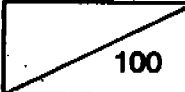


Name : _____ () Date : _____

Class : Primary 5 () Duration : 1 h 45 min

Parent's signature: _____ Score : 

Section A (30 x 2 marks = 60 marks)

For each question 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) in the Optical Answer Sheet provided.

1. Which of the following statements about the rotation of the Earth is/are correct?

- A The Earth rotates about its axis.
- B The Earth rotates from West to East.
- C The rotation of the Earth causes day and night.
- D It takes 24 hours for the Earth to make a complete rotation about its axis.

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

2. Which one of the following statements explains the occurrence of day and night?

- (1) The Earth revolves around the Sun.
- (2) The Earth rotates about its own axis.
- (3) The Earth rotates from East to West.
- (4) The Earth has the Moon revolving around it.

The table below shows information of planets in the Solar System. Study the data carefully and answer Questions 3 and 4.

| Planets | Diameter(km) | Distance from the Sun(million km) | Time taken to make one revolution around the Sun |
|---------|--------------|-----------------------------------|--|
| A | 4 900 | 58 | 88 days |
| B | 2 300 | 5 914 | 248 years |
| C | 12 800 | 150 | 365 days |
| D | 51 100 | 2 870 | 84 years |
| E | 12 100 | 108 | 225 days |
| F | 120 500 | 1 427 | 29 years |
| G | 49 500 | 4 497 | 165 years |
| H | 143 000 | 778 | 12 years |
| I | 6 800 | 228 | 687 days |

3. Planet _____ is Planet F's nearest neighbour in space.

- (1) A
- (2) D
- (3) G
- (4) H

4. Which planet is most likely to be Earth?

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

5. In a certain Solar System, Planet X and Planet Y revolve around their star in opposite position in the same orbit. Planet X has an atmosphere whereas Planet Y does not.

Based on the above information, which of the following statements about Planet X and Planet Y is/are correct?

- A Planet X and Planet Y each has the same average surface temperature.
- B Planet X and Planet Y each receives the same amount of light and heat from their star.
- C Planet X and Planet Y each takes the same amount of time to make one revolution around their star.

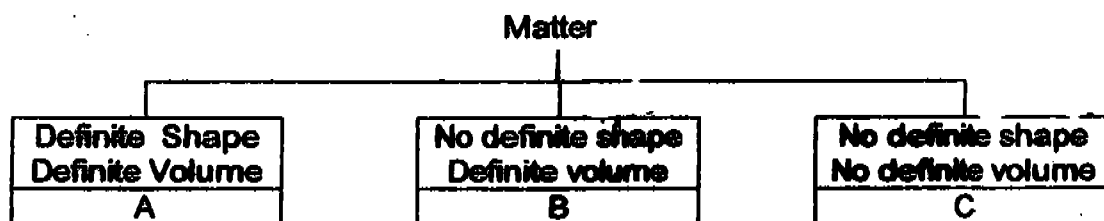
- (1) B only
- (2) A and B only
- (3) A and C only
- (4) B and C only

6. Which of the following are made possible due to the presence of artificial satellites?

- A Meteorologist is able to track the water cycle and study the pattern.
- B The Global Positioning System (GPS) helps aircrafts in their navigation.
- C We are able to view live telecast of soccer matches taking place in other countries.
- D Man can observe Jupiter and obtain the pictures which clearly show the surface of the planet.

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

7. Study the table below.



In which box would you place 'plasticine'?

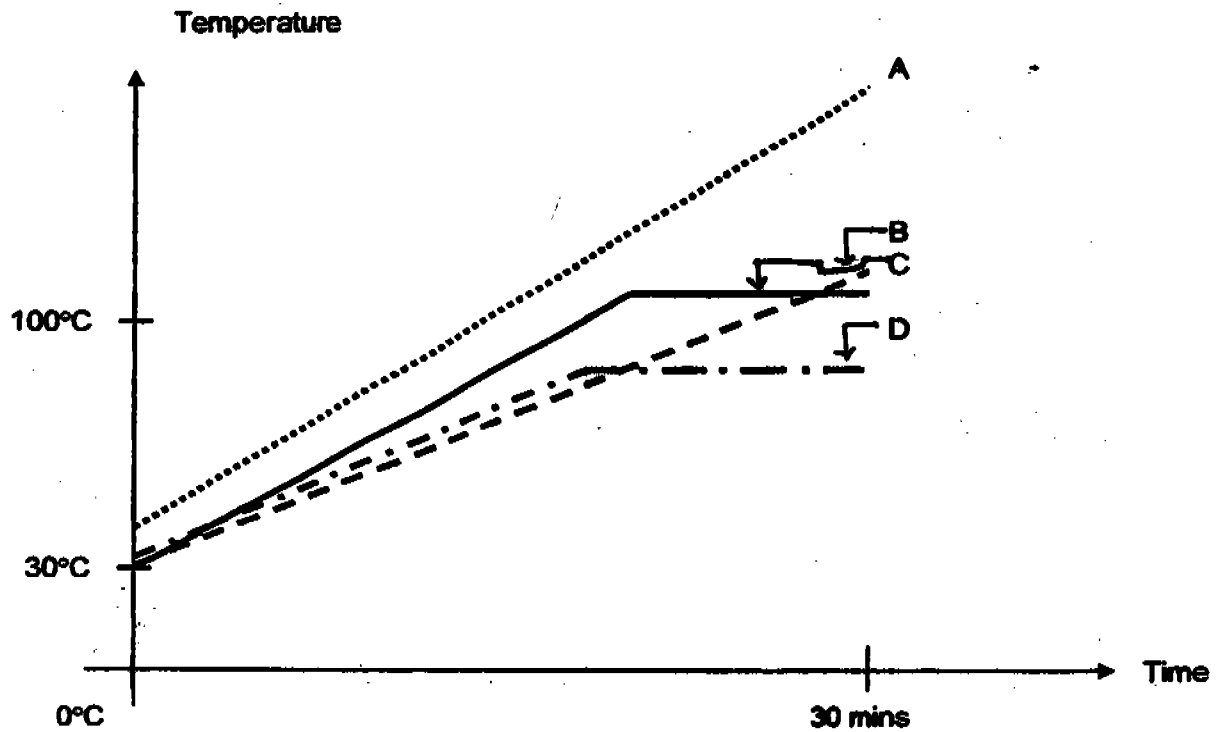
- (1) A
- (2) B
- (3) C
- (4) None of the above

8. Alice put a thermometer in a glass of Coca Cola. She then put 6 pieces of ice into the glass of Coca Cola.

Which one of the following would be her observation and conclusion?

| | Observation | Conclusion |
|-----|---|--|
| (1) | Temperature of Coca Cola rises. | Heat is given out from the ice to the Coca Cola |
| (2) | Temperature of Coca Cola drops. | Heat is taken in by ice from the Coca Cola |
| (3) | Temperature of Coca Cola remains at 0°C | The ice does not give out or take in any heat |
| (4) | Temperature of Coca Cola remains at 0°C | The Coca Cola does not give out or taken in any heat |

9. 4 beakers each containing 100ml of Liquids A, B, C and D were being heated continuously for 30 minutes. The graph below shows the temperature of the 4 liquids during the 30 minutes of heating.

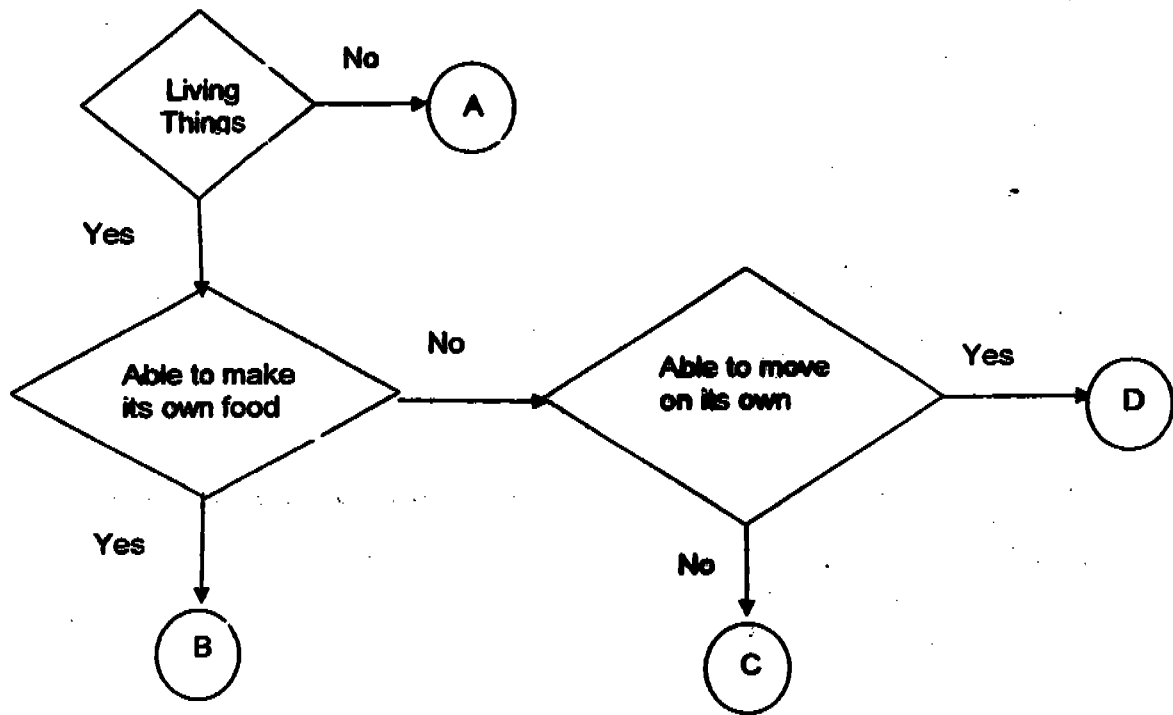


Which one of the graphs above depicts pure water?

- | | | | |
|-----|---|-----|---|
| (1) | A | (2) | B |
| (3) | C | (4) | D |
10. Xiu Li left some salt solution in a beaker. After several days, all that was left was some white particles.
Which one of the following processes has taken place?

- | | | | |
|-----|--------------|-----|-------------|
| (1) | Boiling | (2) | Evaporation |
| (3) | Condensation | (4) | Freezing |

Study the flow chart below and answer Questions 11 and 12.



11. Which one of the following best depicts A, B, C and D?

| | A | B | C | D |
|-----|---------------|---------------|----------|---------------|
| (1) | water lettuce | paper | mushroom | amoeba |
| (2) | paper | amoeba | mushroom | water lettuce |
| (3) | paper | water lettuce | mushroom | amoeba |
| (4) | mushroom | water lettuce | amoeba | ant |

12. Which one of the following is a key characteristic of B?

- (1) Backbone
- (2) Chloroplast
- (3) Cell Membrane
- (4) Body Coverings

13. Plants can be classified in different ways. Which of the following is/are the possible ways of classifying plants?

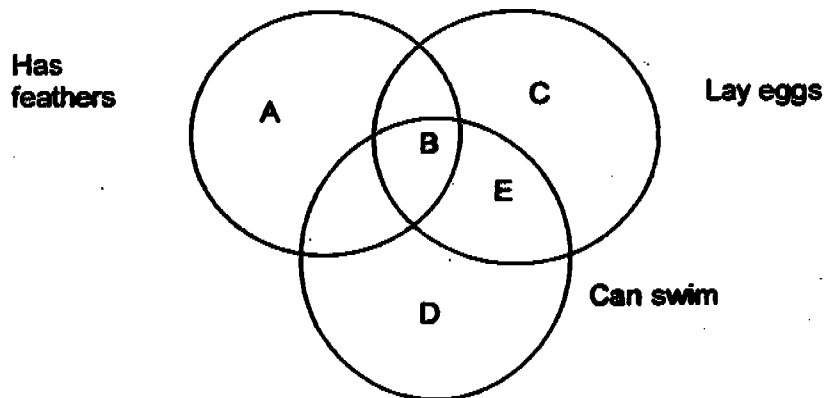
- A: Vein Pattern of leaves
- B: Shape of leaves
- C: Type of roots
- D: Thickness of roots

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

14. Which one of the following is made from materials that were once alive?

- (1) A glass
- (2) A tissue box
- (3) A plastic ruler
- (4) A metal spoon

15. Study the Venn Diagram below.



Where would you classify a penguin?

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

16. Which one of the following statements about cells is correct?

- (1) Small animals have small cells.
- (2) All animal cells are round in shape.
- (3) All organisms are made up of many cells.
- (4) An organ is made up of many types of cells.

17. What will happen to a plant cell if the nucleus is not functioning properly?

- A The plant cell will not be able to divide.
- B The activities of the cell will not be well controlled.
- C Substances moving in and out of the cell will not be well regulated.

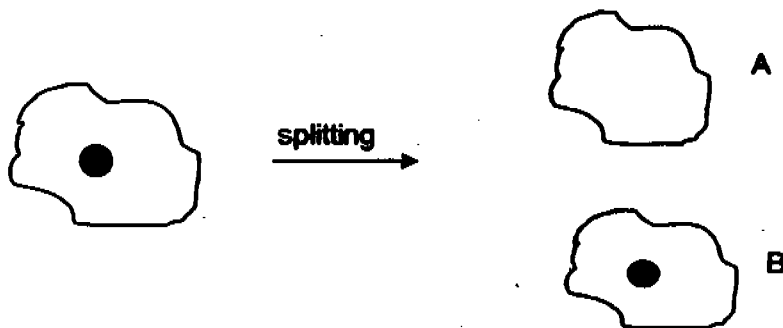
- (1) A only
- (2) A and B only
- (3) A and C only
- (4) B and C only

18. Human being is made up of different cells that are different in _____.

- (A) size
- (B) shape
- (C) function
- (D) cell division

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

19. A scientist cultured some cells in a petri dish. He observed the cells under the microscope. He noticed a cell undergoing splitting and drew what he saw in a diagram as shown below.



The scientist made some predictions of A and B some time after the splitting. Which one of the following predictions is most likely?

- (1) A and B will die.
- (2) A and B will join back as a cell again
- (3) A will die but B will grow and divide itself again.
- (4) A and B will grow and divide themselves again.

20. Which one of the following statements about cell division is true?
- (1) The daughter cells are different in size.
 - (2) The daughter cells are as big as the parent cell after cell division.
 - (3) Only some of the parent cell characteristics is passed to the daughter cells.
 - (4) The parent cell needs to reach an acceptable size before cell division can occur.

21. Plant cells have centre cavity (vacuoles). The fluid in the centre cavity contains sugar and other soluble substances. This fluid is known as the _____.

- (1) cell sap
- (2) cellulose
- (3) cytoplasm
- (4) chloroplast

22. Ming Heng has to do a project which requires the use of objects to represent the various parts of an animal cell. Which one of the following should he use to represent the cell membrane, cytoplasm and nucleus of an animal cell?

| | cell membrane | cytoplasm | nucleus |
|-----|---------------|----------------|---------------|
| (1) | skin | blood | stomach |
| (2) | bark | plant sap | plant |
| (3) | case | gel | water |
| (4) | skin of mango | flesh of mango | seed of mango |

23. Which one of the following is not a single cell (unicellular) organism?

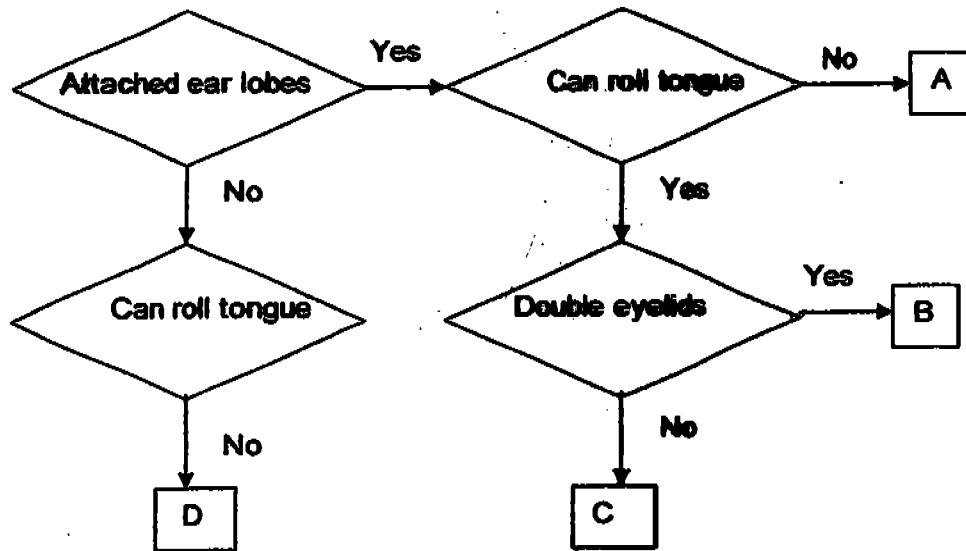
- (1) egg
- (2) seed
- (3) amoeba
- (4) bacteria

24. Which one of the following best explains why animal cell does not have a regular shape?

- A Its cell membrane is thin
- B It does not have a cell wall
- C It needs to undergo cell division
- D It does not have a centre cavity (vacuoles)

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

25. Study the chart below.



Xiaoling has attached ear lobes and double eyelids. However, she can roll her tongue. Which letter, A, B, C or D best represents Xiaoling?

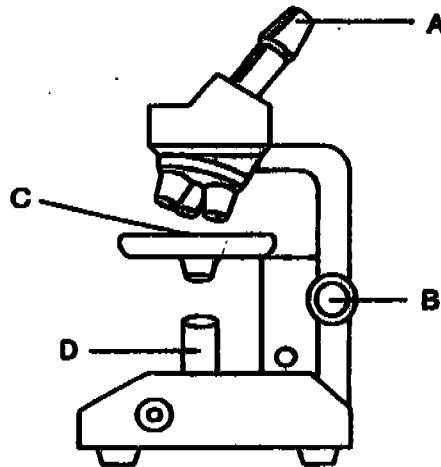
- (1) A
- (2) B
- (3) C
- (4) D

26. The statements below describe the different phases in the cell division of a plant cell. Arrange the phases in the correct order.

- A New cell wall forms.
- B The cytoplasm increase in mass.
- C The parent nucleus is divided into two.
- D The parent cell is split into two identical halves.

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

27. The diagram shows a microscope.



Which part, A, B, C or D do you adjust if you want to get a sharper view of the specimen under the microscope?

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

28. How many cells can you get after a cell has gone through 5 cell divisions?

- (1) 8
- (2) 16
- (3) 25
- (4) 32

29. Which of the following traits can be passed from the parent to young?

- A Dimples
- B Short hair
- C Thick lips
- D Blue eyes

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

30. Which of the following statement(s) about cells is/are correct?

- A All cells have nuclei.
- B Cell is the smallest unit of life.
- C A thin membrane encloses every cell.

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

Name : _____

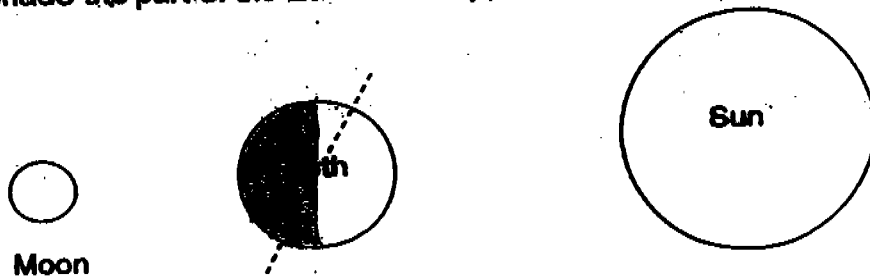
Date : _____

Class : Primary 5 ()

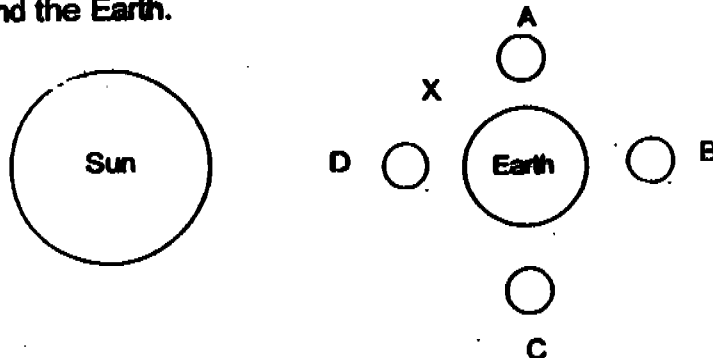
Section B (40 marks)

Write your answers for each question 31 to 46 in the blank spaces provided.
Marks will be deducted for wrong spelling of key words.

- 31: (a) The model below represents the Sun, Earth and Moon. Shade the part of the Earth that experiences night. (1 mark)



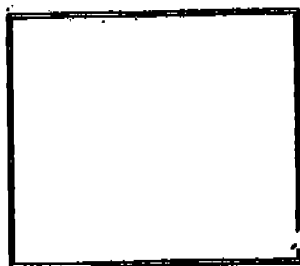
- (b) The diagram below shows 4 possible positions of the Moon, with respect to the Sun and the Earth.



- (i) At which position would the moon be for us to observe a new moon? (1 mark)

- (ii) State the possible position(s) of the moon in which a half moon was observed from Earth. (1 mark)

- (iii) Draw the appearance of the Moon at position X in the box below. (1 mark)

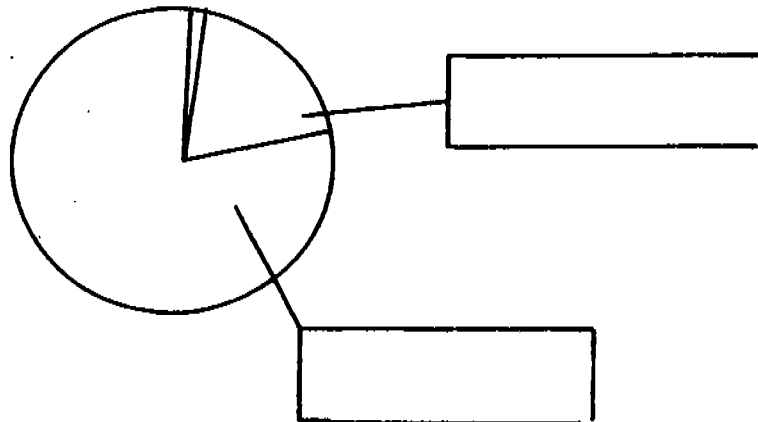


32. (a) The Earth does not give out its own light. However, astronauts are able to see Earth in outer space. Explain why. (1 mark)

- (b) Pluto is the furthest planet from the Sun. Mercury is the nearest planet to the Sun. Based on the information given above do you think we can find living things on these 2 planets? Give a reason for your answer (1 mark)

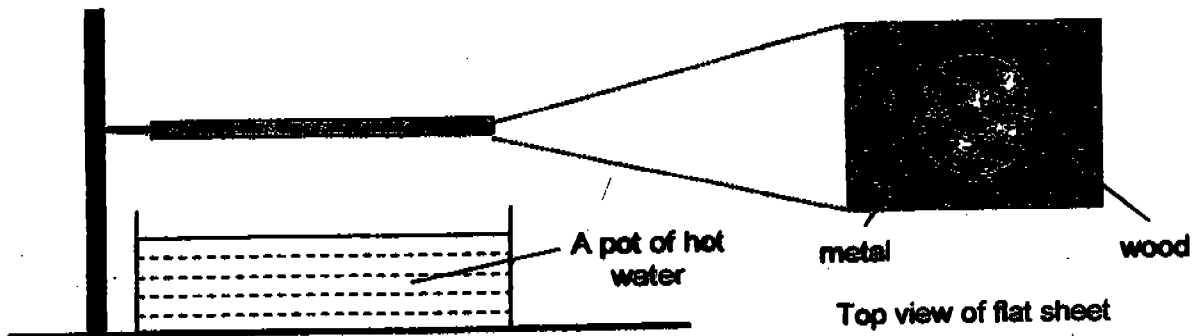
33. The pie chart below shows the composition of the various gases in the Earth's atmosphere.

- (a) Fill in the blanks with the correct names of the various gases. (1 mark)



- (b) Explain how the Earth's atmosphere keeps the Earth's temperature at a suitable range. (2 marks)

34. The diagram below shows a piece of flat sheet made of wood and metal being held above a pot of hot water.



- (a) State what could be observed on the surface of the flat sheet facing the pot of hot water after some time? (1 mark)

- (b) Give a reason for your answer.

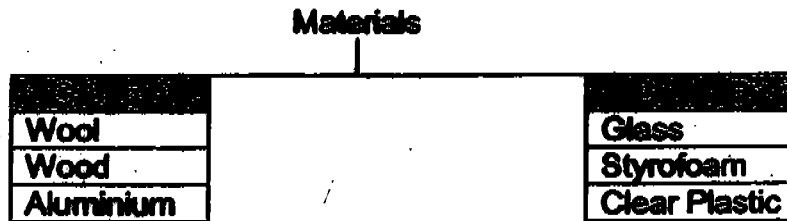
35. Chris prepared 2 beakers containing 100ml of water each. He put 1 beaker at the basketball court and the other in a closed cupboard. After two days, he compared the level of water in the 2 beakers.

- (a) What would Chris observe in the 2 beakers? (1 mark)

- (b) Give a reason for your answer. (1 mark)

- (c) Apart from the amount of water, give another variable Chris has to keep constant in order for the experiment to be a fair test. (1 mark)

36. Jia Wei grouped the following materials as shown below.

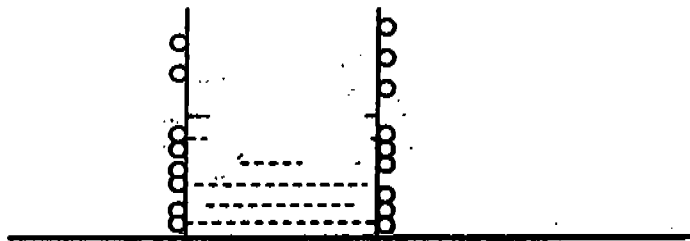


Write suitable headings for the grouping above. (2 marks)

Group A: _____

Group B: _____

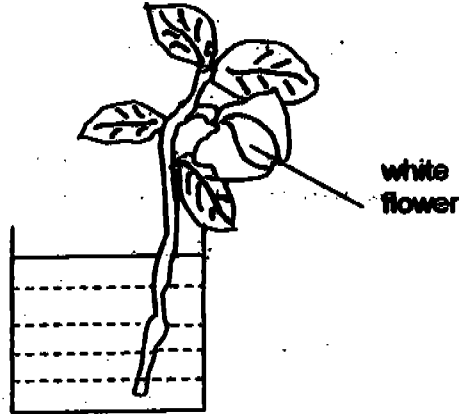
37. Joshua put a few pieces of ice cubes into a glass of Milo.



(a) Draw the ice cubes in the glass. (1 mark)

(b) Joshua observed that there were more water droplets on the lower glass surface than the upper glass surface. Explain his observation. (2 marks)

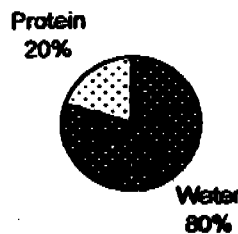
38. ~~She cut off the roots of a chilli plant and put it into a beaker of water. She then added some blue ink into the beaker of water.~~



- (a) What would she observe in the flowers of the plant after 1 day? (1 mark)

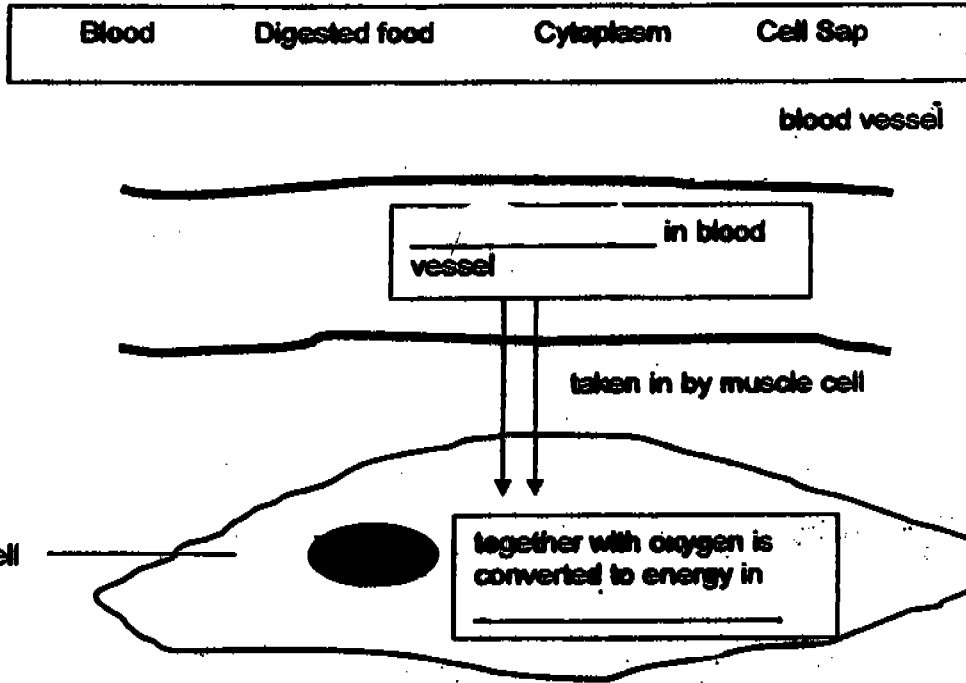
- (b) What does this experiment show? (1 mark)

39. Cytoplasm is found in all cells. The pie chart below shows the composition of the cytoplasm.

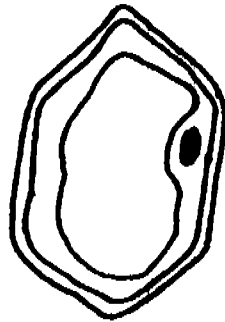


- (a) Explain why the cytoplasm is jelly-like. (1 mark)

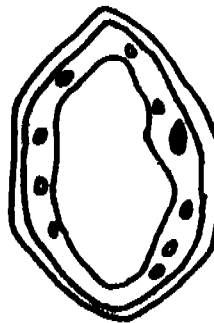
(b) Using the words provided in the box, complete the diagram to show how a muscle cell gets its energy. (1 mark)



40. Study the diagram of two cells below.



Cell A



Cell B

(a) Which one of the above cells is likely to be found in the leaf? (1 mark)

(b) Explain your answer in (a). (1 mark)

41. Jason carried out an experiment with two plant cells from the same plant. He put one cell in a dish containing substance P. After 10 minutes, he found that there were traces of substance P in Part Y of the plant cell as shown in Diagram A below. Jason then removed Part X of the other cell as shown in Diagram B and repeated the experiment.

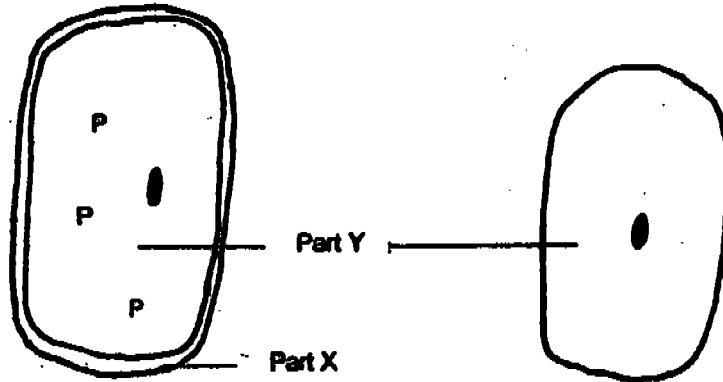


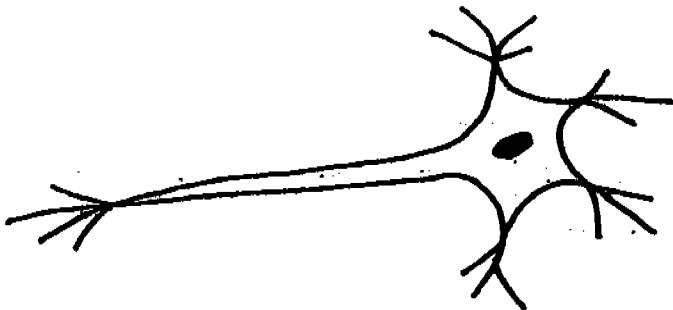
Diagram A

Diagram B

- (a) What would Jason observe in Part Y of the plant cell when Part X was removed from the plant cell? (1 mark)

- (b) What conclusion can you draw based on the observation in (a)? (1 mark)

42. The diagram below shows a nerve cell in a human being.



Name two characteristics of the nerve cell that differ it from the other types of cells in the human body. (2 marks)

- (i) _____
- (ii) _____

43. State 2 reasons for cell division to take place. (2 marks)

(i) _____

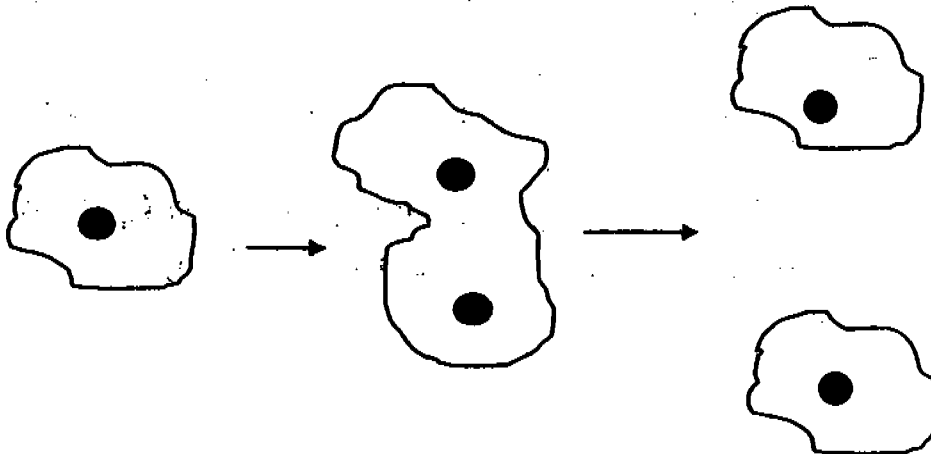
(ii) _____

44. Binary fission and budding are 2 types of cell division.

a) Complete the diagram below to show budding of a yeast cell. (1 mark)



The diagram below shows binary fission of the amoeba.



(b) State a similarity and a difference between the 2 types of cell division in yeast and the amoeba. (2 mark)

(i) Similarity : _____

(ii) Difference : _____

45. Read the following information carefully.

Rahim has brown eyes.

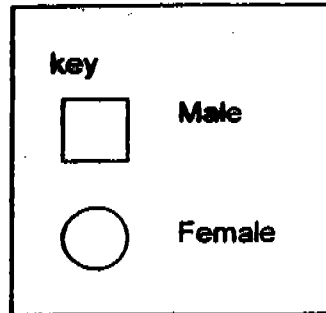
He inherited brown eyes from his maternal grandfather.

Rahim has 2 brothers and 1 sister.

He also has 1 uncle and 1 aunt from his mother's family.

(a) Given the above information and the key, draw Rahim's family tree in the space given below. (2 marks)

(b) Label all the information given in the family tree that you have drawn. (2 marks)



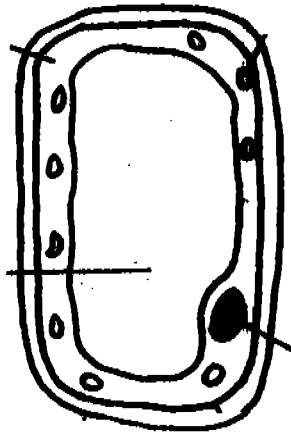
46. Below shows a plant cell and an animal cell.

Label the following parts in each of the diagram.

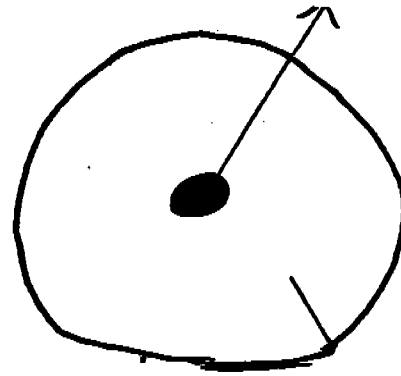
(2 marks)

- Cell membrane
- Cell sap
- Cell wall
- Chloroplast
- Cytoplasm
- Nucleus

Plant Cell



Animal Cell



***** END OF PAPER *****

Setters:

Mdm Chia Li Hoon
Mrs Shirley Lam

Nanyang Primary School
Primary 5 Science CA1 (2005)

EXAMINATION

Answer Sheets

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

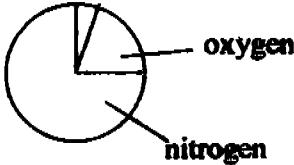
31a. 

- 31b. (i) The moon would appear to be a new moon at position D.
 (ii) The possible positions are A and C.

(iii) 

32a. The earth reflects the light from the sun into the astronaut's eyes that is why astronauts are able to see earth.

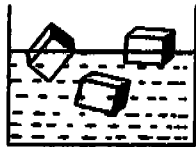
32b. Pluto is too cold as it receives least warm from the sun and mercury is too hot as it receives too much heat from the sun.

33a. 

33b. The atmosphere absorbs the Sun's heat in the day, preventing the earth from getting too hot. It also traps heat at night, preventing the heart from escaping and making the Earth cool.

- 34a. More water droplets on the metal surface than the wooden surface.
- 34b. Metal is a better conductor of heat than wood so its surface will be cooler than wood and there will be more condensation on the metal surface.
- 35a. The beaker in the basketball court would not have any water while the beaker in the closed cupboard will still have water.
- 35b. The beaker in the basketball court received more heat from the sun than the beaker in the cupboard, and made the rate of evaporation for it faster than the beaker in the closed cupboard.
- 35c. He must keep the exposed surface area the same.
36. Group A : natural
Group B : Man-made

37a.



- 37b. The ice cubes made the lower glass surface colder than the upper glass surface and when the water vapour from the surroundings comes in contact with the cold surface, it condenses and forms water droplets.
- 38a. The white flower would turn blue.
- 38b. Water is carried by the stem xylem to the other parts of the plant.
- 39a. 80% of the cytoplasm is water and only 20% is protein is the cytoplasm will look yellow-like.
- 39b. Digested food
Cytoplasm
- 40a. Cell B
- 40b. Only cell B has chloroplast and the leaf cell has chloroplast.
- 41a. Substance P will be found in Part Y.
- 41b. Substance P can pass through the Part X.
42. (i) It is longer than the other cells.
(ii) It has branches.

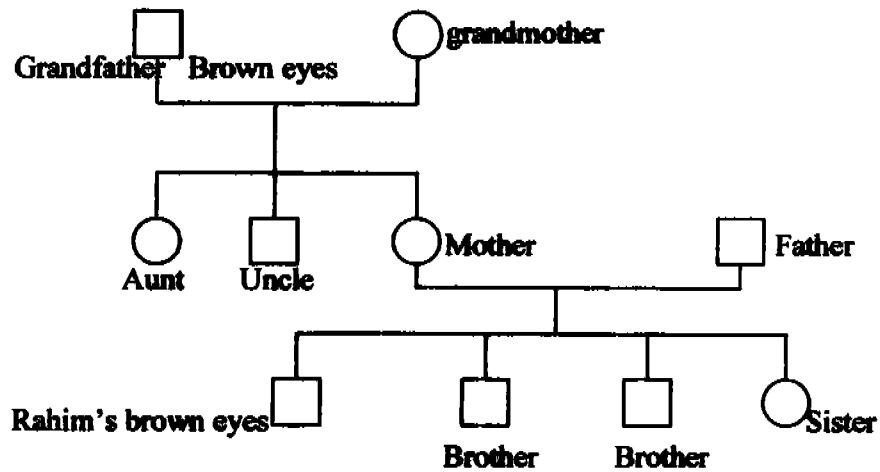
43. (i) It is to replace old and damaged cells in the multi-celled organism.
 (ii) It ensures continuity of single-cell organisms like yeast.

44a.



- 44b. (i) At the end of the process, 2 cells are formed.
 (ii) When binary fission takes place, they divide themselves equally but when budding takes place, they divide themselves unequally.

45.



46

