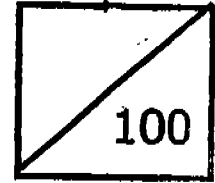




SA1

Rosyth School
First Semestral Assessment for 2005
SCIENCE
Primary 5 EM1/2



Total
Marks:

Name: _____

Class: Pr 5 _____ Register No. _____ Duration: 1 h 45 mins

Date: 11 May 05

Parent's Signature: _____

Booklet A

Instructions to Pupils:

1. Do not open the booklets A and/or B until you are told to do so.
2. Follow all instructions carefully.
3. This paper consists of 2 booklets, A and B.
4. For questions 1 to 30 in Booklet A, shade the correct ovals on the Optical Answer Sheet (OAS) provided using a 2B pencil.
5. For questions 31 to 46, give your answers in the spaces given in the Booklet B.

	Maximum	Marks Obtained
Booklet A	60 marks	
Booklet B	40 marks	
Total	100 marks	

* This booklet consists of 13 pages .

Each question is followed by four possible answers. Choose the most suitable answer and shade the corresponding oval (1, 2, 3 or 4) in the Optical Answer Sheet.

1. Why can we sometimes see man-made satellites in the night sky?

- 1) They reflect light from the sun.
- 2) They reflect light from the stars.
- 3) They reflect light from the control stations on the Earth.
- 4) They give out their own lights as they are controlled by the stations on Earth.

2. Which of the following statement(s) about the rotation of the earth is/are incorrect?

- A: The Earth rotates from the west to the east.
- B: At any time, half the Earth will be facing the Sun.
- C: All places on the Earth experience 12 hours of day and night.

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

3. Read the table below and choose the correct comparison between the Sun and the Moon.

	Sun	Moon
A:	Reflects light	Does not reflect light
B:	A light source	Not a light source
C:	Larger than the Earth	Smaller than the Earth
D:	Revolves around the Moon	Revolves around the Earth

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

4. Which of the following is/are factor(s) that support life on Earth?

- A: The distance of the Earth from the Sun.
- B: The Earth's atmosphere
- C: The presence of man-made satellites.
- D: The Sun provides heat and light energy

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

5. Which one of the following is the process by which a cell splits to produce new identical cells?

- | | |
|------------------|-------------------------|
| (1) Budding | (2) Binary fission |
| (3) Cell fission | (4) Cell multiplication |

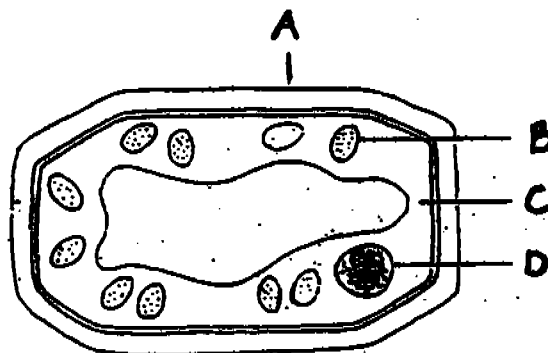
6. Before mounting a slide on a microscope, which one of the following actions must you do first?

- (1) Look through the eyepiece
- (2) Put the slide on the stage.
- (3) Turn the focus knob to bring the stage lower.
- (4) Turn the correct objective lens over the slide.

7. Which of the following is an incorrect description of the function of the microscope part?

Microscope part	Description of function
(1) Eyepiece lens	The lens you look through to see the object you are studying
(2) Objective lens	The lens that is closest to the object you are studying
(3) Arm	The part to hold on to when the microscope is moved
(4) Coarse focus knob	A knob used to see details of your specimen.

8. Look at the plant cell below carefully.



Which part of the cells above functions like bones, supporting the cells and giving them their shape?

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

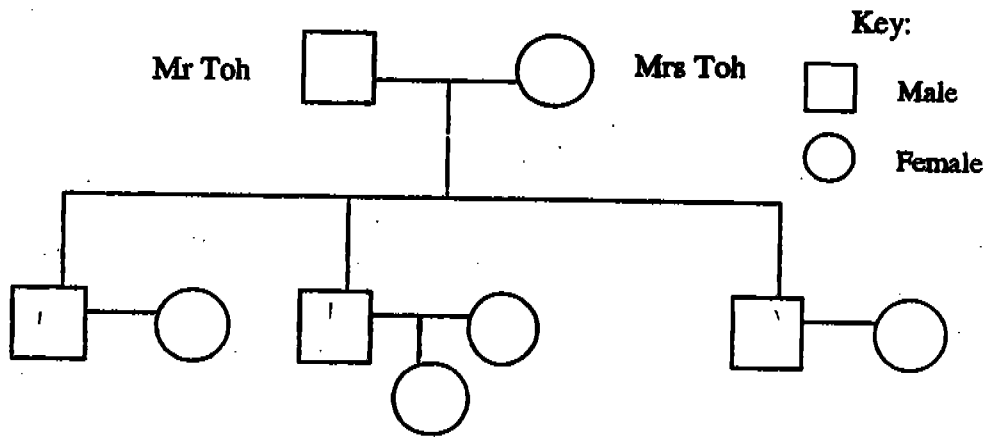
9. Which structure in a cell stores food, water and wastes?

- | | |
|---------------|-------------------|
| (1) Nucleus | (2) Cell Sap |
| (3) Cytoplasm | (4) Cell membrane |

10. Which of the following characteristics cannot be inherited?

- (1) The colour of the skin
- (2) The type of ear lobe
- (3) The shape of the lip
- (4) The length of the hair

11. The family tree shows the relationship in the Toh Family.



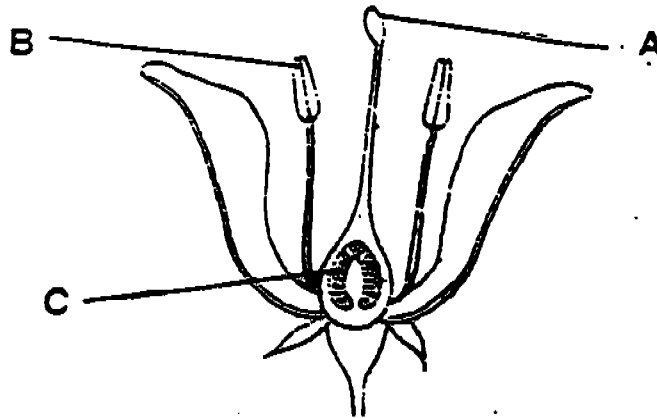
How many children do Mr and Mrs Toh have?

- | | |
|-------|-------|
| (1) 2 | (2) 3 |
| (3) 4 | (4) 5 |

12. Which statement about pollination is incorrect ?

- (1) The transference of pollen grains from one flower to the stigma of another flower
- (2) The transference of pollen grains from one flower to the stigma of the same flower
- (3) The transference of stigma from one flower to the pollen grains of the same or another flower
- (4) The transference of pollen grains from one flower to the stigma of the same or another flower with the help of wind and insects

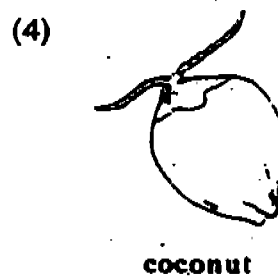
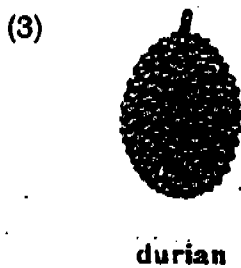
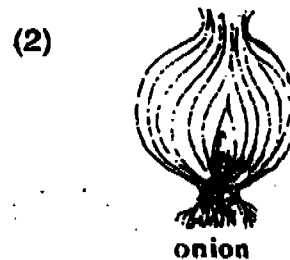
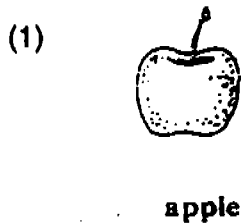
15. The diagram below shows the cross-section of a flower.



Which one of the following correctly labels the parts of the flower?

	A	B	C
(1)	anther	stamen	ovary
(2)	anther	stigma	ovule
(3)	stigma	anther	ovule
(4)	stamen	pistil	ovary

16. Which of the following is not a flower before this stage?



17. Study the table below. Which one of the following is incorrectly classified?

Producing New Plants from Plant Parts			
Leaves	Suckers	Underground Stems	Seeds
(1) Begonia	Ginger	Onion	Sunflower
(2) African Violet	Heliconia	Water chestnut	Chilli
(3) Begonia	Pineapple	Potato	Tomato
(4) Bryophyllum	Banana	Ginger	Lady's finger

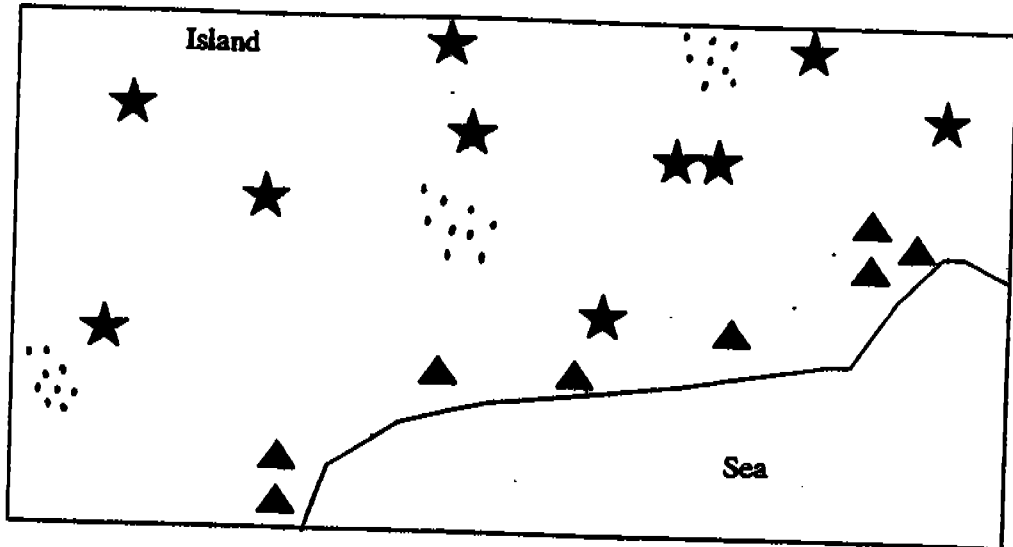
18. Jocelyn learned that iodine turns from brown to dark blue in the presence of starch. She tested some food samples with iodine and recorded the results in the table below.

Food	Observation
Noodles	Iodine turns dark blue
Prawn	Iodine remains the same colour
Groundnut	Iodine turns dark blue
Pork	Iodine remains the same colour
Potato	Iodine turns dark blue
Tapioca	Iodine turns dark blue
Fish	Iodine remains the same colour
Sweet Potato	Iodine turns dark blue

What can you conclude from the observation in the table above?

- (1) Starch is present in plants..
- (2) Starch is present in animals.
- (3) Sweet potato has more starch than potato.
- (4) Starch is present in meat and the parts of plants.

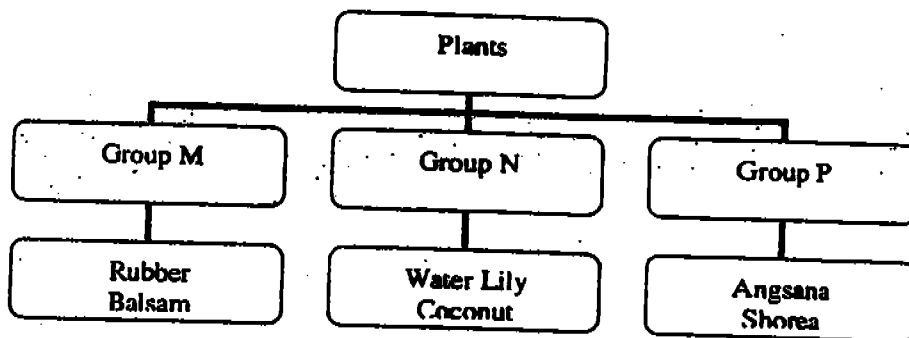
19. The diagram shows part of an island where three types of plants are growing.



How are the fruits or seeds of each type of plant most likely dispersed?

	▲	★	•
(1)	Water	Water	Animals
(2)	Wind	Splitting action	Water
(3)	Water	Wind	Splitting action
(4)	Wind	Animals	Water

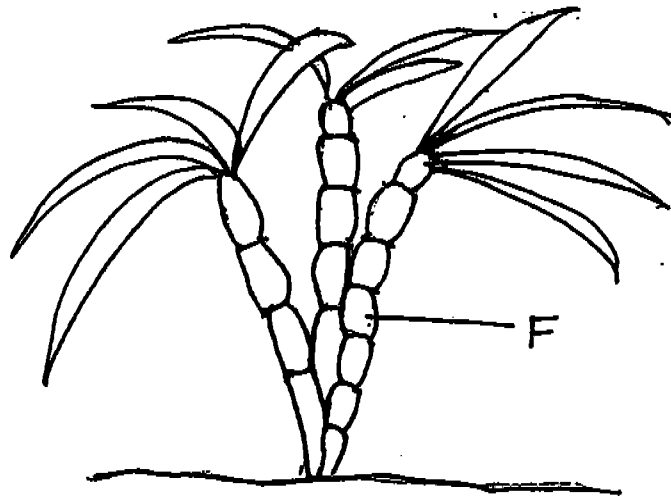
20. Study the diagram below.



The plants are classified according to their method of _____

- (1) growth
- (2) dispersal
- (3) pollination
- (4) reproduction

21. The diagram below shows the sugarcane plant.

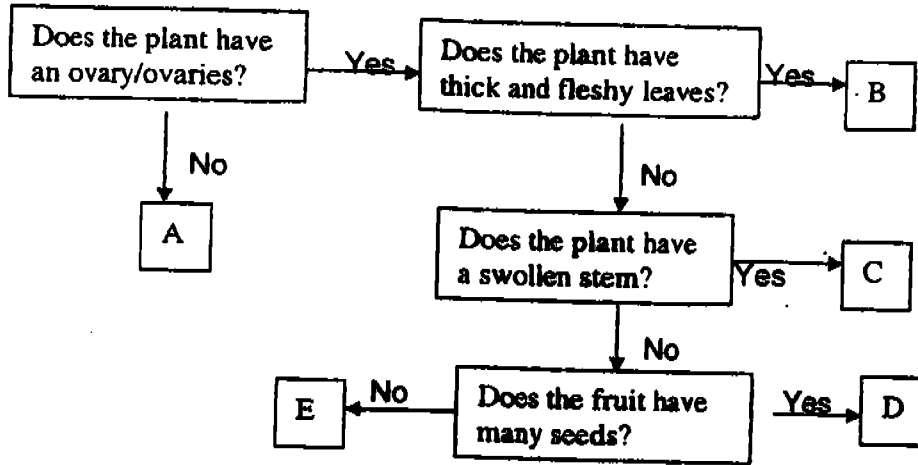


What are the functions of the part marked F?

- A: To store food.
- B: To take in water.
- C: To hold up and spread out the leaves.
- D: To hold the plant firmly to the ground.

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

22. Study the flow chart below carefully.



Which of the following are most likely represented by Plants A, B, C, D, and E?

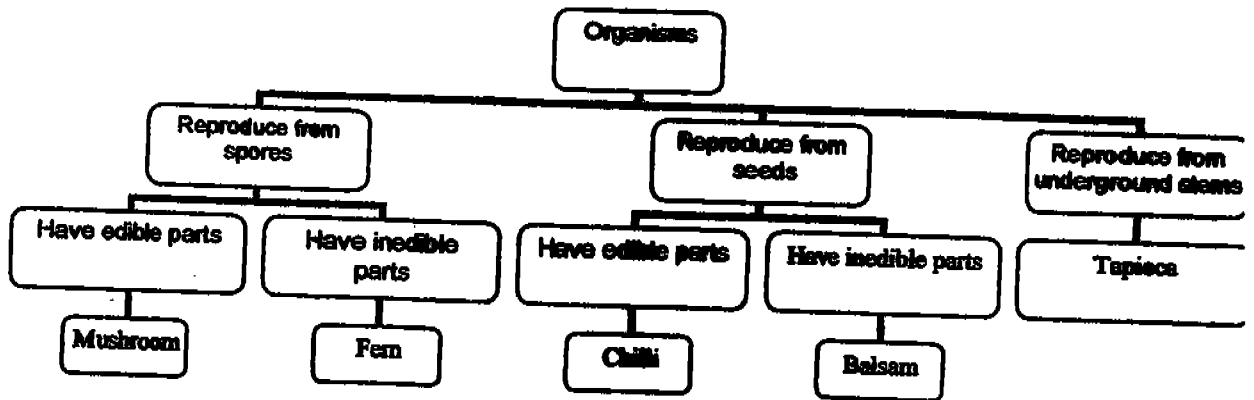
	Plant A	Plant B	Plant C	Plant D	Plant E
(1)	Bird's nest fern	Bryophyllum	Potato	Water lotus	Mango
(2)	Bird's nest fern	Sansevieria	Tapioca	Potato	Rambutan
(3)	Staghorn fern	African violet	Turnip	Sweet potato	Durian
(4)	Bryophyllum	Maidenhair's fern	Onion	Tapioca	Balsam

23. Which of the following statements are true about sexual reproduction in both plants and animals?

- A: The male and female reproductive cells have to fuse for fertilization to take place.
- B: Pollination takes place before fertilization.
- C: The male reproductive cells are called sperms.
- D: The female egg cells are stored in the ovary.

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

24. Study the classification chart below.



Based on the classification chart, what conclusions can be made?

- A: Not all plants are edible.
- B: Plants can reproduce in different ways.
- C: The tapioca plant does not grow from seeds.
- D: The balsam plant is edible.

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

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

25. The diagram below shows an unborn baby which is called a foetus.



Which of the following statements about the foetus are true?

- A: At this stage, the foetus is connected to the umbilical cord which carries food and oxygen.
- B: At this stage, the foetus does not breathe through the nose.
- C: At this stage, the foetus does not produce any waste.
- D: The foetus takes about nine months to develop into a fully formed baby.

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

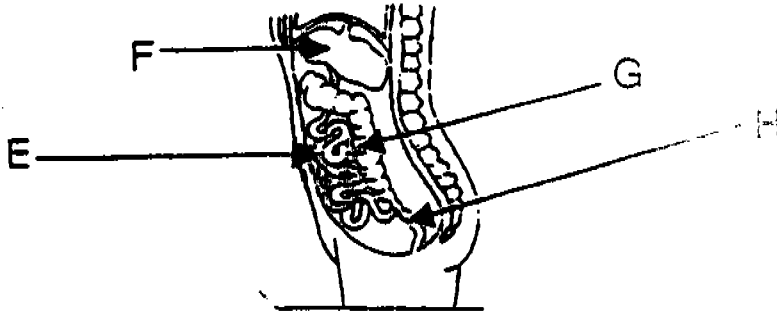
- (2) A, B and D only
- (4) A, C and D only

26. The diagram shows four possible pathways for the transfer of energy from plants to Man.

Which one of the energy chains below transfers the most energy from plants to Man?

- (1) Plant → Insect → Bird → Man
- (2) Plant → Man
- (3) Plant → Cow → Man
- (4) Plant → Fish → Man

27. Study the diagram below.



In which part of the digestive system is the food completely digested and absorbed into the blood?

- | | |
|-------|-------|
| (1) E | (2) F |
| (3) G | (4) H |

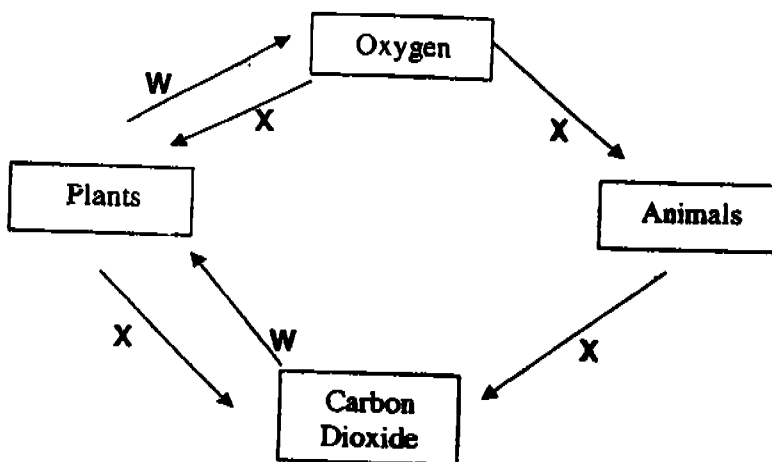
28. Study the information below.

- W: An organism that feeds on nectar only.
- X: An organism that feeds on herbivores.
- Y: Predator of X.
- Z: An organism that traps light energy to make food.

Which one of the following food chains correctly represents the information given above?

- | | | | | |
|-----|-----|-----|-----|---|
| (1) | W → | X → | Y → | Z |
| (2) | W → | X → | Z → | Y |
| (3) | Z → | W → | Y → | X |
| (4) | Z → | W → | X → | Y |

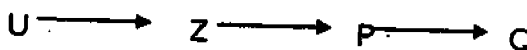
29. The following diagram shows the interdependence of plants and animals in the environment and how these organisms interact with the environment.



What processes do the arrows labeled X and W represent?

	Process X	Process W
(1)	Digestion	Photosynthesis
(2)	Respiration	Photosynthesis
(3)	Respiration	Digestion
(4)	Photosynthesis	Respiration

30. Study the food chain below.



Which one of the following statements about the food chain is correct?

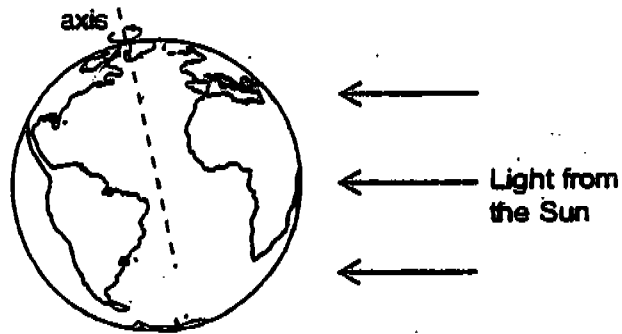
- (1) Organism U makes its own food so it does not require energy from any sources.
- (2) Organism Q receives the most energy because it is at the end of the chain.
- (3) Not all the energy from organism Z can be transferred to organism P.
- (4) More energy is transferred from organism P to Q than from organism Z to P.

END OF SECTION A

Part II: (40 marks)

Read each question carefully and write your answer in the space provided.

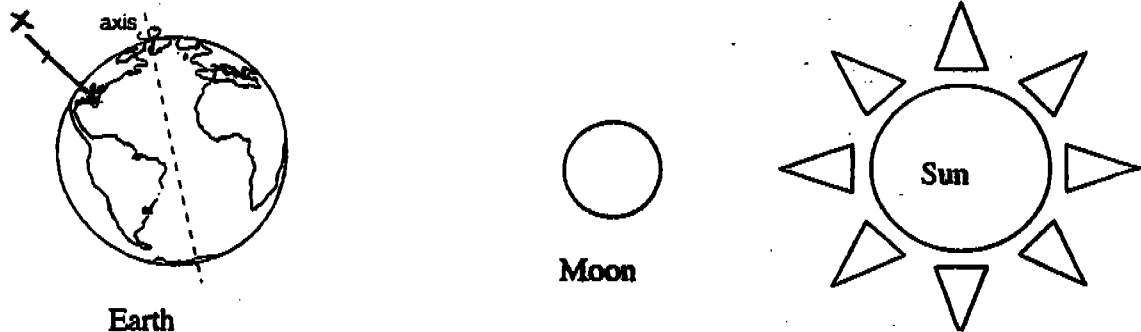
31. The diagram below shows the Sun and the Earth.



(a) Shade the part of the Earth that is experiencing night. (1 mark)

(b) John says that he is able to watch the Olympic games telecast 'live' at home although it is taking place in another country. Can you explain what made it possible for the programme to be telecast 'live.'

32. In the diagram below, the Earth, Moon and the Sun are in a straight line .



Don lives in Country 'X' as shown in the diagram. At 10 pm on 17 April 2005, he looked up at the sky to see the Moon.

(a) Will Don see the Moon? Explain your answer clearly.

(b) How many days later will Don see the full moon?

33. State the process in green plants that is affected by the rotation of the Earth. Explain how the process is affected.

34. (a) How long does Earth take to go around the Sun once?

(1 mark)

(b) Neptune takes 164 years to go around the Sun once.

From the above information what can you tell about the distance of the Earth from the Sun as compared to Neptune?

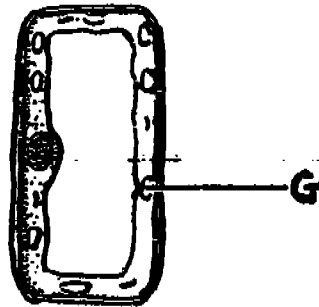
(c) Based on your answer in part (b) explain why there are living things on Earth, and none on Neptune?

35. John realized that he had grown taller by 2cm over the last six months.

(a) What happened to the cells in John's body that helped to increase his height?

(b) John stopped growing after the age of 21 years old. Would cell division have stopped in his body? Give a reason for your answer.

36. Study the plant cell shown below carefully and answer the following questions.

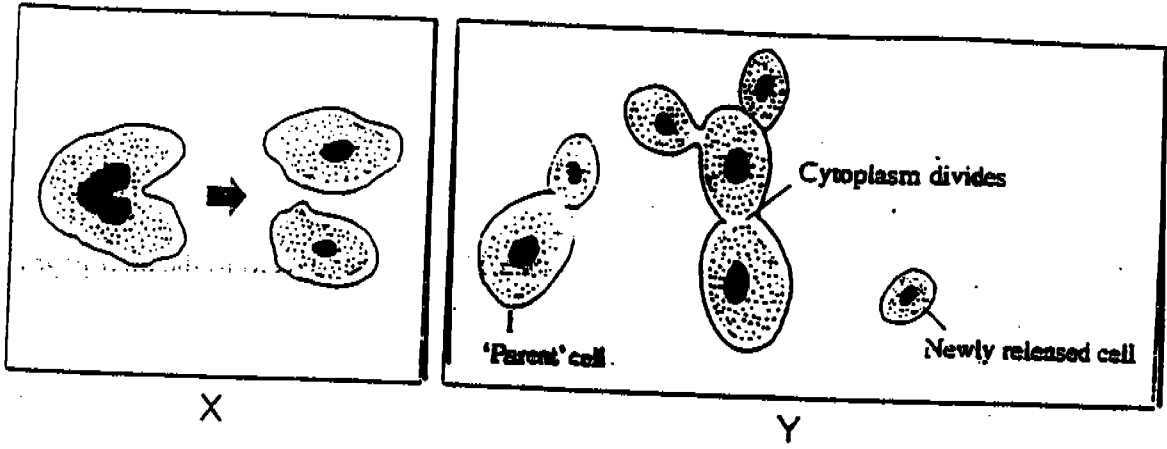


(a) What is the function of the part labeled G?

(b) Jia Qi put an onion under the microscope. She could not find the part that was labeled G. What can you deduce from Jia Qi's observation?

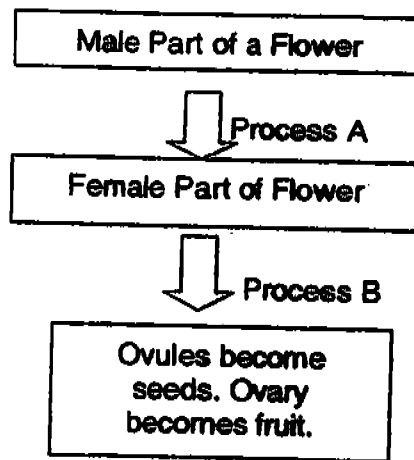
37 Study the diagrams below.

For each statement, determine if it is a correct or incorrect statement. Fill in each blank with the word 'True' for correct statement and 'False' for incorrect statement. (3 marks)



a)	X is an animal cell but Y is like a plant cell.	
b)	Both need air, water and food in order to grow.	
c)	X and Y are in the process of reproducing themselves.	
d)	The cells of x and Y do not need to be fertilized in order to reproduce	
e)	X reproduces by binary fission but Y is hatched from its egg.	
f)	Except for their size, the young of X and Y look like their parents.	

38. Study the diagram below.



(a) Name the two processes involved above.

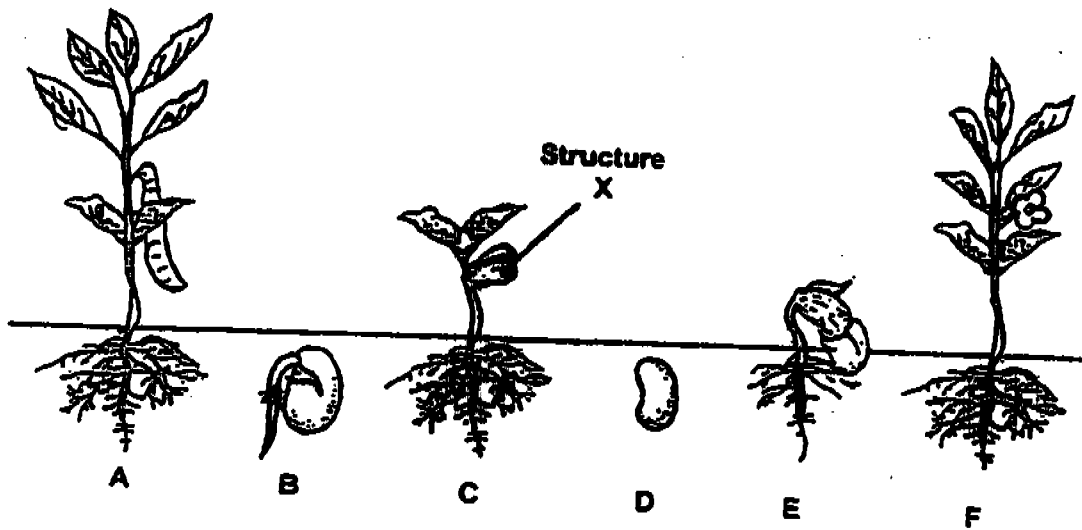
Process A : _____

Process B : _____

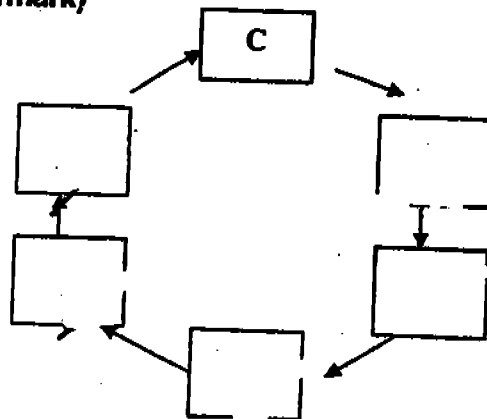
(1mark)

(b) State one way in which process A can take place. (1mark)

39. The diagram below shows the stages of growth of a bean plant.



(a) Arrange the stages of growth of the bean plant in sequence by writing the corresponding letters in the boxes below. One of the stages has been filled for you. (1mark)



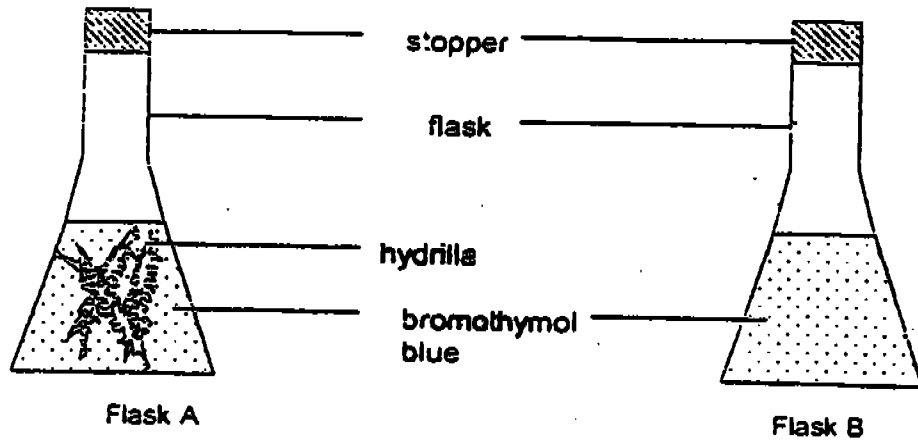
Life Cycle of a Bean Plant

(b) Identify the structure X in diagram C. (1mark)

(c) What happens to structure X as the plant continues to grow? Give a reason for your answer (1mark)

40. A liquid, bromothymol, turns from blue to yellow in the presence of carbon dioxide.

Tim wanted to show that carbon dioxide is released by hydrilla during respiration. He set up an experiment below.



(a) The flasks were left in the dark to prevent photosynthesis from taking place. Explain why this step was necessary. (2marks)

(b) Explain the purpose of setting up flask B? (1mark)

41. A group of students carried out an experiment to compare the amount of water found in 4 different types of fruits they had bought from the supermarket.

The procedure that they carried out was as follows:

- Cut the fruits up.
- Weighed a few pieces of each fruit.
- Heated the cut fruits in an oven for a period for a period of time till they dry up.
- Removed the fruits from the oven.
- Weighed the fruits again.

(a) List two variables that should be kept the same to ensure a fair experiment. (2marks)

(i) _____

(ii) _____

(b) How would they find out which fruit had the biggest water content? (1mark)

42. Study the table below.

	Cod	Common Frog	Sparrow	Deer
Number of eggs /young produced per year	6 million	2000-3000	6 (twice a year)	Usually 1
Where the eggs are fertilized	In water (in the sea)	In water (in ponds and ditches)	Inside the mother	Inside the mother
Care and protection given to the young	None. The parents leave the eggs floating in the water.	None from the parents but the eggs are covered with an unpleasant-tasting jelly. The tadpoles find their own food.	The parents sit on the eggs till they hatch. Then they feed and protect the young for the some time.	The mother feeds the fawn with milk for the first 8 months. She protects it for up to one and a half years.
Enemies which prey on the eggs or the young	Most other fish (even cod)	Fish, newts, water insects, herons and hedgehogs	Crows, hawks, squirrels	Very few. Occasionally foxes and eagles attack the young.

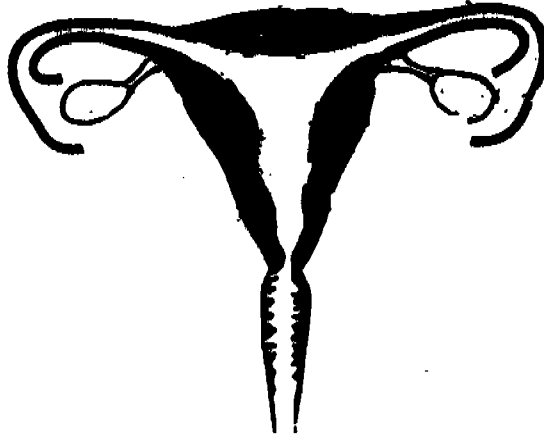
(a) Which animals described above give no care and protection to their young? (1mark)

(b) What is the relationship between the number of eggs produced by an animal and the care and protection given to the young? (1mark)

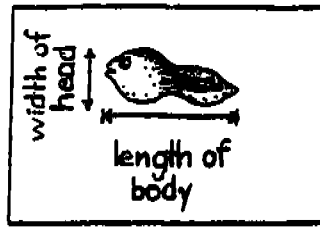
(c) Based on the table, state one way in which the frog is similar to a mosquito? (1mark)

43. The diagram below shows the human female reproductive system.

- (a) Draw an arrow in the diagram below to indicate the part 'ovary'. Label the part. (1mark)
- (b) Circle and label the organ in which the fertilized egg develops. (1mark)

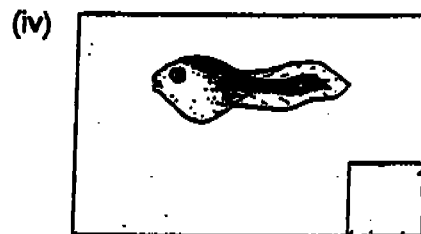
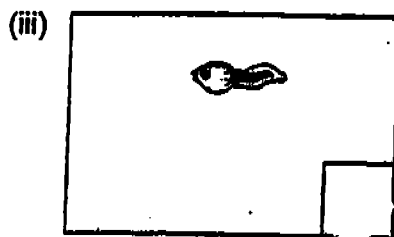
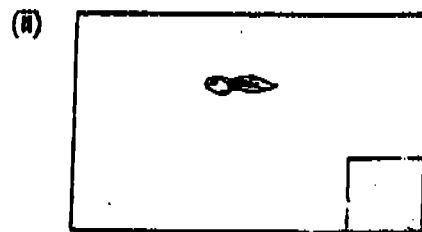
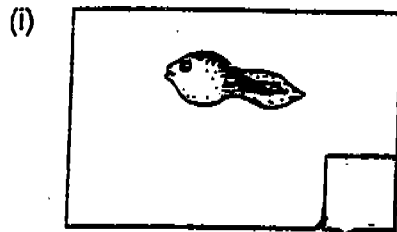


44. John caught 4 tadpoles. He measured (as shown in the diagram below) and recorded the length of their bodies and the width of their heads.



Tadpole	Length of body (cm)	Width of head (cm)
P	2.5	1
Q	1	0.3
R	2	0.8
S	1.3	0.5

- a) Based on the information in the table above, identify the stages of growth of the tadpoles in the diagrams below. Write P, Q, R or S in each of the boxes. (1mark)



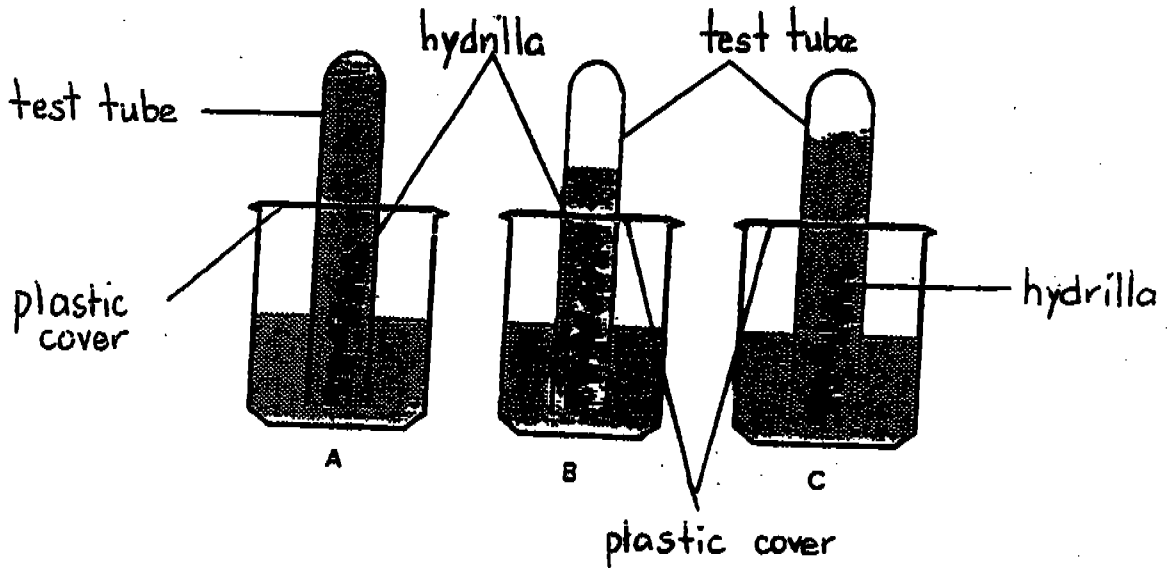
- b) What pattern do you observe about the length of their bodies and the width of their heads? (2marks)

(Go on to the next page)

45. Ali and Ahmad set up an experiment in class using the aquatic plant, hydrilla. They set up 3 test tubes with the same amount of hydrilla in each and placed each test tube upside down in a beaker of water as shown in the diagram.

At the start of the experiment, all three test tubes were full of water.

One was left in a sunny place, another in a dark cupboard and the third in a shady corner. After a day, they checked their results. They drew each test tube showing how much gas could be seen.

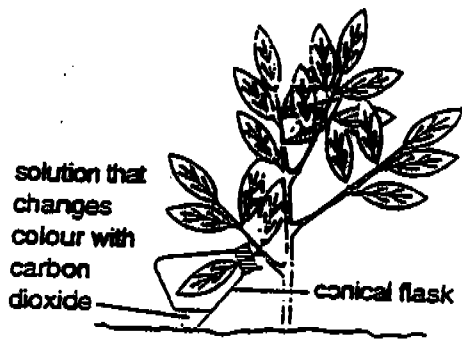


- a) Which test tube was left in a dark cupboard? (1mark)
- _____
- b) Which test tube was left in the bright sun? (1mark)
- _____
- c) Name the gas trapped in each of the test tubes. (1mark)
- i) Test tube A : _____
- ii) Test tube B : _____
- iii) Test tube C : _____

(Go on to the next page)

46. The table below shows the colour change of a solution in the presence of carbon dioxide.

Colour of solution	Amount of carbon dioxide
Green	Lesser amount than in air
Yellow	Same amount as in the air
Red	Larger amount than in air



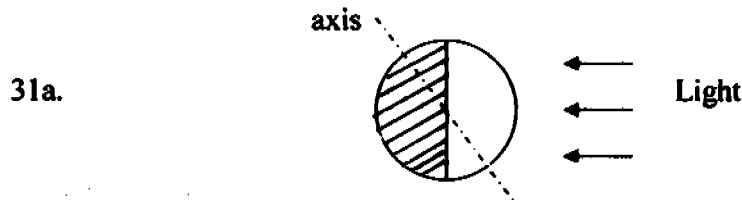
- a) Describe the colour of the solution at
- i) 12 noon: _____ ($\frac{1}{2}$ mark)
 - ii) 12 midnight: _____ ($\frac{1}{2}$ mark)
- b) Explain your answer in Part (a). (2marks)

Rosyth Primary School

Primary 5 Science SA1 (2005)*Exam Suite*

Answer Sheets

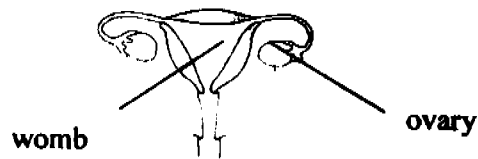
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
1	4	2	3	2	3	4	1	3	4
Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
2	3	3	5	3	2	1	1	3	2
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
2	1	1	1	2	2	1	4	2	3



- 31b. Satellite. Satellites send communication signals from one country to another.
- 32a. The lightest part of the moon is not facing the Earth.
32b. 14 – 15 days later.
33. Photosynthesis. When the Earth is rotating around its own axis, it causes day and night. In the day, there is sunlight which is important for photosynthesis to occur, so green plants could photosynthesize, but in the night, there is no sunlight and the plant cannot photosynthesize.
- 34a. 1 year
34b. The Earth is closer to the sun than Neptune.
34c. The Earth is just the right distance away from the Sun which gives out heat and has the right temperature for living things to live, while Neptune is further away from the Sun, which makes the temperature too cold for living things to live.
- 35a. The cells in John's body divided and multiplied in number which makes him grow taller.
35b. No. Cell division will still continue to replace old and damages ones.

- 36a. G contains chlorophyll which traps light energy from the Sun to make food.
- 36b. The onion contains no chlorophyll that is needed to make food so the onion cannot make food.
- 37a. False
- 37b. True
- 37c. True
- 37d. True
- 37e. False
- 37f. True
- 38a. Pollination
Fertilization
- 38b. Wind.
- 39a. E F
B A
D
- 39b. Seed leaf
- 39c. X will shrivel up and drop off. X provides food for the seedling when it has no leaves, but once the leaves that could help the plant make food appears, X is not needed anymore and would shrivel and drop off.
- 40a. Photosynthesis requires carbon dioxide. During respiration, carbon dioxide is produced which may be taken in for photosynthesis. Then the bromothymal blue will change colour. Results would be inaccurate.
- 40b. Used to show or compare that the change in colour in A is due to carbon dioxide produced by the hydrilla.
- 41a. The same length of time in the oven.
- 41b. If the fruit has the biggest difference between their weight before the fruit was heated in the oven and after the fruit is heated in the oven, the fruit has the biggest water content.
- 42a. Cod and common frog.
- 42b. The greater the number of eggs produced by the animal, the least care it gives to its young.
- 42c. Both lay eggs in water.

43a.



43b.

ovary, womb

44a.

R Q
S P

44b.

As the length of the tadpole's increases, the width of its head will also increase.

45a.

Test tube A

45b.

Test tube B

45c.

- (i) carbon dioxide
- (ii) oxygen
- (iii) oxygen

46a.

- (i) Green
- (ii) Red

46b.

At 12 noon, there is sun, which gives out sunlight that is important for photosynthesis that is a process when carbon dioxide is taken in and oxygen is given out. As the leaf photosynthesizes, more carbon dioxide is used and more oxygen is given out, so there is less carbon dioxide in the air.