) To kick a ball	
(ii) Bending to touch toes	

32. The diagram below shows what some cells on the surface of a leaf look like under a microscope.



- a. What are the tiny openings on the leaf known as?

\_\_\_\_\_

- b. Which of the cells contain(s) chlorophyll?

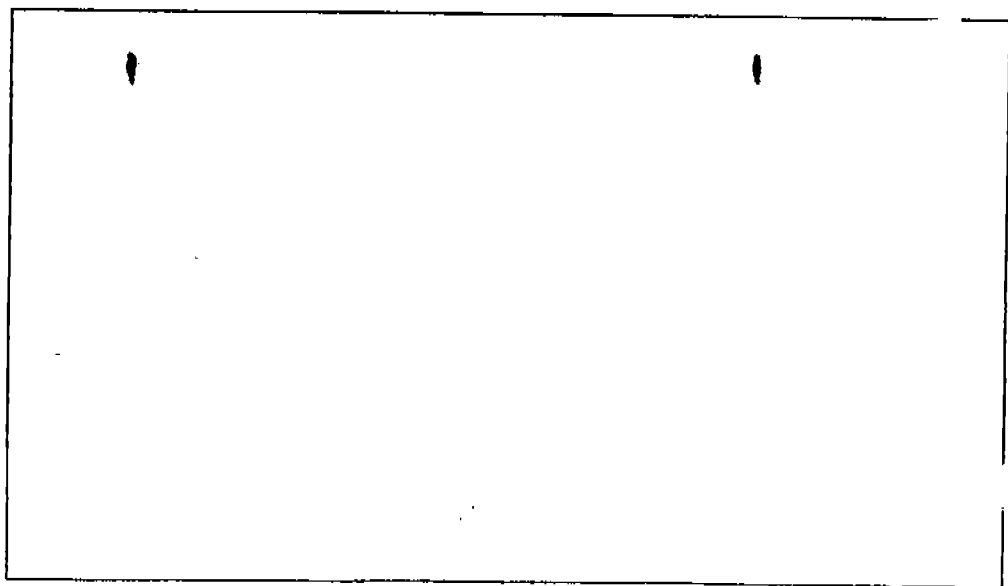
\_\_\_\_\_

- c. State 2 functions of these openings.

(i) \_\_\_\_\_

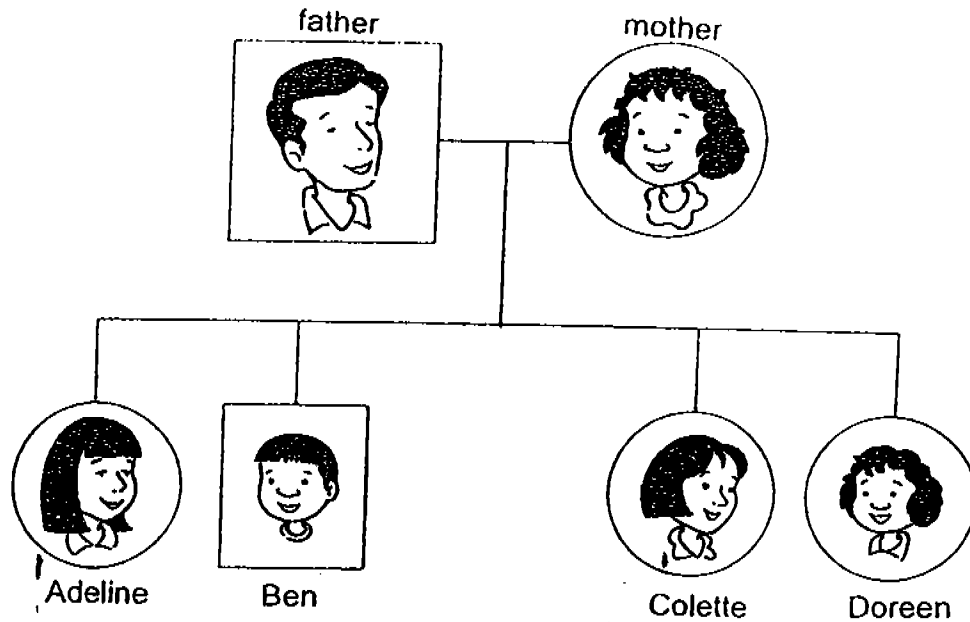
(ii) \_\_\_\_\_

33. Draw in the box provided to show how many new cells are produced from a single cell after 3 cell divisions.



(2 marks)

34.



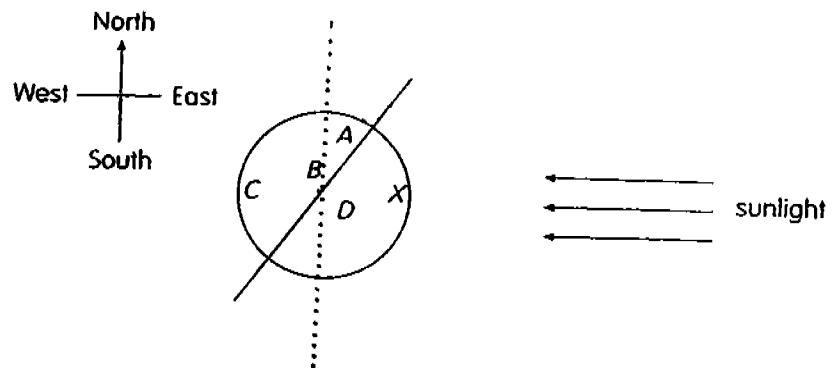
Look at the children in the family tree shown above. •  
 Each child has inherited characteristic/s from one of their parents.  
 What characteristic/s have they inherited from their parent ?  
 Which parent has passed the characteristic/s to them?

Complete the table below by writing the answers in the blank spaces.

Child	Characteristic/s inherited	From which parent?
Ben	small beady eyes	(i)
Doreen	(ii)	mother
Adeline	sharp nose, straight hair	(iii)
Collette	(iv)	father

( 2 marks)

35. Study the diagram below.



It is daytime in Country X.

- a. Which country, A, B, C or D would be the first to turn from night to day?

( 1 mark )

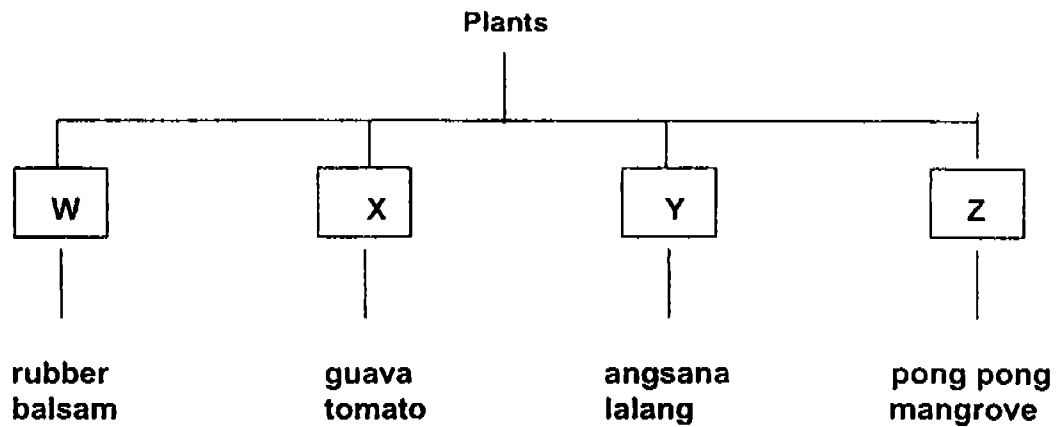
- b. Give an explanation for your answer in (a).

( 2 marks )

36. Why do living things reproduce?

( 1 mark )

37. The classification diagram below shows how some plants have been grouped. They have been classified according to a similarity.



- a. How have the plants been classified?

\_\_\_\_\_

- b. What does each letter represent?

W : \_\_\_\_\_

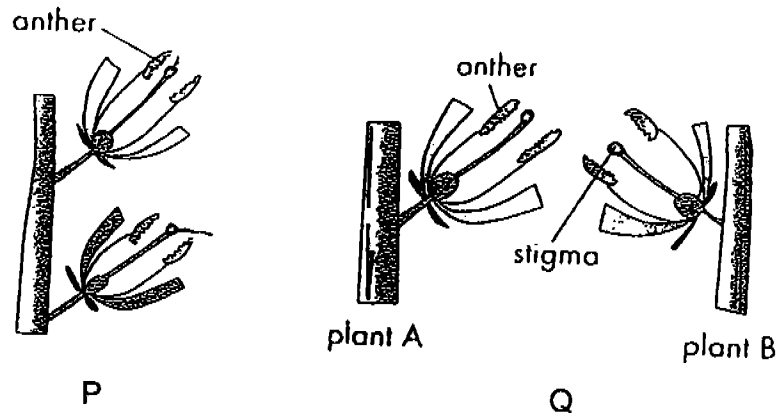
X : \_\_\_\_\_

Y : \_\_\_\_\_

Z : \_\_\_\_\_

( 2 marks )

38. The diagrams below show two types of pollination, P and Q, that take place in the flowers shown below.



- a. Identify each type of pollination and explain the difference between the two.

	Type of Pollination	Explanation
P		
Q		

- b. State one advantage of Pollination Q.

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39. Vanessa is blindfolded so that she cannot see.  
Shawn's ears are covered up so that he cannot hear.



Vanessa



Shawn

They are investigating a small animal that has been brought into the classroom.  
Who is likely to make the following discoveries about the animal?

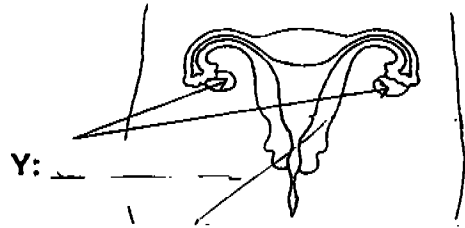
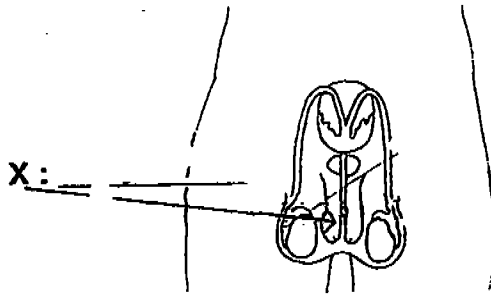
Tick (✓) the correct answer for each discovery.

Discovery	Only Shawn	Only Vanessa	Both Vanessa and Shawn
It has a smell.			
It squeaks when it moves.			
Its fur is soft to the touch.			
It has pink eyes.			

( 2 marks )



40. The diagrams below show the reproductive organ of a man and the reproductive organ of a woman.



- a. Name the parts marked X and Y. (1 mark)
- b. What happens to the human egg during fertilization?

\_\_\_\_\_

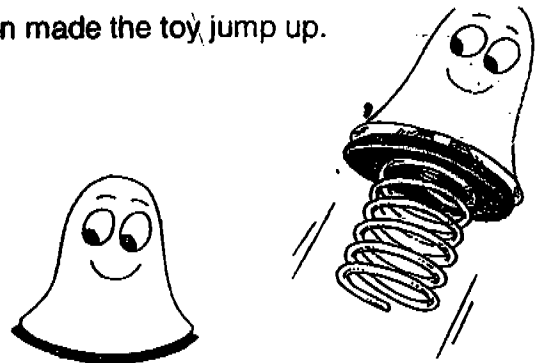
(1 mark)

- c. How does food and oxygen from the mother reach the developing baby?

\_\_\_\_\_

\_\_\_\_\_

41. The picture below shows a toy at rest. John made the toy jump up.



- a. What did he do to make the toy jump up?

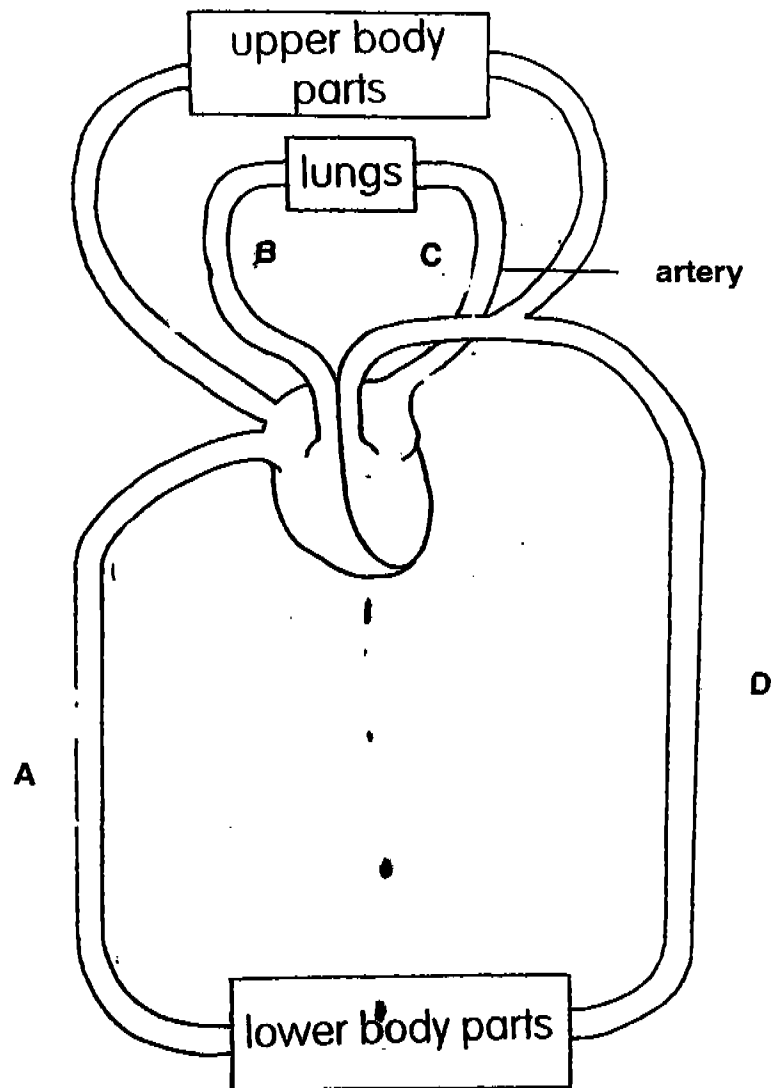
\_\_\_\_\_

\_\_\_\_\_

(1 mark)

- b. The source of energy for the toy is the \_\_\_\_\_
- (1 mark)

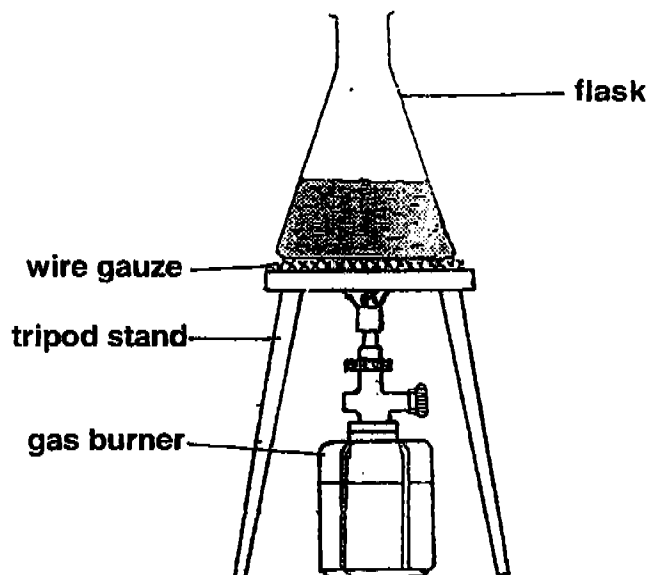
42. The diagram below shows how our heart is connected by blood vessels to the lungs and the rest of the body.



- a. Draw arrows at A, B, C and D to show how blood circulates in our body.  
( 1 mark )
- b. State how the blood at B is different in content to the blood at C.

( 1 mark )

43.



Tracy looked at the set-up shown above and made four statements.

**W:** There is a liquid in the flask.

**X:** The liquid is almost boiling.

**Y:** The source of heat is the gas burner.

**Z:** The wire gauze is placed between the flask and the tripod stand.

Decide which statements are observations and which are inferences.  
Write the letters W, X, Y or Z in the table below.

Observation(s)	Inference(s)

( 2 marks )

44. A group of scientists recorded the average pulse rate (in beats per minute) of some children on 4 different days doing a different activity each day.

Each day their heartbeats were measured after they had done the activity for ten minutes.

The results are shown in the table below.

Activity	Girls' pulse rate ( beats per minute)	Boys' pulse rate ( beats per minute)
reading	88	95
sitting	99	103
walking	115	128
running	159	166

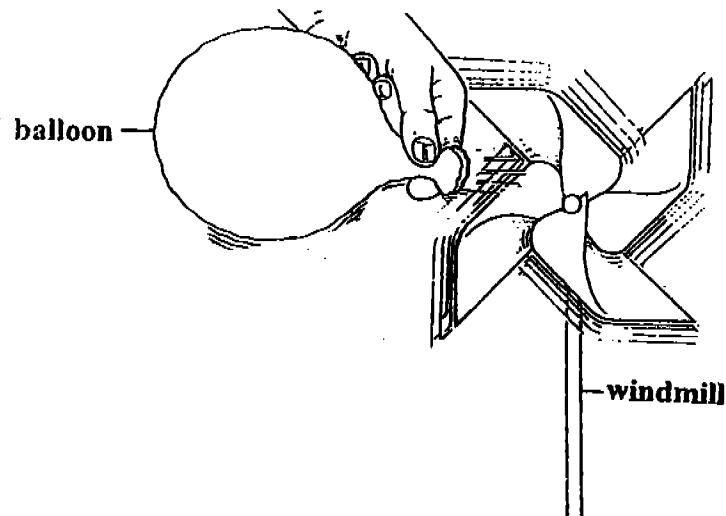
- a. Which activity recorded the greatest pulse rate for both groups?

( 1 mark )

- b. From the results, write down two conclusions the scientists made.

- (i) \_\_\_\_\_  
\_\_\_\_\_
- (ii) \_\_\_\_\_  
\_\_\_\_\_

45.



James blew up a balloon and held it in front of a paper windmill.  
 He then released the air inside the balloon and watched the windmill spin.  
 His three friends used different balloons and repeated the experiment one at a time using the same windmill.

- a. If the children wanted their experiment to be a fair test, they should control other variables too.

Write down two variables that they should keep the same.

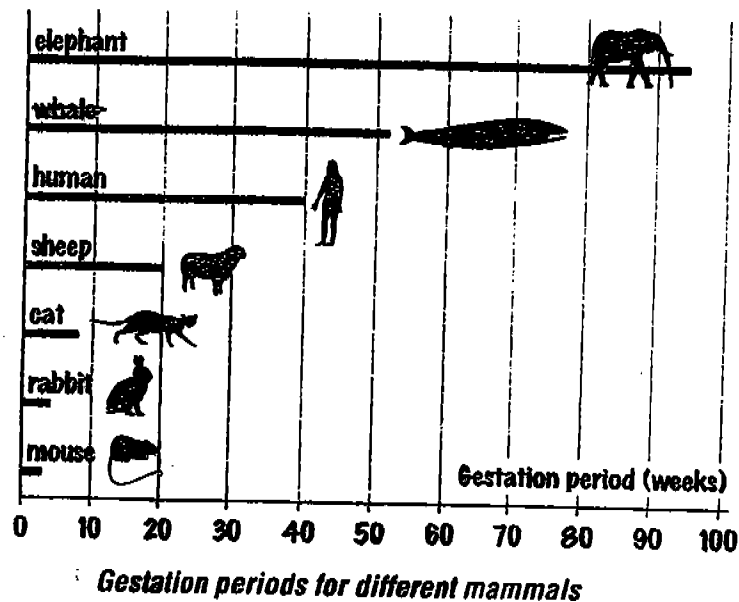
- (i) \_\_\_\_\_  
 (ii) \_\_\_\_\_ ( 2 marks )

- b. If the aim of their experiment was to find out who had the strongest breath, what should they measure and record?

\_\_\_\_\_  
 \_\_\_\_\_ ( 1 mark )

46. Gestation is the period of time an embryo takes to develop from fertilization to birth.  
Different animals have different gestation periods.

Study the graph below.



- a. What is the gestation period of a mouse?
- \_\_\_\_\_
- ( 1 mark )
- b. What would most likely be the gestation period of a dog?
- \_\_\_\_\_
- ( 1 mark )
- c. What pattern do you observe between the size of an animal and its gestation period?
- \_\_\_\_\_
- \_\_\_\_\_
- ( 1 mark )

END OF PAPER

## SA

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38) b) It allows for healthier offspring.

39)

		✓
	✓	
		✓
✓		

40) a) X : penis      Y : ovaries

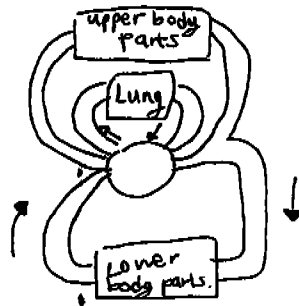
b) The sperm fuses with the female egg.

c) Through the umbilical cord.

41) a) He pushed the toy down.

b) compressed spring

42) a)



b) Blood in C is rich in oxygen while blood in B is rich in carbon dioxide

43) W

X

Y

Z

44) a) running

b) i) Boy's pulse rate are faster than girl's pulse rate.

ii) The more active the activity, the greater the child's heartbeat.

45) a) i) The distance between the windmill and the balloon.

ii) The number of breaths they use to blow.

b) They should measure how many breaths they use to blow and how big the balloon is.

46) a) 2 weeks

b) 8 weeks

c) The bigger the animal, the longer the gestation period is.