

南洋小學

NANYANG PRIMARY SCHOOL

PRIMARY 5 SCIENCE
SEMESTRAL ASSESSMENT 1

2007

BOOKLET A

Date : 7 May 2007

Duration : 1 h 45 min

Name : _____ (

Class: Primary _____ ()

Marks Scored:

Booklet A:		60
Booklet B :		40
Total :		100

Parent's signature:

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
FOLLOW ALL INSTRUCTIONS CAREFULLY.

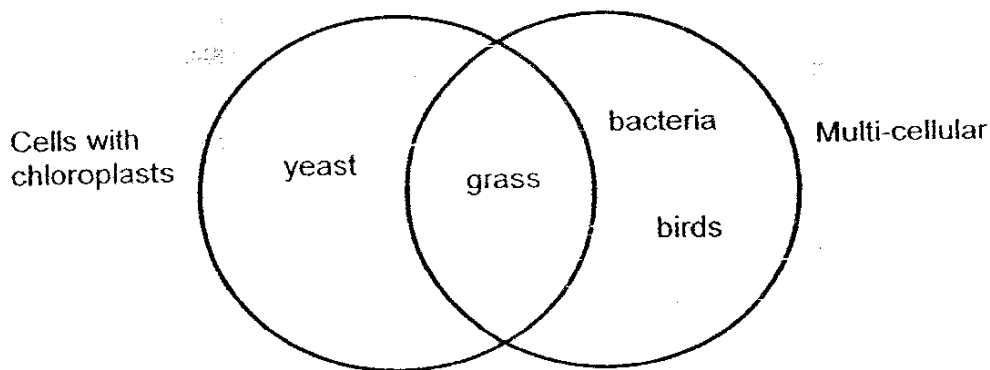
Booklet A consists of 14 printed pages including this cover page.

34

Section A (30 x 2 marks = 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 provided.**

1. Study the Venn diagram below.



Which of the living things in the Venn diagram are **not** classified correctly?

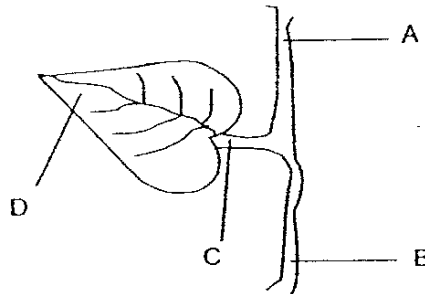
- (1) Grass and birds
(2) Grass and yeast
(3) Yeast and bacteria
(4) Birds and bacteria
2. The following statements describe the stages of a cell division.

- A The cell grows to a certain size.
B The cell divides into two identical halves.
C The nucleus separates into two new nuclei.
D The nucleus of the parent cell makes a copy of itself.

Which one of the following shows the correct order of the stages of cell division?

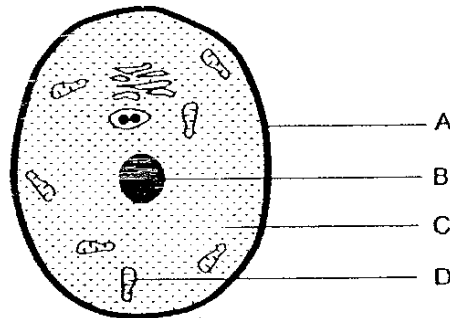
- (1) A → D → C → B
(2) B → A → C → D
(3) C → D → B → A
(4) D → B → C → A

3. Study the diagram below carefully.



Based on the above diagram, which labelled part(s) indicate(s) the presence of the chlorophyll in a bougainvillea plant?

- | | | | |
|-----|--------------|-----|---------------|
| (1) | D only | (2) | A and B only |
| (3) | C and D only | (4) | A, B, C and D |
4. Study the diagram below.



Which part(s) of the cell contain(s) the hereditary materials?

- | | | | |
|-----|-----------------|-----|---------------|
| (1) | B only | (2) | D only |
| (3) | A, B and C only | (4) | A, B, C and D |
5. Which one of the following is a characteristic that parents are able to pass on to their child?
- | | |
|-----|------------------|
| (1) | Dimples |
| (2) | Birthmark |
| (3) | Thumbprints |
| (4) | Long fingernails |

6. The table below shows the characteristics of two cats and their kitten.

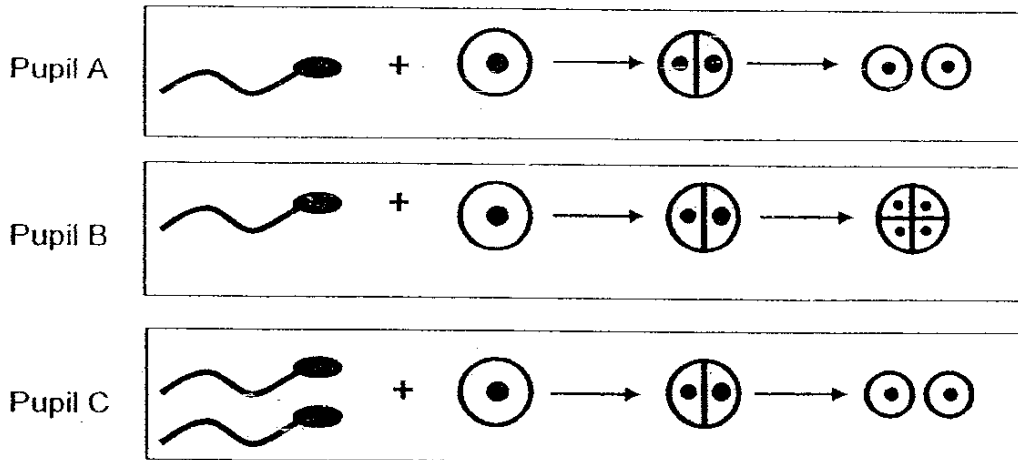
Characteristics	Male Cat	Female Cat	Kitten
Tail	Long	Short	Short
Colour of eyes	Green	Brown	Green
Presence of spots	Yes	No	Yes

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

- A The kitten inherited its father's colour of the eyes.
- B Both the female cat and the kitten had 2 similar traits.
- C The kitten inherited its spots from its mother.
- D The kitten inherited at least 1 trait from both its parents.

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

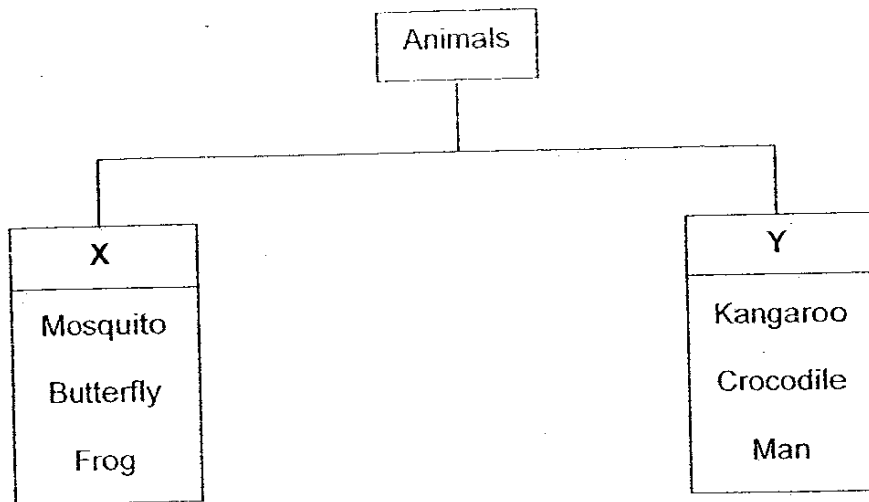
7. The diagram below shows 3 conclusions made by pupils A, B and C.



Which of the above pupils had shown the possible process(es) of fertilization?

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

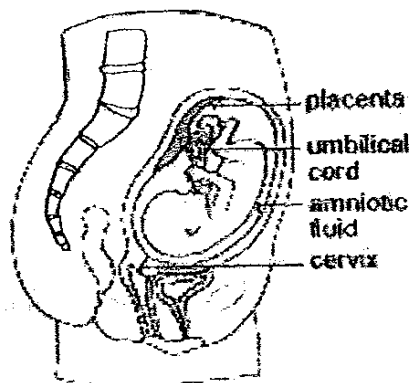
8. Study the following classification table.



The animals above are grouped according to _____.

- (1) their habitats
- (2) the number of stages in their life cycles
- (3) whether their young resembles their parents
- (4) whether they lay eggs or give birth to young alive

9. Study the following diagram.



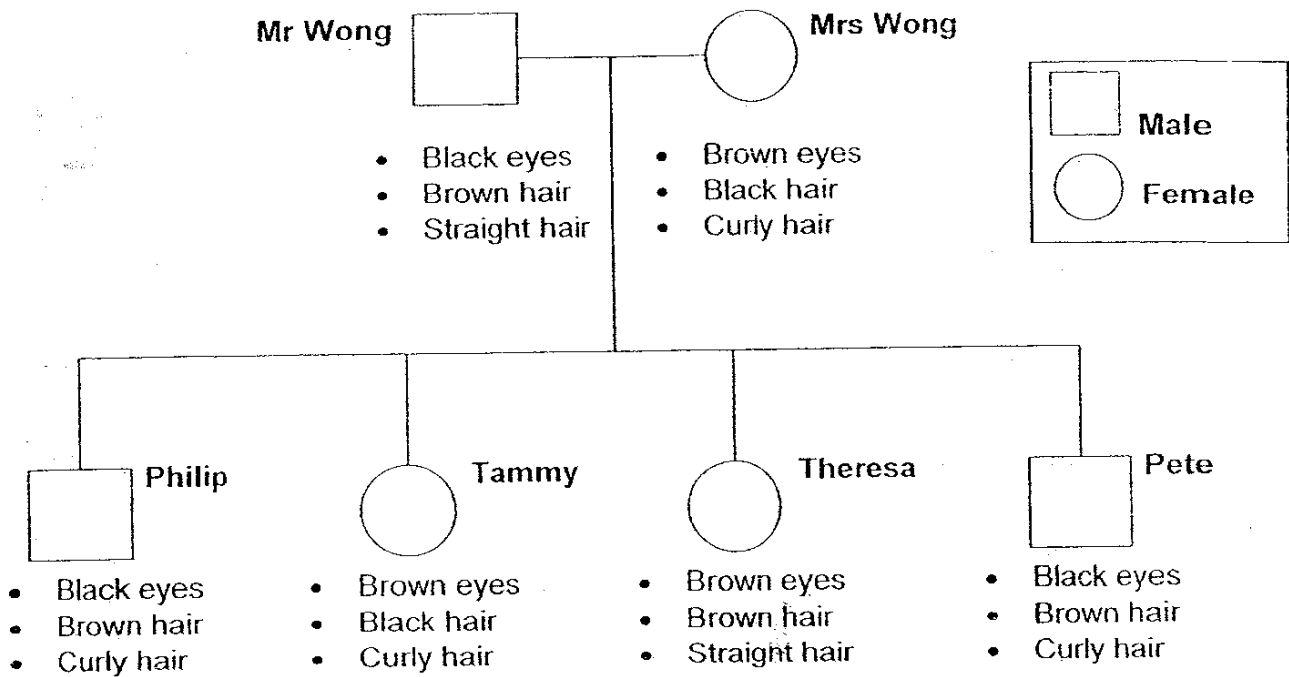
Which of the following substances are carried **from** the foetus' blood to the mother's blood through the umbilical cord?

- A oxygen
- B water
- C digested food
- D carbon dioxide
- E waste materials

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

38

10. Study the family tree of Philip's family.



Which one of the following statements about Philip's family is true?

- (1) Philip inherits the colour of eyes and hair from his mother.
- (2) Tammy has characteristics that are most like her mother.
- (3) Theresa inherits the characteristics of the hair from her mother.
- (4) Pete inherits more traits from his mother than his father.

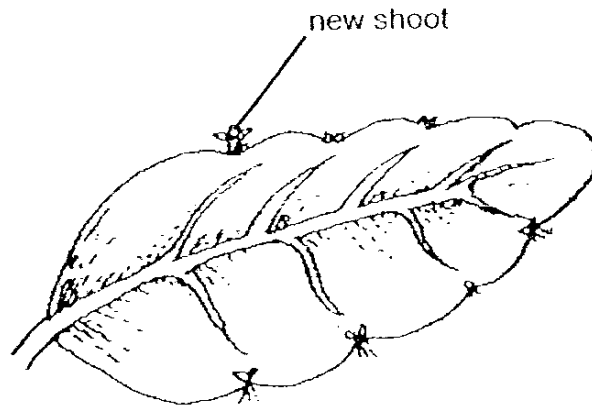
11. Flowering plants may be pollinated by insects or wind. Which of the following features are important to a flower pollinated by wind?

- A Nectar is present.
- B Petals are brightly coloured.
- C Stigmas are long and sticky.
- D Long filaments with anthers hanging out of flowers.

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

39

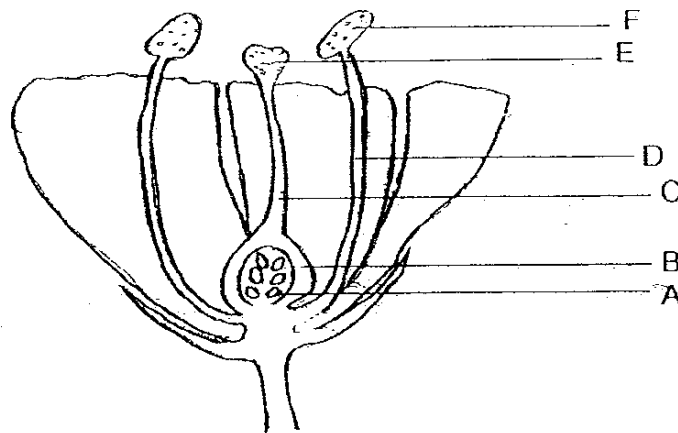
12. Study the diagram below.



The growth of the new shoot from the leaf is an example of _____.

- (1) dispersal
- (2) germination
- (3) reproduction
- (4) photosynthesis

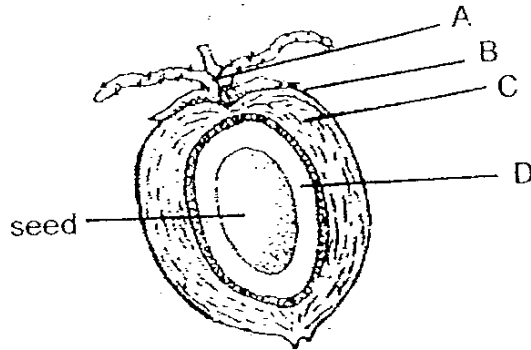
13. The diagram below shows different parts of a flower.



Which one of the following shows correctly the path taken by the male reproductive cell to the female reproductive cell when self-pollination has taken place?

- (1) E → F → D → B
- (2) F → E → C → A
- (3) D → F → E → C → A
- (4) D → F → E → C → B

14. The diagram below shows a coconut fruit.



Which of the part(s), A, B, C or D, enable the coconut seed to germinate at the sandy shore after floating in the river?

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

15. Which one of the following is **not** an advantage of a pineapple plant growing from suckers?

- (1) The parent plant provides food for the young plant to grow.
 (2) The young plant bears better quality fruits than the parent plant.
 (3) The parent plant does not need external agents to disperse its seeds.
 (4) The young plant takes a shorter time to bear fruits as compared to those grown by seeds.

16. The table below shows how four plants, A, B, C and D, can be grouped.

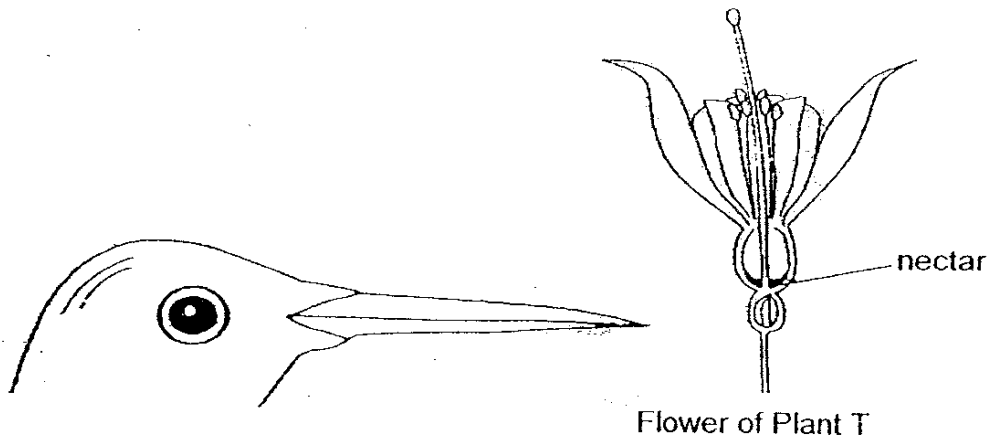
	Reproduce from spores	Reproduce from seeds
Bears flowers	A	B
Does not bear flowers	C	D

Which plant, A, B, C or D, could be a moss?

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

41

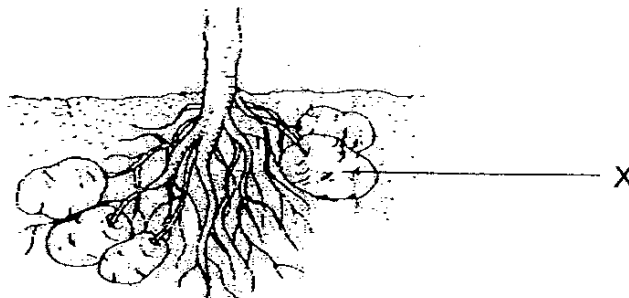
17. The diagrams below show a hummingbird which is useful to Plant T.



How is the hummingbird useful to Plant T?

- (1) It transfers nectar to another plant.
- (2) It disperses seeds to another plant.
- (3) It transfers stigma to another plant.
- (4) It transfers pollen grains to another plant.

18. The diagram below shows a potato plant.



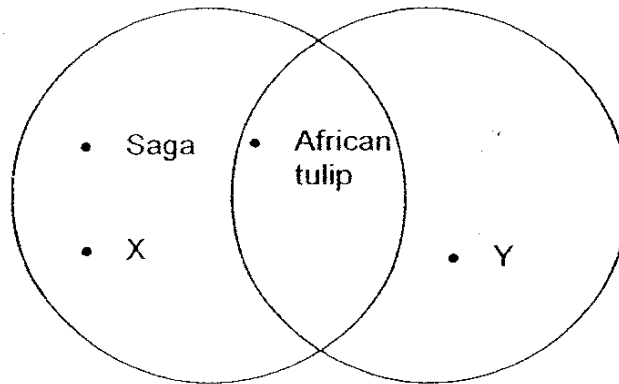
Which of the following statements describe X correctly?

- A X takes in water for the plant.
- B X provides the plant with mineral salts.
- C X stores food for the young developing plant.
- D X has buds which will develop into young plants.

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

42

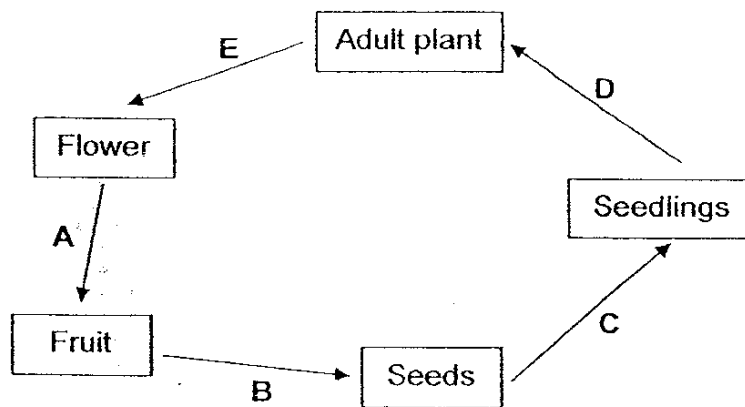
19. Study the Venn diagram below which shows the different methods of seed dispersal.



Which of the following pairs of fruits is correctly represented by X and Y in the table below?

	X	Y
(1)	Rubber	Nipah
(2)	Angsana	Balsam
(3)	Flame of the forest	Lalang
(4)	Mimosa	Shorea

20. The diagram below shows the life cycle of a flowering plant.



At which stages, A, B, C, D and E, are germination, fertilization and seed dispersal taking place?

	Germination	Fertilization	Seed dispersal
(1)	B	A	C
(2)	C	E	B
(3)	C	A	B
(4)	D	E	A

23. The table below provides some information about Planet A, Planet B and Planet C.

	Planet A	Planet B	Planet C
Distance from the Sun (million km)	150	2 500	4 485
Number of moons	1	40	30
Composition of air	78% nitrogen 21% oxygen 1% other gases	58% helium 40% hydrogen 2% oxygen	78% hydrogen 22% helium
Presence of water	Yes	Yes	No

Based on the table above, which of the following statements are correct?

- A Planet C is closer to Planet A than Planet B.
- B Planet C is more unlikely to support life than Planet A.
- C Planet B has less number of natural satellites than Planet C.
- D Planet A will take shorter time to make one revolution round the Sun than Planet B.

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

24. Which one of the following statements is true about the layer of atmosphere around the Earth?

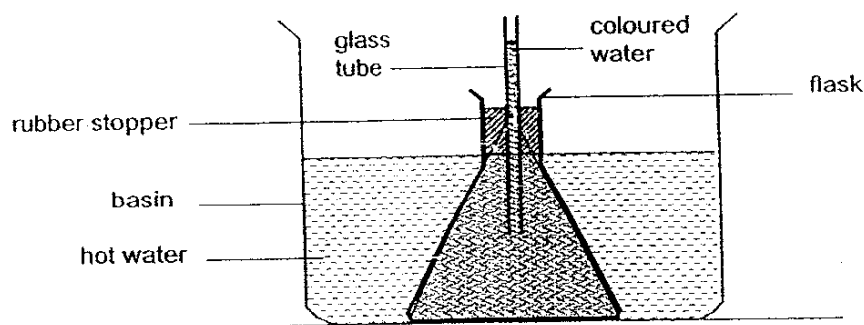
- (1) It keeps the Earth warm as it produces heat in the night.
- (2) It transmits signals from telephones, radios and televisions.
- (3) It ensures that there will be right amount of rainfall for all parts of the Earth.
- (4) It provides living things with oxygen to breathe and green plants with carbon dioxide to make food.

45

25. Sam poured an equal amount of boiling water into a styrofoam cup and a plastic cup. Which one of the following statements best explains why the water in the styrofoam cup is warmer than the water in the plastic cup after half an hour?

- (1) Styrofoam is a better conductor of heat than plastic.
- (2) Plastic is a better conductor of heat than styrofoam.
- (3) Both plastic and styrofoam are good conductors of heat.
- (4) Both plastic and styrofoam are poor conductors of heat.

26. Sundramoorthy set up an experiment as shown in the diagram below.



He observed that the level of coloured water in the glass tube went down slightly first and then rose. Which one of the following statements best explains why the level of coloured water went down slightly at first?

- (1) Gravitational pull caused the coloured water to go down slightly at first.
- (2) The coloured water in the glass tube expanded as a result of the hot water in the basin and so it went down slightly at first.
- (3) The heat from the hot water in the basin made the rubber stopper expand a little and so the coloured water in the glass tube went down slightly at first.
- (4) The hot water in the basin caused the flask to expand, thereby creating a space in the flask for the coloured water in the glass tube to go down slightly at first.

27. Which one of the following statements about heat and/or temperature is correct?
- (1) All sources of heat are also sources of light.
 - (2) Both temperature and heat are forms of energy.
 - (3) Heat can be defined as the measure of hotness and coldness of an object.
 - (4) Heat flows from one object of a higher temperature to another object of a lower temperature.
28. Which one of the following characteristics of a durian tree is **not** an inherited characteristic?
- (1) Colour of the flowers
 - (2) Surface of the bark of the tree
 - (3) Pattern of the veins on the leaves
 - (4) Number of leaves attacked by pests
29. Which one of the following is the function of chlorophyll?
- (1) To trap energy from sunlight.
 - (2) To convert excess sugar into starch.
 - (3) To trap carbon dioxide needed for photosynthesis.
 - (4) To allow exchange of gases during photosynthesis.
30. Which of the following statements about the life cycle of a butterfly are correct?
- A There are four stages in the life cycle of a butterfly.
 - B At the larva stage, the caterpillar's body shortens and hardens.
 - C The change from larva to pupa to adult butterfly is called moulting.
 - D As the caterpillar grows, it sheds the old skin so as to grow new skin.
- (1) A and D only
 - (2) B and C only
 - (3) A, C and D only
 - (4) A, B, C and D



南洋小學

NANYANG PRIMARY SCHOOL

PRIMARY 5 SCIENCE

SEMESTRAL ASSESSMENT 1

2007

BOOKLET B

Date : 7 May 2007

Duration : 1 h 45 min

Name : _____ ()

Class: Primary _____ ()

Marks Scored:

Booklet A:		60
Booklet B :		40
Total :		100

Parent's signature:

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
FOLLOW ALL INSTRUCTIONS CAREFULLY.

Booklet B consists of 10 printed pages including this cover page.

Section B (40 marks)

Write your answers to questions 31 to 46 in the spaces provided.
Marks will be deducted for misspelt key words.

31. Complete the table below on the human reproductive system by filling in the blanks with appropriate words. (2 marks)

	Man	Woman
Reproductive organs		
Reproductive cells		

32. For the following statements below, put a tick (✓) in the correct box to indicate whether they are true or false. (2 marks)

	True	False
(a) All animals look after their young.		
(b) In mammals, the egg cells are fertilised internally.		
(c) All animals go through either 3-stages or 4-stages life cycle.		
(d) In the life cycle, the change from egg to adult is known as moulting.		

33. The table shows some food that we eat. State the parts of the plant that we are eating. (2 marks)

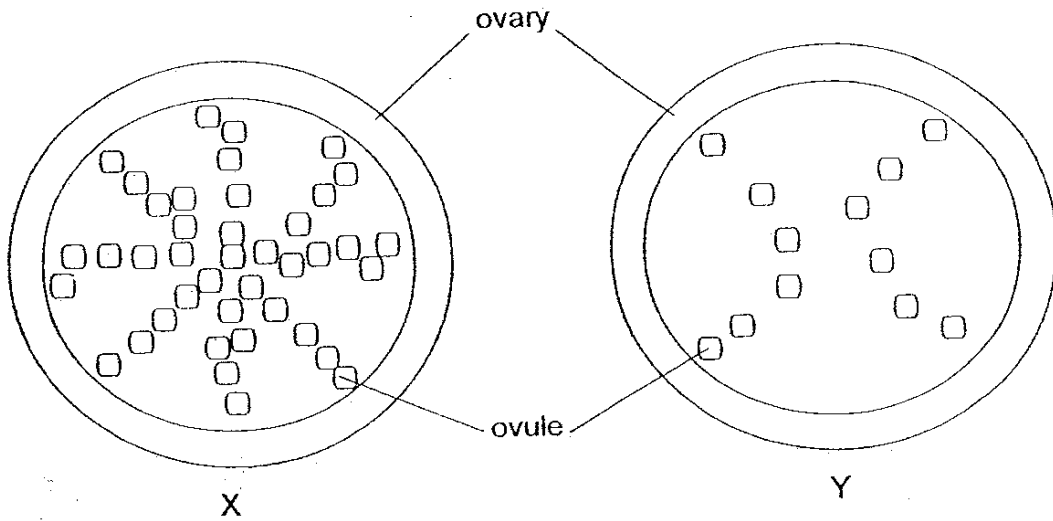
	Food	Plant part that we eat
(a)	Pea	
(b)	Onion	
(c)	Banana	
(d)	Broccoli	

34. Zhicong noticed some fern leaves growing near the base of his balsam plant. He wondered how the fern plant had got there when he did not plant it. Zhicong's mother told him to remove the fern plant if he wanted to have a healthy balsam plant.

(a) How did the fern plant grow in Zhicong's pot of balsam plant?(1 mark)

(b) Why did Zhicong's mother advise him to remove the fern? (1 mark)

35. The diagram below shows the cross sections of the ovaries of two flowers, X and Y.

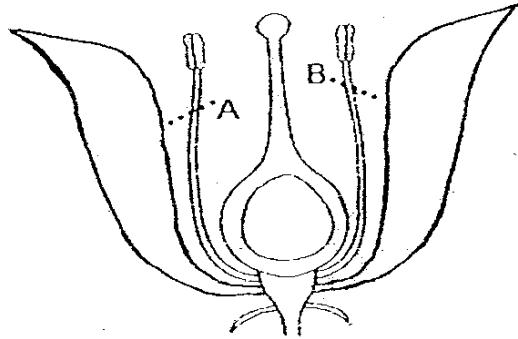


(a) Study the diagram of both ovaries, X and Y, and compare the fruits that will develop from both ovaries. (1 mark)

(b) Give an example of a fruit that will develop from ovary X. (1 mark)

50

36. Julie cut away the 2 parts, A and B, of the flower below and observed it for a week. At the end of the week, she was surprised to see a fruit developing from the flower.

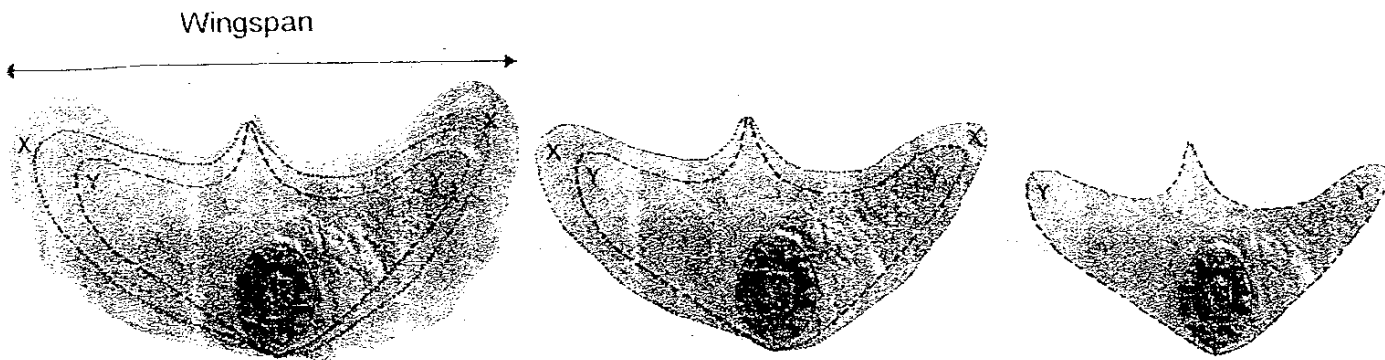


- (a) What was Julie trying to find out when she cut the 2 parts, A and B, of the flower? (1 mark)
- (b) Give 2 possibilities how the fruit could have developed from the flower after Julie had cut the flower at A and B. (2 marks)
- (i) _____
- (ii) _____

37. Peiyong placed 5 red bean seeds on a damp cotton wool and left them at a warm place for them to germinate. However, after a week, only 3 seedlings developed. She made some conclusions at the end of her experiment. Which of the following conclusions that she made is true, not true or not possible to tell? Put a tick (✓) in the correct box for each statement. (3 marks)

Conclusions made by Peiyong	True	Not true	Not possible to tell
(a) When seeds germinate, the shoots are the first to grow.			
(b) The remaining 2 seeds will germinate given another week.			
(c) The seed leaves decrease in size as the seedlings grow.			

38. Ben found the seed below and carried out an experiment on it.



After he had measured the wingspan, he dropped the seed from the table top and recorded the distance travelled by the seed. Next, he cut the same seed at X, measured the wingspans before carrying out the same procedure. He carried out the same procedure again by cutting the same seed at Y. The table below shows the distance travelled by the seed at different wingspans.

Wingspan of seed (cm)	10	7	4
Distance travelled (cm)	62	48	19

(a) From the results of the above experiment, what is the relationship between the wingspan and the distance travelled by the seed?

(b) Predict the distance travelled by the seed if the wingspan was 5 cm. (1 mark)

(c) State a variable that Ben had to keep the same in order for the experiment to be a fair one. (1 mark)

(d) Name a plant with the same method of dispersal. (1 mark)

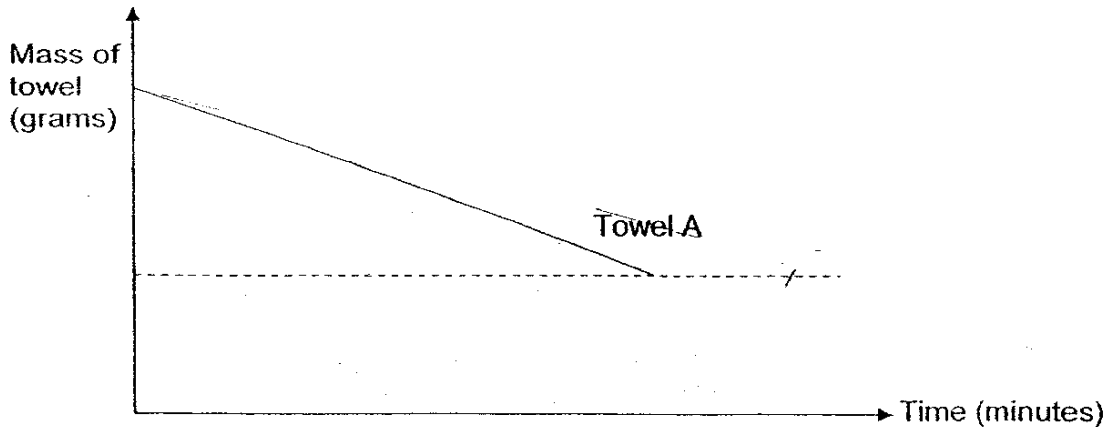
39. The diagram below shows a laboratory thermometer.



(a) Name a substance that X could be. (1 mark)

(b) Name a property that X should have for it to be used in a thermometer. (1 mark)

40. Eleanor soaked two identical towels, A and B, in a basin of water. She hung towel A in the shade and towel B under the sun. She then took the mass of towel A and B at regular time intervals. Thereafter, she plotted the graph for towel A as shown below.

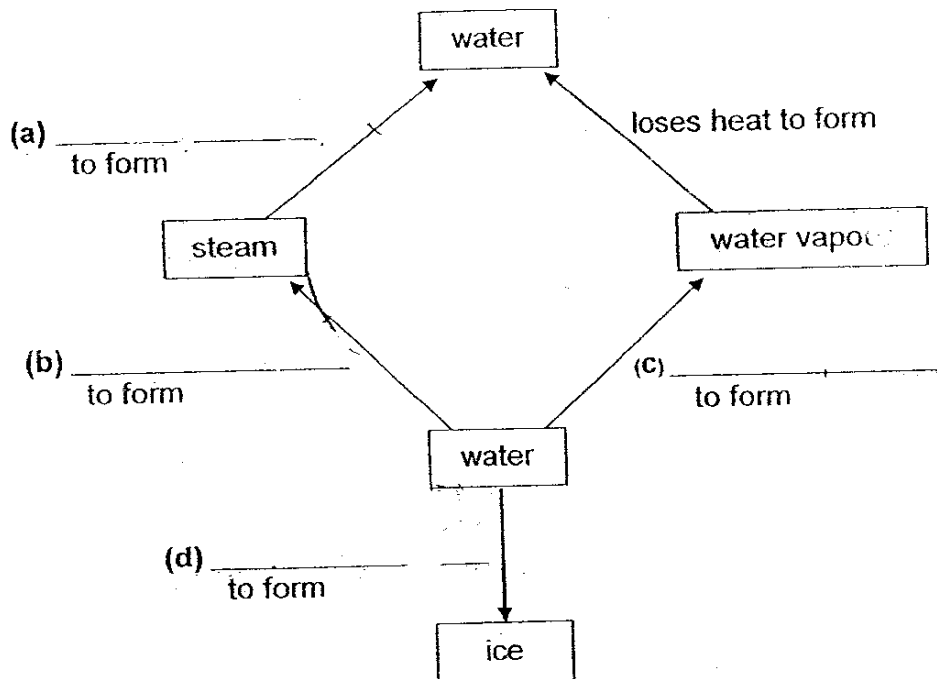


(a) Based on the graph, what is the relationship between the mass of towel A and the time? (1 mark)

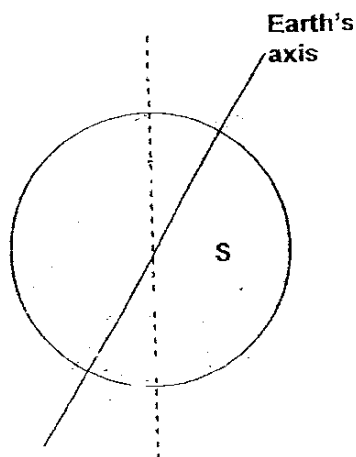
(b) Draw and label the line graph for towel B in the graph above. (1 mark)

53

41. Study the diagram below carefully. Fill in the blanks (a), (b), (c) and (d) with either 'gains heat' or 'loses heat' for the change of states in the water to occur. (2 marks)



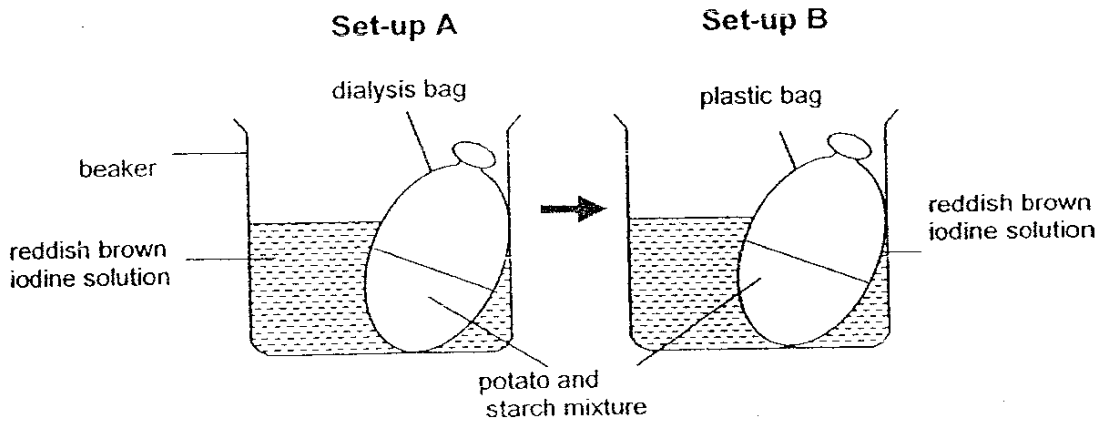
42. The diagram below shows S on Earth. S is experiencing daytime.



- (a) Draw arrows to indicate where sunlight is coming from. (1 mark)
- (b) Shade the part of Earth that is experiencing night-time. (1 mark)

54

43. The diagram below shows 2 set-ups that Natalie used to study the property of the material used to make a dialysis bag.



Natalie recorded her observation at the beginning of the experiment. She recorded her observation again 3 hours later. The recorded observations for Set-up A and Set-up B are shown in the tables below.

Set-up A

	<i>Iodine Solution</i>	<i>Potato and starch mixture</i>
Start of experiment	Reddish brown	White
3 hours later	Reddish brown	Dark blue

Set-up B

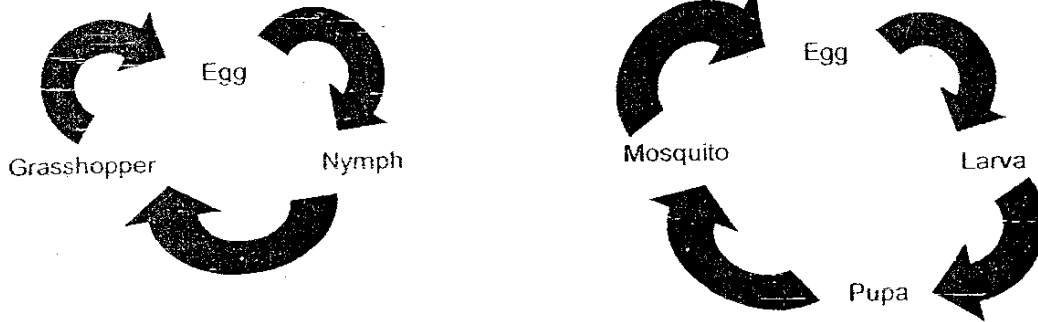
	<i>Iodine Solution</i>	<i>Potato and starch mixture</i>
Start of experiment	Reddish brown	White
3 hours later	Reddish brown	White

- (a) Explain why the potato and starch mixture turned dark blue after 3 hours in set-up A. (2 marks)

- (b) What is the purpose of Set-up B? (1 mark)

- (c) What is the common property shared between the material used to make the dialysis bag and the cell membrane? (1 mark)

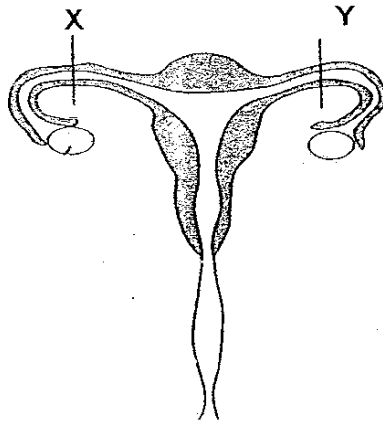
44. The diagrams below show the life cycles of a grasshopper and a mosquito.



- (a) Based on the above diagram, state one difference between the two life cycles. (1 mark)

- (b) Explain why the population of mosquitoes can be controlled when a layer of oil is spread on the surface of the water. (1 mark)

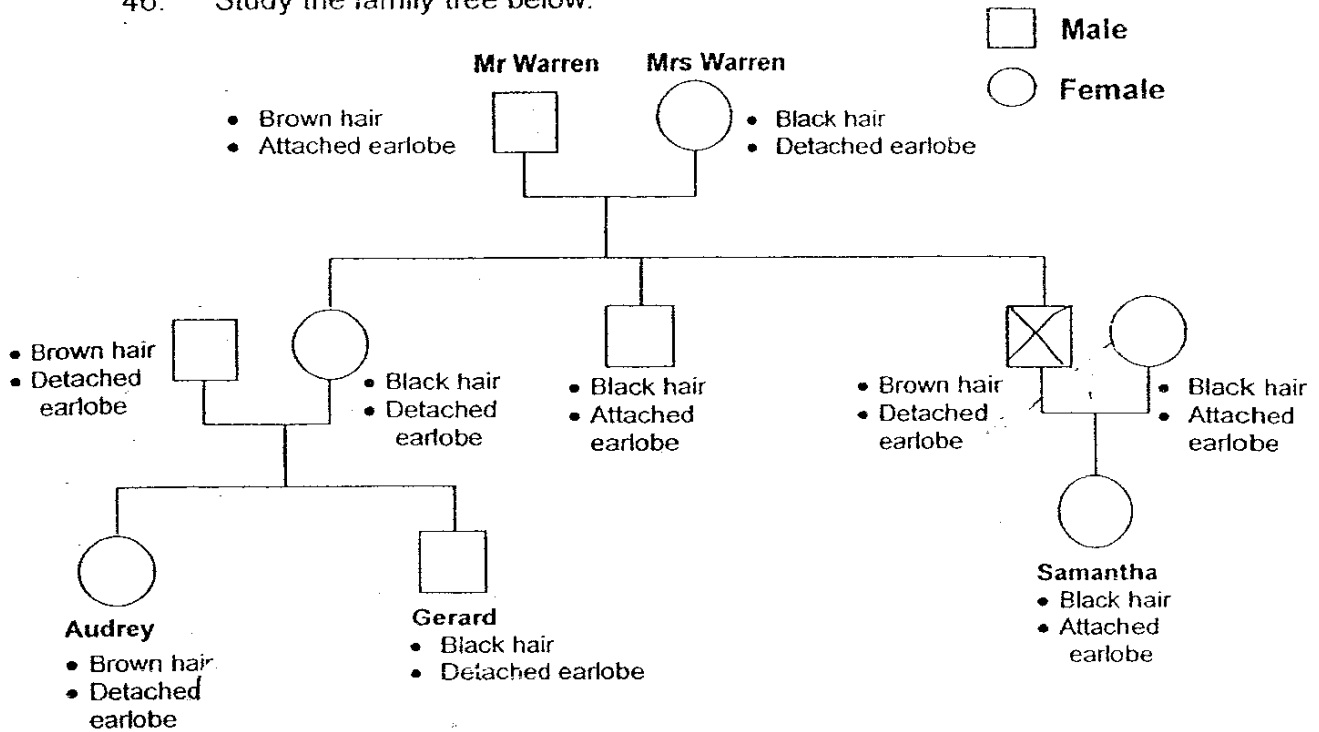
45. The diagram below shows the female reproductive system.



- (a) Label the ovary in the diagram above. (1 mark)
- (b) Explain what will happen when the fallopian tubes are cut and tied at X and Y. (1 mark)

56

46. Study the family tree below.



(a) Put an 'X' in the above family tree to identify Audrey's uncle who is married. (1 mark)

(b) Based on the above family tree, what characteristics does Audrey's cousin have? (1 mark)

(c) How is Audrey related to Mrs Warren? (1 mark)

(d) How many children do Mr and Mrs Warren have? (1 mark)

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

Setters: Mr Brandon Ng
Mrs Linda Tan

51

Nanyang Primary School
Primary 5 Science SAI Exams (2007)

Answer Keys

SECTION A : (60 MARKS)

Qn no.	Ans
1	3
2	1
3	1
4	1
5	1
6	2
7	2
8	3
9	2
10	2

Qn no.	Ans
11	2
12	3
13	2
14	3
15	2
16	3
17	4
18	2
19	3
20	3

Qn no.	Ans
21	4
22	2
23	2
24	3
25	4
26	4
27	4
28	4
29	1
30	4

SECTION B (40 MARKS)

31. Man : Testes, sperm
Woman : Ovaries, egg

32a. F
32b. T
32c. F
32d. F

33a. Seed
33b. Bulb
33c. Fruit
33d. Flower

34a. The wind has carried the spores of the fern plant to Zhicong's plant.
34b. So that they will not have to compete for nutrients space, water and sunlight

35a. Fruit X has more seeds than Y.
35b. Papaya

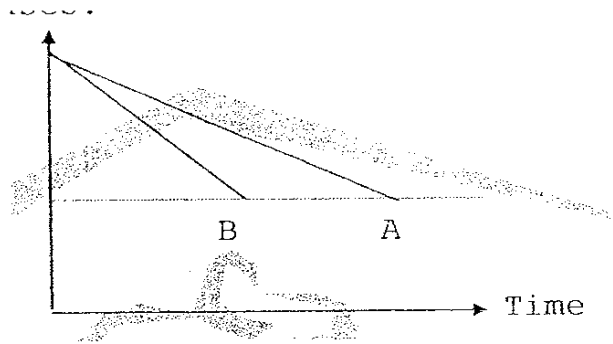
36a. She was trying to find out if a fruit can develop from the flower if it has no anthers.
36b. (i) The pollen grains from another flower of the same kind was dispersed by wind and landed on the flower.
(ii) Insects carry pollen grains from another flower of the same kind to this flower.

37a. Not true
37b. Not possible
37c. Not true

- 38a. The smaller the wingspan of the seed, the shorter the distance traveled by the seed.
- 38b. 21cm
- 38c. The height
- 38d. Shorea

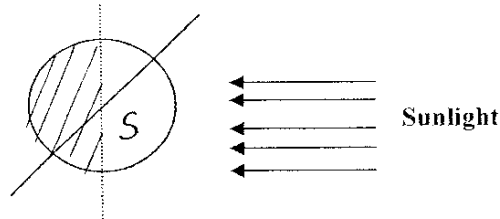
- 39a. Mercury
- 39b. Good conductor of heat.

- 40a. As the time increases, the mass of towel A decreases.
- 40b.



- 41a. Loses heat
- 41b. Gains heat
- 41c. Gains heat
- 41d. Loses heat

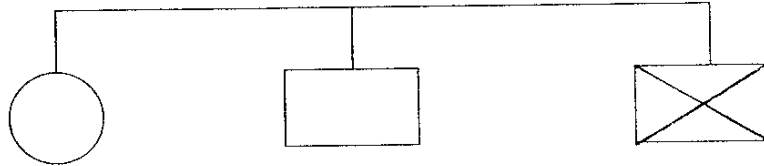
42.



- 43a. The dialysis bag allowed the iodine to enter and interacted with the potato and starch mixture, thereby causing the mixture to turn dark blue.
- 43b. It acts as a control.
- 43c. They allow some substances to pass through.
- 44a. The grasshopper has a three-staged life cycle but the mosquito has a four-staged life cycle.
- 44b. The larvae and pupae of mosquitoes breathe through breathing tubes. The layer of oil prevents them from getting oxygen so they die.

- 45a. X = Ovary
45b. Fertilization cannot take place as the sperm cannot meet the egg.

46a.



- 46b. Her cousin Samantha has black hair and attached earlobe.
46c. Mrs Warren is Audrey's grandmother.
46d. 3.