



## BIOLOGY

### BOOKS - VIKRAM PUBLICATION ( ANDHRA PUBLICATION)

#### CELL : THE UNIT OF LIFE

#### Very Short Answer Type Questions

1. Vacuole in a plant cell:



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2. What does 's' refer to a 70s and 80s ribosome ?



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3. Mention a single membrane bound organelle which is rich. in hydrolytic enzymes.



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4. What are gas vacuoles ? State their functions.



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5. What is the function of a polysome ?



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6. What is the feature of a metacentric chromosome ?



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7. What is referred to as satellite chromosome ?



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8. What are microbodies ? What do they contain ?



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9. What is middle lamella made of ? What is its functional significance ?

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10. What is Osmosis ? Define Osmotic Pressure ? Describe Berkily- Hartley method of determining osmotic pressure.

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11. Which part of the Bacterial cell is targeted in gram staining ?

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**12.** Which of the following is not correct ?

Robert Brown discovered the Cell.

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**13.** Which of the following is not correct ?

Schleden and Schwann formulated the cell theory

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**14.** Which of the following is not correct ?

Virchow explained that cells are formed from pre existing cells

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15. Which of the following is not correct



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16. New cells generate from

- (a) bacterial fermentation (b) regeneration of old cells  
(c) pre-existing cells (d) abiotic materials



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17. Match the following

- |                |   |
|----------------|---|
| (a) Cristae    | (i) Flate membranous sacs in stroma       |
| (b) Cisternae  | (ii) Ifoldings in mitochondria            |
| (c) Thylakoids | (iii) Disc-shaped sacs in Golgi apparatus |



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**18.** Which of the following is correct:

- (a) Cells of all living organisms have a nucleus.
- (b) Both animal and plant cells have a well defined cell wall.
- (c) In prokaryotes, there are no membrane bound organelles.
- (d) Cells are formed de novo from abiotic materials.

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## Short Answer Type Questions

**1.** Chlorophyll contains

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2. Explain the association of Carbohydrate to the plasma membrane and its significance.

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3. Comment on the cartwheel structure of centriole.

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4. Briefly describe the cell theory.

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5. Differentiate between Rough Endoplasmic Reticulum (RER) and Smooth Endoplasmic Reticulum (SER).



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6. Give the biochemical composition of plasma membrane. How are lipid molecules arranged in the membrane ?



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7. Describe the structure of nucleus.



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**8.** Give a brief account of the types of chromosomes based on the position of Centromere.

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**9.** The cytoskeleton in a cell is involved in

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**10.** What is endomembrane system ? What cell organelles are not included in it ? Why ?

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**11.** Distinguish between Active transport and Passive transport ?



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**12.** What are nucleosomes ? What are they made of ?



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**13.** Name two cell-organelles that are double membrane bound. What are the characteristics of these two organelles. State their functions and draw labelled diagrams of both.



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**14.** What are the characteristics of prokaryotic cells?

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

Rudolf Virchow

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

Schleiden and Schwann.



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## Long Answer Type Questions

1. What structural and functional attributes must a cell have to be called a living cell ?



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2. Eukaryotic cells have organelles which may

- a) Not be bound by a membrane
- b) Bound by a single membrane
- c) Bound by a double membrane.

Give the various sub-cellular organelles into these three categories.

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3. The genomic content of the nucleus is constant for a given species where as the extra chromosomal DNA is found to be variable among the members of a population. Explain.

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4. Mitochondria : Power house of the cell,ATP: ..... ? .....

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5. Is there a species specific or region specific type of plastids ? How does one distinguish from the other ?



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6. Write the functions of the following.

Centromere



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7. Write the functions of the following.

Cell wall



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**8.** Write the functions of the following.

Smooth ER



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**9.** Write the functions of the following.

Golgi complex



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**10.** Write the functions of the following.

Centrioles



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**11.** Are the different types of plastids interchangeable ? If yes, give examples where they are getting converted from one type to another.

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**12.** Describe the structure of nucleus.

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**13.** Describe the structure of the following with the help of labelled diagrams.

Centrosome

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14. What is a centromere? How does the position of centromere form the basis of classification of chromosomes. Support your answer with a diagram showing the position of centromere on different types of chromosomes.

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## Textual Exercise

1. What is a mesosome in a prokaryotic cell? Mention the functions that it performs.

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2. How do neutral solutes move across the plasma membrane? Can the polar molecules also move across it in the same way? If not, then how are these transported across the membrane?



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3. Name the two cell-organelles that are double membrane bound. What are the characteristics of these two organelles ? State their functions and draw labelled diagrams of both.



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4. What are the characteristics of prokaryotic cells?

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5. Multicellular organisms have division of labour. Explain.

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6. Cell is the basic unit of life. Discuss in brief.

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7. What are nuclear pores? State their function.

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**8.** Both lysosomes and vacuoles are endomembrane structures, yet they differ in terms of their functions.

Comment.

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**9.** Describe the structure of nucleus.

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**10.** Describe the structure of the following with the help of labelled diagrams.

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**11.** What is a centromere? How does the position of centromere form the basis of classification of chromosomes. Support your answer with a diagram showing the position of centromere on different types of chromosomes.



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**12.** Is extra genomic DNA present in prokaryotes and eukaryotes ? If yes, indicate their location in both the types of organisms.



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**13.** Structure and function are correlatable in living organisms. Can you justify this by taking plasma membrane as an example ?

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## Important Questions

**1.** Vacuole in a plant cell:

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**2.** What are gas vacuoles ? State their functions.

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3. What is the function of a polysome ?

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4. What are microbodies ? What do they contain ?

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5. What is Osmosis ? Define Osmotic Pressure ? Describe Berkily- Hartley method of determining osmotic pressure.

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## 6. Match the following

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7. Explain the association of Carbohydrate to the plasma membrane and its significance.

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8. Comment on the cartwheel structure of centriole.

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**9. Differentiate between Rough Endoplasmic Reticulum (RER) and Smooth Endoplasmic Reticulum (SER).**

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**10. What is cytoskeleton ? What functions is it involved in ?**

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**11. What are nucleosomes ? What are they made of ?**

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**12. What are the characteristics of prokaryotic cells?**



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

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

Schleiden and Schwann.



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**15.** What structural and functional attributes must a cell have to be called a living cell ?



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**16.** Justify the statement. "Mitochondria are power houses of the cell".



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**17.** Write the functions of the following.

Centromere



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**18.** Write the functions of the following.

Cell wall



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**19.** Write the functions of the following.

Smooth ER



**Watch Video Solution**

**20.** Write the functions of the following.

Golgi complex



**Watch Video Solution**

**21.** Write the functions of the following.

Centromere



**Watch Video Solution**

**22.** Are the different types of plastids interchangeable ? If yes, give examples where they are getting converted from one type to another.



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**23.** Describe the structure of the following with the help of labelled diagrams.

Nucleus

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**24.** Describe the structure of the following with the help of labelled diagrams.

Centrosome

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