

01

Four students in a class were discussing about cell. Read it carefully and answer the following questions.

Ravi : Mature RBCs cannot carry out cell division.

Raju : Animal cells change shapes but plant cell cannot.

Paul : During development erythrocytes loose nucleus.

Jim : Cellulosed cell walls give rigidity to plant cells.

- i) Whose statements are correct ?
- ii) Who supports whom is answering the statement ? Why ? Give an example.
- iii) What is the shape of RBC's ?
- v) What is cellulose ?

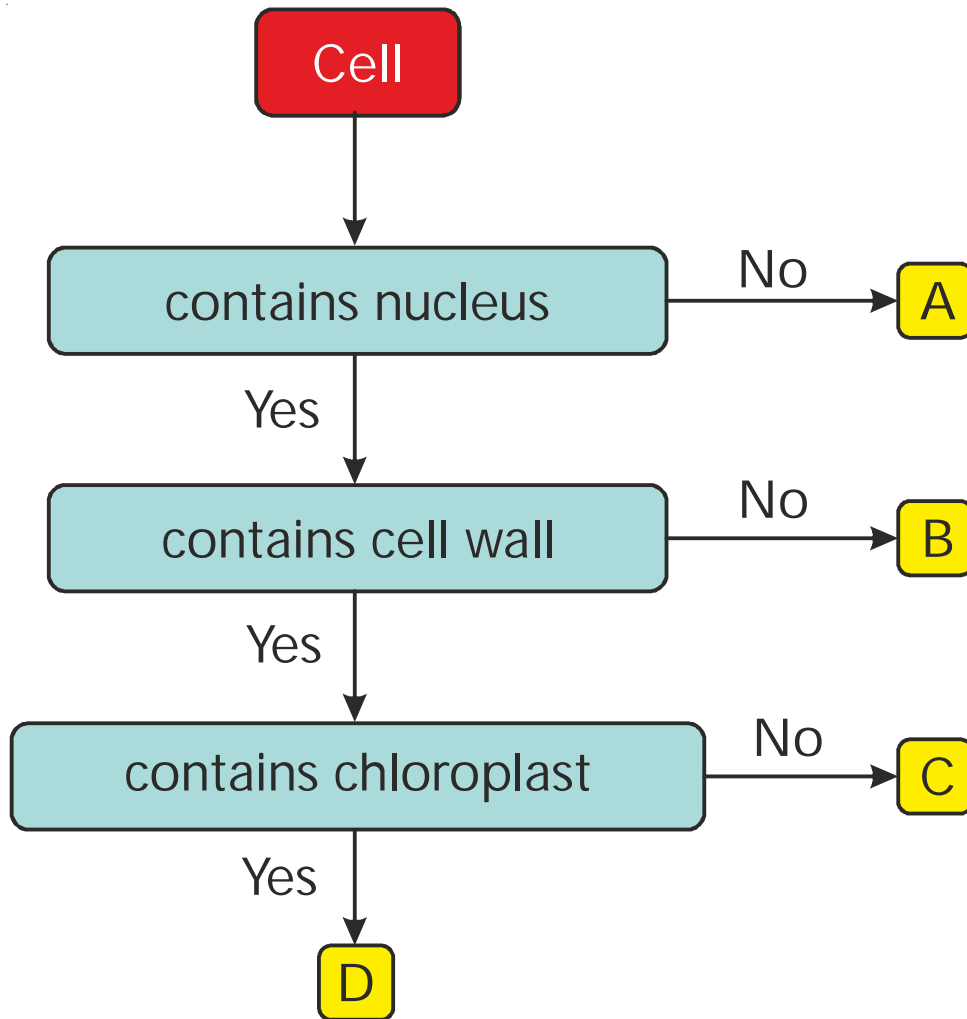
- i) All statements are correct. All of them are correct.
- ii)
 - a) Paul supports Ravi
Mature red blood cells cannot divide or carry on many life processes characteristics of other cells, because during its development each erythrocyte loses its nucleus and organelles.
 - b) Jim supports Raju
Animal cells are capable of changing their shapes, but the shape of plant cell is fixed due to the presence of cellulosed cell wall.
- iii) RBCs are biconcave, disc like.
- iv) It is a Polysaccharide (Carbohydrate). It is most abundant organic polymer occurring in structural cell wall material of plants.

02 Complete the table choose the related answers from the following.

Name of the cell	Number of functions
Muscle cell	V
Palisade cell	III
Root hair cell	I
Sensory neurone	IV
White blood cell	II

- I) Absorbs salts and waters from the soil.
- II) Kills bacteria.
- III) Makes food by photosynthesis.
- IV) Carries electrical impulses.
- V) Shortens to bring about movements.

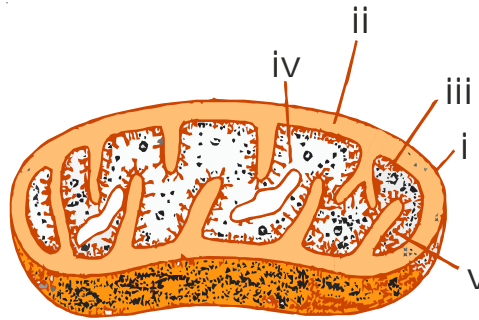
03 Study the diagram below carefully. Which of the following cells best represents a cell found in the root of a plant ?



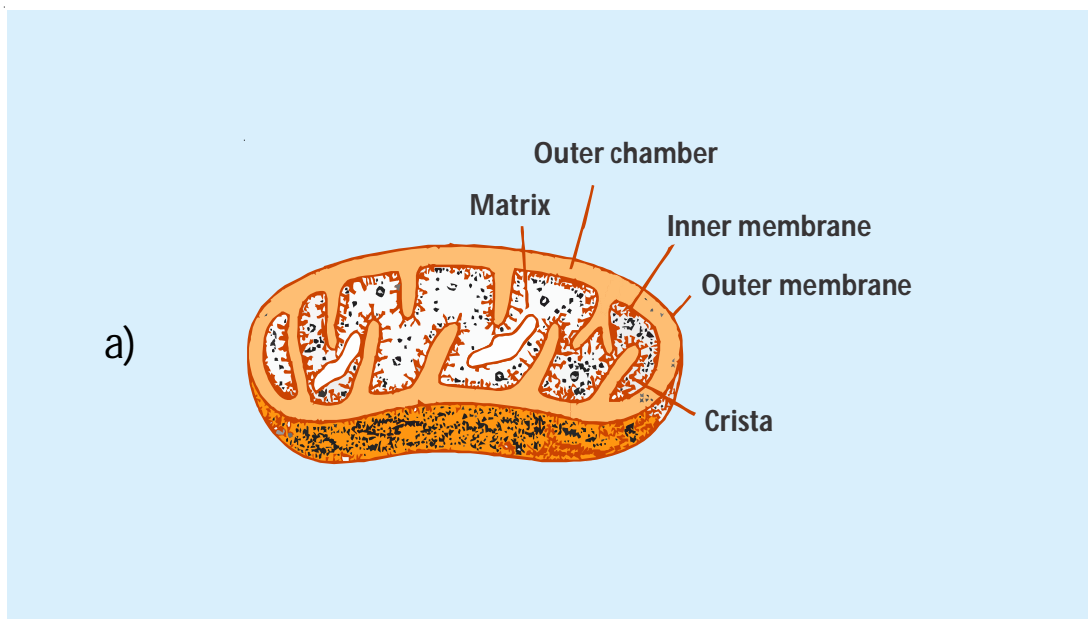
'C' represents a cell found in the root of a plant

04

Identify the structure of an cell organelle given below.
Answer the following.



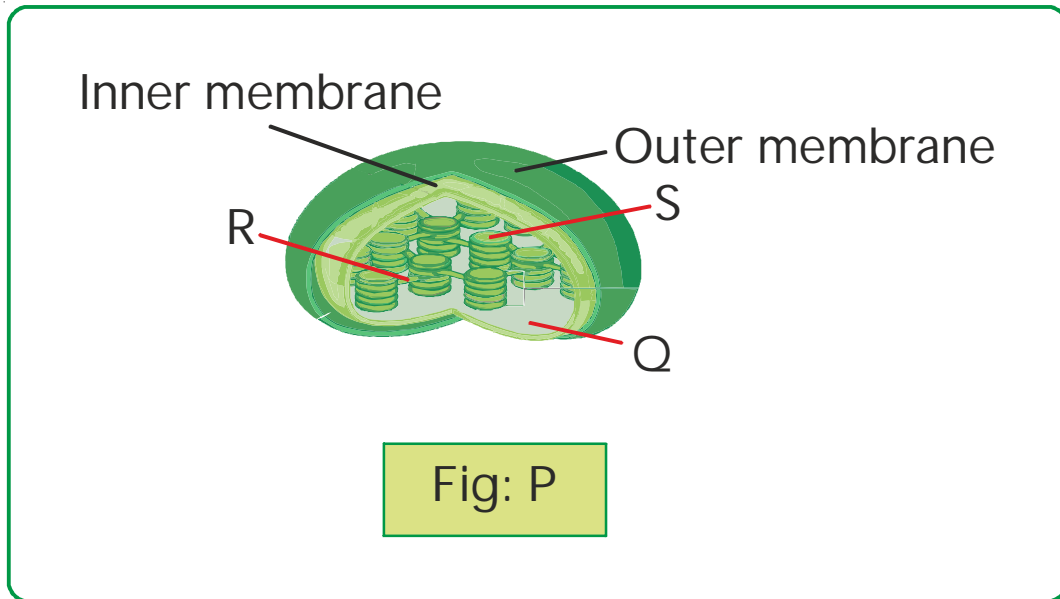
- Label its parts (atleast 5).
- Write in short, any three functions of the organelle shown.
- The organelle shown has a degree of autonomy that makes it quite unlike the other components of cells. Given reasons.
- Identify and label part 'v' shown in the diagram.



- b) It is a “power house” of cell because huge amount of energy liberated during aerobic respiration is trapped inside mitochondria in the form of energy rich ATP molecules. This energy trapped by mitochondria is then utilized in performing various metabolic processes of the cell.
- Enzyme required for krebs cycle, electron transport system, fatty acid synthesis and haeme synthesis etc are found in mitochondria.
 - It also contain DNA and RNA.
- c) Unlike other components of cells mitochorindria (also ‘chloroplasts’) are semiautonomous organelles. They are capable of ‘self repliation. They have DNA, self transcribed RNAs and protein making machinery i.e., ribosomes, energy producing mechanism and structural proteins and enzymes required for replication.
- d) Stalked particles on inner layer of cristae are ‘respiratory assemblies each stalk particle consists of base, stalk and spherical head.

05

Observe the figure. Identify and Label its parts.



P - Chloroplast

Q - Stroma

R - Thylakoid

S - Granum