



## BIOLOGY

# BOOKS - FULL MARKS BIOLOGY (TAMIL ENGLISH)

## CELL: THE UNIT OF LIFE

### Text Evaluation Questions Solved

1. The two subunits of ribosomes remain united at critical ion level of \_\_\_\_

A. Magnesium

B. Calcium

C. Sodium

D. Ferrous

**Answer: A**



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2. Sequences of which of the following is used to know the phylogeny

A. mRNA

B. rRNA

C. tRNA

D. Hn RNA

**Answer: B**



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**3.** Many cells functions properly and divide mitotically even though they do not have \_\_\_\_

A. Plasma membrane

B. Cytoskeleton

C. Mitochondria

D. Plastids

**Answer: C**



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4. Keeping in view the fluid mosaic model for the structure of cell membrane, which one of the following statements is correct with

respect to the movement of lipids and proteins from one lipid monolayer to the other

- A. Neither lipid nor proteins can flip-flop
- B. Both lipid and proteins can flip-flop
- C. While lipids can rarely flip-flop proteins cannot
- D. While proteins can flip-flop lipids cannot

**Answer: C**



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5. Match the columns and identify the correct option:



A. a-iii,b-iv,c-ii,d-i

B. a-iv,b-iii,c-i,d-ii

C. a-iii,b-iv,c-i,d-ii

D. a-iii,b-i,c-iv,d-ii

**Answer: C**



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6. Bring out the significance of phase contrast microscopy



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7. State the protoplasm theory.



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8. distinguish between prokaryotes and eukaryotes.



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9. Difference between plant and animal cell.



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10. Draw the ultra structure of plant cell.



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## Additional Questions Solved Multiple Choices Questions

1. Scientist who named the unicellular particles as 'animalcules'.

A. Aristotle

B. Robert Brown

C. Antonie von Leeuwenhoek

D. Robert Hooke

**Answer: C**



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2. Cell theory was modified by \_\_\_\_

A. Schwann

B. Schleiden

C. Virchow

D. Dutrochet

**Answer: C**



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**3. Which of the following microscope produce 3D-image?**

A. Phase contrast

B. TEM

C. SEM

D. Dark field

**Answer: C**



4. Which of the following electron opaque chemical used in electron microscope

A. Strontium

B. Deuterium

C. Palladium

D. Uranium

**Answer: C**



5. Medium for electron movement in TEM is

----

A. Air

B. Oil

C. Water

D. Vacuum

**Answer: D**



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6. Resolving power of SEM is \_\_\_\_\_

A. 5-10Å

B. 2-10Å

C. 5-20nm

D. 5-20nm

**Answer: C**



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7. Which among the following is NOT an exception to cell theory?

A. Viruses

B. Viroids

C. Prions

D. Fungi

**Answer: D**



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8. Scientist who named the cytoplasm as "Sarcode" is\_\_\_\_

A. Dajardin

B. Corti

C. Purkinje

D. Hugo Van Mohl

**Answer: A**



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9. The pH of protoplasm is around\_\_\_

A. 6.6

B. 6.7

C. 6.8

D. 6.9

**Answer: C**



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10. The refractive index of protoplasm is \_\_\_\_

A. 1.4

B. 2.4

C. 3.4

D. 0.4

**Answer: A**



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11. Histone proteins are seen in the DNA of

-----

A. Pseudokaryotes

B. Prokaryotes

C. Mesokaryotes

D. Eukaryotes

**Answer: D**



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**12.** Which of the following organelle is believed to be an endosymbiont ?

A. Ribosomes

B. Mitochondrion

C. Golgi bodies

D. Nucleus

**Answer: B**



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13. \_\_\_\_\_ is the living content of the cell.

A. Cytoplasm

B. Protoplasm

C. Nucleoplasm

D. Nucleus

**Answer: B**



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14. Fungal cell wall is made of \_\_\_\_

A. Cutin

B. Chitin

C. hemicellulose

D. Pectin

**Answer: B**



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15. \_\_\_\_\_ acts as a channel between the protoplasm of adjacent cells.

A. Middle lamellae

B. Pits

C. Plasmodesmata

D. Primary cell wall

**Answer: C**



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16. Fluid mosaic model was proposed by\_\_\_\_

A. Schleiden and Schwann

B. Singer and Nicolson

C. Binning and Roher

D. G. Palade

**Answer: B**



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17. Which is the largest of the internal membranes?

A. Golgi bodies

B. Endoplasmic reticulum

C. Tonoplast

D. Nuclear membrane

**Answer: B**



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**18.** In plant cells, golgi bodies are found as small vesicles called\_\_\_\_\_

A. Polysomes

B. Cytosomes

C. Cytosol

D. Dictyosomes

**Answer: D**



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19. \_\_\_\_\_organelle plays a major role in post translation process of protein

A. Golgi bodies

B. Nucleolus

C. Ribosomes

D. ER

**Answer: A**



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20. Zymogen granules are synthesized in\_\_\_\_\_

- A. Lysosomes
- B. Golgi bodies
- C. Mitochondria
- D. Chloroplast

**Answer: B**



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21. Altmann named mitochondrion as\_\_\_\_\_

A. Apoplast

B. Elaioplast

C. Symplast

D. Bioplast

**Answer: D**



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**22. DNA of mitochondrion is \_\_\_\_**

A. Helical

B. Dumb-bell

C. Circular

D. Spiral

**Answer: C**



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**23.** Mitochondria are inherited from\_\_\_\_parent.

A. Male

B. Female

C. both

D. None

**Answer: B**



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**24.**  $F_1$  particles are also called as \_\_\_\_\_

A. Polysomes

B. Glyoxysomes

C. Peroxisomes

D. Oxysomes

**Answer: D**



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**25. Elaioplasts store\_\_\_**

A. Starch

B. Lipid

C. Protein

D. Chlorophyll



**Answer: B**



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**26.** The photosynthetic units are called as \_\_\_\_

- A. Oxysomes
- B. Quantosomes
- C. Thylakoids
- D. Chloroplasts

**Answer: B**



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**27. Which organelle is not membrane bound?**

A. Mitochondrion

B. Golgi bodies

C. Chloroplast

D. Ribosomes

**Answer: D**



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**28.** Ribosomes of mitochondrion are \_\_\_\_

A. 16S

B. 80S

C. 70S

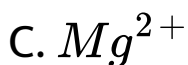
D. 50S

**Answer: C**



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29. \_\_\_\_\_mineral is required for structural cohesion of ribosomes.



**Answer: C**



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30. Lysosomes originate from \_\_\_\_

A. Mitochondrion

B. Nucleus

C. ER

D. Golgi bodies

**Answer: D**



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**31.** In mammals, peroxisomes are seen in \_\_\_\_ cells.

A. Brain

B. Lung

C. Liver

D. Heart

**Answer: C**



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**32.** Which organelle has a single unit membrane ?

A. Ribosomes

B. Glyoxysomes

C. Polysomes

D. Nuclues

**Answer: B**



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**33.** The single unit membrane of vacuoles is called as\_\_\_\_\_

A. Tonoplast

B. Symplast

C. Apoplast

D. Amyloplast

**Answer: A**



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34. Vacuoles of Apple cells store\_\_\_\_\_

A. Sucrose

B. Malic acid

C. Citrate

D. Flavanoid pigment

**Answer: B**



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35. Ribosomal biogenesis occur at\_\_\_\_\_

A. Mitochondrion

B. Polysomes

C. Nucleolus

D. Chromosomes

**Answer: C**



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**36.** The term chromosome was introduced by

A. Bridges

B. Strasburger

C. Waldeyer

D. Poster

**Answer: C**



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**37. Stability to chromosome is offered by\_\_\_**

A. Satellite

B. Telomere

C. Kinetochore

D. Nucleolus

**Answer: B**



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**38.** Life span of the cells is determined by

.....

A. Kinetochore

B. Satellite

C. Chromatin

D. Telomere

**Answer: D**



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**39.** Metacentric chromosomes are \_\_\_\_ shaped chromosomes.

A. L

B. V

C. J

D. I

**Answer: B**



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**40.** Polytene chromosomes are observed in\_\_\_\_of Drosophila.

A. Endocrine gland

B. Gall bladder

C. Salivary gland

D. Exocrine gland

**Answer: C**



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**41.** Lampbrush chromosomes occur at \_\_\_\_\_ stage of meiotic Prophase I.

A. Leptotene

B. Diplotene

C. Zygotene

D. Pachytene

**Answer: B**



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**42.** Number of basal rings in gram positive bacteria\_\_\_\_\_.

A. 2

B. 4



C. 6

D. 8

**Answer: A**



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**43. Microtubules are made of \_\_\_\_**

A. Dyenin

B. Tubin

C. Tubulin

D. Nexin

**Answer: C**



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**44.** Cytoplasm is stained\_\_\_\_by eosin.

A. Pink

B. Blue

C. Greenish blue

D. Green

**Answer: A**



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**45.** Key difference between plant cell & animal cell is \_\_\_\_.

A. Ribosomes

B. Vacuoles

C. Cell wall

D. Centrioles

**Answer: C**



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## **Additional Questions Solved li Very Short Answer Type Questions 2 Marks**

**1. Name the scientists who proposed the cell theory.**

**A. Matthias Schleiden and Theodor Schwann.**

B.

C.

D.

**Answer:**



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**2. Define resolving power of a microscope.**



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3. Define magnification. How will you calculate it?



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4. List out the types of objective lenses used in Bright field microscope.



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5. In Bright field microscope, where does the primary & secondary magnification occurs?



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6. List out the components of Electron Microscope.



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7. Name the organisms that are exceptions to cell theory.



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8. Name the types of cells based on nuclear characteristics.



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9. Define nucleoid.



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10. Which of the following organelle is believed to be an endosymbiont ?





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**11.** Write a note on endosymbiont theory.



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**12.** Point out any four prokaryotes.



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**13.** Why spirochaetae is said to be a prokaryote?



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**14.** Name any two unique structures/organelles of a plant cell.



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**15.** What are the components of protoplasm?



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**16.** What is the cell wall composition of the following organism?

(a) Fungi

(b) Bacteria

(c) Algae.



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17. Which cell wall layer of plant cell is laid during maturation? Mention its role.



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18. How pits are formed?



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19. What is the role of plasmodesmata in a plant cell?



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**20.** Name the two types of Pits.



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**21.** Define flip-flop movement.



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**22.** name the two types of protein seen in cell membrane.



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**23.** What is cytoplasmic streaming?



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**24.** Name any four endomembrane structures.



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**25. What are dictyosomes?**



**Watch Video Solution**

**26. What are porins?**



**Watch Video Solution**

**27. What are oxysomes?**



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**28.** How does study of Mitochondrial DNA help in evolutionary studies ?



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**29.** Why are mitochondria and chloroplast called as semi autonomous organelles .



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**30.** Why Mitochondira is called as 'the power house of a cell'?



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**31.** Classify plastids based on colour.



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**32.** Classify plastids based on storage & mention their storage component.



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**33. What are Quantosomes?**



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**34. What are the functions of chloroplast ?**



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**35. What is Svedberg units ?**



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**36.** Where the biogenesis of ribosomes occur?



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**37.** What are Polysomes? State its function.



**Watch Video Solution**

**38.** Define Autolysis.



**Watch Video Solution**

**39.** List out the enzymes of lysosomes.



**Watch Video Solution**

**40.** Name any two organelles involved in photorespiration.



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**41.** Name few single unit membrane bound organelles.



**Watch Video Solution**

**42.** What is tonoplast ?



**Watch Video Solution**

**43.** How vacuoles helps to maintain the structure of a plant cell?



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**44.** What are metachromatic granules?



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**45.** Which is the largest organelle in a cell?  
State its function.



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**46.** What is a pore complex?



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**47.** What are nucleolar organizers region?



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**48.** Draw the types of chromosomes based on centromere position.



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**49.** What is a telomere ?



**Watch Video Solution**

**50.** Classify chromosomes based on function.



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**51.** Name any two giant chromosomes.



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**52.** Define proton motive force.



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**53.** Name the basal rings found in flagella of gram negative bacteria.



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54. (a) Define histochemistry.

(b) What is Somatic pairing?



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## **Additional Questions Solved Iii Short Answer Type Questions**

1. Explain the principle involved in scanning electron microscope (SEM).



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2. Write a note on solation gelation property of protoplasm.



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3. Explain the nuclear characters of Mesokaryotes.



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4. List out the unique characters of a Eukaryotic cell.



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5. name the chemicals seen in the cell wall of plant cells.



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6. Name the 3 distinct regions of plant cell wall.



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7. Explain the role of hemicellulose, pectin & glycoprotein in primary cell wall.



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**8.** In cell membrane, phospholipids undergo flip-flop movement but not the protein. Why?



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**9.** Define signal transduction.



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**10.** Distinguish between rough endoplasmic reticulum and smooth endoplasmic reticulum.



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**11.** Write the major roles of Golgi bodies.



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**12.** Which is the most abundant protein on Earth? Where it is encoded?



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**13.** Classify ribosomes with an example.



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**14.** Write a note on Glyoxysomes.



**Watch Video Solution**

**15.** What are cell inclusions ? Give example.



**Watch Video Solution**



**16.** Draw and label the structure of Nucleus.



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**17.** Distinguish heterochromatin and euchromatin.



**Watch Video Solution**

**18.** Define Kinetochore.



**Watch Video Solution**

**19.** Write a note on SAT-chromosome.



**Watch Video Solution**

**20.** how telomeres helps in cancer studies ?



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**21.** Name the three types of centromere in eukaryotes.



**Watch Video Solution**

**22. What is giant chromosome?**



**Watch Video Solution**

**23. How polyteny condition is achieved?**



**Watch Video Solution**

**24. What is Microphotography?**



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**25.** Draw the structure of peroxisomes.



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## **Additional Questions Solved Iv Long Answer Type Questions**

**1.** Write short notes on dark field microscope.



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2. Compare Transmission Electron Microscope with Scanning Electron Microscope.



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3. List out the features of Cell Doctrine.



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4. Discuss in detail about the physical properties of protoplasm.



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5. List out the function of cell wall.



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6. Explain in detail about fluid mosaic model.



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7. Describe endocytosis.



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**8. Write down the functions of Golgi bodies.**



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**9. Describe the structure of Mitochondria.**



**Watch Video Solution**

**10. Draw and label the structure of Nucleus.**



**Watch Video Solution**

**11.** Name the three types of centromere in eukaryotes.



**Watch Video Solution**

**12.** What are the functions of nucleus.



**Watch Video Solution**



**13.** Explain the structure and movement of Eukaryotic flagella.



**Watch Video Solution**

**14.** Describe the steps involved in cytological techniques.



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**15.** Name any 5 common stains their colour & their affinity used in cytological studies.



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## **Additional Questions Solved V Higher Order Thinking Skills**

**1.** What makes the plant cell more rigid than animal cells?



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2. Cleaning organelle in the cell-Explain.



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3. Ribosomes are single membrane organelles present in both prokaryotes & eukaryotes. List out the sites where ribosomes are present in plant cell.



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4. What does 'S' refer in a 70S and an 80S ribosomes?



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5. Briefly give the contributions of the following scientists in the field of cytology.

(a). Schleiden and Schwann

(b) Singer and Nicolson.



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6. Are extra genomic DNA seen in Eukaryotes ?



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7. Why are mitochondria and chloroplast called as semi autonomous organelles .



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