



## BIOLOGY

### BOOKS - SANTRA BIOLOGY (BENGALI ENGLISH)

#### CELL - AS THE BASIC UNIT OF LIFE

##### Mcq

1. The only microscope which gives 3D images is

A. Compound microscope

B. Electron microscope

C. SEM

D. Fluorescent microscope

**Answer: C**



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2. Very high wavelength rays are used in one of the following microscope

A. Fluorescent

B. Polarising

C. Ultraviolet

D. Phase contrast

**Answer: B**



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3. One of the following dyes cannot be used for staining chromatin material

- A. Acetocarmine
- B. Crystal violet
- C. Haematoxylin
- D. Feulgen stain

**Answer: B**



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4. The technique used for separating DNA fragment is

A. Southern blotting

B. Elisa test

C. Western blotting

D. All above

**Answer: A**



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**5. Protoplasm is the site for all**

A. Anabolic function

B. Catabolic function

C. Metabolic function

D. Physiological function

**Answer: C**



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6. Resolving power of light microscope is

A.  $0.2\mu m$

B.  $2\mu m$

C.  $0.1\mu m$

D.  $100\mu m$

**Answer: A**



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7. Which is the substitution of mitochondria in E. Coli ?

- A. Gogi body
- B. Ribosome
- C. Mesosome
- D. Glyoxysome

**Answer: C**



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8. Prokaryotic nucleus is known as

- A. Nucleoid

B. Genophore

C. Both above

D. None above

**Answer: A**



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**9.** The longest cell in the plant kingdom is

A. Sieve tube

B. Vessel

C. Sclerenchyma fibre

D. Tracheid

**Answer: C**



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**10.** Wall of young cells in plants is mainly composed by

A. Cellulose

B. Starch

C. Glycogen

D. Protein

**Answer: A**



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11. The cell size is mainly dependent upon

- A. Its physiological state
- B.  $O_2$  requirement
- C. Basic metabolism
- D. All above

**Answer: D**



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12. The term 'cytology' was coined by

- A. Bridges
- B. R. Hooke

C. Hertwig

D. Swanson

**Answer: D**



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**13.** Which statement is true for both prokaryotic and eukaryotic cells ?

A. They contain ribosomes

B. They have peptidoglycan cell walls

C. They contain true nuclei

D. They contain membrane bound organelles

**Answer: A**



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**14. Cell's cytoskeleton is formed by**

A. Cytosol

B. ER

C. Golgi bodies

D. Lysosomes

**Answer: B**



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15. The phenomenon of cell drinking is called

- A. Endosmosis
- B. Pinocytosis
- C. Phagocytosis
- D. Exocytosis

**Answer: B**



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16. The longest living cells among the following are

- A. RBC
- B. B-cells

C. T-Cells

D. Memory cells

**Answer: C**



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17. Which of the following structure is not bounded by membrane ?

A. Spherosomes

B. Mitochondria

C. Ribosomes

D. Lysosomes

**Answer: C**



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**18.** The active transport mechanism is against concentration gradient and

- A. Requires protein
- B. Does not require protein
- C. Requires ATP
- D. Does not require ATP

**Answer: C**



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19. Fluid mosaic model exhibits amphipathy because of

- A. Glycoproteins
- B. Phospholipids
- C. Lipids
- D. Glycolipids

**Answer: C**



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20. The most abundant material in the plant cell wall is

- A. Lignin
- B. Hemicellulose

C. Starch

D. Cellulose

**Answer: D**



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**21.** Cell wall of higher plants can be stained by

A. Methylene

B. Sudan V

C. Zinc chloride

D. Phloroglucinol

**Answer: D**



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22. Plasmodesmata helps in

- A. Food translocation
- B. Mineral translocation
- C. Translocation of phytohormones
- D. All above

**Answer: D**

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23. Controlling centre of the cell is

- A. Nucleoplasm
- B. Nuclear chromatin
- C. Nucleus
- D. All above

**Answer: C**

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**24.** Which statement is wrong about nucleolus?

- A. It has rRNA and proteins
- B. It has granules
- C. It has lipoprotein membrane

D. It has fibres

**Answer: C**

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**25.** Gastric cells secreting zymogen have well-developed

A. SER

B. RER

C. Mitochondria

D. Plastids

**Answer: B**

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26. The ribosomes are attached to ER through

A. rRNA

B. mRNA

C. Ribophorins

D. All above

**Answer: C**



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27. The ER membrane is continuous with one of the following

- A. Plasma membrane
- B. Nuclear membrane
- C. Membrane of Golgi
- D. All above

**Answer: B**



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**28. The functional unit of Golgi complex is**

- A. Cristae
- B. Thylakoid
- C. Archoplasm

D. Cisternae

**Answer: D**



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**29.** Which of the following structure is present in mitochondria?

A. Oxysomes

B. Dictyosomes

C. Quantasomes

D. Polysomes

**Answer: A**





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**30.** Mitochondria will be most abundant among the

- A. Liver cells
- B. Kidney cells
- C. Brain cells
- D. Cardiac muscle cells

**Answer: D**



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**31.** Carbohydrate is synthesized from fat within

A. Spherosome

B. Glyoxysome

C. Lomasome

D. Lysosome

**Answer: B**



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**32. Lysosome along with the food contents is called**

A. Primary lysosome

B. Secondary lysosome

C. Lomasome



D. Liposome

**Answer: B**



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**33. Ribosome contains maximum quantity of**

A. mRNA

B. Lipids

C. Steroids

D. rRNA

**Answer: D**



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**34.** The types of amino acids in highest quantity in ribosomes are

- A. Glycine and tryptophan
- B. Lysine and arginine
- C. Histidine only
- D. Lysine only

**Answer: B**



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**35.** The photosynthetic units are termed as

- A. Microsomes
- B. Spherosomes
- C. Glyoxysomes
- D. Quantasomes

**Answer: D**



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**36. Pigment absent in chloroplast is**

- A. Chlorophyll
- B. Carotene
- C. Xanthophyll

D. Anthocyanin

**Answer: D**



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**37. Microfilament present in cells are made up of**

A. Myosin

B. Tubulin

C. Actin

D. All above

**Answer: D**



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**38.** One of the principal structural elements of the living cell is

- A. Carbon
- B. Oxygen
- C. Silicon
- D. Hydrogen

**Answer: A**



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**39.** A fundamental requirement of every living organism is

A. Evolution

B. Order

C. Energy

D. Growth

**Answer: C**



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**40.** Study of cells in all aspects is

A. Cytology

B. Cytotaxonomy

C. Cell biology

## D. Cytochemistry

**Answer: C**

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**41.** One of the following is not a non-protoplasmic inclusion

A. Cystolith

B. Starch grain

C. Raphide

D. Mitochondria

**Answer: D**

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**42.** Cellular totipotency means

- A. Synthesis of new cells
- B. Formation of new species
- C. Formation of new plants
- D. Capability of a plant cell to form complete plant

**Answer: D**



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**43.** Which is the principle site for synthesis of rRNA?

- A. Nucleolus



B. Mitochondria

C. Chloroplast

D. ER

**Answer: A**



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**44.** Components of 70S ribosomes are

A. 50S and 20S

B. 50S and 30S

C. 40S and 40S

D. 40S and 30S

**Answer: B**



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**45.** Respiratory enzymes are stored in bacteria in

- A. Mesosome
- B. Plasma membrane
- C. Cell wall
- D. All above

**Answer: A**



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46. pH of the cytoplasm is

A. 5.8

B. 6.8

C. 7.8

D. 8.8

**Answer: C**



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47. Largest physical and chemical molecules for cell are

A. Carbohydrates

B. Lipids

C. Proteins

D. Nucleic acids

**Answer: C**



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**48.** A basic character of living being is

A. Cellular structure

B. Metabolism

C. Reproduction

D. All the above

**Answer: C**

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49. One of the most common form of energy is

- A. Thermal
- B. Radiant
- C. Electrical
- D. All above

**Answer: A**

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50. Quantasomes are found in

A. Mitochondria

B. Chloroplasts

C. Nucleus

D. All above

**Answer: B**



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**51. Middle lamella is a constituent of**

A. Cell membrane

B. Cell wall

C. Cytoplasm

D. Nucleoplasm

**Answer: B**



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**52.** Chloroplasts are self replicating units as they possess

A. DNA

B. RNA

C. Neither DNA nor RNA

D. Both DNA and RNA

**Answer: D**



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53. Grana and stroma lamellae occurs in

- A. Chloroplast
- B. Ribosome
- C. Golgi body
- D. Mitochondria

**Answer: A**



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54. The colour of chromoplast can be

- A. Yellow



B. Red

C. Orange

D. All of the above

**Answer: D**



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**55.** Filaments present in flagella / cilia are

A. Microfibril

B. Microtubules

C. Microfilaments

D. Microvilli

**Answer: B**



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**56.** Golgi apparatus is absent in

- A. Higher plants
- B. Yeast
- C. Blue green algae
- D. Liver cell

**Answer: C**



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57. Membrane bound Krebs cycle enzyme is

- A. Fumarase
- B. Cis-aconitase
- C. Succinate dehydrogenase
- D. Malate dehydrogenase

**Answer: C**



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58. In plant cells, peroxisomes are associated with

- A. Photorespiration
- B. Phototropism

C. Photoperiodism

D. Malate dehydrogenase

**Answer: A**



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**59.** Golgi complex is derived from

A. Cell membrane

B. ER

C. Nuclear envelop

D. Cytoplasm

**Answer: B**

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**60.** Protein tubulin is absent in

A. Flagella

B. Cilia

C. Microtubules

D. Plasma membrane

**Answer: D**

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**61.** Glyoxysomes are connected with metabolism of

A. Fats

B. Protein

C. Carbohydrates

D. All of these

**Answer: A**



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**62. Which is correctly matched ?**

A. Centrosome -Enzyme for digestion

B. Lysosomes-Synthesis of amino acid

C. ER-Formation of new nuclear membrane

## D. Microsomes-Photosynthesis

**Answer: C**

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**63.** Mitochondrial cristae are sites of

- A. Breakdown of macromolecules
- B. Protein synthesis
- C. Phosphorylation of flavoprotein
- D. Oxidation-reduction reaction

**Answer: D**

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64. Inner membrane convolutions of a mitochondria are known as

A. Lamellae

B. Thylakoid

C. Grana

D. Cristae

**Answer: D**



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65. Poisons like cyanides inhibit  $Na^+$  efflux and  $K^+$  influx.

The effect is reversed by injection of ATP indicating that



- A.  $Na^+ - K^+$  pump operates in cells
- B. ATP is hydrolysed by ATPase to release energy
- C. Energy for  $Na^+ - K^+$  pump comes from ATP
- D. ATP is carrier protein

**Answer: C**



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**66.** Organelle having flattened bound cisternae and lying near the nucleus is

- A. Golgi apparatus
- B. Mitochondrion
- C. Centriole

D. Nucleolus

**Answer: A**



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**67.** Centrioles occurs in

A. Centrosome

B. Centromere

C. Chromosome

D. Spindle fibre

**Answer: A**



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68. Nucleoplasm is continuous with cytoplasm through

- A. ER
- B. Golgi apparatus
- C. Centriole
- D. Nuclear pore

**Answer: D**



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69. Nucleolus takes part in the synthesis of

- A. Ribosome

B. tRNA

C. mRNA

D. DNA

**Answer: A**



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**70.** Chlorophyll occurs in chloroplast

A. Stoma

B. Thylakoid membranes

C. Inner membrane

D. Inner membrane

**Answer: B**



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**71. Rigidity of cell wall is due to**

A. Cellulose

B. Pectin

C. Lignin

D. Hemicellulose

**Answer: C**



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72. Colour of rose petal is due to water soluble pigment present in

- A. Cytoplasm
- B. Intercellular spaces
- C. Nucleus
- D. Vacuoles

**Answer: D**



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73. ER of rapidly dividing cell is

- A. Non functional

B. Poorly developed

C. Absent

D. Highly developed

**Answer: B**



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**74. Site for protein synthesis**

A. Pyrenoid

B. Chloroplast

C. Ribosome

D. Mitochondrion

**Answer: C**



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**75.** Series of reactions which can convert fatty acids to sugar in plants but not in animals is

- A. Krebs cycle
- B. Glyoxylate cycle
- C. Ornithine cycle
- D. Glycolysis

**Answer: B**



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76. Which one does not possess histone associated DNA?

- A. Chromosome
- B. Mitochondria
- C. Euchromatin
- D. Heterochromatin

**Answer: D**



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77. Smaller unit in cell wall is

- A. Fibril
- B. Middle lamella

C. Microfibril

D. Micelle

**Answer: D**



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**78.** Cell wall possesses

A. Cellulose

B. Hemicellulose

C. Pectin

D. All of these

**Answer: D**

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**79.** The site of cellular respiration

A. Nucleus

B. ER

C. Ribosome

D. Mitochondria

**Answer: D**

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**80.** Which causes softening of fruits

A. polygalacturonase

B. Magnesium

C. Pectin

D. Iron

**Answer: A**



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**81.** In higher plants the cell wall consists of

A. Cellulose

B. Protein

C. Starch

D. None of the above

**Answer: A**



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**82. Phagocytosis was first seen by**

A. Huxley

B. Strasburger

C. Haeckel

D. Metchnikoff

**Answer: D**



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**83.** A unit membrane is absent over

A. Lysosome

B. Microbody

C. Nucleus

D. Ribosome

**Answer: D**



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**84.** A single unit membrane is present over

A. Nucleus

B. Mitochondrion

C. Lysosome

D. Chloroplast

**Answer: C**



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**85.** Main element present in middle lamella is

A.  $Fe^{3+}$

B.  $Ca^{2+}$

C.  $Mg^{2+}$

D.  $K^+$

**Answer: B**



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**86.** Glycolate metabolism occurs in

- A. Lysosome
- B. Ribosome
- C. Glyoxysomes
- D. Peroxisomes

**Answer: D**



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**87.** Circular DNA is present in

- A. Bacteria only
- B. Bacteria and Chloroplast
- C. All viruses
- D. Bacteria, Chloroplast and virus

**Answer: A**



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**88.** Desmosomes are concerned with

- A. Cell adherens
- B. Cytolysis

C. Cell division

D. Cellular excretion

**Answer: A**



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**89. Which one is living ?**

A. Protoplasm

B. Nucleus

C. Cytoplasm

D. All of these

**Answer: D**

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90. Golgi apparatus takes part in

- A. Protein synthesis
- B. Lipid synthesis
- C. Carbohydrate synthesis
- D. Oxidative phosphorylation

**Answer: C**

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91. Hydrolytic enzymes occurs in

A. Mitochondria

B. ER

C. Golgi apparatus

D. Lysosome

**Answer: D**



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**92. Which one takes part in acrosome formation**

A. Gogi apparatus

B. Lysosome

C. Nucleus

D. Mitochondria

**Answer: A**

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**93.** Which has a single membrane covering?

A. Mesosome

B. Golgi apparatus

C. Mitochondria

D. Centrosome

**Answer: B**

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**94.** Oxysomes occur in

- A. Golgi body
- B. Chloroplast
- C. Mitochondria
- D. ER

**Answer: C**



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**95.** The term thylakoid was coined by

- A. Arnon

B. Park and Biggins

C. Menke

D. Willstatter

**Answer: D**



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**96.** Which one separated the mitochondrial core from outside ?

A. Outer membrane

B. Inner membrane

C. Perimitochondrial space

D. All of these

**Answer: B**



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**97.** Plasmalemma prevents escape of  $Na^+$  and  $K^+$  to

- A. Cause disruption in neighbouring cells through desmosomes
- B. Maintains electrostatic neutrality of cells
- C. Maintain cell sap
- D. All of these

**Answer: D**



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**98.** Which one is different?

- A. Protoplasm - Huxley
- B. Cell - Schwann
- C. Vitamin - Funk
- D. Chromosome - Mendel

**Answer: B**



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**99.** Which cell organelle reduces the number of other organelle

- A. Oxysome

B. Lysosome

C. Mitochondria

D. None of these

**Answer: B**



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**100.** Thylakoid occurs inside

A. Mitochondria

B. Chloroplast

C. Golgi apparatus

D. ER

**Answer: B**



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**101.** Xanthophyll occurs in

A. Chloroplast

B. Vacuole

C. Leucoplast

D. Chromoplast

**Answer: B**



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**102.** Cell membranes occur in

- A. Eukaryotes
- B. Prokaryotes
- C. Both in eukaryotes and prokaryotes
- D. None of these

**Answer: C**



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**103.** Action potential on the outer surface of plasma membrane is

- A. Neutral

B. Positive

C. Negative

D. Variable

**Answer: B**



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**104.** Karyolymph is

A. Nuclear pore

B. Nuclear sap

C. Cell gap

D. None of these

**Answer: B**



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**105. Which one does not possess RNA ?**

A. Plasmalemma

B. Chromosome

C. Ribosome

D. Nucleolus

**Answer: D**



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**106.** SER is associated with

- A. Lysosome
- B. Golgi body
- C. Mitochondrion
- D. Lomasome

**Answer: B**



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**107.** Protein synthesis occurs in a animal cell in

- A. Cytoplasm
- B. Cytoplasm as well as mitochondria

C. Ribosome attached to nuclear envelop

D. Nucleolus as well as cytoplasm

**Answer: C**



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**108.** Two animal cells are interconnected by

A. Plasmodesmata

B. Cell wall

C. Desmosome

D. Plasma membrane

**Answer: C**



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**109.** Fluid mosaic model differs from Robertson's model in

- A. Arrangement of lipid molecules
- B. Arrangement of protein
- C. Number of lipid layers
- D. All of these

**Answer: B**

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**110.** Mitochondria increases in the cells of

- A. Dormant seed
- B. Dry seed
- C. Ripening fruits
- D. Germinating seed

**Answer: D**



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**111.** Centriole and centrosome occurs in the cells of

- A. Green plant
- B. Animals
- C. Bacteria and cyanobacteria

D. Both 'b' and 'c'

**Answer: B**



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**112.** Plasmalemma is made of

- A. Single protein layer
- B. Single lipid layer
- C. Single lipid layer and two protein layer
- D. Single protein and single lipid layer

**Answer: C**



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**113.** Nucleus is covered by

- A. Porous double membrane
- B. Porous single membrane
- C. Non porous single membrane
- D. Non-porous double membrane

**Answer: A**



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**114.** Solar energy is trapped by

- A. Oxysomes

B. Thylakoid

C. Stroma

D. DNA

**Answer: B**



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**115.** Protein synthesis occurs in

A. Mitochondria

B. Chloroplast

C. Cytoplasm

D. Ribosome

**Answer: D**



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**116.** Which one is a non living cell inclusion

A. Golgi complex

B. Centrosome

C. Vacuole

D. Ribosome

**Answer: C**



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117. Crystals of calcium carbonate forming branches in epidermal cell

A. Cystolith

B. Raphide

C. Spheraphides

D. Otolith

**Answer: A**



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118. Enzyme facilitating transport across cell membrane is

A. Ligase

B. Lipase

C. Endonuclease

D. Permease

**Answer: D**



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**119.** Leucoplast represent

A. Colourless plastid

B. Proplastids

C. Cell adhesive

D. Plastid with variable colour



**Answer: A**



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**120.** Membrane system considered to be extension of  
infolded plasma membrane

A. Golgi complex

B. Plastids

C. Mitochondria

D. ER

**Answer: D**



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121. Export house of cell is

A. ER

B. Golgi body

C. Nucleus

D. Lysosome

**Answer: B**



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122. Detoxification site in liver is

A. Free Ribosome

B. Golgi complex

C. SER

D. RER

**Answer: C**



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**123.** RNA takes part in the synthesis of-

A. DNA

B. Carbohydrate

C. Fat

D. Protien

**Answer: D**

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124. Cell organelle covered by a single unit membrane is

- A. Glyoxysomes
- B. Lysosomes
- C. Peroxisomes
- D. All the above

**Answer: D**

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125. Ribosome is formed of

A. RNA + Protein

B. DNA + RNA

C. DNA + Protein

D. Protein only

**Answer: A**



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**126.** Oxidative electron transport occurs in

A. Chloroplast

B. Outer membrane of mitochondria

C. Cristae

D. ER

**Answer: C**



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**127. Chloroplast of algae lack**

A. Quantasome

B. Lamellae

C. Pigments

D. Grana

**Answer: D**



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**128.** Racker's particles are found in

- A. Nucleus
- B. Mitochondria
- C. Chromosomes
- D. Golgi apparatus

**Answer: B**



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**129.** Strength and rigidity of cell wall is due to

- A. Lignin

B. Cellulose

C. Suberin

D. Pectin

**Answer: A**



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**130.** In multicellular organisms 70S ribosomes occur inside

A. E.R.

B. Lysosome

C. Mitochondria

D. Nucleus



**Answer: C**



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**131. Membrane most abundant in a cell is**

- A. E.R. membrane
- B. Plasma membrane
- C. Golgi membrane
- D. Nuclear membrane

**Answer: A**



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**132.** Middle lamella is mainly composed of

- A. Mumaric acid
- B. Hemicellulose
- C. Calcium pectate
- D. Phosphoglycerides

**Answer: C**



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**133.** Cell theory is not applicable for

- A. Fungus
- B. Virus

C. Bacteria

D. Algae

**Answer: B**



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**134.** Peptide synthesis inside a cell take place in

A. Mitochondria

B. Ribosomes

C. Chloroplast

D. Chromoplast

**Answer: B**

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**135.** Ribosomal RNA is actively synthesized in

A. Ribosomes

B. Nucleolus

C. Lysosomes

D. Nucleoplasm

**Answer: B**

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**136.** A major site for synthesis of lipid is

A. Symplast

B. SER

C. Nucleoplasm

D. RER

**Answer: B**



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**137.** Which of the following is always absent in prokaryotic cells ?

A. Ribosome

B. Mitochondria

C. DNA

D. Cell wall

**Answer: B**

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**138.** True nucleus is absent in

A. Anabaena

B. Mucor

C. Vaucheria

D. Volvox

**Answer: A**

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**139.** Which of the cell organelle is present in both eukaryotic and prokaryotic cells?

- A. Endoplasmic reticulum
- B. Mitochondria
- C. Nucleus
- D. Ribosome

**Answer: D**



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**140.** Which one of the following is stored in lysosome ?

A. Secretory glycoproteins

B. Hydrolytic enzymes

C. RNA and Protein

D. Sugar, fat, ATP

**Answer: B**



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**141.** Which of the following is used in mitotic spindle poison

A.  $Ca^{+2}$

B.  $Mg^{+2}$

C. Tubulin



D. Colchicine

**Answer: D**



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**142.** In plants both cellulose and hemicellulose are major components of which one of the following?

- A. Plasma membrane
- B. Cell wall
- C. Nuclear membrane
- D. Mitochondrial membrane

**Answer: B**



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**143.** Cytoskeleton network of a cell is built by a process called

- A. Triphasic polymerization
- B. Biphasic polymerization
- C. Treadmilling
- D. Dynamic instability

**Answer: D**



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**144.** Which of the following cell organelles is responsible for extracting energy from carbohydrates to form ATP?

- A. Ribosome
- B. Chloroplast
- C. Mitochondria
- D. Lysosome

**Answer: C**



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**Choose More Than One Options**

1. Which are present in plant cell ?

A. Cell wall

B. Lysosome

C. Vacuole

D. Microvili

**Answer: A::C**



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2. Different colours of chromoplasts are

A. Red

B. Orange

C. Yellow

D. Green

**Answer: A::B::C**



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**3. Which are present in eukaryotic cell ?**

A. Mesosome

B. Lysosome

C. Ribosome

D. Centrosome

**Answer: B::C::D**

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4. Which are absent in prokaryotic cell?

A. Lysosome

B. Ribosome

C. Centrosome

D. Golgibody

**Answer: A::C::D**

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5. Components of centromere are

A. Kinetochore

B. Astral ray

C. Centriole

D. Centriole

**Answer: A::B**



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**6. Important functions of mitochondria are**

A. Glycolysis

B. Krebs cycle

C. Oxidative phosphorylation

D. Fatty acid metabolic regulation

**Answer: B::C::D**

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7. Lebiliser substance of lysosome are

A. Vitamin-A

B. Cholesterol

C. Cortisole

D. Progesterone

**Answer: A::D**

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8. Example of mesokaryotic cells are

- A. Peridinium
- B. Noctiluca
- C. Bacteria
- D. Blue green algae

**Answer: A::B**



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9. Colourless plastids are

- A. Amyloplast

B. Leueoplast

C. Chromoplast

D. Elaioplast

**Answer: A::B::D**

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## Fill In The Blanks

1. The main element of cell wall of the prokaryotic cell is

\_\_\_\_\_

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2. Cell membrane is \_\_\_\_\_ Å in thickness.

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3. The fold of inner membrane of mitochondria are called \_\_\_\_\_

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4. Protein synthesis is the function of \_\_\_\_\_

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5. Mitochondria is called \_\_\_\_\_ of the cell.

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6. \_\_\_\_\_ is called suicidal bag.

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7. Which cell does not have perforated cell wall?

A. tracheids

B. vessels

C. sieve tubes

D. none of the above

**Answer:**

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8. Microfilament is of two types, i.e., \_\_\_\_\_ and myosin.

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9. The middle lamella is made up of \_\_\_\_\_ or \_\_\_\_\_ pectates.

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10. The cell walls are supposed to be the product of \_\_\_\_\_  
and \_\_\_\_\_

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11. \_\_\_\_\_ was the first to observe cell wall in dead cells of cork.



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12. \_\_\_\_\_ ER is associated with glycoprotein synthesis.



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13. The contractile vacuoles play important role in \_\_\_\_\_



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14. The appearance of ER is dependent on the \_\_\_\_\_ of the cell.



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15. The golgi complex was described by \_\_\_\_\_ in the nerve cells of \_\_\_\_\_



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16. Golgi complex is found in all type of cells except some cells such as \_\_\_\_\_ of man.



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17. In plant cells golgi apparatus occurs is the scattered form of many unconnected units called \_\_\_\_\_

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18. During spermatogenesis, the golgi apparatus gives rise to \_\_\_\_\_

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19. The ribosomes were first observed by \_\_\_\_\_

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20. The principle site of ribosomal RNA in the cell is the \_\_\_\_\_

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21. During protein synthesis mRNA gets attached to \_\_\_\_\_ subunit of Ribosome.

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22. Each granum of chloroplast may consist of general sac like structure called \_\_\_\_\_

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23. Microbodies containing oxidating enzymes is called \_\_\_\_\_

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24. Clusters of ribosomes found attached with mRNA threads are called \_\_\_\_\_

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25. Stalked particles present on inner membrane of mitochondria are called \_\_\_\_\_

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## True Or False Statement Questions

1. Zymogen granules remain in the cell of pancreas.

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2. The sub-units of 70S ribosome are 40S and 60S.

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3. Lysosome controls the secretion of the cell.

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4. Star-shaped chloroplast remains in the cell of Zygnema.

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5. Singer and Nicolson discovered cytoskeleton.



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6. PLP is the element of cell wall of the plant cell.

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7. Knoll and Ruska discovered electron microscope.

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8. Schleiden and Schwann discovered the cell theory.

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9. Primary cell wall is elastic and capable of expansion.

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10. Cellulose is a long branched chain molecule being formed of about 6000 glucose molecule.

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11. Middle lamella is made up of calcium sulphate.

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12. The lysosome were discovered by Altman.

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**13.** The suicidal bags of a cell are lysosomes.

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**14.** The suicidal bags of a cell are peroxisomes.

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**15.** The convex face of cisternae of Golgi body is called forming face.

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**16.** Extensive infoldings of the inner membrane of mitochondria are called oxysomes.

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**17.** Elaioplast, aleuroplast and amyloplast are three type of leucoplast.

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**18.** Centriole gives rise to basal bodies of cilia and flagella.

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**19.** The power house of the cell is mitochondria.

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**20.** Internal membranes or cytomembranes are extension of cell membrane.

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**21.** The walls have unit membrane structure.

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22. All the cell organelle are bounded by the same membrane.

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### Very Short Answer Type Questions

1. Who coined the term Mitochondrion?

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2. Name the organism which possesses one mitochondria.

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3. Which of the mitochondrial enzymes are present in the matrix?



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4. What are elementary particles?



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5. Where are the enzymes of respiratory chain of E.T.S located in mitochondria.



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6. What is the pH of cytoplasm?

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7. What holds the ribosomes together in a polysome?

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8. What is the role of acrosomal granule in sperm penetration?

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9. Name the discoverer of peroxisomes.

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10. What is cytosol?

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11. What are the unconnected units of golgi complex found in plant cell?

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12. Where is dynein found?

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**13.** Define plasmodesmata.

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**14.** Which cell organelle is known as semi autonomus ?

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**15.** Which cell organelle exhibits polarity ?

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**16.** Which part of the cell is associated with glycogen metabolism?



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17. Which what reaction  $F_1$  particles of mitochondria are associated?

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18. What happens if  $Mg^{2+}$  concentration rises above 0.001 M in the Hyaloplasm?

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19. Which is the longest cell in plant kingdom?

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20. What is the mode of origin of centriole ?

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21. What is heterochromatin?

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22. What is the name given to the crystal deposition of  $CaCO_3$  in the plant cell ?

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Short Answer Type Questions

1. Give two examples of prokaryotic cells.



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2. (a) Who first showed the presence of mitochondria in living cells? (b) State its function in respiration.



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3. Name two type of essential secretory products of protoplasm.



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4. What is pinocytosis ?

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5. What is rhizoplast? Where is it found?

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6. Where are the chlorophyll molecules concentrated in the chloroplasts?

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7. Name each part of well-developed nucleus.

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8. In which type of cells rough surfaced endoplasmic reticulum is found?

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9. Name the cells where endoplasmic reticulum is absent.

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10. State the functions of endoplasmic reticulum.

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**11.** State the functions of centriole.

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**12.** How does secretion take place by means of Golgi body?

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**13.** In which stage the nuclear membrane is absent in a cell ?

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**14.** Where is rRNA synthesized?

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15. Where does citric acid cycle take place?



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16. Name two trace elements of protoplasm.



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17. What are the main organic compounds of protoplasm?



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18. What is the resolving power of human eye.



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19. What is the resolving power of light microscope.

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20. What is the resolving power of electron microscope.

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21. What are the smallest and largest organism on earth?

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22. Define cell wall.

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23. Who first discovered / described the cell ?

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24. Name the scientist who first introduced the name cell ?

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25. What is ribosome?

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**26.** Where is ribosome found?

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**27.** Why does betacyanin pigment come out of beet root when warmed, but carotene from boiled carrot does not ?

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**28.** (a) Name the different types of RNA (b) State the functions of each.

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**29.** What is the main function of plasma membrane?

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**30.** Who first discovered the Unit membrane ?

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**31.** Who first discovered the Mitochondria?

 [Watch Video Solution](#)

**32.** Who first discovered the Nucleus?

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**33.** In 70S ribosome, what does the letter 'S' stand for ?



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**34.** How many membranes comprise the nuclear envelope?



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**35.** What are nucleosomes?



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**36.** Who discovered electron microscope?



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**37.** What is the chemical component of the wall of the pollen that resists decay during fossilisation?

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**38.** What are the three chemical classes of pigments that impart to floral parts ?

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**39.** Mention two factors on which red and blue colour of flowers depends.

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40. State the differences between the nucleus of bacteria and nucleus of yeast.

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41. Who discovered microscope ?

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42. What is reverse pinocytosis?

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**43.** Name two components of a bacterial cell wall which are not present in the cell wall of higher plants.

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**44.** Name the internal membrane present in the prokaryotic cell.

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**45.** Mention one major role of Golgi apparatus.

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**46.** What is centrosome?



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47. Where is centrosome found ?



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48. What is lysosome?



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49. Where from lysosome has originated?



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**50.** Mention the functions of lysosome.

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**51.** Name one cell organelle with single-layered membrane and another with double-layered membrane.

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**52.** (a) What is rough ER? (b) Why is it so named?

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**53.** What is pleomorphism?

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**54.** What is tonoplasm?

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**55.** What is polyribosome?

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**56.** What is inulin?

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**57.** What is coenocyte?

 [Watch Video Solution](#)

**58.** Mention where tonoplast is found?

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**59.** Which organelle connects cell membrane with nuclear membrane?

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**60.** Name the organelle which contains enzymes responsible for breakdown of macromolecules.

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**61.** What are the chemical components of nucleoli?

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**62.** (a) What is ribosome ? (b) Where from it originates?

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**63.** What do you mean by kinetosome and kinoplasm?

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**64.** Name the plant cell visible with naked eye?

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**65.** Name the cytoplasmic organelles of eukaryotic cell.

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**66.** Define euchromatin, mention its chemical nature.

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**67.** What do you mean by Autophagy?

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**68.** What is Glycocalyx or cell coat?

 [Watch Video Solution](#)

**69.** What is nuclear lamina?

 [Watch Video Solution](#)

**70.** What is plasmodesmata and state its function?

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71. What is polysome?



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72. Which organelle is known as transducer and why is it so called?



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73. What is 'sol' and 'gel' ?



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**74.** What is cyclosis and how it helps a cell?

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**75.** State the function of cell wall and its constituents.

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**76.** State the function of microbodies.

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**77.** What are microfilament?

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**78.** Why lysosomes are termed 'Suicidal bags'?

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**79.** What is transitional vesicle of golgi body?

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**80.** What is vitellogenesis?

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**81.** Which organelle and how it is responsible for cell plate and cell wall formation.

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**82.** Cell is the basic unit of life. - Explain.

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**83.** What is cell theory? Who proposed cell theory? Explain the cell theory in brief.

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**84.** What is cell? What are the names of the smallest cell and the largest cell? Who first discovered cell? Which plant cell and animal cell are seen in the open eye?

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**85.** What are prokaryotic, mesokaryotic and eukaryotic cell? Give examples. Discuss their comparative account.

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**86.** What is cell wall? Describe its ultra structure. What is its function?

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**87.** What is cell membrane? What are its structural constituents? What is the function of cell membrane? Show its difference with cell wall.

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**88.** What is plastid? Classify the plastid. Describe with diagram the ultra structure of a chloroplast. Show the differences between three main plastids. State the functions of plastid.

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**89.** What is ER? Describe its ultra structure. What is its function?

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**90.** What is G.B.? Describe its ultrastructure. What is its function? Describe its process of secretion.

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**91.** (a) What is mitochondria? Why it is called as "power house of cell"? Describe its ultrastructure with diagram. State the functions of mitochondria. (b) Draw a labelled diagram of mitochondrion.

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**92.** What is ribosome? Describe its ultra structure. Why ribosome is called as "protein factory"? What is its function? What is the role of ribosome in protein synthesis?



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**93.** What is lysosome? Why lysosome is called as "suicidal bag"? Discuss its ultrastructure. What do you mean by polymorphism of lysosome? State the function of lysosome.



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**94.** What is nucleus? Why is its called as "brain of the cell"? Describe its ultrastructure with diagram. What are the functions of it?

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**95.** What is centrosome? Describe its ultrastructure. State the functions of centrosome.

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**96.** What are microbodies? Classify the microbodies. Describe their ultrastructure.

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**97.** What is microtubule? State its structure and function.

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**98.** What is cytoskeleton? Describe its constituents.

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**99.** Describe the ultrastructure of cilia and flagella and state their functions.

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**100.** State the differences between prokaryotic and eukaryotic cell.

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**101.** In which type of cell does the cell wall remain? Describe the structure of cell wall with diagram. What is its function?

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**102.** State the functions of nucleus and Golgi body in brief.

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**103.** State the difference: (i) Cell wall and cell membrane, (ii) Chloroplast and amyloplast, (iii) Starch grains and zymogen granules.

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**104.** Describe the structure of the nucleus of eukaryotic cell with labelled diagram.

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**105.** Show the differences between phagocytosis and pinocytosis.

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**106.** Mention the structural and functional differences between Rough Endoplasmic Reticulum (RER) and Smooth Endoplasmic Reticulum (SER).

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**107.** How does the cell get protection from the destroying reaction of the lysosomal enzymes? What is ribophorin?

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**108.** What is ribosome? Where is its origin?

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**109.** What are the chemical components of nucleolus?

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**110.** What is desmosome? What is lysosome? Mention its function.

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**111.** Mention the two types of organisms containing prokaryotic cell. What are the cytoplasmic organelles of eukaryotic cell?

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**112.** What is cytoskeleton? What is its structural unit?  
Mention its importance.

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## Long Answer Type Questions

**1.** Describe the polymorphism of lysosome.

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**2.** Discuss the structure and function of chloroplast.

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3. Give the structure and function of nucleus.

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4. Give an account of the structure of mitochondria

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5. Write short notes on : (i) Glyoxysomes, (ii) Peroxisomes,  
(iii) Spherosomes.

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1. Which of the following is not correct?

A. Robert Brown discovered the cell.

B. Schleiden and Schwann formulated the cell theory.

C. Virchow explained that cells are formed from pre-existing cells.

D. A unicellular organism carries out its life activities within a single cell.

**Answer:**



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2. New cells generate from

- A. bacterial fermentation
- B. regeneration of old cells
- C. pre-existing cells
- D. abiotic materials

**Answer:**

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**3. Match the following**

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

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4. 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 nova from abiotic materials.

**Answer:**



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

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6. 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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7. Name two cell-organelles that are double membrane bound. State their functions and draw labelled diagrams of

both.



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8. What are the characteristics of prokaryotic cells.



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9. Multicellular organisms have division of labour. Explain.



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



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**11.** What are nuclear pores? State their function.

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

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

(i) Nucleus, (ii) 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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