

**NANYANG PRIMARY SCHOOL****PRIMARY FIVE SCIENCE****SEMESTRAL ASSESSMENT 1  
2005****BOOKLET A****Date : 6<sup>th</sup> May 2005****Duration : 1 h 45 min****Name : \_\_\_\_\_ (      )****Class: Primary 5 (      )****Marks Scored:**

<b>Booklet A:</b>		<b>60</b>
<b>Booklet B :</b>		<b>40</b>
<b>Total :</b>		<b>100</b>

**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.**

3                      6

**Section A (20 x 2 marks = 40 marks)**

For each question from 1 to 20, four options are given. One of them is the correct answer. Make your choice (1, 2, 3 or 4). Shade the correct oval (1, 2, 3 or 4) on the Optical Answer Sheet provided.

1. Which of the following are present in all cells?

- A nucleus
- B cell wall
- C cytoplasm
- D chloroplast

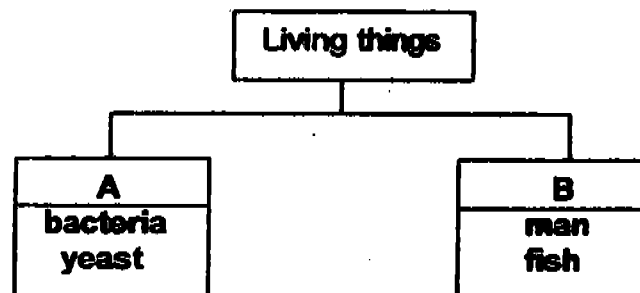
- |                  |                     |
|------------------|---------------------|
| (1) C only       | (2) A and B only    |
| (3) A and C only | (4) A, B and D only |

2. Which of the following statements are true?

- A Cells come in many different shapes and sizes.
- B All living things are made up of more than one cell.
- C The new cells formed from cell division are different from the parent cell.
- D Cell walls are important to plants because they give the plant cells their shape.

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

3. Study the classification table below.



Which one of the following can be placed in Box A?

- |          |                |
|----------|----------------|
| (1) ant  | (2) moss       |
| (3) worm | (4) paramecium |

4. The characteristics from the female parent are passed on to her young through the \_\_\_\_\_.

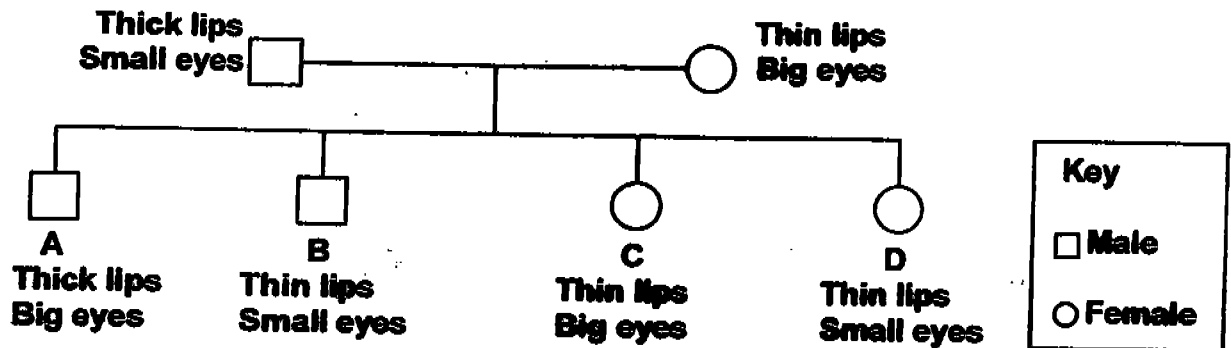
- |            |            |
|------------|------------|
| (1) eggs   | (2) ovary  |
| (3) sperms | (4) testes |

5. Which of the following characteristics are ~~is~~ hereditary?

- A Dimples
- B Colour of skin
- C Type of hairline
- D Colour of eyebrow

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

6. Study the family tree below.



Which children inherited one feature from each parent?

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

7. Which one of the following is found in the centre of the Solar System?

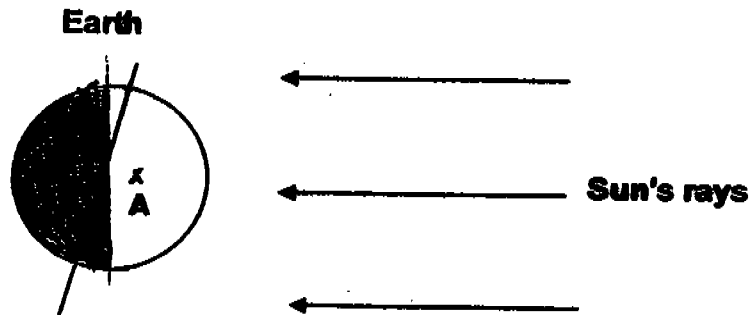
- |            |               |
|------------|---------------|
| (1) Moon   | (2) Star      |
| (3) Planet | (4) Satellite |

8. Man-made satellites are used for \_\_\_\_\_.

- A Communication
- B Space exploration
- C Weather forecasting
- D Observation of the Earth

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

9. The diagram below shows the position of the Earth and the sun.



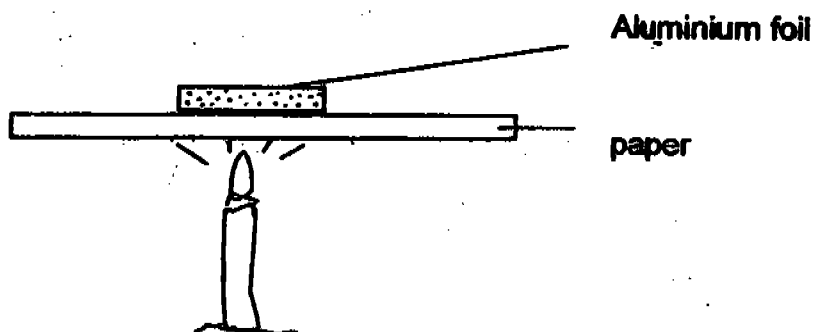
If it is 10 a.m. at location A, what is the time at location B?

- |            |             |
|------------|-------------|
| (1) 5 a.m. | (2) 1 p.m.  |
| (3) 5 p.m. | (4) 10 p.m. |

10. Mary took out an empty glass bottle from the refrigerator. Immediately, she filled it up with some hot water quickly. She observed that the glass bottle cracked soon after the hot water was poured into it. Which one of the following best explains her observation?

- (1) The bottle lost heat.
- (2) The bottle gained heat.
- (3) The bottle did not expand evenly.
- (4) The bottle did not contract evenly.

11. John cut a piece of aluminium foil and placed it on a piece of white paper. He then placed the paper above a flame as shown in the diagram below.



After two minutes, he removed the flame. Which one of the following would John observe of the white paper after the aluminium foil was removed?

<p>(1)</p> <p>Hole</p> <p>Charred</p>	<p>(2)</p> <p>Charred</p>
<p>(3)</p>	<p>(4)</p> <p>Charred</p>

12. Which one of the following statements is true about the life cycle of a cockroach?

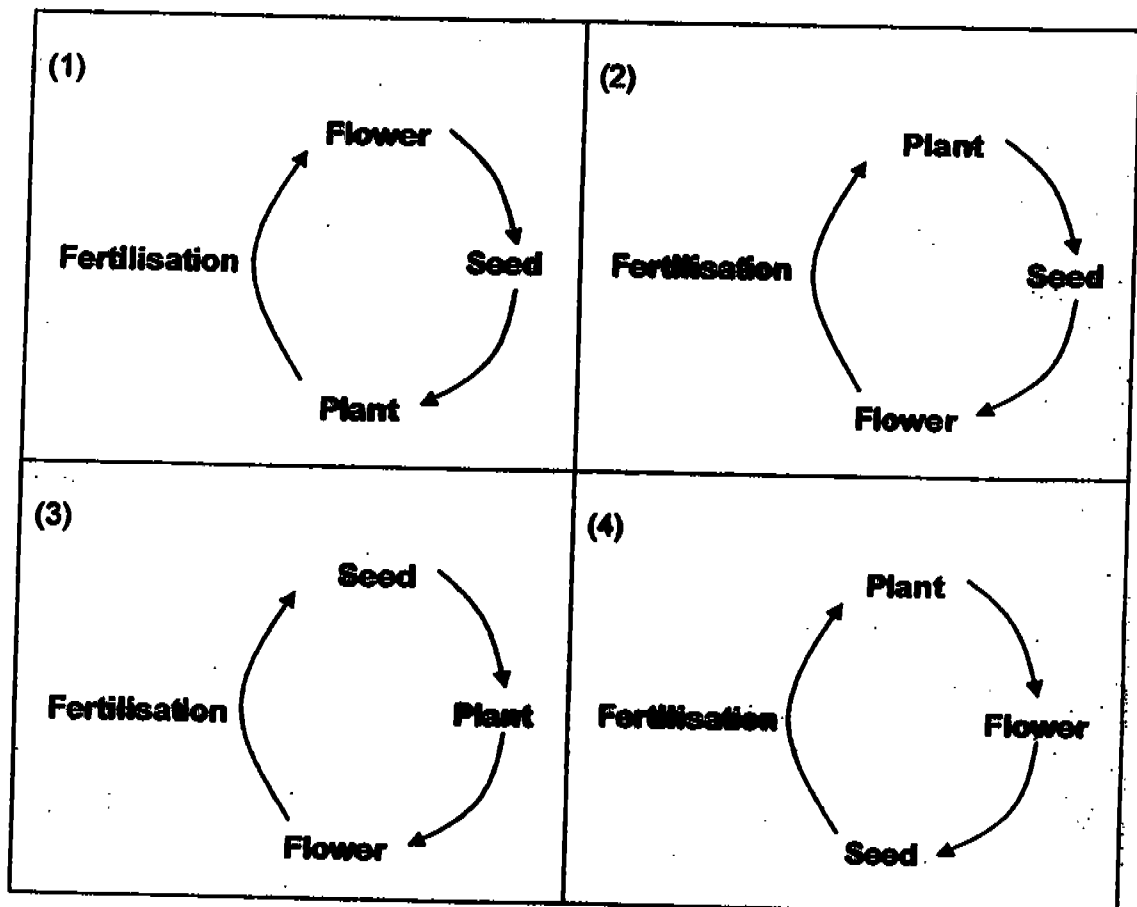
- (1) The nymph of a cockroach lives in water.
- (2) The female cockroach takes care of its young.
- (3) The female cockroach lays many eggs at a time.
- (4) The young of a cockroach develops from a pupa.

13. which of the following processes involve a heat gain by water?

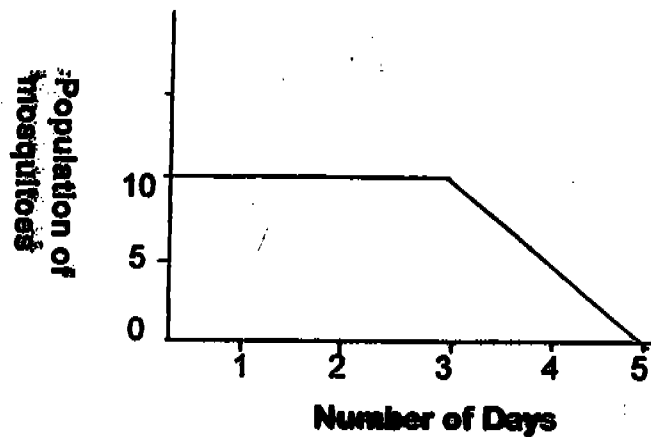
- A Boiling
- B Melting
- C Evaporation
- D Condensation

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

14. Which diagram below shows correctly the development of a flowering plant?



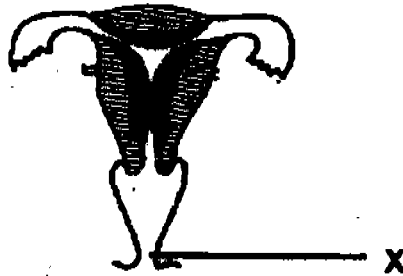
15. John put 10 wigglers into a container containing 1 litre of water. He observed them over 5 days and plotted the result in a graph as shown below.



Which one of the following does not contribute to the decreasing population of the wigglers?

- (1) A fish was introduced on day 3.
  - (2) The wigglers had turned into adult mosquitoes.
  - (3) John added 100gm of salt into the water every day.
  - (4) A layer of oil had been poured over the water on day 3.
16. What is the structure in the mammal that allows ~~oxygen~~ and nutrients to be passed from the mother to the foetus?
- |                    |                    |
|--------------------|--------------------|
| (1) womb           | (2) vagina         |
| (3) umbilical cord | (4) fallopian tube |

Study the following diagram to answer questions 17 and 18.



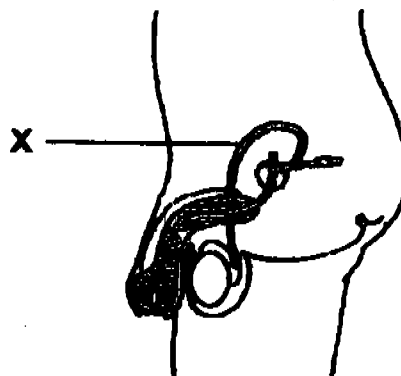
17. Which part of the female reproductive system is missing in the above diagram?

- |             |                     |
|-------------|---------------------|
| (1) womb    | (2) vagina          |
| (3) ovaries | (4) fallopian tubes |

18. What is the function of the part marked X?

- (1) To receive the sperms
- (2) To carry the eggs to the uterus
- (3) To allow a fertilised egg to be implanted and developed
- (4) To produce female hormones and release eggs for fertilisation

19. The diagram below shows the male reproductive organ.



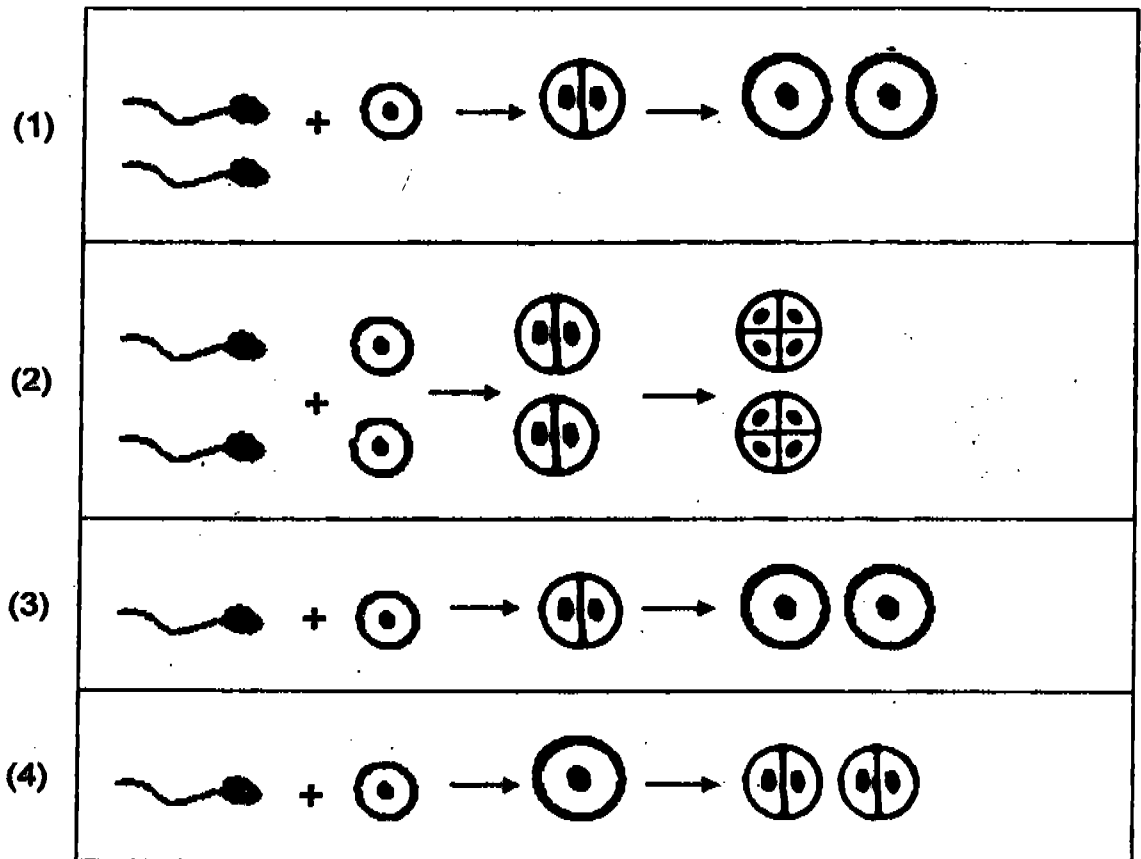
Which of the following statement(s) is/are true if part X is cut?

- A There will be no sperms produced.
- B The sperms produced will not be stored.
- C The male will not be able to have children.
- D The male will not be able to pass out urine.

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



20. Identical twins are formed when a fertilised egg splits into two separate cells. The diagrams below trace every stage of the process. Which one of the following diagrams best represents the formation of identical twins?



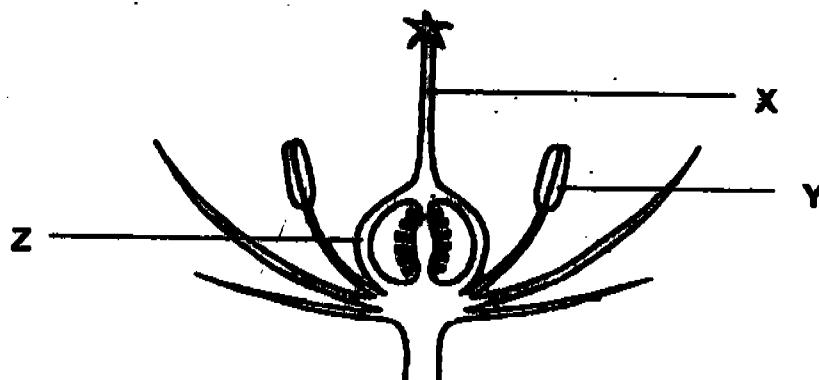
21. Siti made the following statements about fertilisation in plants.

"For fertilisation in a flower to occur, pollen grains from the (i) \_\_\_\_\_ are deposited in the (ii) \_\_\_\_\_ of the flower. It then enters the ovary through the style."

Which one of the following words should she use to fill in the blanks in (i) and (ii)?

	(i)	(ii)
(1)	stigma	filament
(2)	stigma	anther
(3)	anther	filament
(4)	anther	stigma

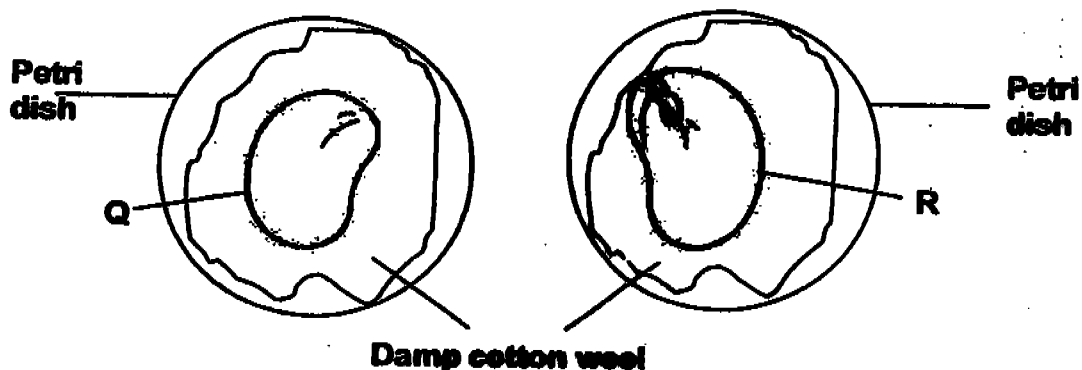
22. The diagram below shows the cross section of a flower.



Which one of the following correctly identifies parts X, Y and Z?

	X	Y	Z
(1)	Stigma	Anther	Ovary
(2)	Stigma	Filament	Ovule
(3)	Style	Anther	Ovary
(4)	Style	Filament	Ovule

23. Raju soaked a kidney bean in water and removed the seed coat. He then split the seed into two halves, parts Q and R, as shown in the picture below.



He placed both parts on a petri dish laid with damp cotton wool and left them aside for four days. Which one of the following would he observe on the fourth day of the experiment?

- (1) Both parts Q and R remain unchanged.
- (2) A larger seedling grew from part R than from part Q.
- (3) A seedling emerged from part R but not from part Q.
- (4) Part R turned brown while part Q remained the same.

24. Nadia went to a park and saw a flower with big yellow petals. She found that the flower had a sweet scent. How is this flower most likely to be pollinated?

- (1) By wind
- (2) By bees
- (3) By water
- (4) By grasshoppers

25. Kang Rui dropped three different fruits X, Y and Z from a height of 5 metres and recorded the time each fruit took to land on the ground. He conducted the same experiment 3 times for each type of fruit. The following table shows his results.

		Fruits		
		X	Y	Z
Time taken (s)	1 <sup>st</sup> try	1.1	4.6	2.7
	2 <sup>nd</sup> try	1.2	4.9	3
	3 <sup>rd</sup> try	1.1	5	2.3

What fruit is Y most likely to be?

- (1) saga
- (2) shorea
- (3) mimosa
- (4) pong pong

Study the information below to answer questions 26 and 27.

Isabel wanted to test the effect of overcrowding on the growth of plants. She conducted the experiment using pots of the same size, labelled A and B. The table below shows some conditions for the experiment.

Pot	Number of seedlings	Amount of water used (ml)	Amount of soil used (g)
A	5	Y	Z
B	X	7	350

26. Which of the following best represent X, Y and Z ?

	X	Y	Z
(1)	5	7	350
(2)	5	10	300
(3)	25	10	300
(4)	25	7	350

27. Which of the variables had to be kept the same in order for her to conduct a fair test?

- A type of soil
- B material of pot
- C amount of light
- D type of seedlings

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

28. Which one of the following correctly describes the process of germination?

- (1) Shoot appears → root emerges → green leaves appear → seed leaves drop off → becomes a seedling
- (2) Shoot appears → root emerges → seed leaves drop off → green leaves appear → becomes a seedling
- (3) Root emerges → shoot appears → green leaves appear → seed leaves drop off → becomes a seedling
- (4) Root emerges → seed leaves drop off → shoot appears → green leaves appear → becomes a seedling

29. The picture below shows a ginger.



Which of the following can be grown in the same way as the ginger?

- |            |            |
|------------|------------|
| (A) Yam    | (B) Onion  |
| (C) Potato | (D) Carrot |
- (1) A and C only                      (2) B and C only  
(3) A, B and D only                (4) B, C and D only
30. Four students planted some hibiscus plants on a small plot of land. After a few weeks, they found weeds growing near the hibiscus plants. They made the following comments:

Student A : *We don't have to remove the weeds as the hibiscus plants will still grow well.*

Student B : *We have to remove the weeds as they will compete for the basic necessities with the hibiscus plant.*

Student C: *We can leave the weeds alone as they will die eventually since the hibiscus is a bigger plant.*

Student D: *We'd better remove the weeds, otherwise both plants will die.*

Which one of the above students have made the most accurate statement?

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

**PRIMARY FIVE SCIENCE**  
**SEMESTRAL ASSESSMENT 1**  
**2005**

**BOOKLET B**

**Date : 6<sup>th</sup> May 2005**

**Duration : 1 h 45 min**

**Name : \_\_\_\_\_ (       )**

**Class: Primary 5 (       )**

**Marks Scored:**

<b>Booklet A:</b>		<b>60</b>
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<b>Total :</b>		<b>100</b>

**Parent's signature: .....**

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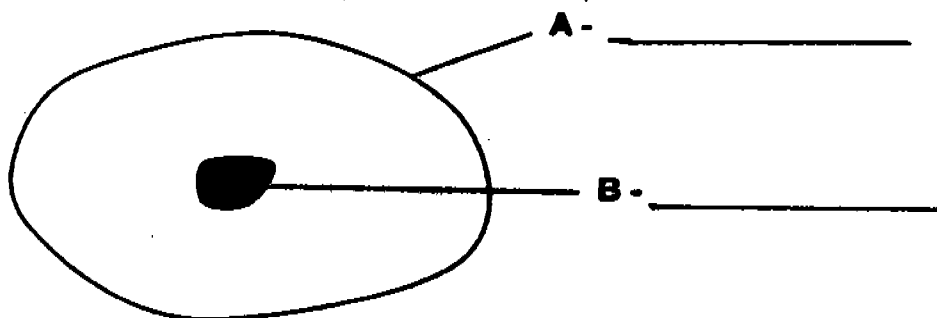
**Section B (10 marks)**

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

31. Fill in each blank with the correct word.

Yeast cells reproduce by a process called \_\_\_\_\_. One bud forms on the outer surface of a 'parent' cell. The \_\_\_\_\_ in the 'parent' cell then doubles and divides. One of the nuclei enters the \_\_\_\_\_. Finally, the bud breaks away to become a new \_\_\_\_\_. (2 marks)

32. The diagram below shows an animal cell.



- (a) Label parts A and B. (1 mark)

- (b) What is the function of part A? (1 mark)

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- (c) Based on the diagram, why is the animal cell not able to make food? (1 mark)

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33. Fatimah examined three cell specimens under a microscope and recorded her observations in the table below.

Presence of	Cell A	Cell B	Cell C
Cell Wall			
Chloroplasts			
Cytoplasm			

- (a) Which cell is likely to be taken from a hydrilla? (1 mark)

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- (b) Give an example of cell B. (1 mark)

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34. (a) The Earth is constantly spinning about its own axis. Explain why we do not feel this movement. (1 mark)

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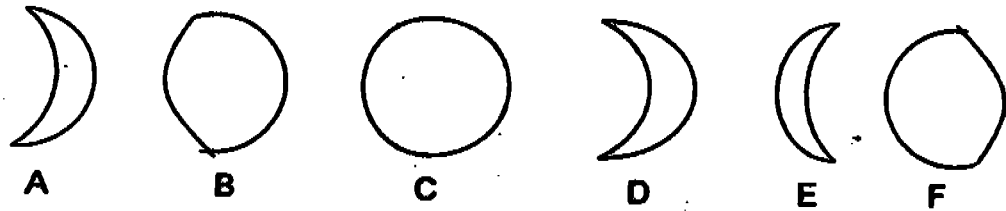
- (b) State one difference between the sun and the moon. Do not compare their size or shape. (1 mark)

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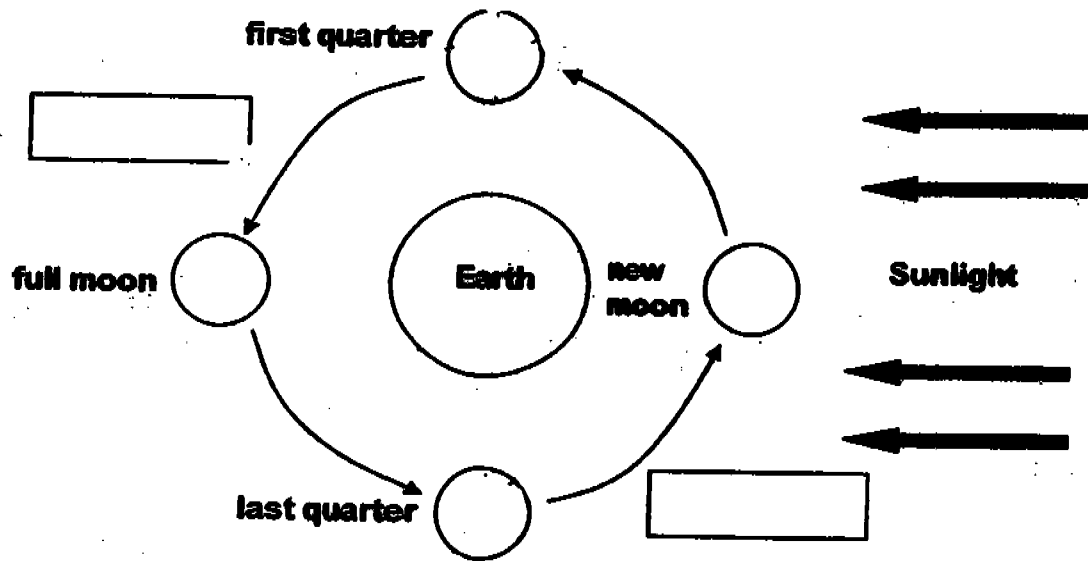
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35. The diagram below shows the different phases of the Moon.



Write the correct letters (A, B, C, D, E, F) in the boxes below. There should only be one letter in each box. (2 marks)

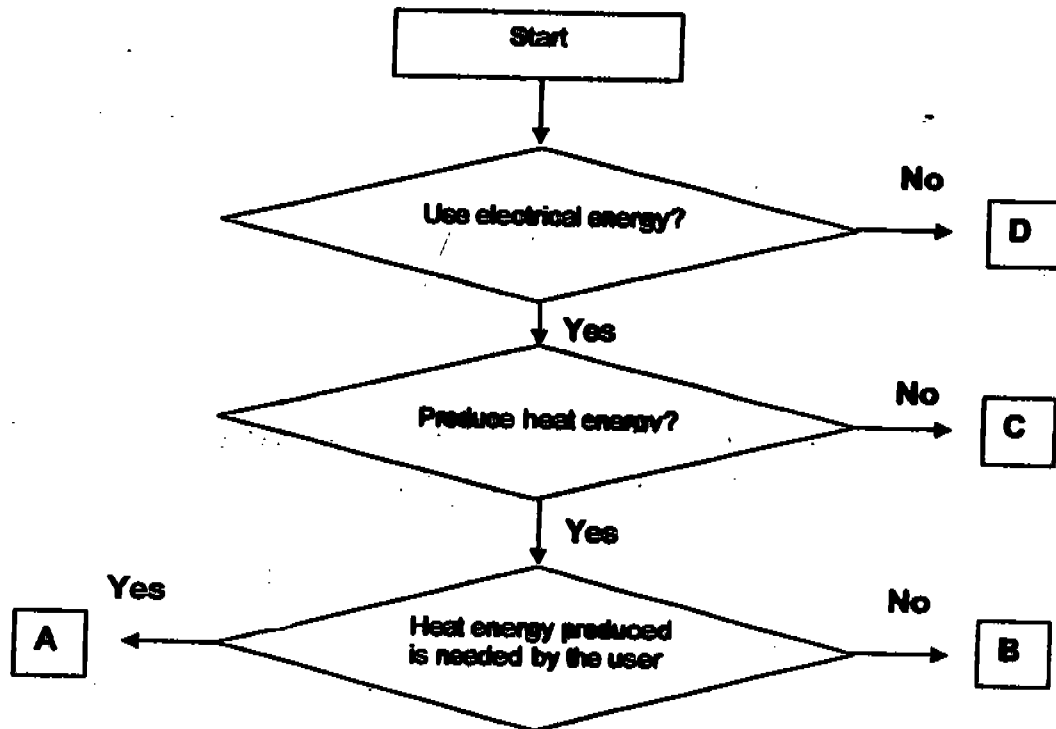


36. Rahim was given three containers made of three different materials of the same thickness. He labelled them A, B and C. He poured an equal amount of hot coffee into each of these containers and left them in the same place. Ten minutes later, Rahim measured the temperature of the coffee in the three containers and recorded the result in the following table.

Container	Temperature of coffee ( $^{\circ}\text{C}$ )				
	Start	10 minutes later			
		1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	Average
A	90	61	60	59	60
B	90	45	39	34	40
C	90	85	82	73	80

- (a) What was Rahim trying to find out? (1 mark)
- \_\_\_\_\_
- \_\_\_\_\_
- (b) Rahim was told that the 3 containers were made of glass, metal and styrofoam. Based on the result shown on the table above, which container is most likely to be made of styrofoam?
- \_\_\_\_\_
- (c) Explain your answer in (b). (1 mark)
- \_\_\_\_\_
- \_\_\_\_\_
- (d) Why did Rahim repeat the experiment 3 times for each container? (1 mark)
- \_\_\_\_\_
- \_\_\_\_\_

37. In the flow chart below, A, B, C and D represent different groups of objects.



- (a) Based on the chart above, classify the following objects in Group A and Group B below. (2 marks)

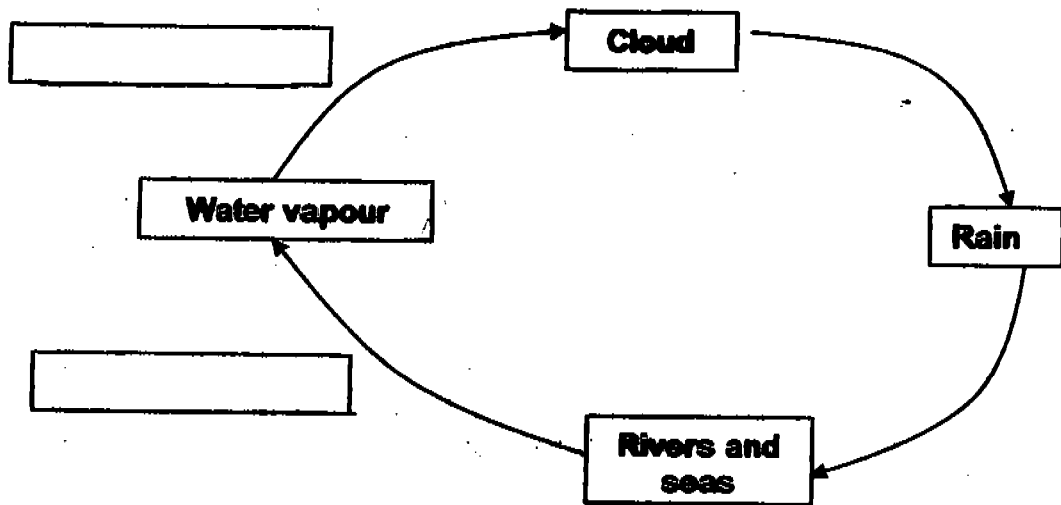
Electric cooker	Electric oven	Hi-fi system
Photostating machine	Desktop computer	Electric steamer

Objects
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p style="text-align: center; margin-bottom: 10px;"><b><u>Group A</u></b></p> <hr style="border: 0; border-top: 1px solid black; margin-bottom: 5px;"/> <hr style="border: 0; border-top: 1px solid black; margin-bottom: 5px;"/> <hr style="border: 0; border-top: 1px solid black; margin-bottom: 5px;"/> </div> <div style="width: 45%;"> <p style="text-align: center; margin-bottom: 10px;"><b><u>Group B</u></b></p> <hr style="border: 0; border-top: 1px solid black; margin-bottom: 5px;"/> <hr style="border: 0; border-top: 1px solid black; margin-bottom: 5px;"/> <hr style="border: 0; border-top: 1px solid black; margin-bottom: 5px;"/> </div> </div>

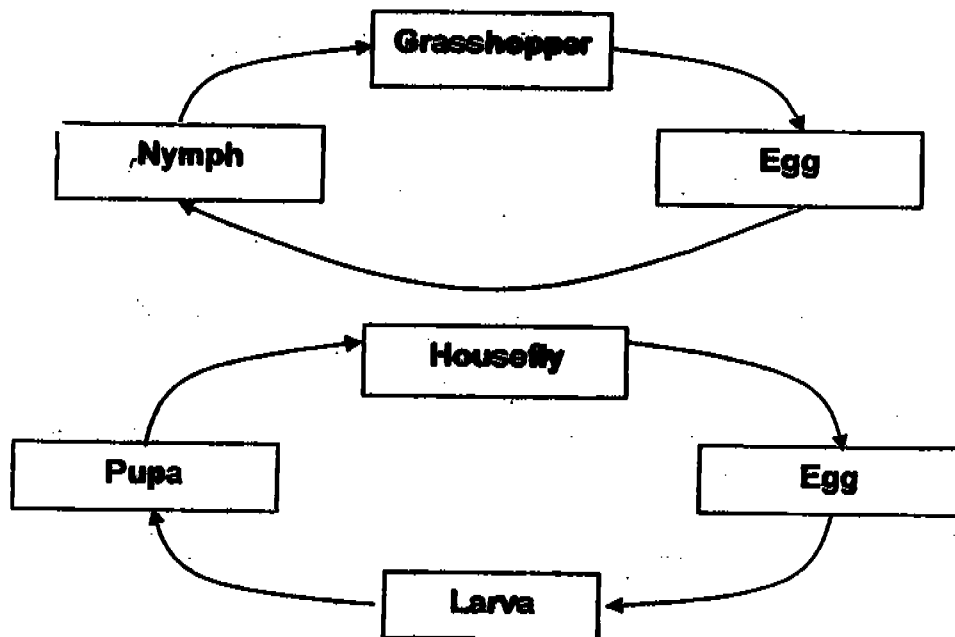
- (b) In which group, does a lighted candle belong to? (1 mark)

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38. The diagram below shows a water cycle. Write the 2 processes involved in the boxes provided. (2 marks)



39. Study the life cycles of the insects shown below.

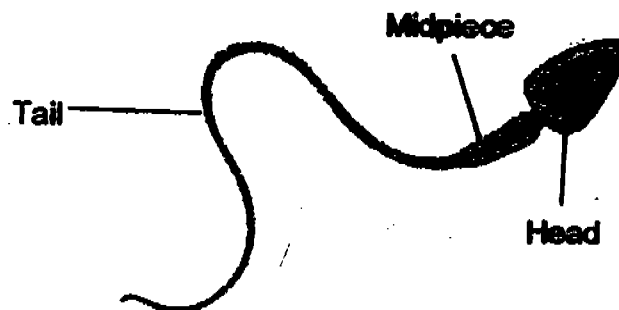


State one similarity and one difference between the life cycles of these two insects. (2 marks)

(i) Similarity: \_\_\_\_\_

(ii) Difference : \_\_\_\_\_

40. (a) The diagram below shows a human cell.



- (i) The above cell is required for reproduction. Name the cell.

\_\_\_\_\_

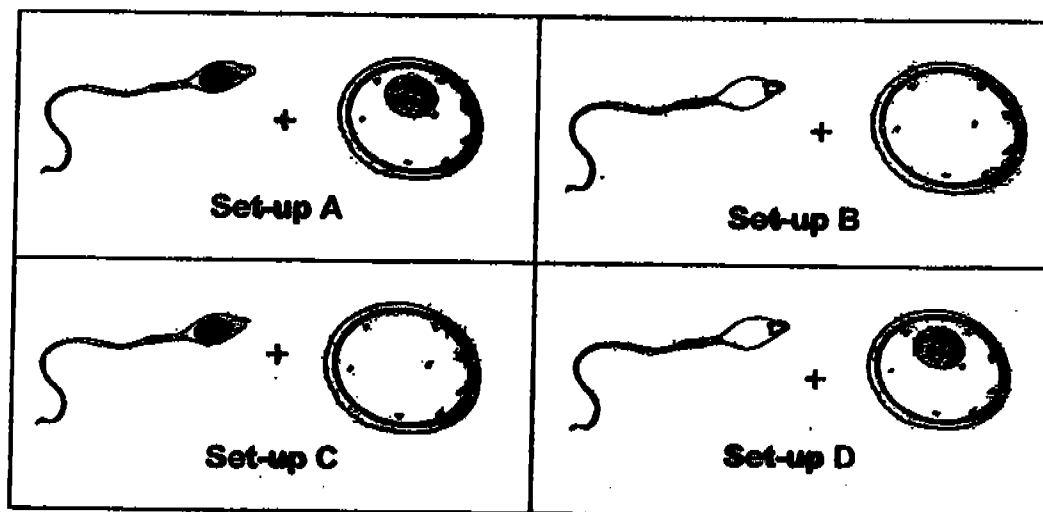
(1 mark)

- (ii) What is the function of the tail?

(1 mark)

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

- (b) Study the following experimental set-ups.



- (b) Rashid wants to find out if an egg will develop into a young if there is no nucleus in it. Which of the above experimental set-ups A, B, C or D should he use to show that? (1 mark)

\_\_\_\_\_

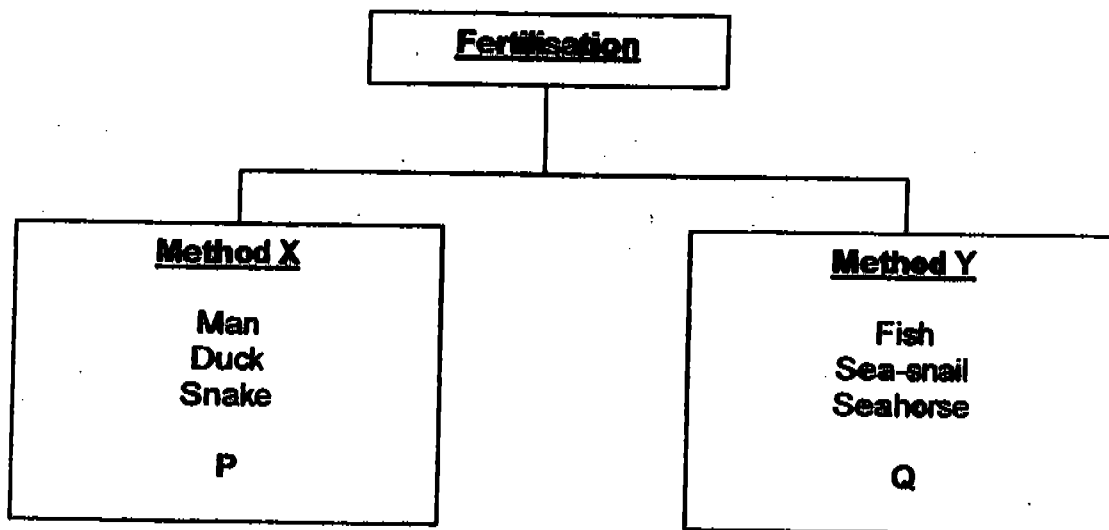
41. (a) The statements below describe the different stages in the process of fertilisation.

- A One sperm enters the egg successfully.
- B The sperm's nucleus fused with the nucleus of the egg.
- C Many sperms try to penetrate the egg.
- D The fertilized egg divides.
- E Other sperms are not able to enter the egg.

Arrange the above stages of fertilization in the correct order by writing down the alphabets in the boxes provided below. (2 marks)



- (b) The classification chart below shows 2 types of fertilisation for animals.



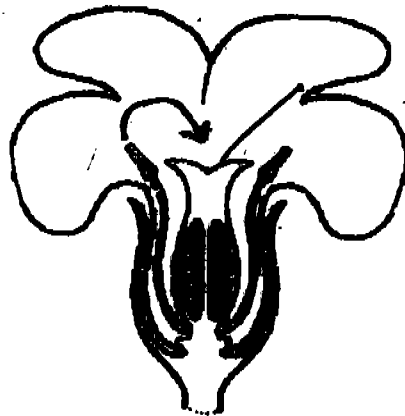
- (b) Identify animals P and Q.

(1 mark)

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

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

42. The diagram below shows a flower in which all its ovules are exposed.

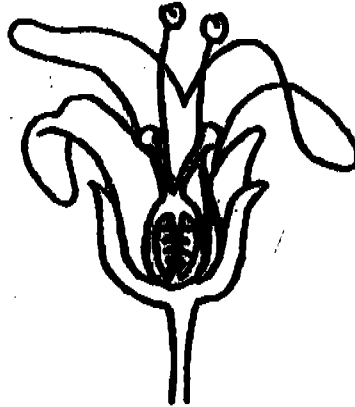


- a) Based on the above diagram, put a '✓' under "True", "False" or "Not possible to tell" for each of the following statements. (1 mark)

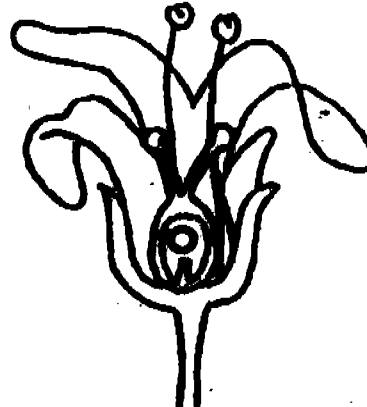
		True	False	Not possible to tell
(i)	There are many ovaries in the flower			
(ii)	Many pollen grains are needed for the flower to be fertilised.			

- b) Draw an arrow to show how pollination may take place in the above flower. (1 mark)

43. The following pictures show the longitudinal section of two flowers, A and B, with all their ovules exposed.

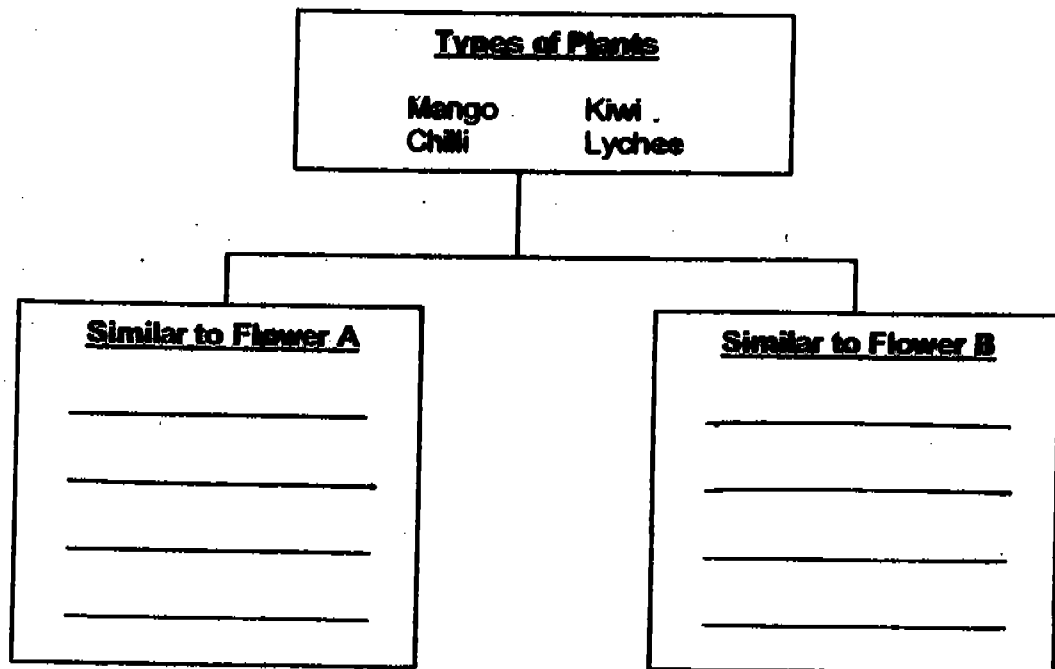


Flower A



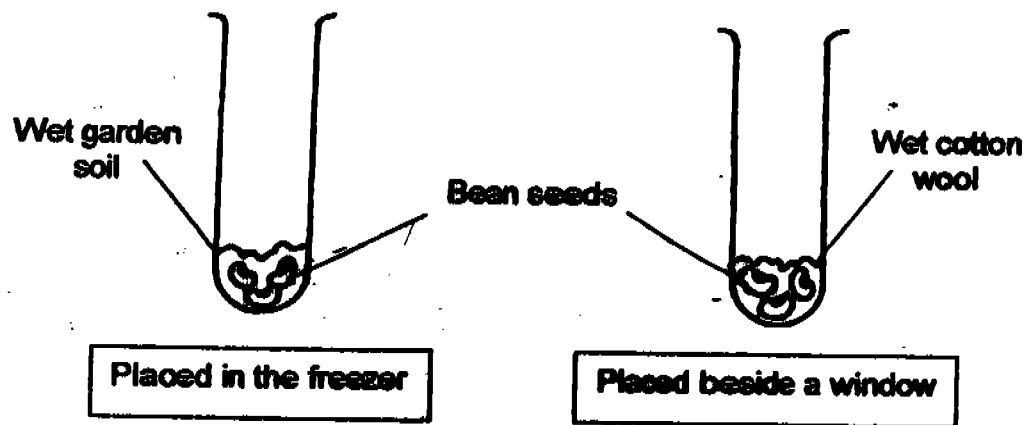
Flower B

From the list of plants below, classify these plants so that they have flowers which are similar in structure to that of flower A or B. (2 marks)





44. Abdullah conducted an experiment to see how bean seeds grow in different temperatures as shown below.



- a) His sister saw his experimental set-ups and told him that he did not conduct a fair test. What should Abdullah do in order to carry out a fair test? (1 mark)

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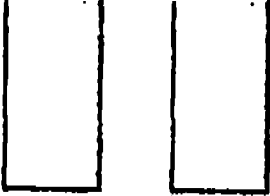
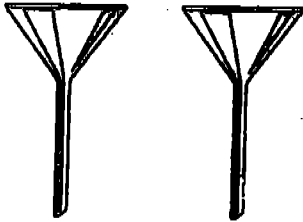
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- b) After he had made the adjustment, he observed the seeds a few days later and found that the seeds left in the freezer did not grow. Give a reason for his observation. (1 mark)

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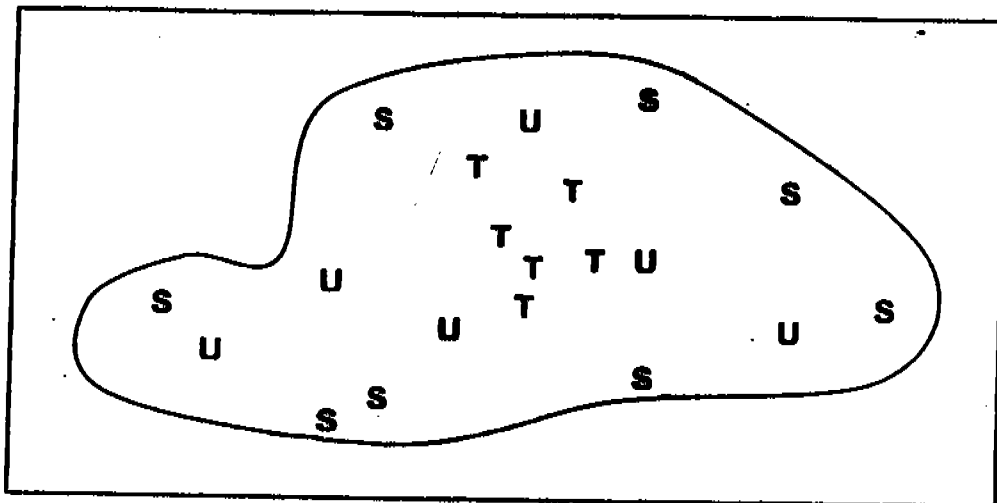
45. Wei Yang wanted to carry out an experiment to find out if onions grow better in soil or in water. He was given the following materials by his teacher.

<ul style="list-style-type: none"> <li>• 2 large onions of about the same size</li> </ul> 	<ul style="list-style-type: none"> <li>• 2 beakers with width about the size of the onions</li> </ul> 
<ul style="list-style-type: none"> <li>• 2 funnels</li> </ul> 	<ul style="list-style-type: none"> <li>• 250ml of water</li> </ul>
<ul style="list-style-type: none"> <li>• 250g of garden soil</li> </ul>	<ul style="list-style-type: none"> <li>• 250g of wet sand</li> </ul>

Use only the necessary materials given above to help Wei Yang conduct a fair test. Draw and label the two experimental set-ups in the boxes given below. (2 marks)

<u>Set-up 1</u>	<u>Set-up 2</u>

46. The diagram below shows the picture of an island. S, T and U are the types of plants that can be found on the island.



- a) Which plant is most likely to be dispersed by the explosive splitting of its fruits? (1 mark)

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- b) Give one characteristic that the fruits of plant S may possess. (1 mark)

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- c) Why it is important for plants to disperse their seeds? (2 marks)

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—————END OF PAPER—————

Setters: Mrs Toh Yew Ching

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**Nanyang Primary School**  
**Primary 5 Science SA1 (2005)**

*Exam Site*

**Answer Sheets**

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
1	1	4	1	4	3	2	4	1	3
Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
2	3	3	3	2	3	3	1	2	3
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
4	3	3	2	2	4	4	3	2	2

- 31a.        budding  
              nucleus  
              bud  
              cell
- 32a.        A : cell membrane  
              B : nucleus
- 32b.        Part A controls the movement of the substances in the cell and out of the cell.
- 32c.        The animal cell does not have chloroplast and chloroplast contains chlorophyll which is needed to make food.
- 33a.        Cell A is likely to be taken from a hydrilla.
- 33b.        Cell B could be an onion cell.
- 34a.        We are moving together with the earth at the same speed.
- 34b.        The sun gives out own light while the moon does not give out its own light
35.        B  
              E

- 36a. He was trying to find out which material is the best conductor of heat.  
 36b. Container C
- 36c. The coffee in it lost the least heat showing that it is the poorest conductor of heat.
- 36d. He had to make sure that he had the same results so he can make a correct conclusion.
- 37a.
- |                  |                       |
|------------------|-----------------------|
| Electric oven    | Photostatting machine |
| Electric steamer | Desktop computer      |
| Electric cooker  | Hi-fi system          |
- 37b. A lighted candle belongs to Group D.
38. Condensation  
 Evaporation
39. (i) Their life cycle both have egg stage.  
 (ii) The life cycle of a housefly has 4 stages while the life cycle of a grasshopper only has 3 stages.
40. (i) Sperm  
 (ii) It helps the sperm swim.
- 40b. Card A
- 41a. C, A, E, B, D  
 41b. P : chicken  
 Q : frog
- 42a. (i) False  
 (ii) Not possible to tell
- 42b.

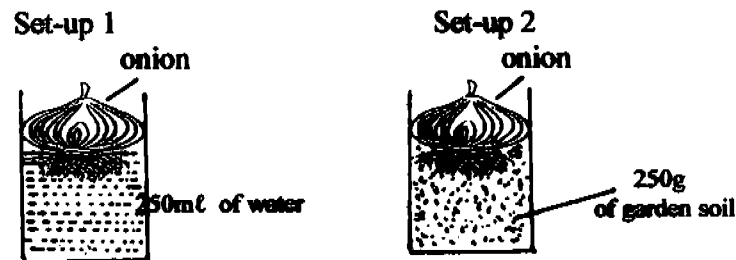


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43.           Chilli                   Lychee  
              Kiwi                   Mango

- 44a.           Abdullah should use garden soil in both set-ups.  
44b.           The seeds in the freezer did not receive warmth and warmth is needed for germination to take place.

45.



- 46a.           Plant T  
46b.           Plant S may have a fibrous husk.
- 46c.           If plants disperse their seeds, they will not suffer overcrowding and do not have to compete for water, sunlight and minerals and they will grow healthily.