



SAT

ANGLO-CHINESE SCHOOL (PRIMARY)

MID-YEAR EXAMINATION 2005

SCIENCE

BOOKLET A

Name: _____ ()

Class: Primary 5 _____

Date: 13th May 2005

Duration of paper: 1 h 45 min

**THIS BOOKLET CONTAINS 18 PAGES.
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FOLLOW ALL INSTRUCTIONS CAREFULLY.**

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)

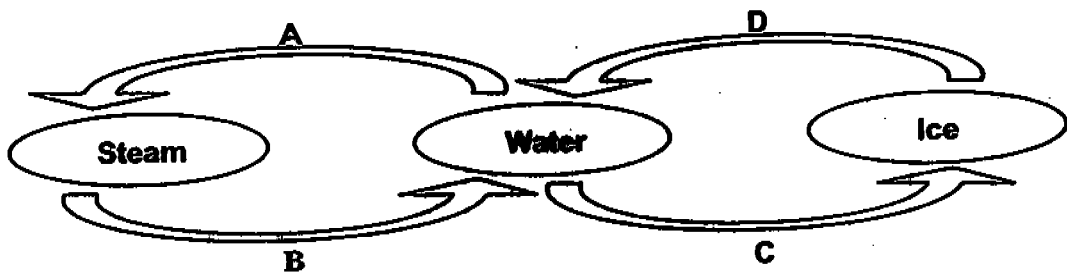
1. The table below shows the results of some tests done on several fabrics.

Test	Fabric			
	A	B	C	D
Is it fireproof?	No	Yes	No	Yes
Is it stretchable?	No	No	Yes	No
Is it waterproof?	No	Yes	Yes	No
Is it light?	No	Yes	No	No

Which fabric (A, B, C or D) would make the best fire-fighting suit?

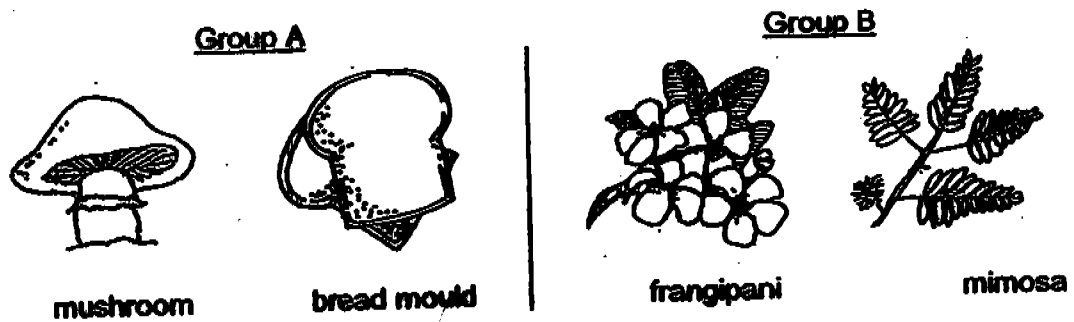
- (1) A
- (2) B
- (3) C
- (4) D

2. Which one of the following correctly shows the processes indicated by the arrows?



	A	B	C	D
(1)	Boiling	Condensation	Freezing	Melting
(2)	Freezing	Condensation	Evaporation	Melting
(3)	Condensation	Boiling	Freezing	Melting
(4)	Condensation	Freezing	Melting	Evaporation

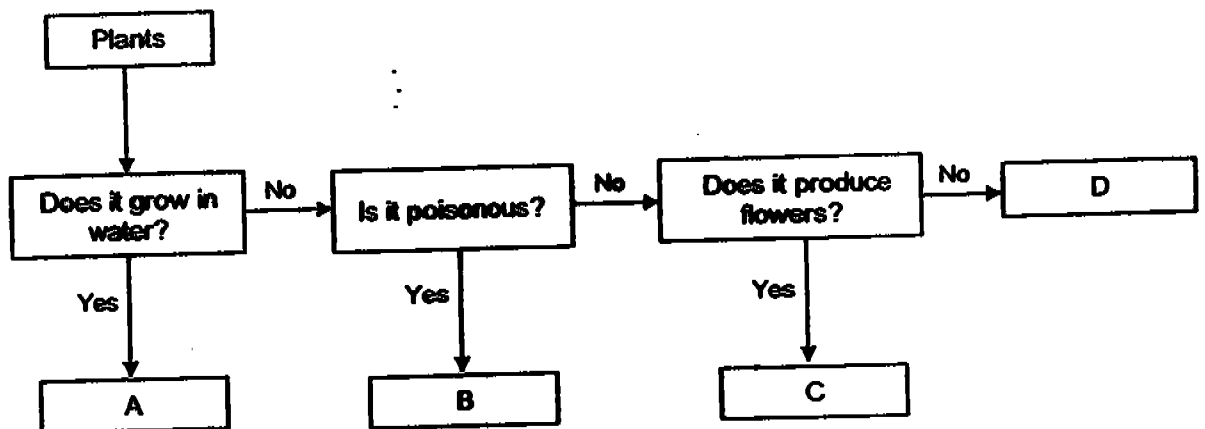
3. Look at the following classification of living things.



Which of the following statements about the classification is incorrect?

- (1) Group B organisms need food.
- (2) Group B organisms contain chlorophyll.
- (3) Both groups of organisms respond to changes.
- (4) Group A organisms make their own food.

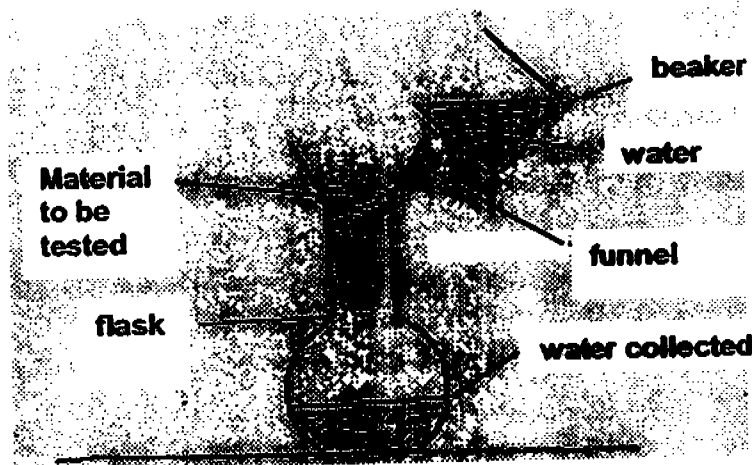
4. Study the flow chart below carefully.



Which of the following groups of plants below correctly represents A, B, C and D?

	A	B	C	D
(1)	Lantana	Water Lily	Bird's Nest Fern	Hibiscus
(2)	Water Lily	Lantana	Hibiscus	Bird's Nest Fern
(3)	Bird's Nest Fern	Water Lily	Lantana	Hibiscus
(4)	Water Lily	Hibiscus	Bird's Nest Fern	Lantana

5. Zech sets up the experiment to find out which materials can absorb the most water. He puts the material to be tested into the funnel and then pours 200 ml of water from the beaker into the funnel as shown in the diagram. He makes his observation and then repeats this for all the other materials.



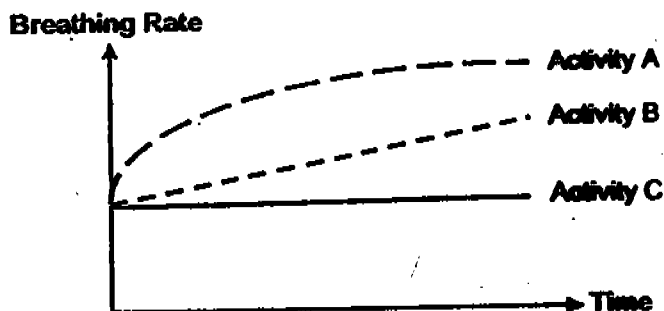
What is the most suitable measurement that he should take to help him reach a conclusion?

- (1) Height of water in the funnel
 - (2) Height of water in the beaker
 - (3) Amount of water collected in the flask
 - (4) Amount of water poured into the funnel
6. In the set-up below, what will most likely happen to the fish if all the plants are removed?



- (1) They will die immediately.
- (2) They will start to reproduce.
- (3) They will swim at the bottom of the tank.
- (4) They will stay close to the surface of the water.

7. The graph below shows the breathing rate of Samuel when he is doing three different activities.



Which of the following options correctly shows these three activities?

	Activity A	Activity B	Activity C
(1)	strolling	sprinting	jogging
(2)	jogging	sprinting	strolling
(3)	sprinting	strolling	jogging
(4)	sprinting	jogging	strolling

8. Which of the following statements about animal reproduction is/are true?

- ✓ A: A sperm is needed to fertilise an egg.
- B: All eggs that are laid are fertilised.
- C: Fertilisation has to occur in the body.
- ✓ D: All animals give birth to their young alive.

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

9. Wescott set up four identical dishes A, B, C and D with the same amount of cotton wool. He placed different number of green beans into each dish. He then placed the dishes where they would get enough sunlight and air. He watered them regularly.

The table below records the number of seedlings that appeared in each dish after a week.

Dish	Number of Seedlings
A	12
B	24
C	32
D	20

Based on the table, which pot is most likely to have the tallest and thinnest bean sprouts after a week?

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

10. Edmund found fruit X. What can he do to find out whether fruit X has the same dispersal method as the pong-pong fruit?

- A: Place it in water
- B: Measure its weight
- C: Rub it against the ground
- D: Check it to see whether it has a fibrous husk

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

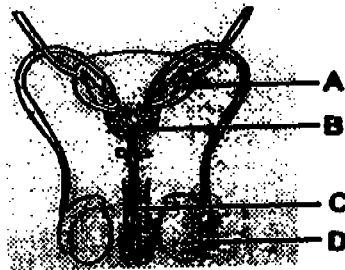
11. On a field trip, Michelle found a flower. She recorded the following observations.

Observations
<ul style="list-style-type: none">• The flower has small petals and no scent.• The anthers and feathery stigma of the flower are dangling outside the petals.

From the information given, which of the following inferences about the flower are likely to be correct?

- A: It is a bisexual flower.
 - B: It can become a fruit.
 - C: It is a wind-pollinated flower.
 - D: It is an insect-pollinated flower.
- (1) A and C only
- (2) B and C only
- (3) B and D only
- (4) A, B and C only

12. The diagram below shows a male reproductive system.



In which part of the system are the male reproductive cells produced?

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

13. Information about the traits that parents will pass on to their young is found in the _____ of the cell.

- (1) nucleus
- (2) cytoplasm
- (3) chloroplasts
- (4) cell membrane

14. The table below records the characteristics of Animal X.

Method of reproduction	Lays eggs	
	Gives birth to its young	
Type of outer covering	Hair/Fur	
	Feathers	
	Scales	
	No outer covering	
Number of legs/limbs	2	
	4	
	6	
	None	

Animal X is most likely to be _____.

- (1) fish
- (2) frog
- (3) crow
- (4) crocodile

The table below shows information about some of the planets in our Solar System. Study the table below and answer questions 15 and 16.

Planet	Mercury	Venus	Earth	Mars
Distance from the Sun (million km)	58	108	150	228
Time taken to make one revolution around the Sun	88 days	225 days	365 days	687 days
Time taken to make one rotation	58 days 18 hours	247 days	1 day	24 hours 37 mins

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

- A: Venus takes the longest time to complete one rotation.
- B: When Mercury completes one rotation, Earth would have completed 50 rotations.
- C: The further away the planet is from the Sun, the longer the time taken to make one revolution around the Sun.

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

16. If a new planet is discovered between Venus and Earth, which one of the following is most likely to be the time taken for it to make one revolution around the sun?

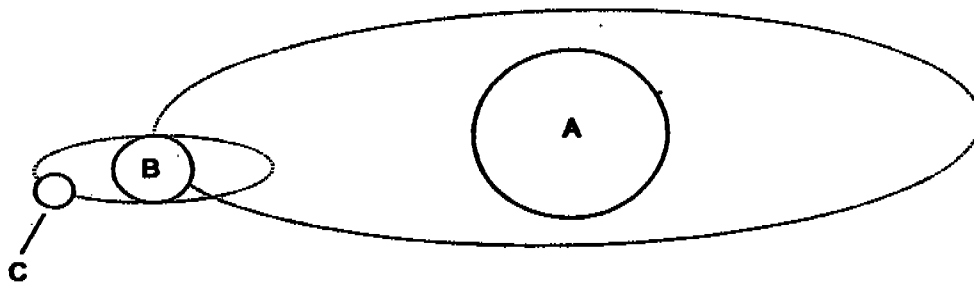
- (1) 80 days
- (2) 152 days
- (3) 276 days
- (4) 452 days

17. Which of the following in our solar system give(s) out light?

- A: Sun
- B: Mars
- C: Moon
- D: Venus

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

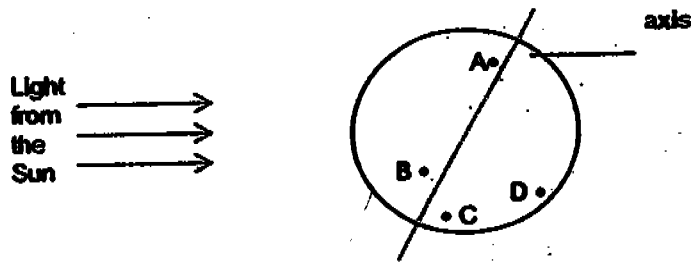
18. The diagram below shows 3 objects, A, B, and C that are found in the solar system. C revolves around B and B revolves around A.



Which one of the following correctly identifies A, B and C?

	A	B	C
(1)	Sun	Earth	Mars
(2)	Earth	Sun	Moon
(3)	Sun	Earth	Moon
(4)	Earth	Sun	Mercury

19. The diagram shows the Earth and its axis. A, B, C and D are different locations on Earth.



Based on the diagram, at which location would a person be experiencing night time?

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

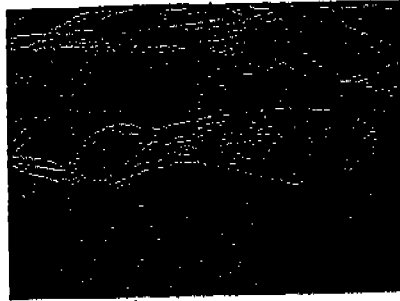
20. The table below shows the comparison between the testis and the ovary.

Comparison	Testis	Ovary
A	Male reproductive organ	Female reproductive organ
B	Produces sperms	Produces eggs
C	The organ where fertilisation takes place	The organ where fertilised eggs develop

Which of the above comparisons are correct?

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

21. The picture below shows a fruit of the Sycamore plant.



A fruit of the Sycamore plant

Based on the picture, a child concluded that it is very likely to be dispersed by wind. What is the main characteristic that helped the child make this conclusion?

- (1) dry
- (2) light
- (3) small
- (4) wing-like structure

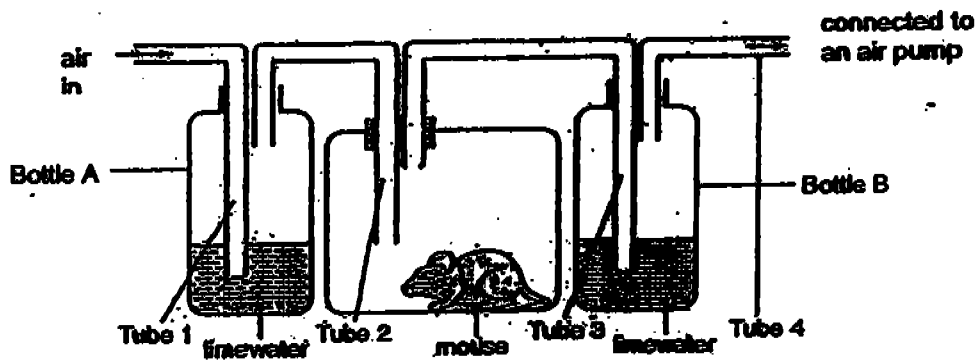
22. The following is a list of the different stages of growth of a plant from a seedling.

- A: Leaves appear
- B: Fruit appears
- C: First root appears
- D: Flowers appear
- E: First shoot appears

Arrange the stages in the correct order.

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

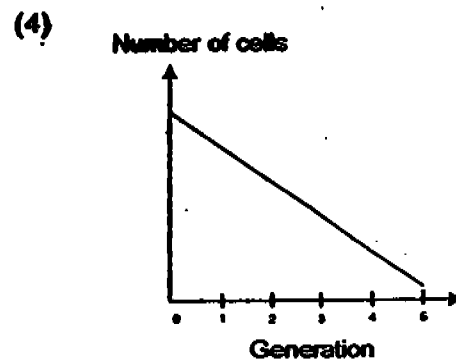
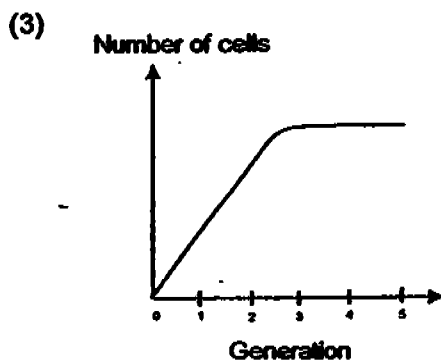
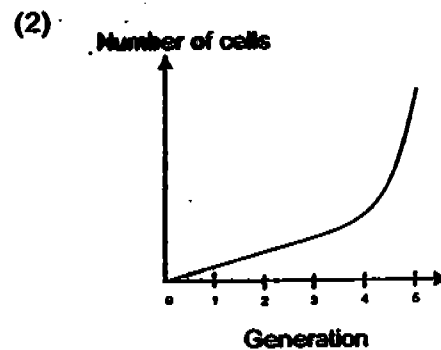
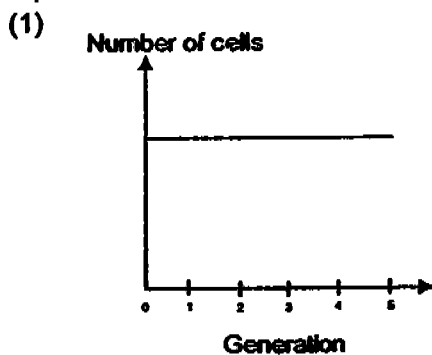
23. An experiment was set up as shown below. The set-up was left for a day.



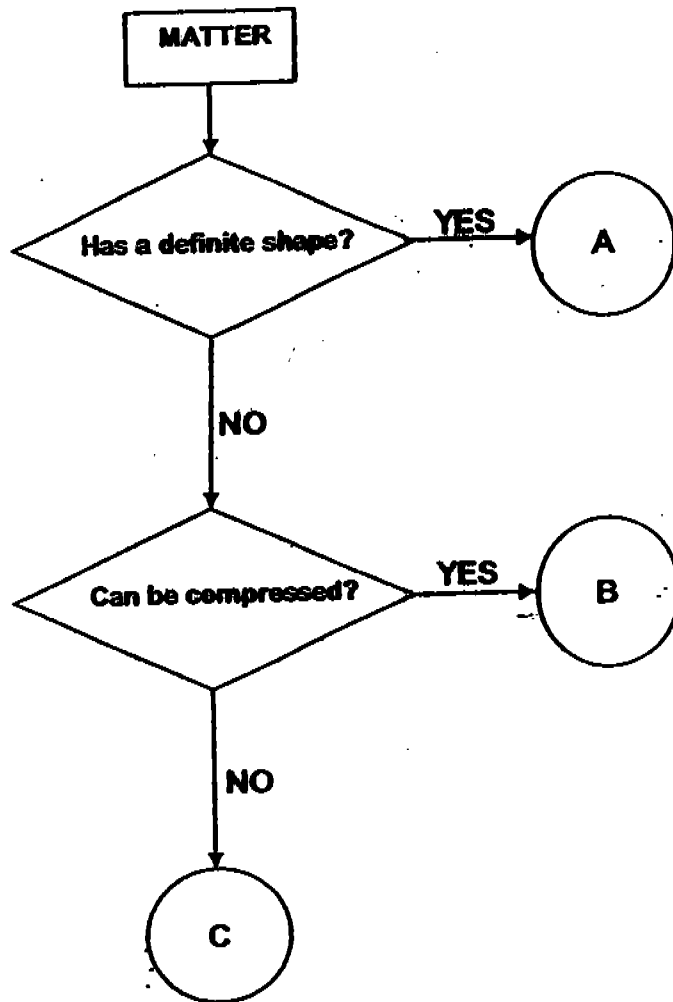
Which of the following statements about the set-up is true?

- (1) Air entering Tube 1 has more oxygen than air entering Tube 2.
- (2) Air entering Tube 2 has more oxygen than air entering Tube 4.
- (3) Only the limewater in Bottle B turned chalky at the end of the day.
- (4) The limewater in both bottles did not turn chalky at the end of the day.

24. Ashraf studied the cell division of a unicellular organism. Which one of the following graphs shows the change in the number of cells after 5 generations?



25. Study the flow chart below.



Which one of the following correctly identifies the items A, B and C?

	A	B	C
(1)	Plasticine	Milk	Syrup
(2)	Water vapour	Glass	Dew
(3)	Metal	Oil	Oxygen
(4)	Wood	Steam	Honey

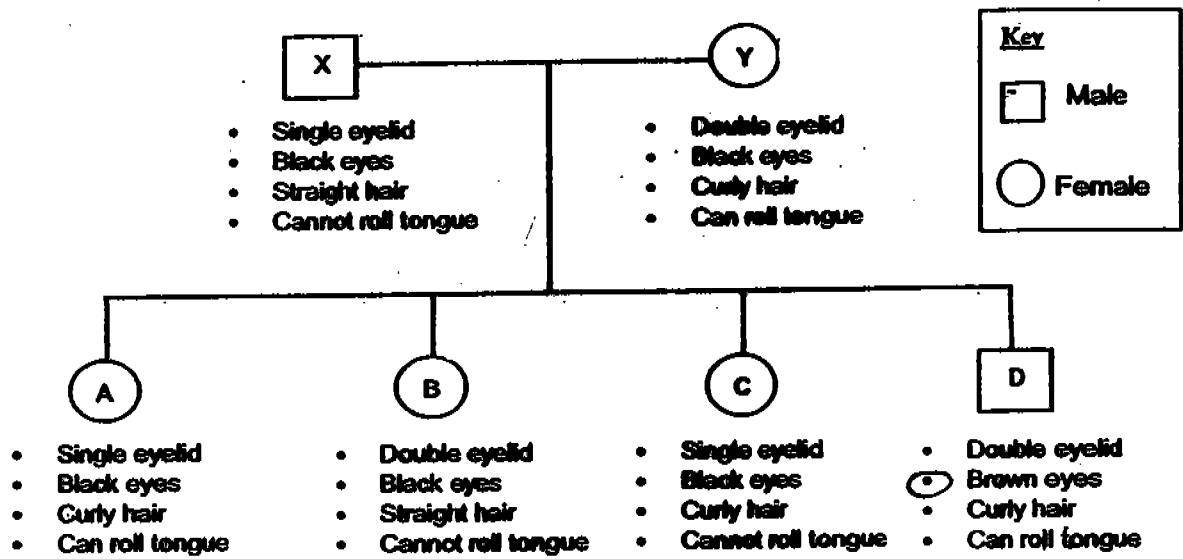
26. The table below shows the number of mammals, birds and insects in a wildlife park from May to August last year.

Animals	Gender	May	June	July	August
Mammals	Male	50	50	60	70
	Female	80	70	70	60
Birds	Male	20	0	20	20
	Female	30	30	40	40
Insects	Male	200	200	200	200
	Female	200	200	200	200
Total		580	550	590	590

Based on the above information, which of the following statements is correct?

- (1) The population of insects increased and then decreased.
- (2) The population of animals decreased and then increased.
- (3) There were three times as many birds in August than in June.
- (4) In June, the population of female mammals was less than that of the male mammals.

27. Study the following diagram.

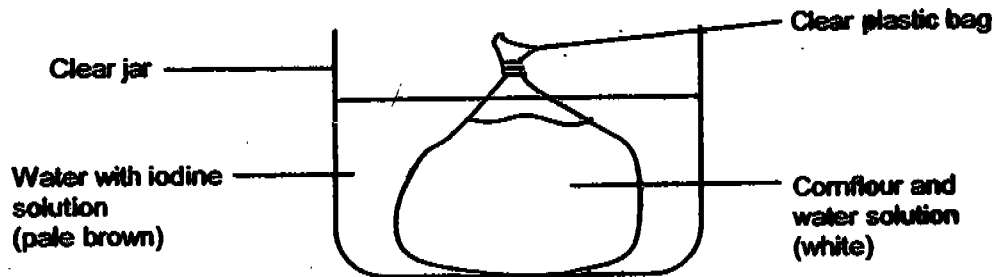


One of the children has been wrongly placed in the family tree above. This child is most likely to be _____.

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

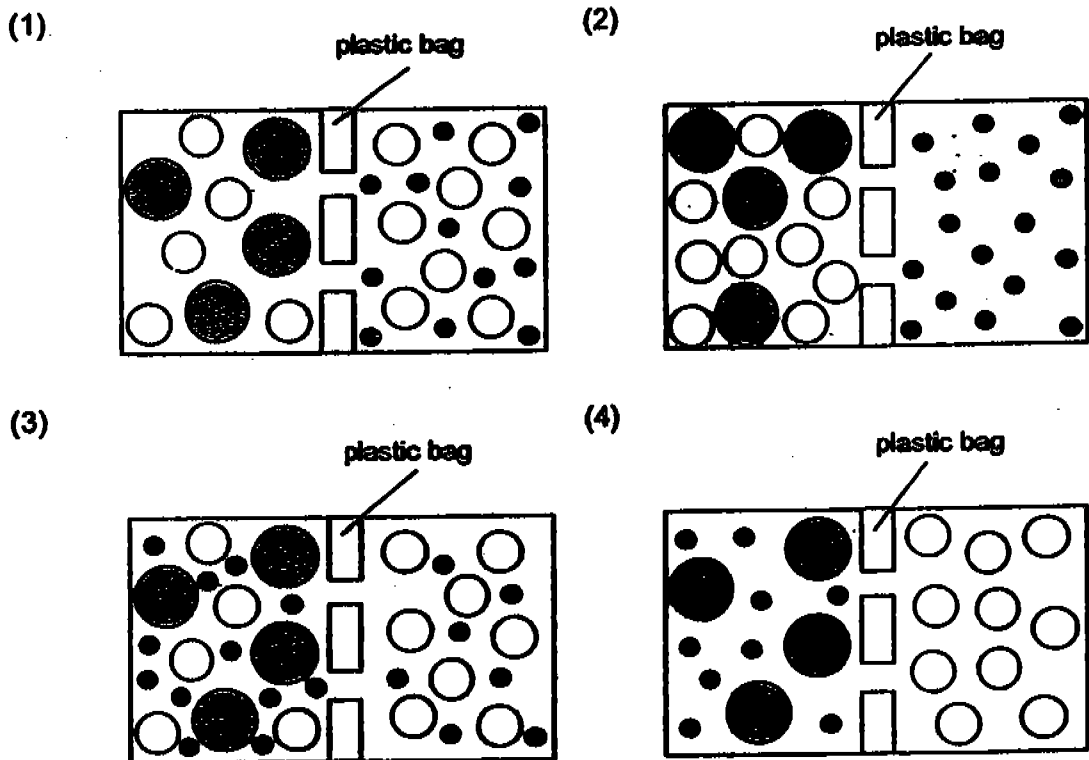
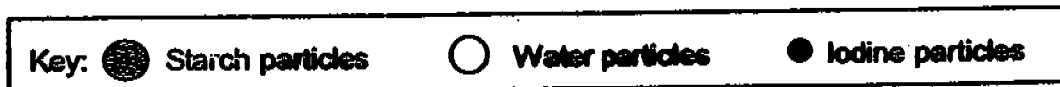
28. The cell membrane of an animal cell is partially permeable, that is, it allows only certain substances to pass through. The free passage of these substances is known as 'osmosis'.

To prove this, Frodo mixed some cornflour (a type of starch) with water in a clear plastic bag. The bag is tied securely and lowered into a jar of water. A few drops of iodine are then added into the jar of water. This made the jar of water turn pale-brown. He then left the experiment overnight. The set-up is shown below.

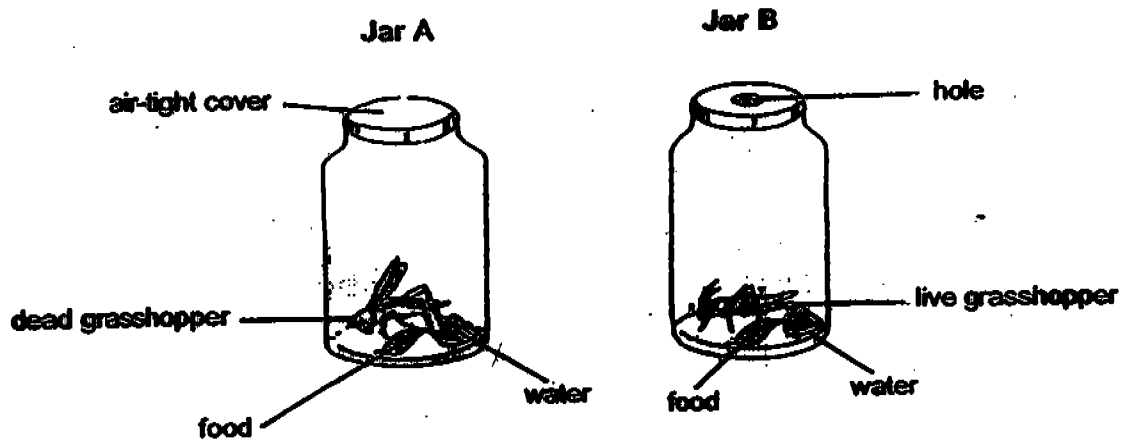


The next day, Frodo took out the bag and noticed that the colour of the mixture in the plastic bag had changed but the colour of the water in the jar remained the same.

Study the four diagrams below. Which one of the following best shows the process of osmosis that Frodo would see the day after?



29. Izzat set up the following experiment.

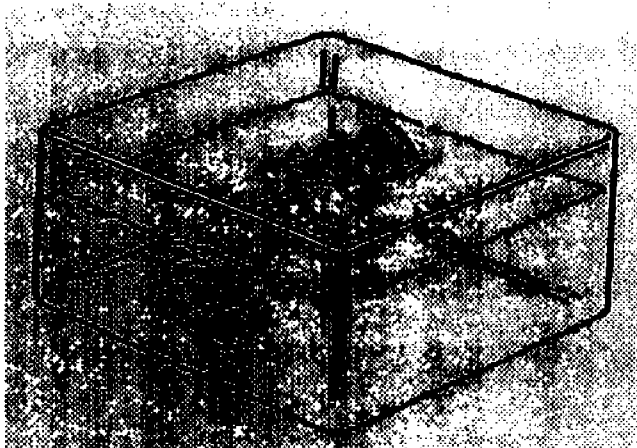


After a few days, the grasshopper in Jar A died but the grasshopper in Jar B was still alive.

What was the aim of the experiment?

- (1) To find out if living things need air to live.
- (2) To show that living things need light to live.
- (3) To find out if living things need food and water to live.
- (4) To show that living things need air, food and water to live.

30. The diagram below shows 2 jars, A and B.



Jar A weighs 500 g and has a volume of 400 cm³. It sinks in water.

Jar B weighs 600 g and has a volume of 700 cm³. It floats in water.

Which one of the following jars will most likely float in water?

JAR	MASS (g)	VOLUME (cm ³)
1	400	400
2	500	700
3	600	600
4	700	600

**ANGLO-CHINESE SCHOOL
(PRIMARY)**

MID-YEAR EXAMINATION 2005

SCIENCE

BOOKLET B

Name: _____ ()

Class: Primary 5 _____

Date: 13th May 2005

Duration of paper: 1 h 45 min

Parent's Signature

Booklet	Maximum marks	Marks obtained
A	60	
B	40	
Total	100	

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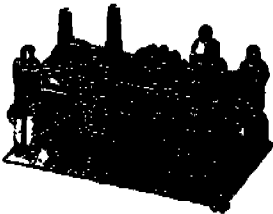
PART II

For questions 31 to 46, 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)

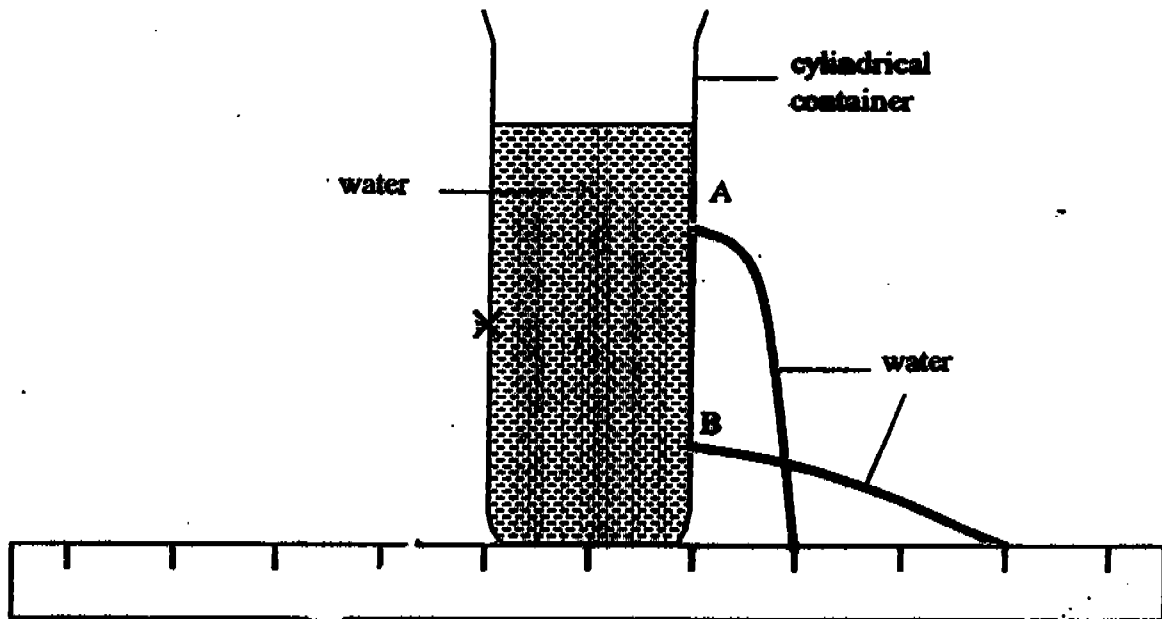
31. A factory has many departments or units that perform different tasks to produce a product. The different departments are shown below.

Factory Unit	
	
Department	Function
The Chief Executive Officer	Controls all activities in the factory.
Factory Floor	This is where all of the activities in the factory take place.
Shipping & Receiving Department	Receives materials and ships products when they are ready.

- a) Which part of a cell serves a similar function as the 'Chief Executive Officer'? [1]

- b) Which part of the factory has a similar function as the cytoplasm of a cell? [1]

32. The diagram below shows a tall cylindrical container with two holes, A and B.

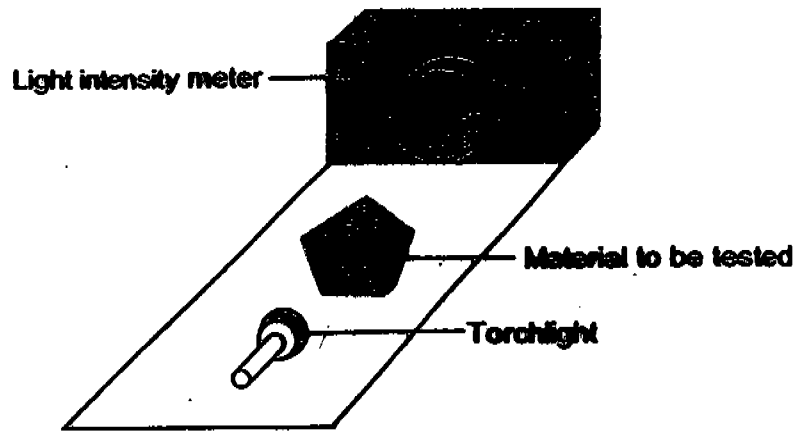


When the container is filled with water, water flows out in a stream from the holes as shown above.

- (a) A third hole is made at X. Draw the stream of water that flows out from X in the same diagram above. [1]

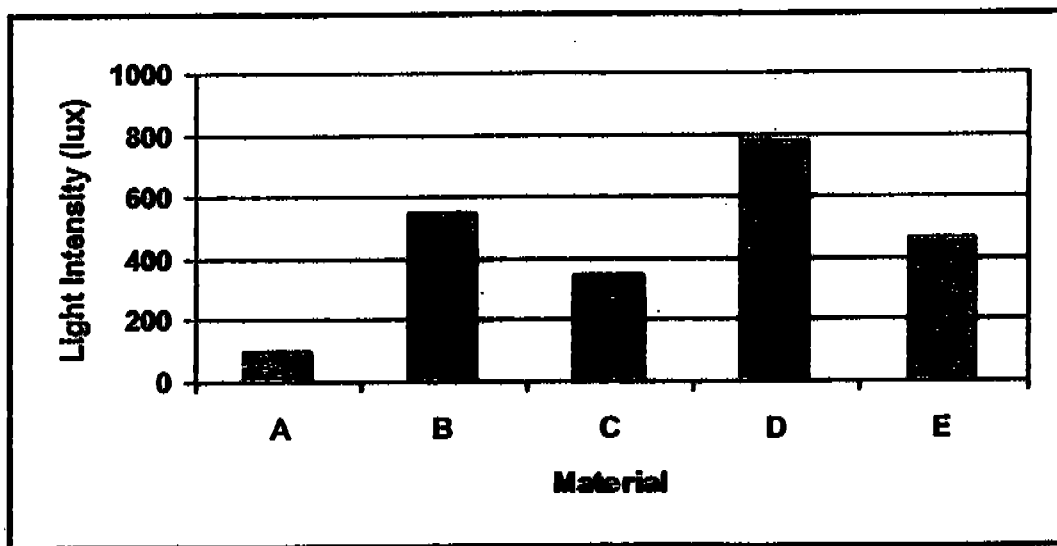
- (b) Based on the results shown, how does the height of the hole affect the distance the stream of water travels? [1]

33. Jacob set up the following experiment in his laboratory.



He shone a light through a piece of material and then used a light intensity meter to measure how much light passes through the material. He repeated this process with 4 other types of materials.

The graph below shows the result of his experiment.



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

(b) Arrange the five types of materials (A, B, C, D and E) according to their ability to prevent light from passing through (from the best to the worst). [1]

34. Julian wanted to find out if the size of a fish tank affects the growth rate of fish. He conducted the experiment and wrote the report below.

Date: 9 January 2005

Aim: To find out if the size of a fish tank affects the growth rate of fish.

Hypothesis: The size of a fish tank affects the growth rate of fish.

Materials: 10 guppies (1 week old each), 10 luohan (1 week old each), 2 different-sized fish tanks, fish food.

Procedure:

- Measure and record lengths of the fish.
- Place the guppy in Tank A (15 cm by 30 cm) by the window.
- Place the luohan in Tank B (25 cm by 40 cm) in a dark corner.
- Feed the fish an equal amount of food daily.
- Observe and measure the length of the fish every week for a month.

Data:
Both fish are measured at the end of every week. The numbers in the table show how much the fish have grown. (Figures are in cm)

Fish	Week 1	Week 2	Week 3	Week 4	Total increase in length
Guppy	0.5	0.5	0.5	1	2.5
Luohan	0.5	0.6	1.2	1.2	3.5

Conclusion:
The size of a fish tank affects the growth rate of fish.

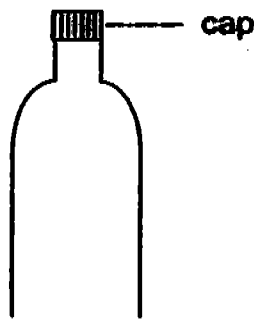
Based on the report, give two reasons why Julian's experiment is not a fair one. [2]

Reason 1:

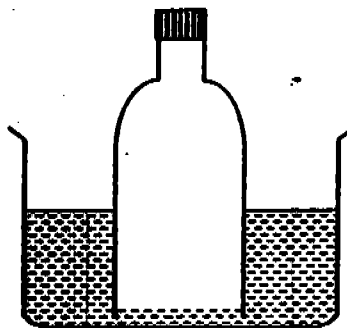
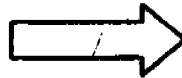
Reason 2:

24

35. John cut off the bottom of a plastic bottle. He then pushed the bottle vertically into a basin of water. The diagram below shows the steps he took.



Bottom of bottle is cut off

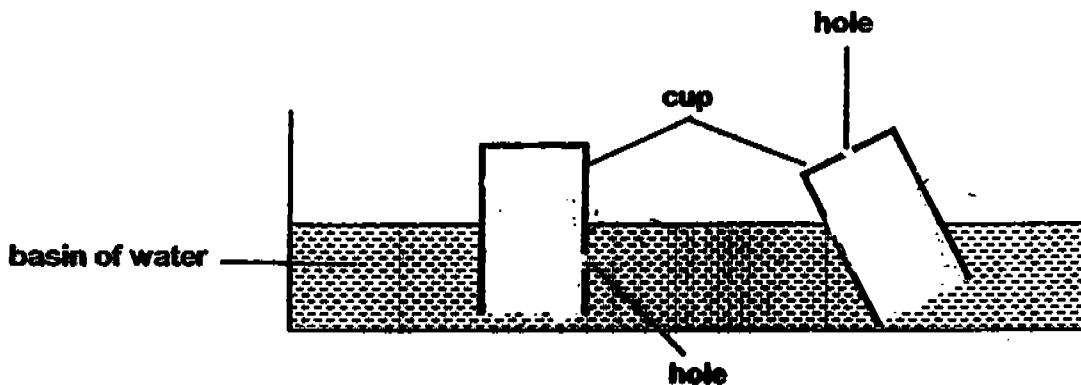


Bottle is pushed into basin of water

(a) Explain why the water cannot enter the bottle from the bottom. [1]

(b) John removed the cap on the bottle. Describe what happened when the cap was removed. [1]

(c) In another experiment, John made a hole in 2 similar plastic cups. The cups were pushed vertically into the basin of water. Complete the diagram below to show the water levels in each of the cups. [2]

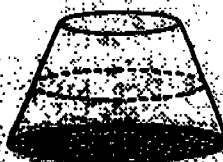


36. Dave poured 200 cm^3 of water into each of the four containers, A, B, C and D. The containers were of different sizes and shapes but were made of the same material. The containers were uncovered and left in the same room.

Container A



Container B



Container C



Container D



- (a) Dave wanted to compare how fast the water evaporates in each container.

What should he measure?

[2]

- (b) From which container will the water evaporate the fastest? Give a reason for your answer.

[2]

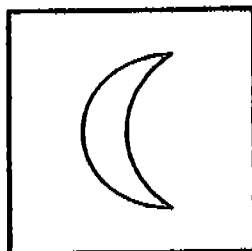
37. The table below shows the melting and boiling points of Substances A to E. Use the information to answer the following questions.

Substance	Melting Point ($^{\circ}\text{C}$)	Boiling Point ($^{\circ}\text{C}$)
A	101	232
B	-30	-5
C	20	130
D	-45	89
E	1	120

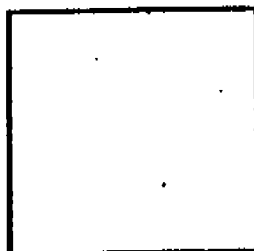
- (a) Which of the substances (A to E) is/are a solid/solids at room temperature (28°C)? [1]
-

- (b) Which of the substances (A to E) is/are a gas/gases at 100°C ? [1]
-

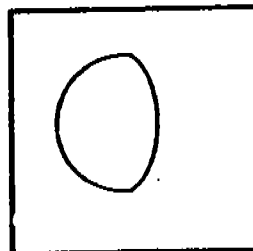
38. The diagram below shows the phases of the moon on 13 Mar and 19 Mar.



13 Mar



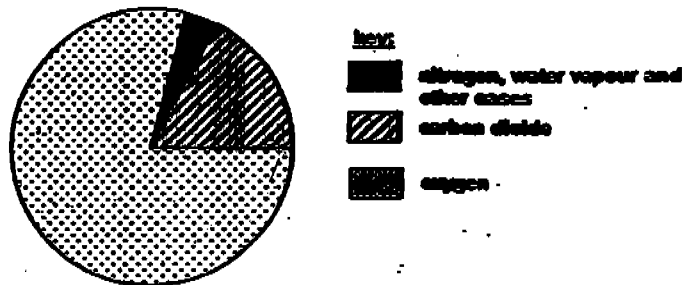
16 Mar



19 Mar

- (a) In the box provided, draw the phase of the moon for 16 Mar. [1]
- (b) If a full moon was observed on the 24 Aug, on which date would the next full moon be observed? [1]
-

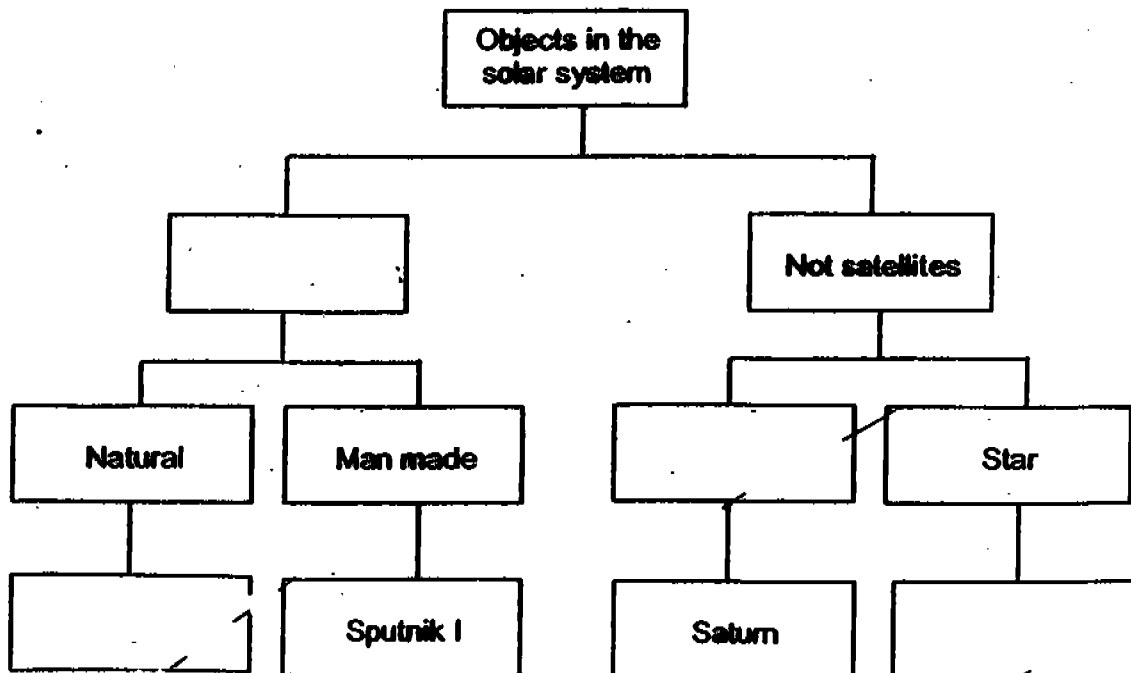
39. The pie-chart shows the composition of air on a newly found planet.



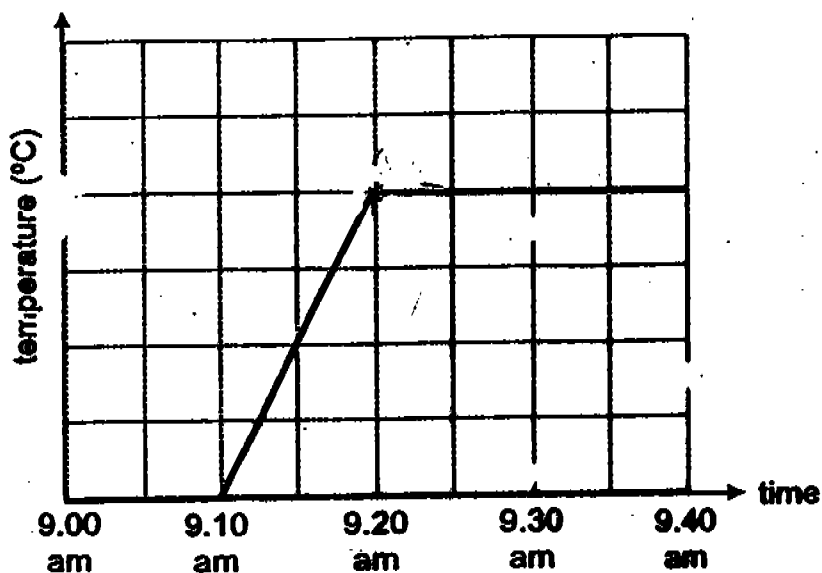
Based on the chart, put a tick (✓) in the correct box for each statement about the air on the planet. [2]

Statement	True	False	Not possible to tell
The air consists of three gases.			
There is more nitrogen than water vapour in the air.			
There is more carbon dioxide than nitrogen in the air.			
More than $\frac{3}{4}$ of the air is made up of oxygen.			

40. Complete the classification chart below by filling in the boxes with a suitable word or words. [2]



41. A cube of ice was left in a room and its temperature over a period of time was plotted as shown in the graph below.



- (a) What is happening to the ice between 9.00 am and 9.10 am? [1]

- (b) Mark a cross (X) on the temperature axis to show the temperature of the room. [1]

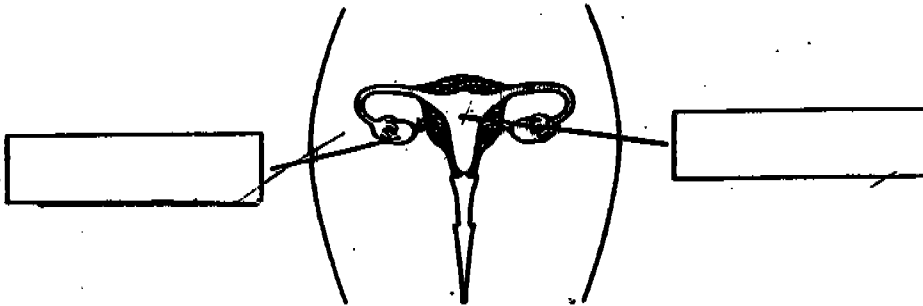
- (c) Put a tick (✓) in the appropriate box below to show if the ice was gaining or losing heat during the following periods of time. [1]

Time (am)	Gaining heat	Losing heat	Neither gaining nor losing heat
9.00 – 9.10			
9.10 – 9.20			

42. The diagram below shows the female reproductive system.

(a) Label the parts in the diagram below.

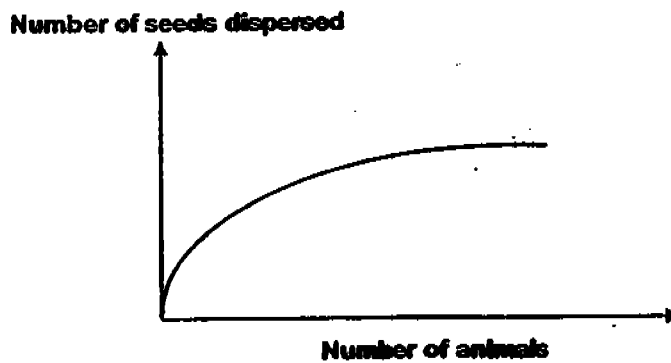
[2]



(b) What is the process that occurs when a sperm fuses with an egg?

[1]

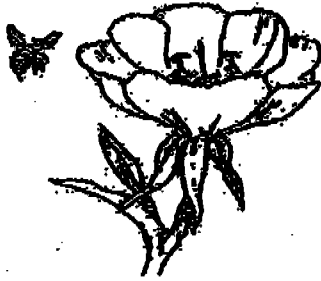
43. Study the graph below carefully.



(a) What is the relationship between the number of seeds dispersed and the number of animals? [1]

(b) State two characteristics of the fruit that contain these seeds. [1]

44. The two flowers below are growing on the same plant. The stigma has been removed from flower A and the anthers have been removed from flower B.



Flower A



Flower B

- (a) Which flower will likely develop into a fruit? [1]

- (b) How do the bees in the diagrams help in the process of pollination? [1]

- (c) State the two features of flowers pollinated by animals. [1]

45. Three plants A, B and C were planted on a piece of land along a river bank as shown in Figure A. Figure B shows the same piece of land a few years later.

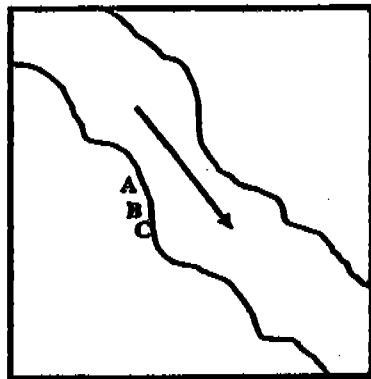
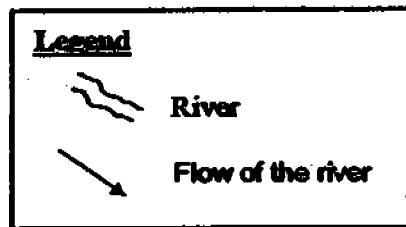


Figure A



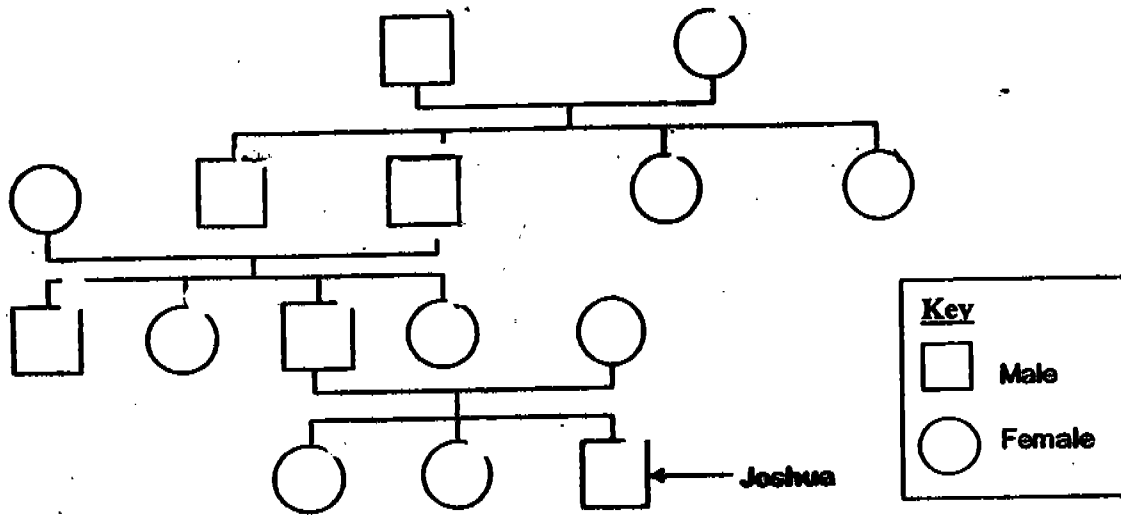
Figure B



- (a) Which plant, A, B or C, is most likely to be dispersed by splitting? Explain your answer. [1]

- (b) What is an advantage of dispersal by splitting as compared to the other methods? [1]

46. The diagram below shows Joshua's family tree.



- (a) How many generations are shown in this family tree? [1]
-
- (b) How many uncle(s) does Joshua have? [1]
-
- (c) Shade the symbol that represents Joshua's grandfather. [1]

~ END OF PAPER ~

Anglo Chinese Primary School
Primary 5 Science SA1 (2005)

Exam Paper

Answer Sheets

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

- 31a. The nucleus
 31b. The factory floor.

32a



- 32b. The lower the height of the holes the further the distance the stream of water travels.

33a. The aim of the experiment was to measure how much light passes through some materials.

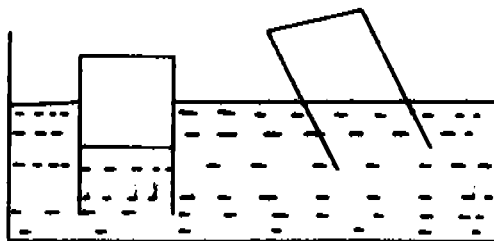
33b. A, C, E, B and D

34. The fish in Tank A and B are of different kinds.
 The two tanks are placed in different areas.

35a. Air occupied space in the bottle, therefore preventing water from entering the bottle from the bottom.

35b. Water started to enter the bottle from the bottom until its level is the same as the level of water in the basin.

35c.



- 44a. Flower B
- 44b. They pick up the pollen grains from flower A's anthers and drop some into flower B's stigmas.
- 44c. They have brightly colour petals and as strong scent.
- 45a. Plant C. They are scattered near the parent plant.
- 45b. Plants do not need to rely on wind, water or animals to disperse their seeds.

- 46a. 4 generations
- 46b. 1
- 46c.

