Samagra Shiksha, Keralam
Annual Evaluation 2023-24

E 906 - Bio

Class : IX

Biology

Time : 1½ Hours
Score : 40

Instructions
- 15 minutes is given as cool off time. You may use the time to read the questions and plan your answers.
- Answer only on the basis of instructions and questions given.
- Keep in mind the score and time while answering the questions.

(5 × 1 = 5)

Answer any 5 questions from 1 - 6. Each carries One score.

1

1. Identify the locomotory structure of the given organism.

.1
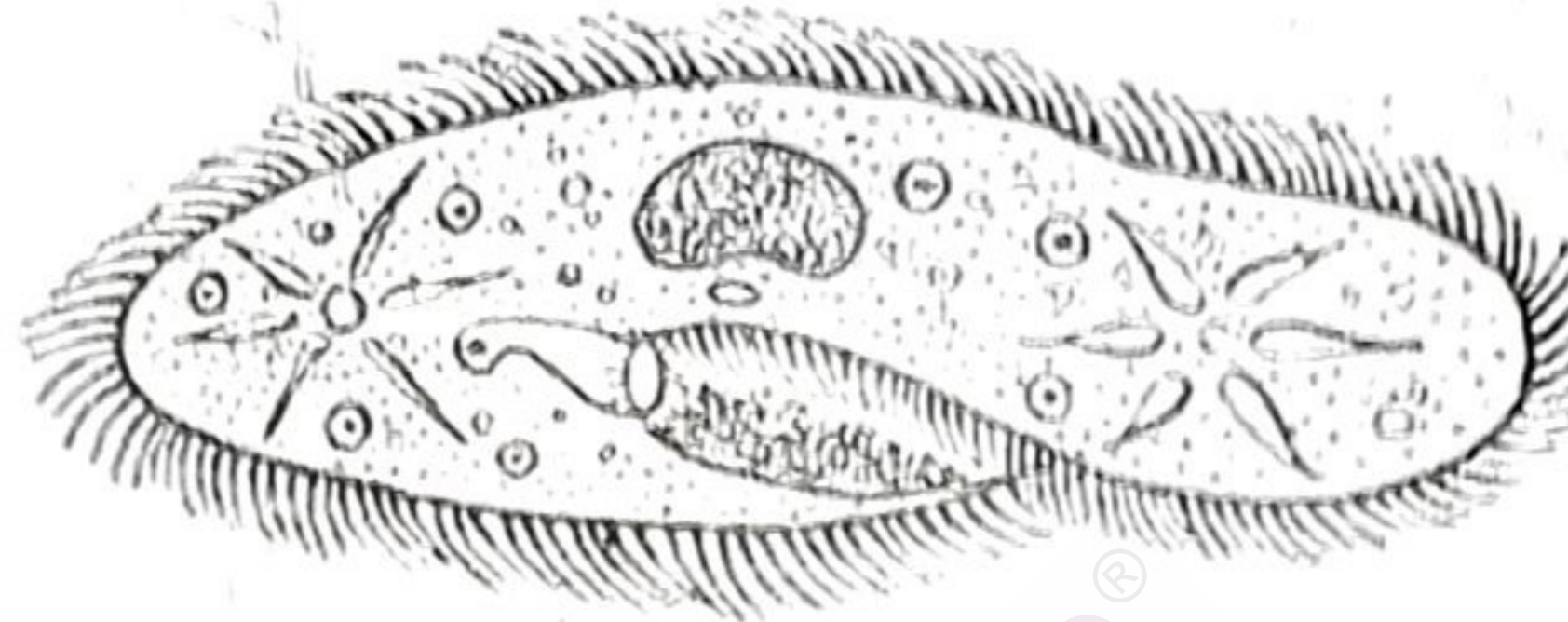
2. Analyse the characteristics given below and identify the muscle cell.
   - Spindle shaped cells.
   - Makes involuntary movements possible.

1

3. In which phase of cell division spindle fibre formation takes place?

   (Prophase, Metaphase, Anaphase, Telophase)

1

4. Select the correct answer by evaluating the given statement and its reason.

   Statement : Monocots do not increase their girth beyond an extent.

   Reason : They do not possess lateral meristem.
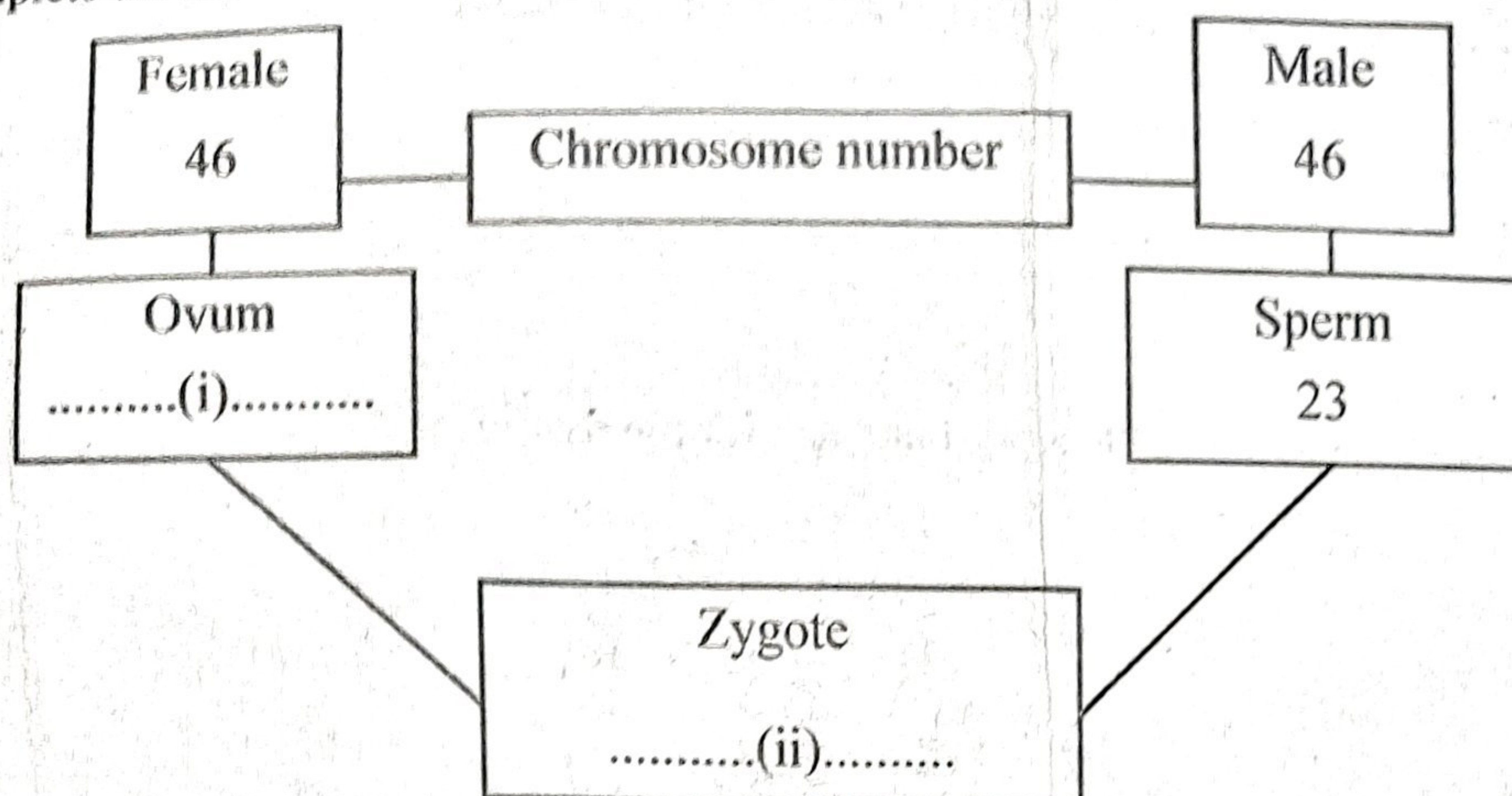
   a) Statement correct, reason incorrect.

   b) Both the statement and the reason are correct.

   c) The statement is incorrect, and the reason correct.

   d) Both the statement and the reason are incorrect.

1

5. Correct mistakes, if any, on the underlined part.

   a) Lungs expel CO_2.

   b) Urea is formed in the kidneys.

   c) Water and salts are expelled through the skin.
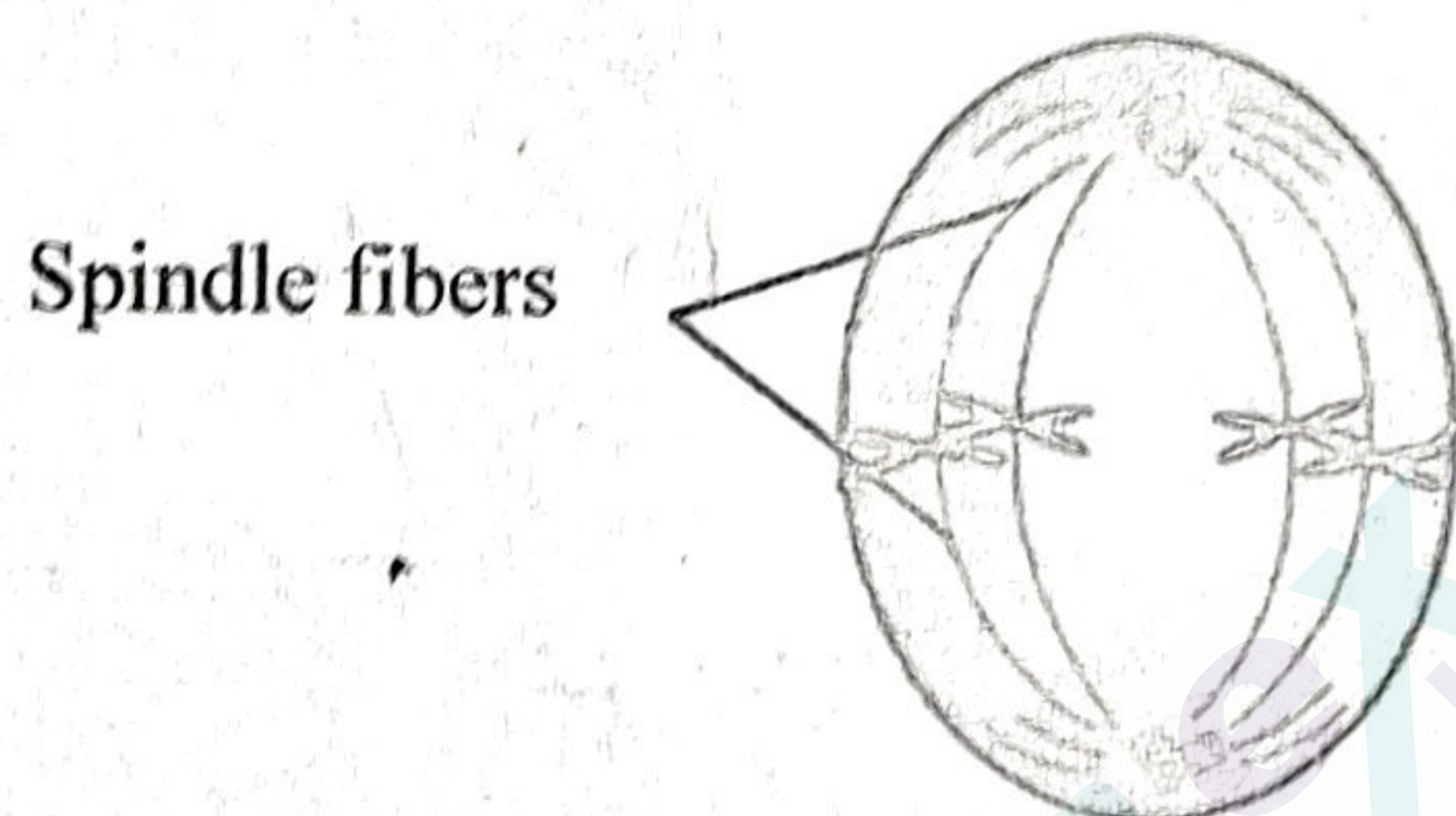
6. Complete the illustration suitably.   1

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  ┌──────────┐      ┌───────────────────┐      ┌──────────┐
  │  Female  │──────│ Chromosome number │──────│   Male   │
  │    46    │      └───────────────────┘      │    46    │
  └──────────┘                                 └──────────┘
       │                                            │
  ┌──────────┐                                 ┌──────────┐
  │   Ovum   │                                 │  Sperm   │
  │ .....(i).....│                             │    23    │
  └──────────┘                                 └──────────┘
        \                                        /
         \          ┌──────────────┐            /
          \─────────│    Zygote    │───────────/
                    │ ......(ii)......│
                    └──────────────┘
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Answer any 6 from questions 7 - 13. Each carries Two scores.   (6 × 2 = 12)

7. Observe the figure and answer the questions.

Spindle fibers

a) Which stage of mitosis is indicated here?   1
b) What changes occur during this stage?   1

8. Types of joints and their positions are given in the box. Make suitable pairs as in the given model.   2

    Model : Pivot joint- the point where the first vertebra joins the skull

> Gliding joint, Elbow, the point where the first vertebra joins the skull, the point where bones of upper arm and shoulder joins, hinge joint, wrist, pivot joint

9. The conversation between two children is given below. Analyse it and answer the question.

    Child 1 -   "It is through meiosis that the chromosome number in humans is maintained constant even after generations."

    Child 2 -   "No. It's mitosis that helps."

    To whom do you agree? Why?   2

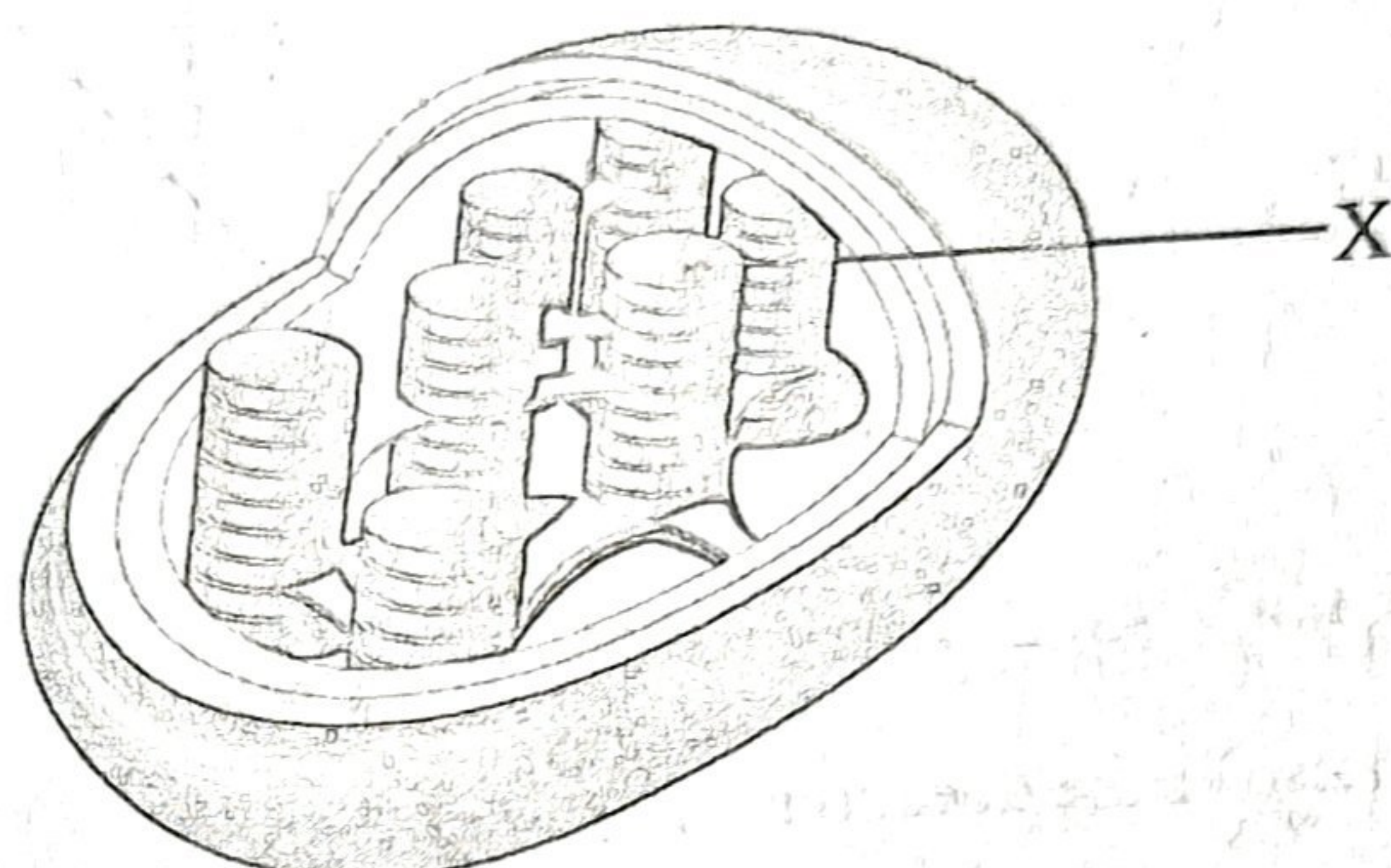10. Examine the given statements and answer the questions.

    i. Roots grow towards water.

    ii. The leaves of Mimosa (touch-me-not plant) fold when we touch them.

    Which types of plant movements are mentioned in **i** and **ii**? Substantiate.   2

11. Observe the picture of chloroplast and answer the following.

    a)   What does 'X' indicate?   1

    b)   Write any two accessory pigments found in 'X'.   1

12. Write the important points that can be included in a pamphlet about the topic *'Old Age is an inevitability of Life'*.   2

    Hints :   ▫ Physical changes of old age.

               ▫ Attitude towards them.

13. Rearrange column B in accordance with column A.   2

A Damage	B Symptoms
Muscular dystrophy	The stretching or breaking of ligaments
Sprain	Damage to cartilage
Rheumatic arthritis	Displacement of bones in joints
Dislocation	Degeneration of muscles due to various reasons

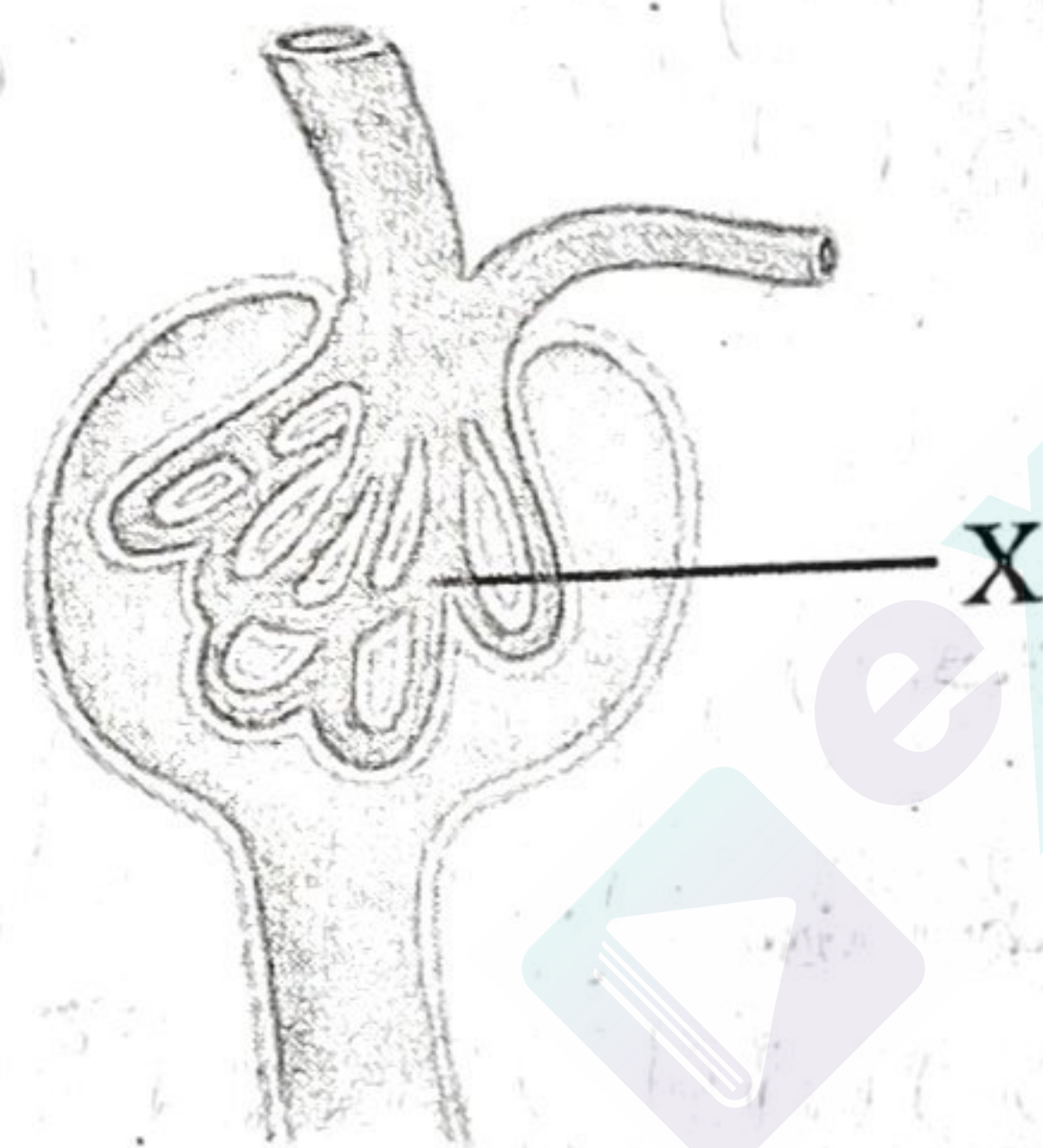Answer any 5 from questions 14 - 20. Each carries Three scores.   (5 × 3 = 15)

14. Observe the figure and answer the following.
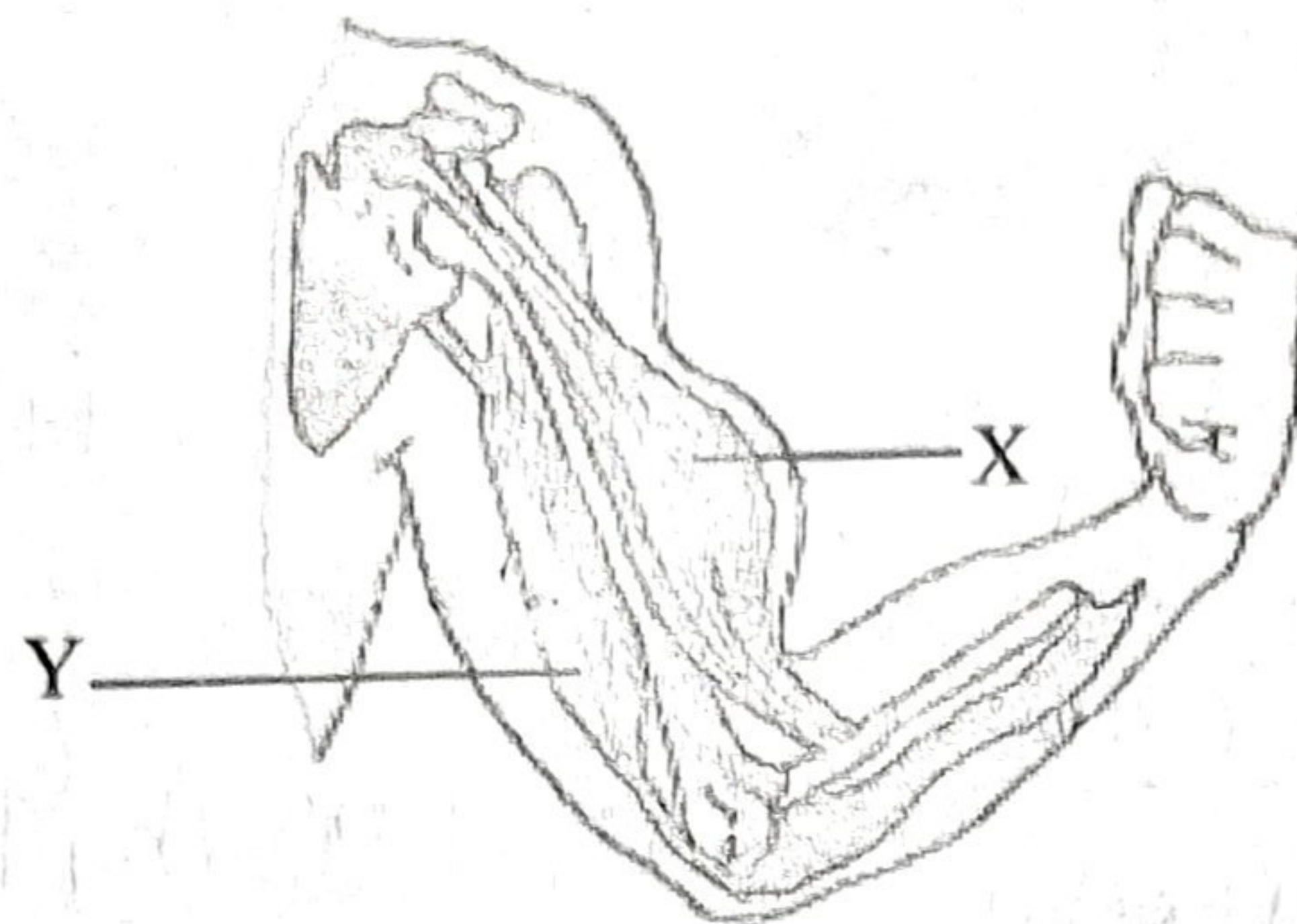
a) Identify the muscles labelled as 'X' and 'Y'.   1

b) Name the part which connect these muscles to the bones.   1

c) How does the action of these muscles help in the movement of forelimbs?   1

15. Analyse the illustration and answer the following questions.

a) Name the process of urine formation that takes place in the part labelled 'X'.   1

b) What are the features of 'X' that helps in this process?   1

c) Does the fluid form as a result of this process turn into urine completely?

Why?   1

16. Analyse the Statement and answer the questions.

When we engage in continuous and strenuous exercises or games, muscles temporarily lose their power of contraction.

a) Name this condition that happens to muscles.   1

b) Give reason for such a condition.   1

c) While taking rest, the muscles regain their capacity. Why?   1

17. Arrange the stages of plant cell division given below in correct order.

   ▫ Daughter cells are formed.

   ▫ Nucleus divides.

   ▫ Small vesicles join to form cell plate.

   ▫ Small vesicles are formed between the daughter nuclei.

   ▫ Extended cell plate joins with the plasma membrane.

   ▫ Cell plate extends to both sides.

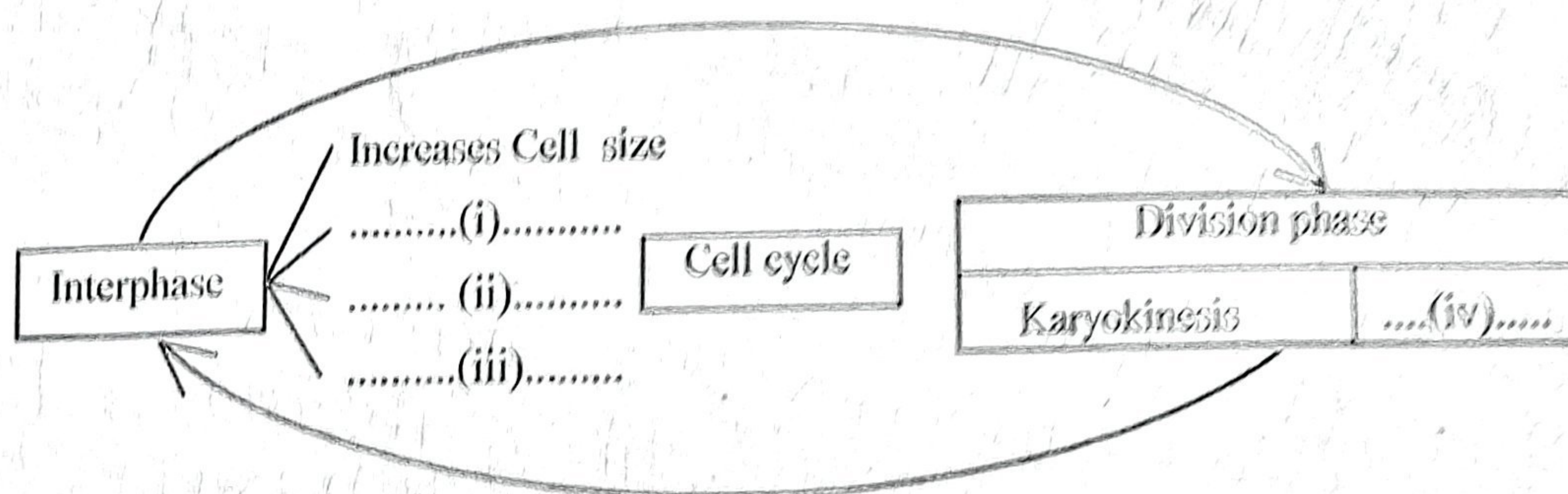18. Analyse the statement on the process of absorption and answer the given questions.

   > Molecules are absorbed by utilising energy and
   > with the help of carrier proteins.

   a) Name the process of absorption mentioned here.   1
   b) Name the simple nutrients that are absorbed in the small intestine through this
      process.   1
   c) How it differs from other absorption process based on concentration gradient?   1

19. Answer the following questions.

   a) List the processes that help water reach the leaves and different parts of the plant. 1

   b) How is the structure of xylem suited for the transportation of water?   2

20. Analyse the illustration of Cell cycle and answer the questions.

   Increases Cell size
   ....(i)..........
   Interphase ....(ii)......... Cell cycle | Division phase | |
   ....(iii)......... | Karyokinesis | ....(iv)..... |

   a) Complete the illustration suitably.   2

   b) How does the processes in **(iv)** differ in plant and animal cell?   1

Answer any 2 from questions 21 - 23. Each carries four scores.   (2 × 4 = 8)

21. Redraw the Diagram and label the parts according to the hints given.
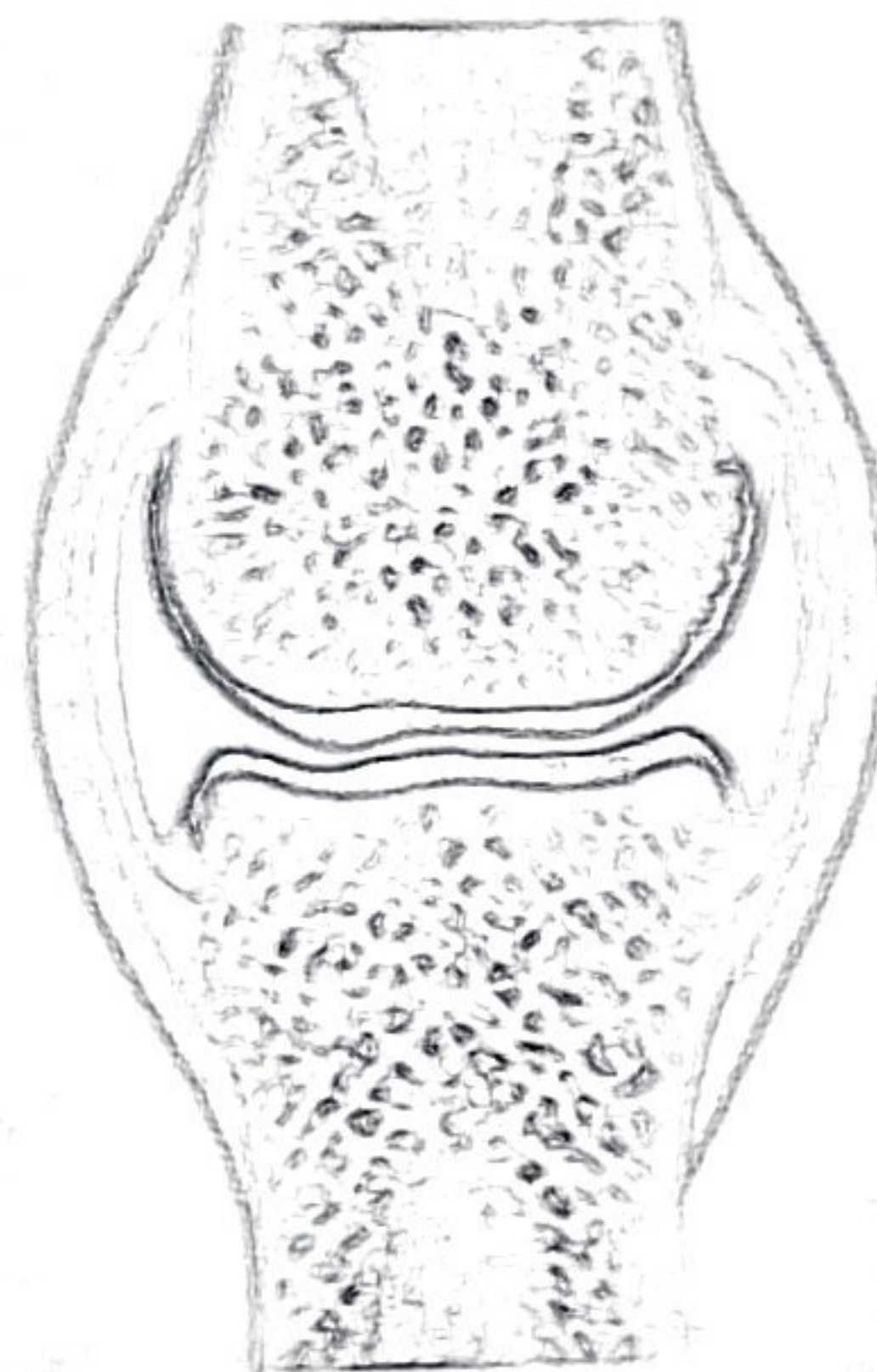
Redrawing   1

a) The part covers and protects the joints.   1

b) Functions as a lubricant between the bones.   1

c) The part that reduces the friction between the bones.   1

22. Answer the following questions based on Cell division.

a) Why meiosis II is said to be similar to mitosis?   1

b) How does the number of daughter cells differ in mitosis and meiosis?   1

c) In females only single ovum is formed from one germinal cell. Give reason.   2

23. Observe the picture and answer the following questions.
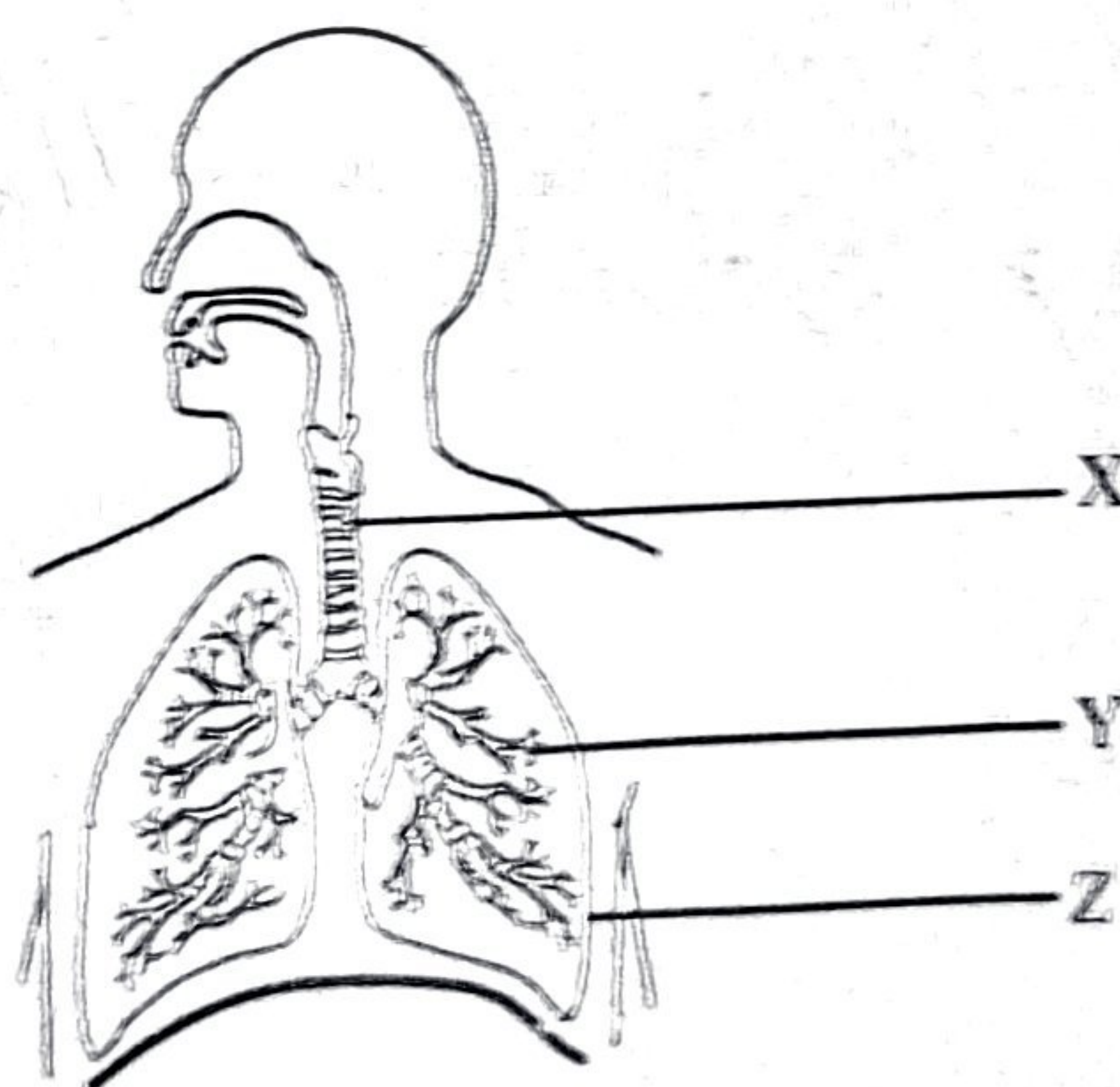
a) Identify and write 'X' and 'Y'.   1

b) Write the function of the delicate and elastic air sacs seen at the end of 'Y'.   1

c) How the volume inside 'Z' reduces during expiration? How it is helpful?   2