



## BIOLOGY

# BOOKS - CHETANA BIOLOGY (MARATHI ENGLISH)

## Cell structure and organization

### Example

1. Define the following. Cell



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2. Define the following. Light microscope



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3. Define the following. Unicellular and multicellular organisms



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4. State the principle of microscope. Why do we need electron microscope?



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5. Who proposed the idea of 'Omnis cellula -e-cellula' and cell theory?



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6. Define totipotency.



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7. Briefly give the contributions of the following scientists in formulating the cell theory

Schleiden and Schwann



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8. Give the postulates of modern cell theory.



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**9.** Why bacterial nucleus is said to be primitive?



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**10.** How do onion peel cells and our body cells differ?



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**11.** Who observed cells under the microscope for the first time?



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**12.** Describe in brief the shapes and sizes of a cell.



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**13.** Name two major divisions of cell structure.



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**14. What are prokaryotes?**



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**15. Name the chemical composing of bacterial cell wall.**



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**16.** What are the components of cell envelope in prokaryotic cell? Briefly describe glycolyx.



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**17.** What staining procedure distinguishes different types of bacteria.



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**18.** What are Mesosomes? What is the main function of Mesosomes?



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**19.** What are different appendages found in prokaryotes?



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**20.** Mention the function of pili and fimbriae.



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**21. How is the Ribosome size measured?**



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**22. What are chromatophores?**



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**23.** Explain the structure of prokaryotic cell with the help of neat labelled diagram.



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**24.** Describe the structure of bacteria with well labelled diagram.



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**25.** Write a short note on prokaryotic cytoplasm.



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**26.** Define Eukaryotic cells? Describe them in short.



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**27.** State the chemical composition of Eukaryotic cell wall in different plant cells. Also state functions.



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**28.** Sketch and label neat and labelled diagram of the following. Animal Cell



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**29.** Sketch and label neat and labelled diagram of the following. Plant Cell



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**30.** Describe plant cell wall with well labelled diagram.



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**31.** What is plasmodesmata?



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**32. What is Plasma membrane?**



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**33. Give the functions of plasma membrane.**



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**34.** Fluid mosaic model proposed by Singer and Nicolson replaced Sandwich model proposed by Danielli and Davson? Why?



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**35.** Plasma membrane is semi-permeable'. Why?



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**36.** What are cell organelles?



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**37.** Define Cytosol.



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**38.** Define Cyclosis.



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**39.** Name the main chemical components of Cytoplasm.



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**40.** Write a note on structure and functions of cytoplasm in eukaryotic cell.



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**41.** What is endomembrane system of a cell?



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**42.** Enlist different cell organelles present in eukaryotic cell.



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**43.** With the help of neat labelled diagram describe the structure of Endoplasmic Reticulum.



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**44.** State the functions of Endoplasmic Reticulum.



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



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**46.** Who discovered Golgi complex?



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**47.** The ultra structure of Golgi complex was described by



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**48.** What is the relationship between Golgi apparatus and ER?



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**49.** What is Cisternal maturation model?



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**50.** Which cell organelles are commonly called "suicide bags"?



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**51.** Why are Lysosomes called "suicide bags"?



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**52.** Describe the various structural forms of Lysosomes.



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**53.** What is Autophagy? Explain about autophagic vesicle.



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**54.** Describe in brief about lysosomes. Also state their functions.



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**55.** Distinguish between intracellular and extracellular digestion?



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**56.** Name the boundary of a vacuole.



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**57.** What is the function of tonoplast membrane?



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**58.** Write a short note on vacuoles.



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**59.** What are Sphaerosomes?



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**60.** What are microbodies? What are their types?



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**61.** Write a short note on: Peroxisomes.





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**62.** Write a short note on Glyoxysomes.



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**63.** Mitochondria are power house of cell.

Given reason.



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**64.** Why mitochondria is called as power house of cell chamber



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**65.** Are mitochondria present in all eukaryotic cells?



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**66.** Describe the structure of Mitochondria.



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**67.** Describe the structure of cell organelle known as "Power house of the cell".



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**68.** Describe the structure of Oxysomes.



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**69.** What are plastids?



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**70.** What are the different types of Plastids?



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**71.** Describe functions of different types of plastids in detail.



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**72.** Onion cells have no chloroplast. How can we tell they are plants?



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**73.** Define Thylakoid



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**74.** Define Grana.



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**75. Define Stroma.**



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**76. Describe eukaryotic ribosomes with neat labelled diagram.**



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**77.** What are polyribosomes?



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**78.** Is nucleolus covered by membrane?



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**79.** Explain the structure of Nucleus with the help of a diagram.



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**80.** Why nucleus is considered as control unit of a cell.



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**81.** Can cells like Xylem or mature human RBCs called living?



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**82.** What are grana?



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**83.** What is a syncytium and coenocyte?



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**84.** What are the functions of nuclear envelope?



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**85.** Explain the structure and function of nucleolus.



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**86.** Write a short note on nucleolus.



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**87.** What is chromatin material? What are its types?



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**88.** How cytoplasm differs from nucleoplasm in chemical composition?



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**89.** Write a short note on Cytoskeleton.



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**90.** Which are the long fibres of Cytoskeleton?



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**91.** Write a note on Cilia and flagella.



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**92.** Distinguish between cilia flagella.



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**93.** Write a note on Centrioles.



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**94.** What is difference between us?

Prokaryotic cell and eukaryotic cell.



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**95.** Characteristics Plant cell and Animal cell.



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**96.** Plants have no circulatory system? Then how cells manage intercellular transport?



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**97.** The RBC surface normally shows glycoprotein molecules. When determining



blood group do they play any role?



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## Exercise

1. Growth of cell wall during cell elongation take place by.

- A. Apposition
- B. Intussusception
- C. Both a and b

D. Super position

**Answer:**



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2. Cell membrane is composed of..... .

A. Proteins cellulose

B. Proteins and phospholipid

C. Proteins and carbohydrates

D. Proteins, phospholipid and some carbohydrates.

**Answer:**



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**3.** Plasma membrane is fluid structure due to presence of

A. Carbohydrates

B. Lipid

C. Glycoproteins

D. polysaccharide

**Answer:**



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**4. Cell wall is present in**

A. Plant cell

B. Prokaryotic cell

C. Algal cell

D. All of the above

**Answer:**



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5. Plasma membrane is..... .

A. Selectively permeable

B. Permeable

C. Impermeable

D. Semipermeable

**Answer:**



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**6. Lysosomes are not helpful in**

- A. Osteogenesis
- B. Cellular digestion
- C. Metamorphosis
- D. Lipogenesis

**Answer:**



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7. Which of the following set of organelles contain DNA

A. Mitochondria, Peroxysome

B. Plasma membrane, ribosome

C. Mitochondria, chloroplast

D. Chloroplast, dictyosome.

**Answer:**



8. Golgi body is absent in

A. Prokaryotes

B. Mature mammalian RBC

C. Akaryotes

D. All of the above

**Answer:**





9. Mitochondria DNA is

A. Naked

B. Circular

C. Double stranded

D. All of the above

**Answer:**



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10. ....first discovered nucleus.

A. Robert Hooke

B. Robert Brown

C. Robert Koch

D. Robert Hill

**Answer:**



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11. Glycocalyx is a part of..... .

A. cell wall

B. cell membrane

C. cell envelope

D. plasma membrane

**Answer:**



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12. ....are invaginations of plasma membrane.

A. Cytoplasm

B. Mesosome

C. Cell wall

D. Chromatophores

**Answer:**



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13. Extra chromosomal DNA in a prokaryote is called..... .

A. plastid

B. nucleoid

C. plasmid

D. nucleus

**Answer:**



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14. Streaming movement of cytoplasmic matrix is called..... .

A. cyclone

B. scattering

C. cyclosis

D. tsunami

**Answer:**



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15. Golgi bodies are involved in..... .

A. excretion

B. secretion

C. ATP synthesis

D. RNA synthesis

**Answer:**



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

A. Singer and Nicholson

B. Schwann and Schleiden

C. Watson and Crick

D. Hooke and Brown

**Answer:**



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**17.** Ribosomes are composed of..... .

A. DNA and proteins



B. DNA and RNA

C. DNA only

D. RNA and proteins

**Answer:**



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**18.** Hydrolytic enzymes are seen in..... .

A. mitochondria

B. ribosomes

C. lysosomes

D. golgi complex

**Answer:**



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**19.** Sphaerosomes are organelles which store..... .

A. proteins

B. fats

C. carbohydrate

D. enzyme

**Answer:**



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**20.** Space between the 2 nuclear membrane is called..... .

A. perinuclear space

B. nuclear space

C. dinuclear space

D. periplastidial space

**Answer:**



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**21. Who postulated cell theory?**

A. Schwaan and Hooke

B. Schleiden and Hooke

C. Schleiden and Schwaan

## D. Schwaan and Brown

**Answer:**



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22. ....coined the term protoplasm in animal cell.

A. Robert Brown

B. J.E. Purkinje

C. Von Mohl

D. Rudolf Virchow

**Answer:**



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**23.** .....is autonomous and self replicating DNA with few genes.

A. Plasmid

B. Plastid

C. Ribosomes

D. Endoplasmic reticulum

**Answer:**



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**24.** .....is called powerhouse of a cell.

A. Nucleus

B. Mitochondria

C. Golgi bodies

D. Ribosomes

**Answer:**



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**25.** Storage of carbohydrate, proteins and fats is done by..... .

A. Nucleus

B. lysosomes

C. Golgi bodies

D. Plastid



**Answer:**



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**26.** Vacuoles are bound by..... .

- A. cell membrane
- B. plasma membrane
- C. tonoplast
- D. cell wall

**Answer:**



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27. Plasma membrane is fluid structure due to presence of

A. Carbohydrates

B. Lipid

C. Glycoproteins

D. polysaccharide

**Answer:**



28. Cell wall is present in

- A. Plant cell
- B. Prokaryotic cell
- C. Algal cell
- D. All of the above

**Answer:**



29. Extra chromosomal DNA in a prokaryote is called..... .

A. plastid

B. nucleoid

C. plasmid

D. nucleus

**Answer:**



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30. Hydrolytic enzymes are seen in..... .

A. mitochondria

B. ribosomes

C. lysosomes

D. golgi complex

**Answer:**



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**31.** Which cell organelles are commonly called "suicide bags"?



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**32.** Name any two enzymes of lysosomes.



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**33.** What is glycocalyx?



**Watch Video Solution**

**34.** What are plasmids? Describe their role in bacteria.



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**35.** Draw neat labelled diagram of:  
mitochondria



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**36.** State the function of vacuole.



**Watch Video Solution**

**37.** Write a note of cell theory.



**Watch Video Solution**

**38.** The RBC surface normally shows glycoprotein molecules. When determining blood group do they play any role?





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**39.** With the help of neat labelled diagram explain the structure of nucleus.



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**40.** With the help of diagram explain difference between animal and plant cell.



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**41.** What is difference between us?

Prokaryotic cell and eukaryotic cell.



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