

NAN HUA PRIMARY SCHOOL  
SEMESTRAL ASSESSMENT 1 2007  
SCIENCE  
PRIMARY FIVE

Name : \_\_\_\_\_ ( )

Section A: \_\_\_\_\_ / 60

Class : Primary 5 \_\_\_\_\_

Section B: \_\_\_\_\_ / 40

Date : 10-5-2007

Total: \_\_\_\_\_ / 100

Duration : 1 hr 45 min

\_\_\_\_\_  
Parent's Signature

**Section A : (30 X 2) marks**

For each question 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.

1. Which of the following characteristics can be passed from parents to their offspring?

- A: Shape of face
- B: Length of fingernails
- C: Shape of nose
- D: Colour of hair

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

2. Which of the following statements about heredity are true?

- (A) The offspring can inherit traits from both parents.
- (B) A female parent cannot pass her traits to a male child.
- (C) Heredity is the passing on of characteristics from offspring to parents.
- (D) Inherited traits sometimes do not show in one generation, but may reappear in the next generation.

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

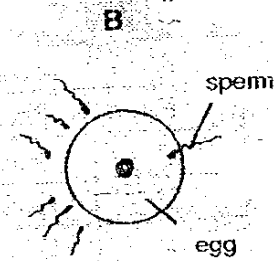
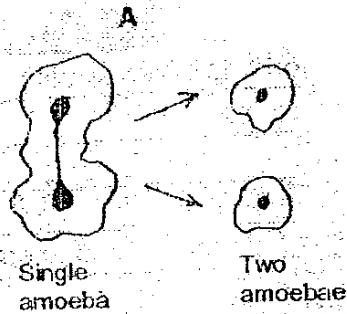
3. Which part of the female reproductive system does the fertilized egg develop in?

- ① The ovary
- ② The womb
- ③ The penis
- ④ The testis

4. Which of the following animal cells pass genetic information from parent to offspring?

- ① Brain cell and ovum
- ② Sperm and blood cell
- ③ Blood cell and brain cell
- ④ Ovum and sperm

5. Diagrams A and B below show reproduction in an amoeba and in human beings respectively.



Which of the following statements about the 2 methods of reproduction is/are true?

- (A) In diagram A, only one parent is involved, while in diagram B, a male and a female parent are involved.
  - (B) In diagram A, the young does not have the same characteristics as the parent.
  - (C) In diagram A, fertilization is external while in diagram B, fertilization is internal.
- (1) A only  
 (2) B only  
 (3) A and C only  
 (4) A, B and C
6. Which of the following statements about sexual reproduction is/are true?

- (A) Most animals reproduce by sexual reproduction.
  - (B) In sexual reproduction, the sperm joins with the egg to produce a fertilized egg.
  - (C) Sexual reproduction in plants include pollination, fertilization, seed dispersal and germination.
  - (D) Yeast cell reproduce by sexual reproduction.
- (1) A only  
 (2) A and B only  
 (3) A, B and C only  
 (4) A, B, C and D

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7. The human sperms are produced in the \_\_\_\_\_ of a male person.

- ① oviduct
- ② penis
- ③ ovary
- ④ testes

8. Which of the following statements about plants are true?

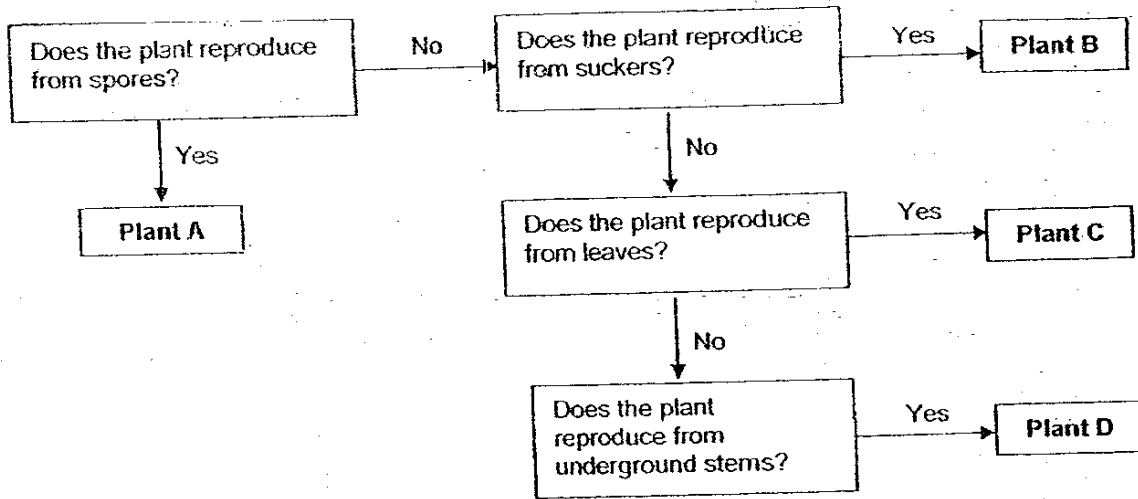
- A: Plants reproduce by seeds only.
- B: Only non-green plants have spores.
- C: The African tulip fruit splits up and the seeds are dispersed by wind.
- D: The seeds of the mango and the mimosa plant are dispersed by animals.

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

9. Which one of the following is not a characteristic of seeds dispersed by wind?

- ① They are small.
- ② They are light.
- ③ They have hooks.
- ④ They have wing-like structures.

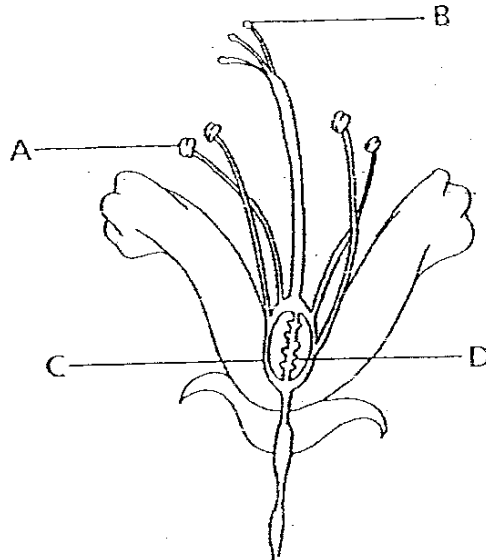
10. Study the flow chart below carefully.



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

	Plant A	Plant B	Plant C	Plant D
①	fern	pineapple	onion	bryophyllum
②	moss	banana	begonia	ginger
③	pineapple	morning glory	African violet	potato
④	fern	hibiscus	morning glory	begonia

11. Study the picture below carefully.

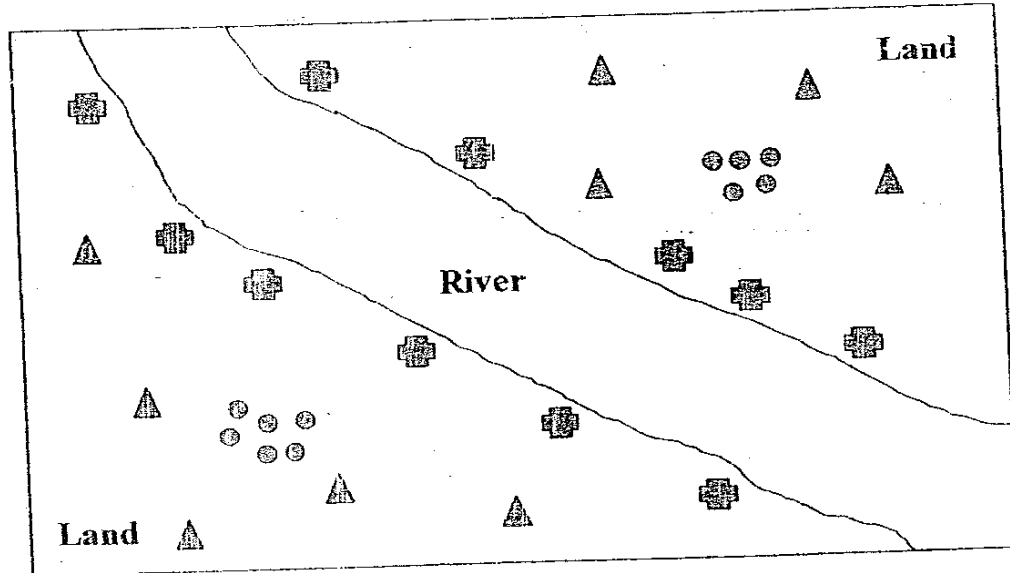


During pollination, which of the labelled parts should the pollen grains land on in order for fertilization to take place?




- ① A
- ② B
- ③ C
- ④ D

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

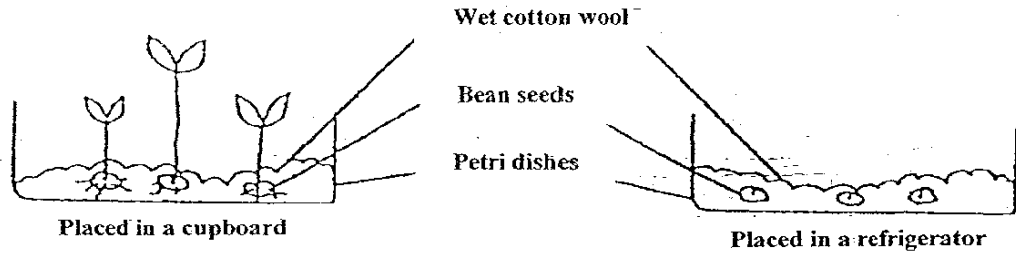


How are the seeds of each type of plant most likely dispersed?

			
①	Splitting action	Wind	Water
②	Water	Splitting action	Wind
③	Water	Wind	Splitting action
④	Wind	Splitting action	Water

13. Which of the following statements about germination is/are **true**?
- A: A seed can remain dormant until the conditions are favourable for germination.
- B: When a seed starts to germinate, the shoot appears first.
- C: Before the seedling is able to make its own food, it gets its food from the seed leaves.
- ① A only  
 ② A and B only  
 ③ A and C only  
 ④ A, B and C.

14. Jeffrey tried to grow some beans. He placed the beans on some wet cotton wool in 2 petri dishes as shown below. He then placed 1 dish in the refrigerator and the other in a cupboard. After a few days, the following results were obtained.

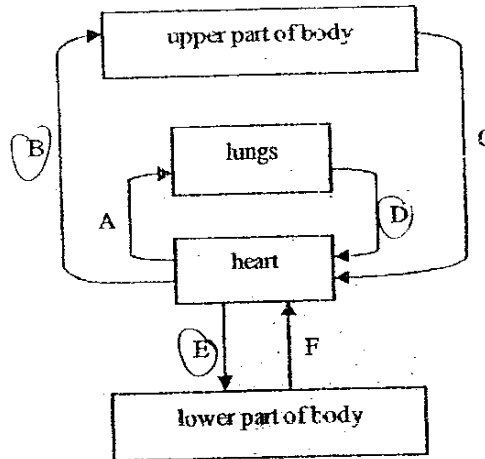


Based on the above results, Jeffrey concluded that \_\_\_\_\_ is necessary for the seeds to germinate.

- ① water
  - ② light
  - ③ warmth
  - ④ cotton wool
15. The food-carrying tubes of a plant carry food from the \_\_\_\_\_.
- ① flowers to the roots.
  - ② flowers to the leaves.
  - ③ roots to the other parts of the plant.
  - ④ leaves to the other parts of the plant.



16. The diagram shows the circulatory system in Man.



Arteries that carry oxygen-rich blood are indicated by arrows

- ① A, B and E
- ② B, D and E
- ③ A, C and F
- ④ C, D and F

17.



Torch

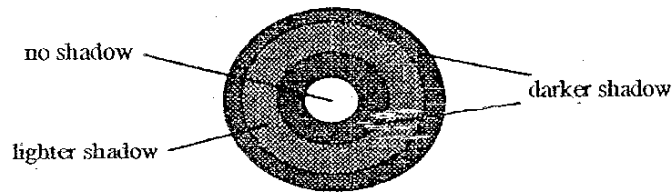


Object X



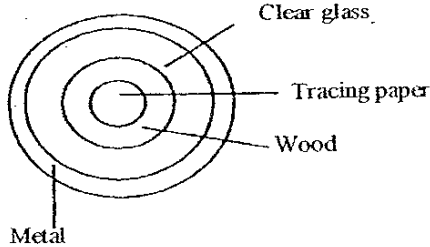
Screen

An object made of different materials is placed between a torchlight and a screen. Its shadow is shown on the screen as follows.

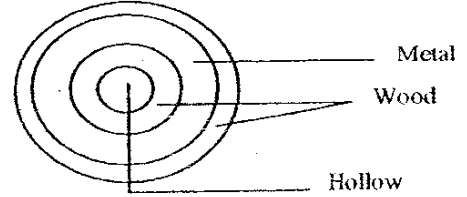


Which one of the following is likely to be the object?

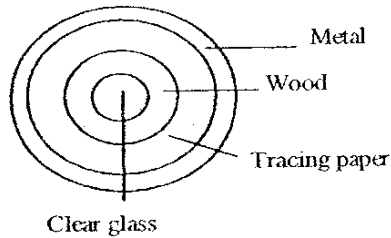
(1)



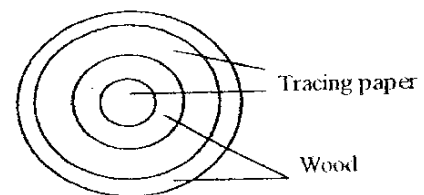
(2)



(3)



(4)

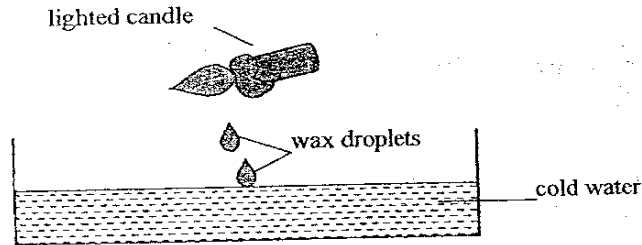


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18. Which one of the following statements about light and heat is correct?

- (1) Light can be seen but not heat.
- (2) Light can travel a long distance but not heat.
- (3) Heat can be absorbed but not light.
- (4) Heat is a form of energy but not light.

19.

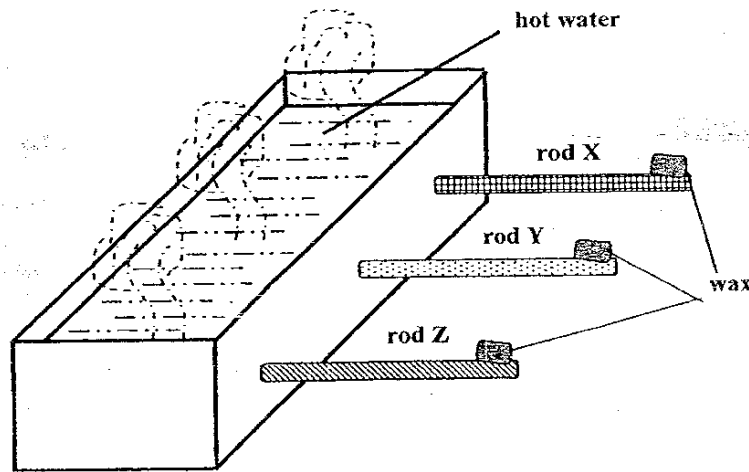


Which statements are true about the droplets of wax when they fall onto the cold water?

- (A) They gain heat.
- (B) They lose heat.
- (C) They change state.
- (D) They change colour.

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

20. An experiment is set up as shown in the diagram. Rods X, Y and Z are of the same length but of different materials. Three pieces of wax from a candle are placed at the tip of each rod. It is observed that the wax on X melts first followed by that on Y and then Z. Which one of the following statements explains the observation?



- (1) Some materials conduct heat more easily than others.
- (2) Some materials give off heat more easily than others.
- (3) Some pieces of wax melt more easily than other pieces.
- (4) Some parts of the water gain heat more easily than other parts.

21. Study the table below.

Planet	Distance from the Sun (million km)	Diameter of the planet (km)	Time taken to make one revolution around the Sun	Time taken to make one rotation
Mercury	58	4880	88 days	59 days
Venus	108	12104	225 days	243 days
Mars	228	6794	687 days	24 hours
Neptune	4497	49532	165 years	16 hours

Based on the above table, which of the following conclusions are true?

- A: A planet's diameter depends on its distance from the Sun.
- B: The time taken to make one rotation depends on the diameter of the planet.
- C: The time taken to make one revolution around the Sun depends on the distance from the Sun.

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

22. Which of the following statements is/are true about the Sun?

- (A) The Sun is a star and it gives out its own light and heat.
- (B) The Sun revolves around the Earth.
- (C) The Sun is the closest star to the Earth.
- (D) The Sun is made up of a huge mass of very hot liquids.

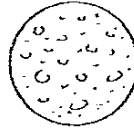
- ① A only
- ② A and C only
- ③ B, C and D only
- ④ A, B, C and D

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23. How are the Moon and the Earth similar?



Earth

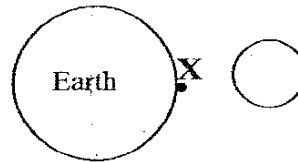
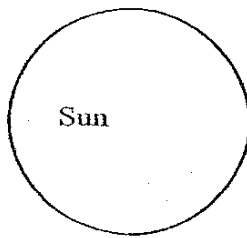


Moon

- A: They are both man-made satellites.
- B: They both reflect light from the Sun.
- C: They both rotate about an axis.

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

24.



The diagram above shows that the earth is between the sun and the moon and that the three are in a straight line. A person is standing at position X on the Earth. Which of the following statements are true?

- A: The person at position X is experiencing day-time.
- B: The person at position X is experiencing night-time.
- C: The shadow of the Earth is formed on the Moon.
- D: The shadow of the Moon is formed on the Earth.

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

25. Which of the following factors contribute to the ability of the Earth to sustain life?

- A: The existence of a natural satellite that moves around the Earth.
- B: The ideal distance of the Earth from the Sun.
- C: The presence of an atmosphere.

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

26. What is the main function of the cell membrane of a plant cell?

- ① It gives the cell a fixed shape.
- ② It controls activities in the cell.
- ③ It gives the cell a green colour.
- ④ It controls substances entering the cell.

27. Which part of a cell is partially permeable?

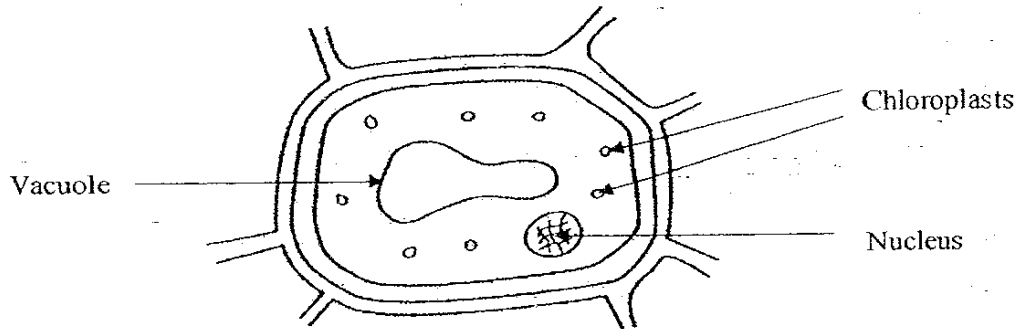
- ① Nucleus
- ② Cytoplasm
- ③ Cell wall
- ④ Cell membrane

28. Which of the following are found in all plant cells?

- A: Cell wall
- B: Chloroplasts
- C: Cell membrane
- D: Cytoplasm

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

29) The diagram below shows the structure of a cell.

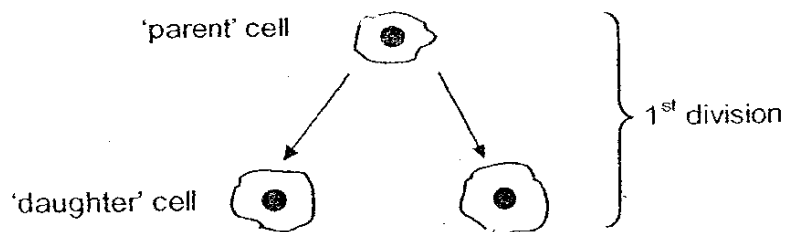


From which of the following could the cell have come from?

- A: From the leaf of a coleus plant
- B: From a grasshopper
- C: From a root of a balsam plant
- D: From a stem of a cactus plant

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

30. The diagram below shows the cell division of a unicellular micro-organism.



What is the number of 'daughter' cells produced from the single 'parent' cell after the 4<sup>th</sup> division?

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

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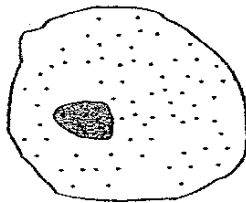
Name : \_\_\_\_\_ ( ) Marks : \_\_\_\_\_ / 40

Class : Primary 5 \_\_\_\_\_

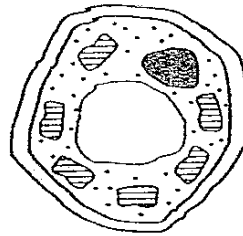
**Section B : 40 marks**

Write your answers to questions 31 to 46. The number of marks available is shown in brackets ( ) at the end of each question or part question.

31. The diagram below shows a plant cell and an animal cell.  
The cells are labeled A and B.



Cell A



Cell B

- (a) From the above information, identify the plant cell and the animal cell. (1m)

Plant cell : \_\_\_\_\_

Animal cell : \_\_\_\_\_

- (b) (i) A certain part of the plant cell is **not** found in the animal cell.  
Name this part. (1m)

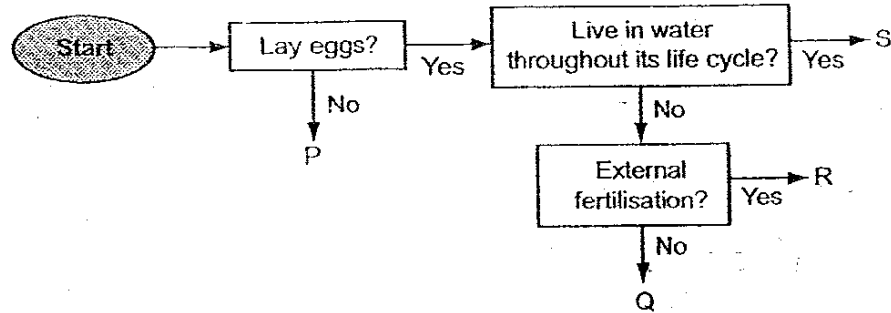
\_\_\_\_\_

- (ii) What is the function of this part? (1m)

\_\_\_\_\_

\_\_\_\_\_

32. Study the flow chart below.



(a) In which group, P, Q, R or S, does a frog belong to?

\_\_\_\_\_ (1 m)

b) In which group, P, Q, R or S, does a dolphin belong to?

\_\_\_\_\_ (1 m)

c) Based on the information from the flow chart, state a similarity between Animals R and S.

\_\_\_\_\_ (1 m)

33. Diagrams X and Y show two special cells that the human male and human female produce, respectively.



Diagram X

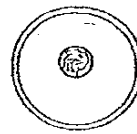


Diagram Y

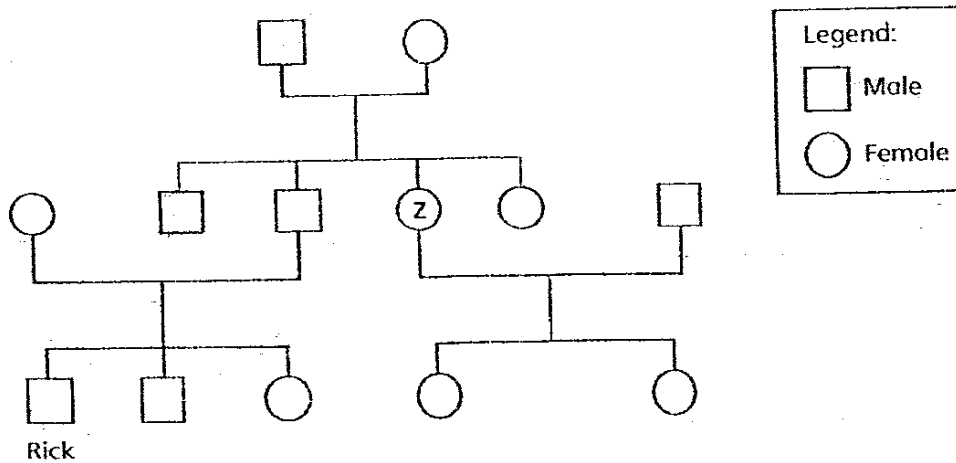
(a) Which organ produces the cell shown in diagram X?

\_\_\_\_\_ (1 m)

(b) Name the process when a cell from diagram X fuses with the cell from diagram Y.

\_\_\_\_\_ (1 m)

34. Study the family tree below.



(a) What is Z's relationship to Rick?

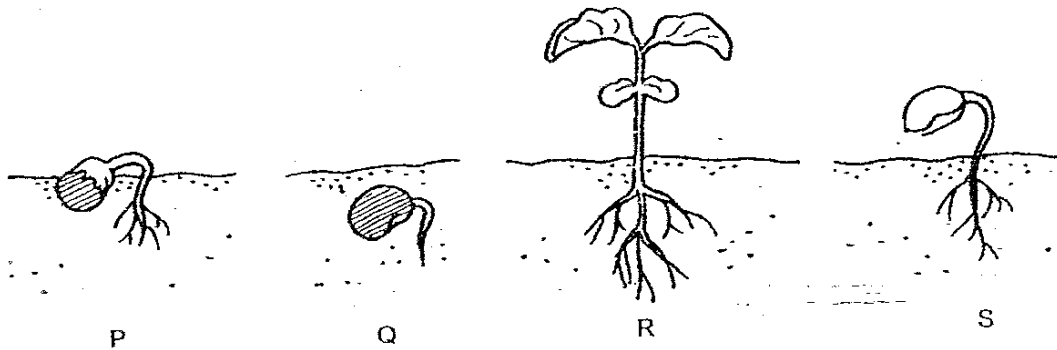
(1 m)

(b) Shade the symbol that represents Rick's paternal uncle.

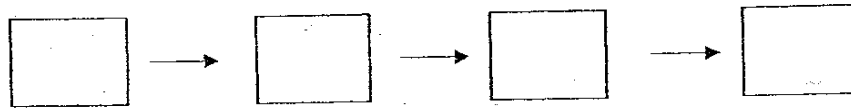
(1 m)

50

35. Study the diagrams shown below.



(a) Rearrange the stages (P, Q, R and S) in the correct order to show how a seed becomes a young plant. (1 m)



(b) Is sunlight necessary for growth in each of the stages that are shown in the above diagrams? Indicate your answer by classifying the 4 stages (P, Q, R and S) in the table below. (2 m)

Stages that need sunlight	Stages that do not need sunlight

(c) What is the function of the seed leaves? (1 m)

\_\_\_\_\_

36. (a) What process must take place first before fertilization can occur in flowering plants?

\_\_\_\_\_ (1 m)

- (b) Name **two agents** that enable this process to take place.

\_\_\_\_\_ (1 m)

- (c) Describe what happens during the process mentioned in (a).

\_\_\_\_\_  
\_\_\_\_\_ (1 m)

37. The table shows some plants that have been grouped according to the way their seeds are dispersed.

Group A	Group B	Group C	Group D
shorea	guava	nipah	balsam
angsana	love grass	coconut	rubber

Name the method of dispersal for each group of plants. (4m)

Group A : \_\_\_\_\_

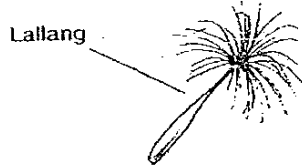
Group B : \_\_\_\_\_

Group C : \_\_\_\_\_

Group D : \_\_\_\_\_

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38. Study the diagram of the Lallang fruit below.



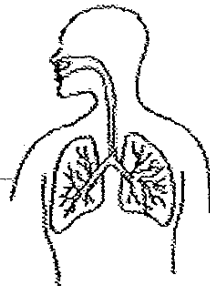
(a) How is the above fruit likely to be dispersed?

\_\_\_\_\_ (1m)

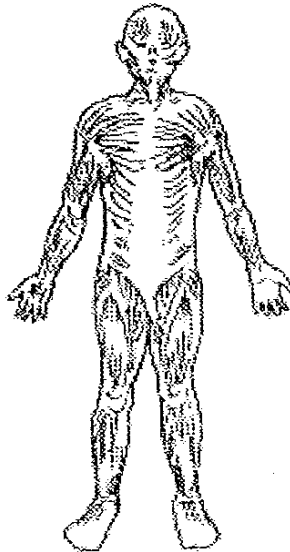
(b) Explain your answer in (a).

\_\_\_\_\_ (1m)

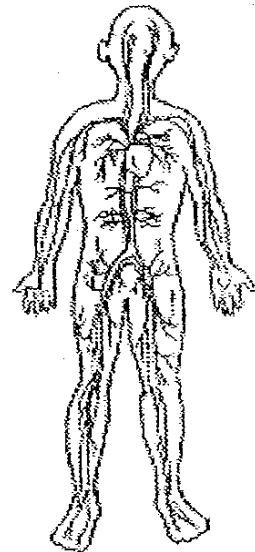
39. Study the diagrams below carefully.



X



Y



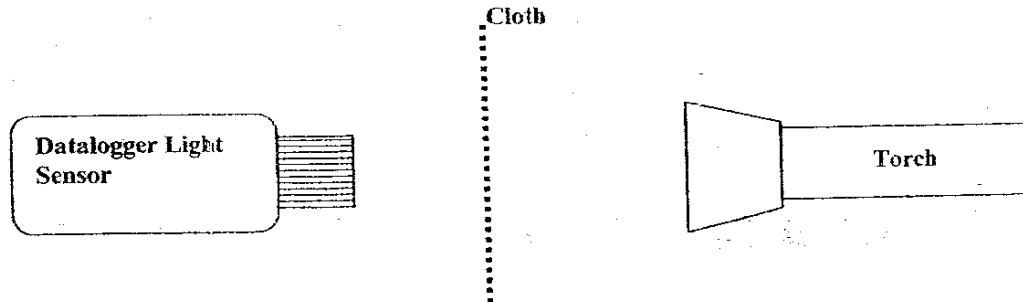
Z

Which one of the following has a similar function as the plant transport system? (2m)

\_\_\_\_\_

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40. James wanted to find out the transparency of different types of cloth. He set up an experiment as shown below. (2m)

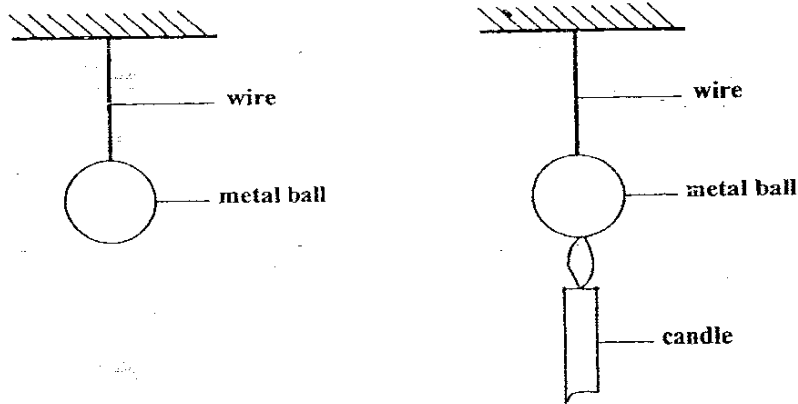


By shining a beam of light on one side of a cloth, he took readings from a datalogger light sensor on the other side. He repeated the experiment using different types of cloth.

To ensure that the test was fair, which variables should he keep the same and which variables should he change? Put a tick (✓) in the correct box.

Variables	Keep the same	Change
Distance between the torch and the cloth		
Distance between the cloth and the light sensor		
Type of cloth used		

41. The diagram below shows a metal ball that is suspended. A lighted candle is then placed below the metal ball.

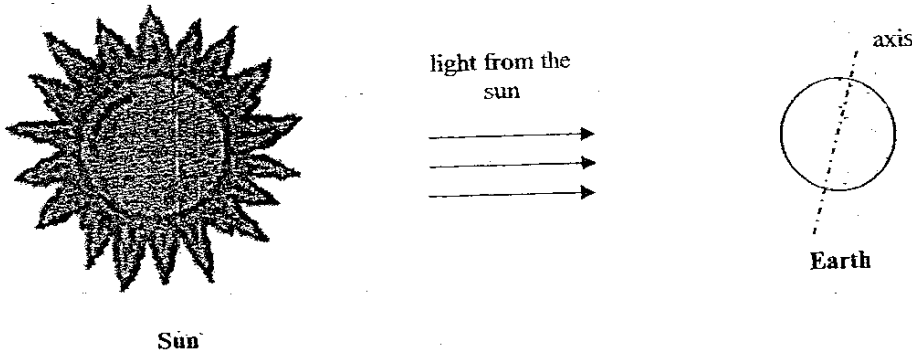


Some changes happen to the metal ball when the lighted candle is placed below it. Describe 2 of these changes. (2m)

- (i) \_\_\_\_\_  
\_\_\_\_\_
- (ii) \_\_\_\_\_  
\_\_\_\_\_




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



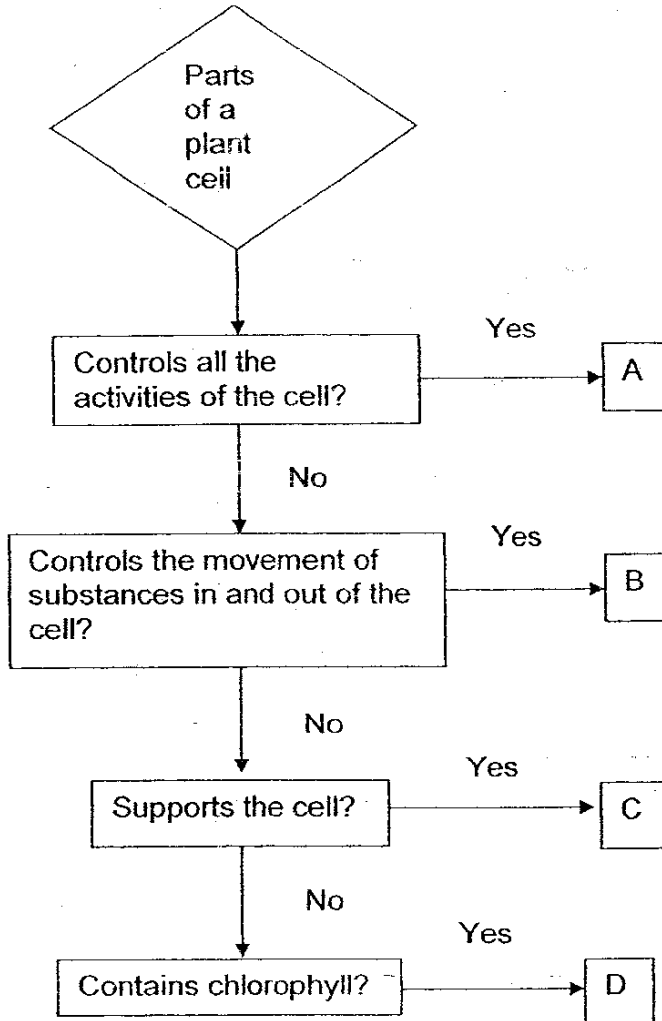
- (a) Shade the part of the Earth that is experiencing night time. (1m)
- (b) David is able to watch the World Cup telecast 'live' at home although it is taking place in another country. Explain why it is possible for the World Cup to be telecast 'live'. (1m)

43. Roger observed the phases of the Moon on every Saturday night last month. He observed a New Moon on the first Saturday as shown in the table below.

Draw the correct phases of the Moon observed for the 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> Saturday of the month in the table below. (3 m)

1st Saturday	2nd Saturday	3rd Saturday	4th Saturday
			

44. Study the flow chart below carefully.



The letters A to D represent the different parts of a plant cell. Write down which part of the plant cell each letter represents. (2 m)

A: \_\_\_\_\_

B: \_\_\_\_\_

C: \_\_\_\_\_

D: \_\_\_\_\_

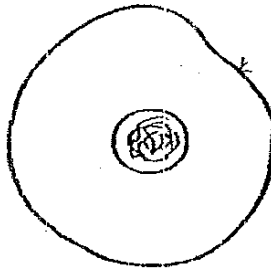
57

45. Put a "T" for statements that are true or an "F" for statements that are false. (2 m)

- (a) All cells are surrounded by a cell membrane. ( )
- (b) All plant cells have chloroplasts. ( )
- (c) All cells have a cell wall. ( )
- (d) All cells have cytoplasm. ( )

46. Certain types of cells allow water but not substance X to move in and out of them.

(a) In the diagram of a cell below, name and label the part that stops substance X from entering the cell. (1 m)



(b) When some of these cells were placed in solution X (solution obtained by dissolving substance X in water), the cells shrivelled. Why did the cells shrivel?

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(1 m)

END-OF-PAPER

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Nan Hua Primary School

Primary 5 Science SA1 Exams (2007)



**SECTION A : (60 MARKS)**

Qn no.	Ans
1	2
2	1
3	2
4	4
5	1
6	3
7	4
8	2
9	3
10	2

Qn no.	Ans
11	2
12	3
13	3
14	3
15	4
16	2
17	3
18	1
19	2
20	1

Qn no.	Ans
21	2
22	2
23	3
24	3
25	3
26	4
27	4
28	2
29	2
30	3

**SECTION B (40 MARKS)**

31a. Plant cell: Cell B      Animals cell : Cell A

31b. (i) The part is cell wall.

(ii) The function of cell wall is to support the plant cell and give it a regular shape.

32a. A frog belongs to group B.

32b. A dolphin belongs to group P.

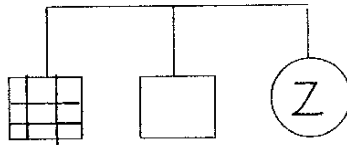
32c. Both Animals R and S lay eggs.

33a. The testes of the male produce the cell.

33b. The process is Fertilisation.

34a. Z is Rick's paternal aunt.

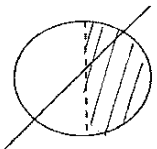
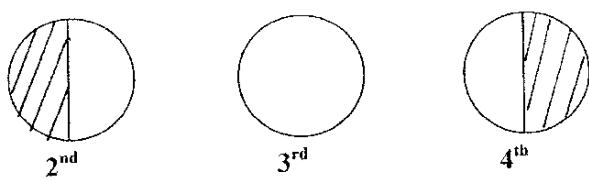
34b.



35a. Q → P → S → R

35b. R, P, Q and S

35c. The seedlings gets energy from the food stored in seed leaves to grow before it can make its own food.

- 36a. The process is pollination.  
36b. The two agents are wind and insect.  
36c. Pollen grain from the anther is transferred to the stigma.
37. A: Dispersal by wind.  
B: Dispersal by animals.  
C: Dispersal by water.  
D: Dispersal by splitting (splitting open forcefully).
- 38a. The fruit is likely to be dispersed by wind.  
38b. The Lallang fruit is small and has feathery structure that enables it to stay afloat in the air for a longer period of time to travel a longer distance away from the parent plant.
39. Z has a similar function as the plant transport system.
40. Keep the same  
Keep the same  
Change
41. (i) The metal ball expands. (due to the heat from the flame.)  
(ii) The temperature of the metal ball increased.
42. 
- 42b. The information of the world cup is transmitted from the satellite dish of the country the world cup is taking place to the communication satellite then to David's television, so he can watch world cup 'live'.
43. 
44. A: Nucleus  
B: Cell membrane  
C: Cell wall  
D: Chloroplast
- 45a. T  
45b. F  
45c. F  
45d. T
- 46a. Cell membrane.  
46b. Water escaped from the cell to solution X, causing the cell to shrivel.