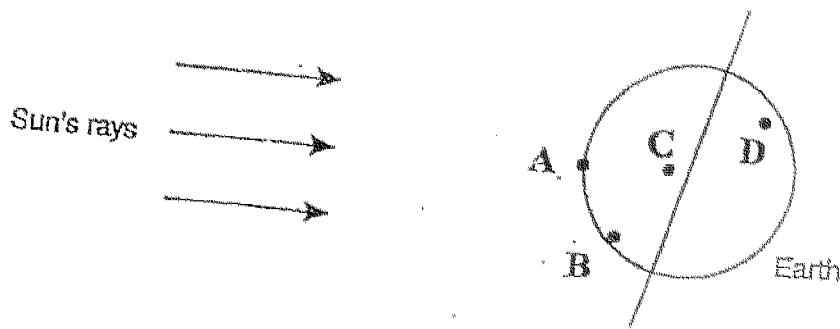


Section A : Multiple-Choice Questions (20 X 2 marks)

For each question, choose the correct answer and shade the oval corresponding to the number on the Optical Answer Sheet (OAS) provided.

1. The diagram below shows the Earth seen from the side. Which position **A**, **B**, **C** or **D**, on Earth will experience evening first?



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

( )

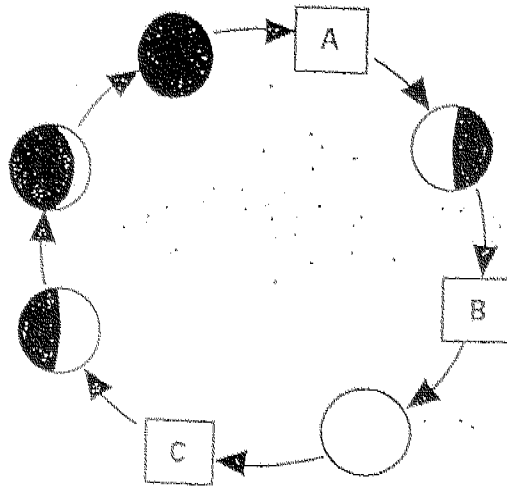
2. Which of the following statement(s) is/are true concerning the Earth's atmosphere?

- A. It is a layer of gases surrounding the Earth.
- B. It absorbs the Sun's heat keeping us warm.
- C. It shields us from the Sun's harmful rays.

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

( )

3. Study the phases of the Moon in the diagram below.



What of the following correctly shows the missing phases of the Moon?

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

4. Which of the following statements about the New Moon are true?

- A. The side of the Moon facing the Earth is totally in shadow.
- B. It takes place at the beginning of each lunar month.
- C. The Moon is between the Sun and the Earth at that time.
- D. The Earth is between the Sun and the Moon at that time.

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

( )

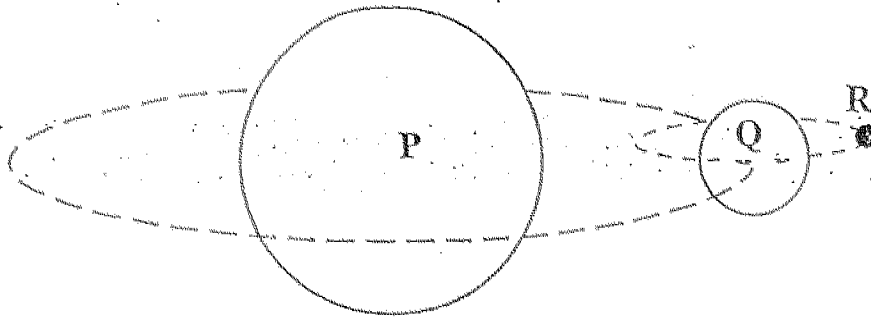
5. Which of the statements are true concerning all the planets found in the Solar System?

- A. They are not light sources.
- B. They revolve around the Sun.
- C. They take one year to complete one revolution round the Sun.
- D. They support life.

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

( )

6. Study the diagram below.



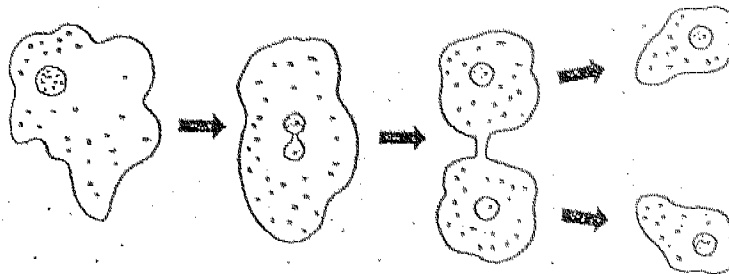
Based on the above diagram only, which of the following statements are true?

- A. Q moves around P.
- B. Q moves around R.
- C. R is a satellite of Q.
- D. P does not move at all.

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

( )

7. Study the diagram below.



The diagram shows how an amoeba divides into two amoebae. This method of reproduction is known as \_\_\_\_\_.

- (1) budding
- (2) fertilization
- (3) sexual reproduction
- (4) binary fission

( )

8. Compare a paramecium and a maize plant.

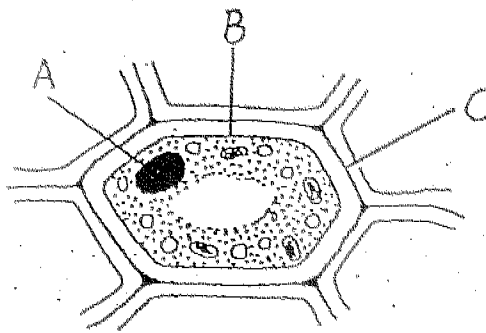
	A paramecium	A maize plant
A.	It is made up of one cell.	It is made up of many cells.
B.	It has no chloroplasts.	It has chloroplasts.
C.	Cell division takes place.	Cell division does not take place.

Which of the above comparison(s) is/ are true?

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

( )

9. Study the diagram below.



Which one of the following correctly shows the functions of the labelled parts?

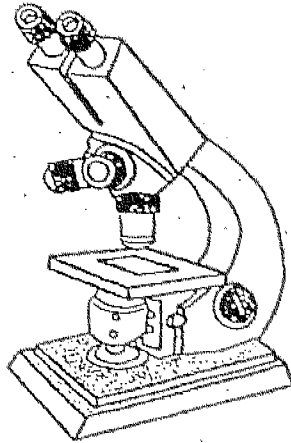
	Part A	Part B	Part C
(1)	Controls all the activities in the cell.	Protects and supports the cell.	Controls materials moving in and out.
(2)	Controls materials moving in and out.	Protects and supports the cell.	Control all the activities in the cell.
(3)	Controls all the activities in the cell.	Controls materials moving in and out.	Protects and supports the cell.
(4)	Protects and supports the cell.	Controls materials moving in and out.	Controls all the activities in the cell.

10. Which of the statement(s) about the cytoplasm of a cell is/are true?

- A. It is a jelly-like substance that almost fills the cell.
- B. It contains many cell parts.
- C. New substances are made here.

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

11. Study the diagram below.



Which of the following statement(s) about the above instrument is/are true?

- A. It can make objects look several hundred times larger.
- B. It is an optical instrument that enables us to see tiny objects.
- C. It is called a light microscope.
- D. It uses lenses to make objects look bigger.

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

( )

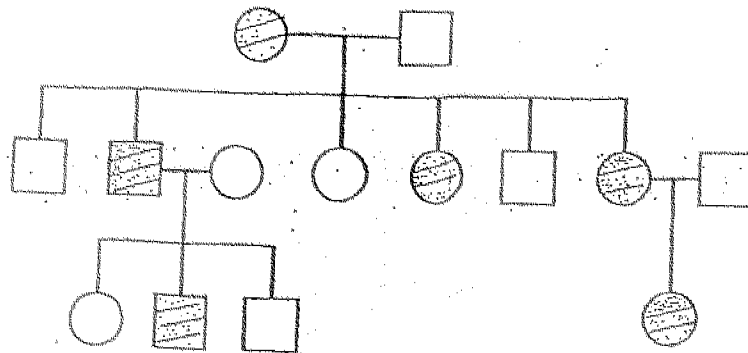
12. In human beings, how long does the fertilised egg take to fully develop into a baby?





- (1) About 9 weeks
- (2) About 10 weeks
- (3) About 40 weeks
- (4) About 90 weeks

3

( )

13. Study the following diagram that shows an inherited characteristic, colour blindness, in a family. Study the family tree carefully and answer the question that follows.



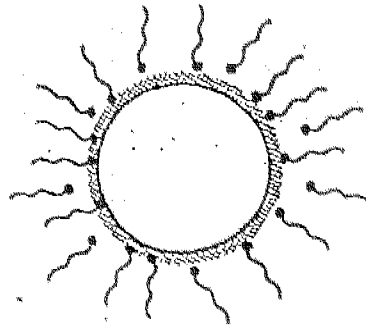
-  Females with colour blindness
-  Males with colour blindness
-  Females with normal sight
-  Males with normal sight

Which of the following is likely to be a true statement?

- (1) When a female parent has colour blindness, all her children will have colour blindness.
- (2) When a male parent has colour blindness, all his sons will have colour blindness.
- (3) When a child has colour blindness, at least one of the siblings has colour blindness.
- (4) When a child has colour blindness, at least one of the parents has colour blindness.



14. The diagram below shows many sperms near an egg.



In animals, fertilisation will only take place when \_\_\_\_\_.

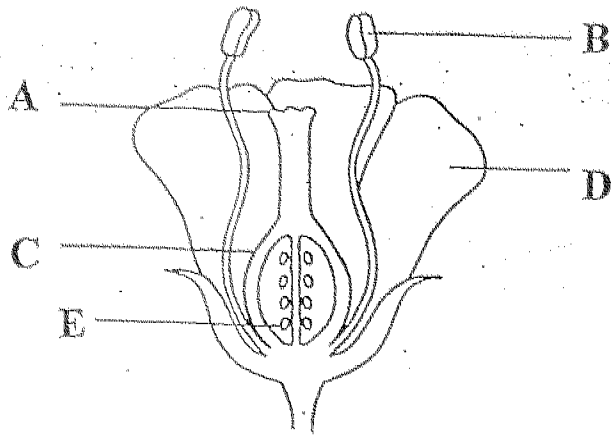
- (1) a sperm fuses with an egg
- (2) a sperm is near an egg
- (3) many sperms have entered the egg
- (4) the egg divides into two daughter eggs

15. Which group(s) of animals fertilise(s) their eggs externally?

- A. Mammals
- B. Amphibians
- C. Birds

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

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



Which are the parts that make up the female part of the flower?

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

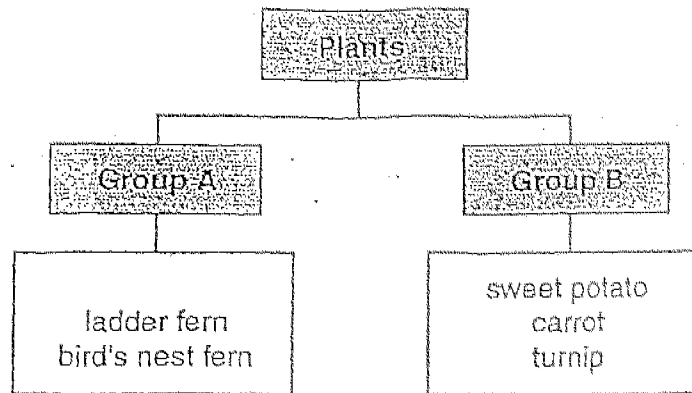
( )

17. Which of the following correctly describes pollination?

- (1) The transfer of pollen from the anther to the stigma.
- (2) The transfer of pollen from the stigma to the anther.
- (3) The transfer of pollen from one petal to another petal.
- (4) The transfer of pollen from the anther to the petal.

( )

18. Study the classification table below carefully.



What are the suitable headings for Group A and Group B ?

	Group A	Group B
(1)	Non-green plants	Green plants
(2)	Non-flowering plants	Flowering plants
(3)	Reproduce from suckers	Reproduce from root cutting
(4)	Reproduce from spores	Reproduce from underground root

19. Which of these plants have their male and female parts found on separate flowers?

- A. Morning glory
- B. Maize
- C. Cucumber
- D. Hibiscus

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

20. Which of the following shows the correct sequence of the germination of a seedling?

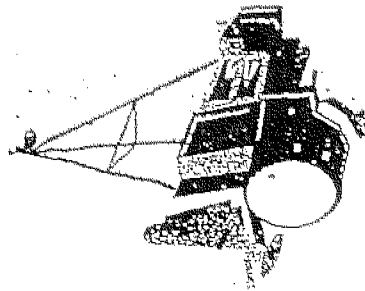
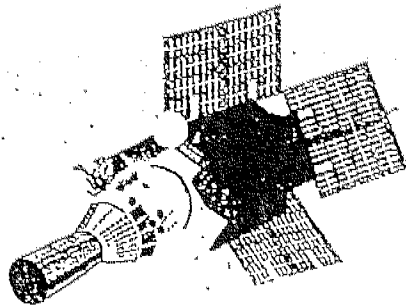
- (1) shoot grows upwards → root grows upwards → new leaves grow → make food
- (2) shoot grows upwards → new leaves grow → make food → root grows downwards
- (3) root grows downwards → make food → shoot grows upwards → new leaves grow
- (4) root grows downwards → shoot grows upwards → new leaves grow → make food

Section B: Open-ended Questions (60 marks)

Answer the following questions in the space provided.

/60

21. The diagrams below show some man-made satellites which were put in space.



(a) State three uses of these man-made satellites. (3marks)

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(b) Name a natural satellite of the Earth. (1mark)

---

22. The table below shows some information about some of the planets in the Solar System.

Planet	Diameter (km)	Rotation time
Mercury	4827	58 days 18 h
Venus	12 229	247 days
Earth	12 755	24 h
Mars	6758	24h 37 min
Jupiter	142 718	9h 50 min
Saturn	119 227	10h 14 min
Uranus	47 144	11h
Neptune	49 075	16h
Pluto	5 873	6 days 9 h

(a) From the table above, which planet takes the longest to complete one rotation? (1 mark)

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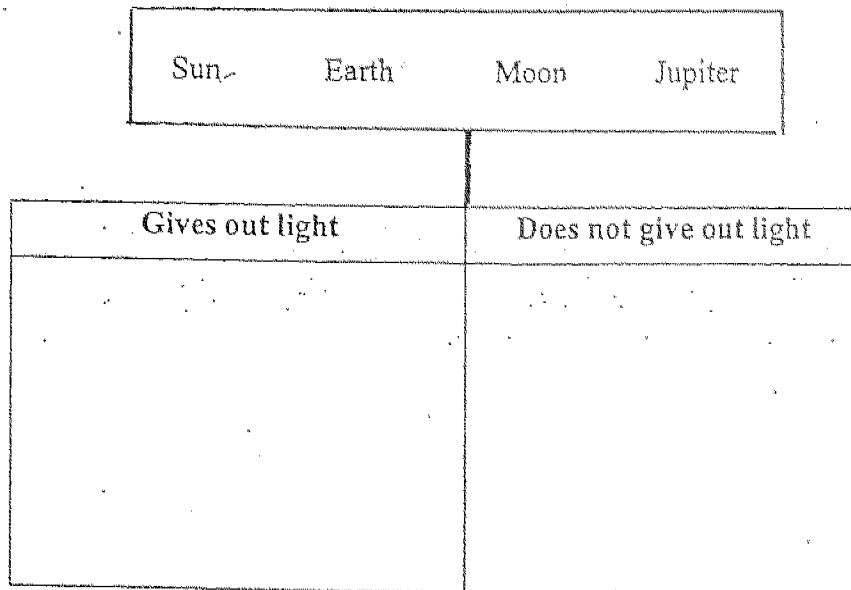
(b) When the Earth has made one complete rotation, Neptune will have made \_\_\_\_\_ rotation(s). (1 mark)

23. For each of the statements below, indicate whether it is 'True' or 'False'. (2 marks)

(a) There is only one moon in the Solar System. \_\_\_\_\_

(b) The different phases of the Moon we see on Earth are caused by the regular movement of the Moon around the Earth. \_\_\_\_\_

24. Group the following words under the correct headings. (2 marks)



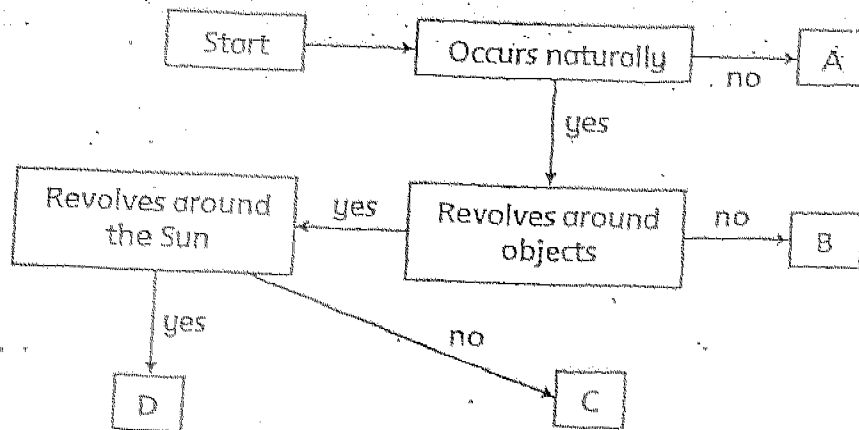
25. The Sun provides green plants with \_\_\_\_\_ to make food.  
The Sun also provides \_\_\_\_\_ to enable living things to survive on Earth. (2 marks)

26. The following statements predict what will happen if the Earth stops spinning on its own axis but continues revolving around the Sun.

Put a tick (✓) against the correct predictions and a cross (✗) against the wrong predictions. (2 marks)

- Half of the Earth will be lighted and the other half will be in darkness at all times.
- The same half of the Earth will be lighted throughout its revolution round the sun.
- The day and night cycle will no longer exist.
- The sunrise and sunset cycle will no longer exist.

27. Study the flow chart below.



Put the following objects through the flow chart above and find out at which exit point (A, B, C or D) they will end at.

(i) Jupiter : \_\_\_\_\_

(ii) Television Satellite : \_\_\_\_\_

(2 marks)

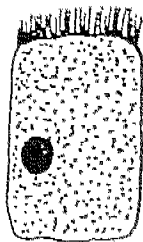


28. Fill in the blanks with the correct words.

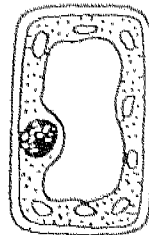
(a) An imaginary line on the Earth that passes from the North Pole to the South Pole is called the \_\_\_\_\_ of the Earth. (1 mark)

(b) The time taken by the Earth to revolve one complete round around the Sun is \_\_\_\_\_ (1 mark)

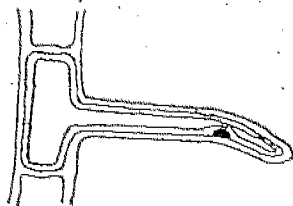
29. The drawings below show some plant and animal cells. Each cell has a different function.



A



B



D



C

(a) Cell C is an organism. What is the name of this organism? (1 mark)

\_\_\_\_\_

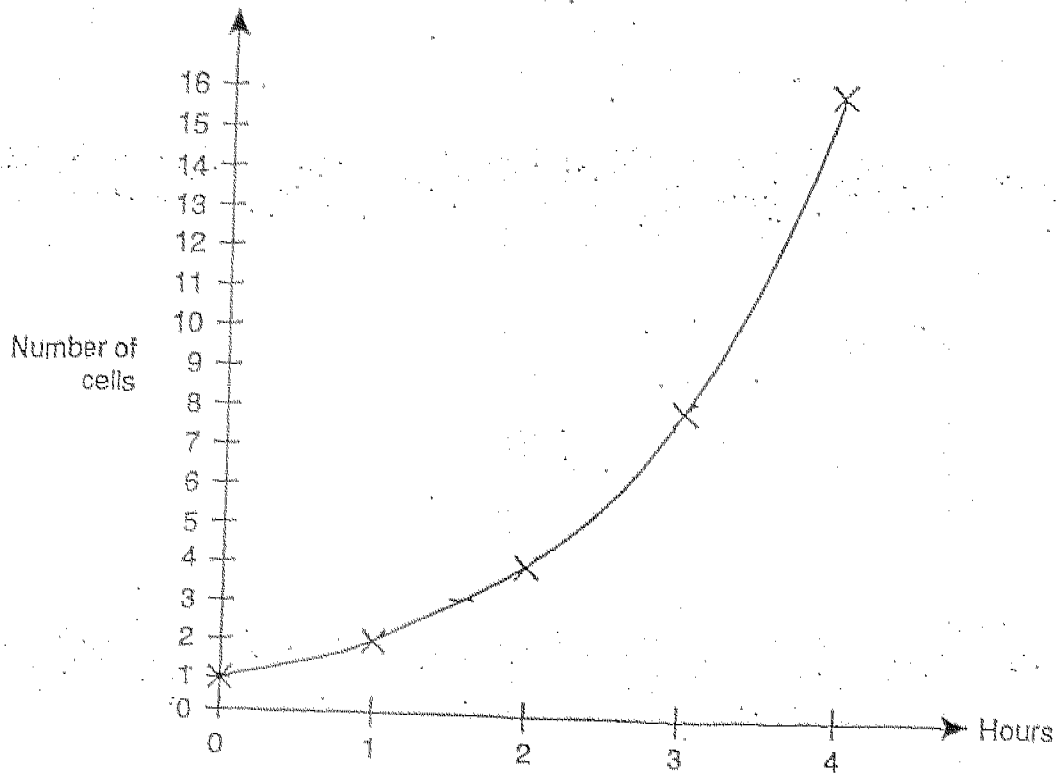
(b) Which of the above cells has/have cell walls? (1 mark)

\_\_\_\_\_

30. Bacterium and yeast are examples of \_\_\_\_\_ organisms. (1 mark)

31. Cell division helps replace \_\_\_\_\_ or \_\_\_\_\_ cells. (2 marks)

32. Kelly placed one unknown cell in some nutrient solution in a small sterile dish. She counted the number of cells as the original cell underwent cell division every hour under a microscope. She then plotted the graph below.



(a) From the graph, what was the number of cells at

0 hour? \_\_\_\_\_

1 hour? \_\_\_\_\_

3 hours? \_\_\_\_\_

4 hours? \_\_\_\_\_

(2 marks)

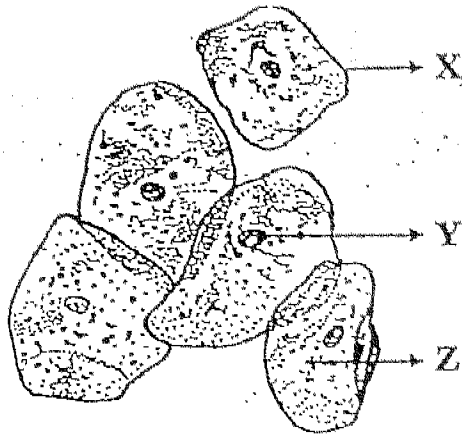
(b) If we assume the conditions remain the same throughout, what would be the number of cells at 6 hours?

\_\_\_\_\_

(1 mark)

33. The diagram below shows typical cells obtained from the cheek of a boy.

Name the parts of the cells labelled X, Y, and Z.



X : \_\_\_\_\_ (1 mark)

Y : \_\_\_\_\_ (1 mark)

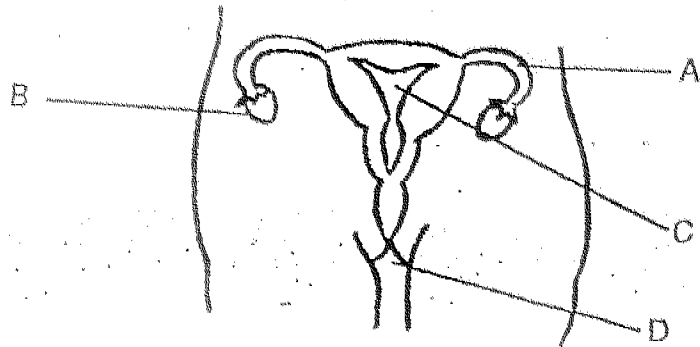
Z : \_\_\_\_\_ (1 mark)

34. For each of the following statements, decide whether they are true or false and put a tick (✓) in the correct column. (2 marks)

Statements	True	False
(a) Chloroplast is found inside chlorophyll.		
(b) Cell division enables a living thing to grow.		
(c) A cell is the basic unit of all living things.		
(d) Different types of cells can have different shapes, sizes and functions.		

35. The nucleus of a cell contains hereditary materials called \_\_\_\_\_ and it also \_\_\_\_\_ all activities of the cell. (2 marks)

36. The diagram below shows the female reproductive system of a human being.



(a) Where does the fertilised ovum attach itself and develop? (1 mark)

\_\_\_\_\_

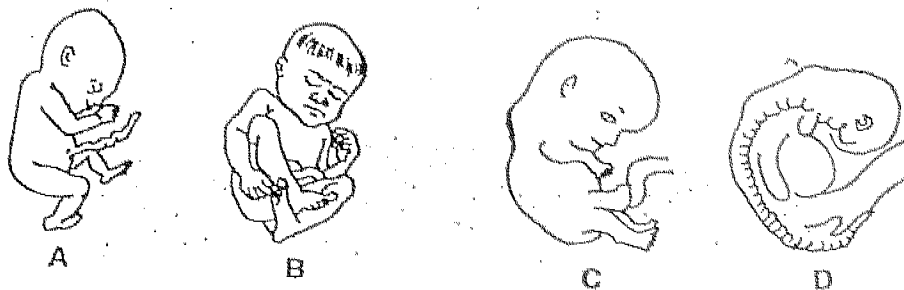
(b) Where does the egg come from? (1 mark)

\_\_\_\_\_

37. For each statement below, tick the correct box to indicate whether it is true, false or not possible to tell. (2 marks)

Statements	True	False	Not Possible to Tell
(a) Tongue-rolling is a characteristic that can be passed down from parents to their children.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(b) Fingerprints in the same family are the same.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(c) We get one set of genes from our father and one set of genes from our mother.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(d) If Tom has black hair, when he has children, they will have black hair too.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

38. A doctor observed and drew the following diagrams to show an unborn baby at different stages of growth inside the mother's womb. (2 marks)



Arrange them in the correct order in the boxes below.

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First

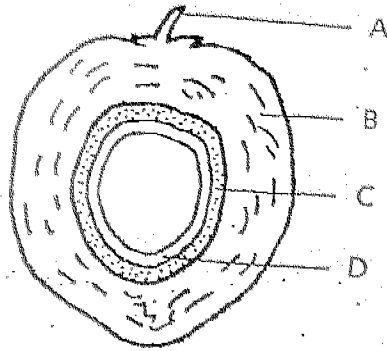
Last

39. Classify the following animals according to their methods of reproduction. Write your answer in the classification table below. (2 marks)

Lizard	Deer
Butterfly	Ostrich

By Laying Eggs	By Giving Birth to their Young

40. The diagram below shows the inside of a coconut fruit.



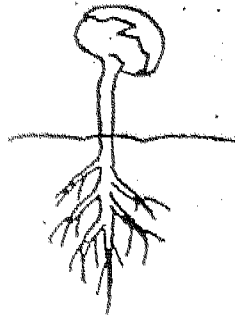
(a) Which part of the fruit enables it to float? (1 mark)

\_\_\_\_\_

(b) Explain how this part helps it to float. (1 mark)

\_\_\_\_\_

41.



The diagram above shows a germinating seed.

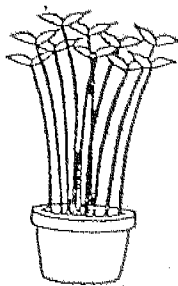
(a) State the conditions necessary for the seed to germinate. (1 mark)

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

(b) Where does the germinating seed get its food from at this stage? (1 mark)

\_\_\_\_\_

42. Look at the two pots of plants below. Both pots of plants are grown under the same conditions.



Pot A



Pot B

After three weeks, the plants in Pot A were taller than those in Pot B. However, they looked less healthy than the plants in Pot B.

Explain why the plants in Pot B were healthier than those in Pot A. (2 marks)

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43. (a) Classify the following seeds/fruits into two groups. (2 marks)

begonia   banana   pineapple   African violet

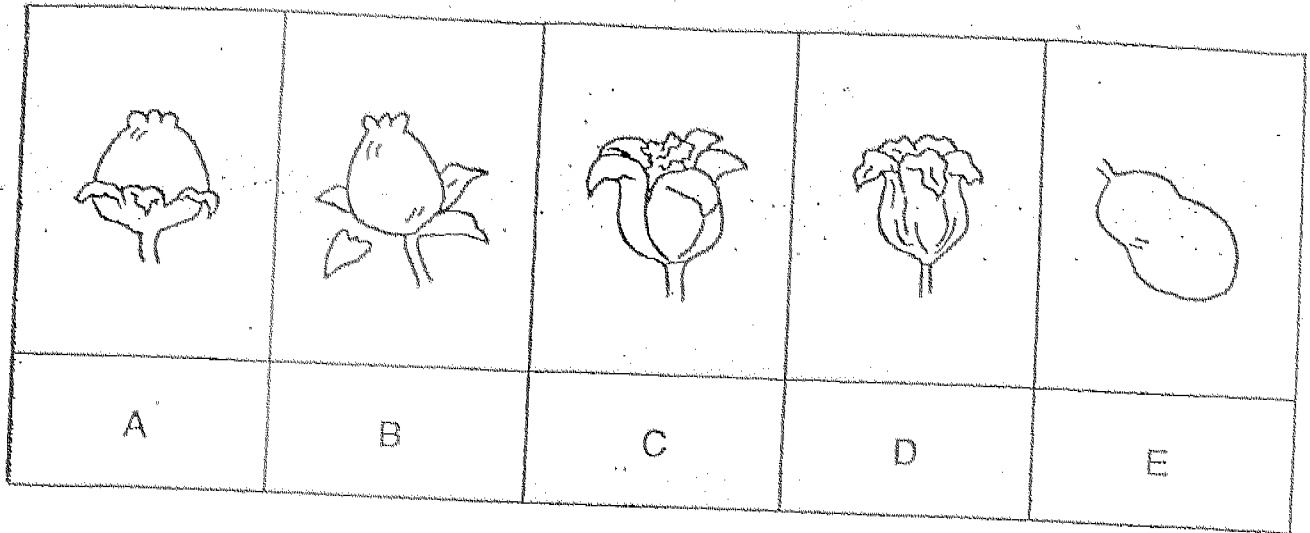
Group A	Group B

(b) How are the above fruits/seeds classified?

Group A : \_\_\_\_\_ (1 mark)

Group B : \_\_\_\_\_ (1 mark)

44. The different stages of the development of a fruit is shown below.



(a) Rearrange the diagrams to show the correct order of the development of the fruit. (2 marks)

1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>

(b) This plant reproduces by \_\_\_\_\_ (1 mark)



45. Peter measured the lengths of five string bean pods and counted the number of seeds in each fruit. He recorded the results in a table as shown below.

String bean fruit	Length of fruit (cm)	Number of seeds
A	18	10
B	15	10
C	22	13
D	28	15
E	20	12

Based on the above results, state whether each of the following statements is "True" or "False" by putting a tick in the correct box. (3 marks)

	Statement	True	False
(a)	The longer the string bean fruit, the more seeds it contains.		
(b)	String bean fruits of 21cm would definitely contain at least 15 seeds.		
(c)	String bean fruits of different lengths could have the same number of seeds.		

46. Three plants; X, Y and Z, were planted on a piece of land as shown in Diagram A.

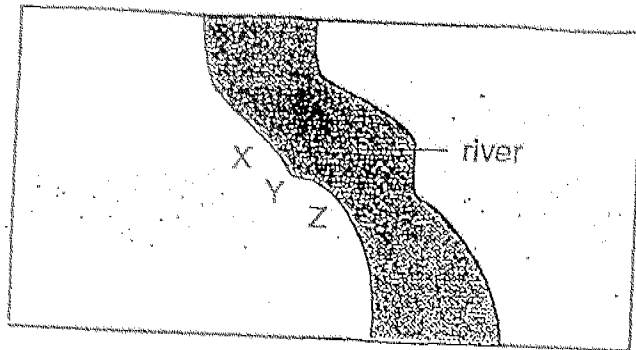


Diagram A

A few years later, many plants were growing on the same piece of land as shown in Figure B.

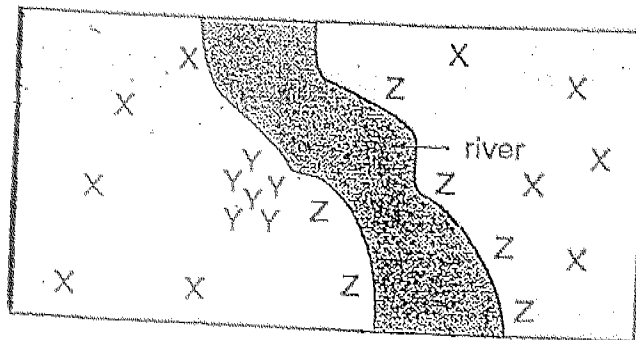


Diagram B

State which of the plants, X, Y or Z, dispersed its seeds/fruits by :

- (a) water - \_\_\_\_\_ (1 mark)
- (b) wind - \_\_\_\_\_ (1 mark)
- (c) splitting - \_\_\_\_\_ (1 mark)

~ End of Paper ~

## SAI Pr 5 Science Answers.

21) a) Communication  
Space exploration  
Weather forecasting

b) The moon.

22) a) Venus

b) 1-5

23) a) False (b) True

24) Sun | Earth  
moon  
Jupiter

25) sunlight, heat

26) ✓ (27) (i) D

X (ii) A

✓ (28) a) axis

✓ b) 365 days

29) a) Cell C is a paramecium.

b) B and D.

30) unicellular

31) old, or damaged

32) a) 1 b) 64

2

8

16...

33) X: Cell membrane

Y: Nucleus

Z: cytoplasm

34) a) False

b) True

c) True

d) True

35) genes, controls.

36) a) C

b) B

38) D, C, A, B

39) Butterfly | Deer

Ostrich

Lizard

40) a) Part B

b) It is light in weight and traps air.

41) a) Warmth, air and water.

b) Seed leaves.

42) Pot B do not fight for

sunlight, nutrient, water

space and air but Pot A

fight for it as it is over crowded.

43) a) Group A

banana

pineapple

Group B

African violet

begonia

b) Reproduce from suckers

b) Reproduce from leaves.

44) a) C, D, A, B, E

b) ~~seeds~~ seeds.

45) a) False

b) False

c) True

46) a) Z

b) X

c) Y