



BIOLOGY

NEET & AIIMS

CELL:THE UNIT OF LIFE

Example

1. Give two examples of unicellular organisms.



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2. Who gave and cell theory?

A.

B.

C.

D.

Answer:



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3. Which is the main arena of cellular activities?



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4. Which type of cell lacks membrane-bound organelles?



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5. what is the function of cell wall in a prokaryotic cell?



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6. Name the extraachromosomal segments of DNA found in a prokaryotic cell.



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7. which three structures collectively form cell envelope of a bacterial cell ?



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8. Give a function glycoalyx



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9. Wate are the two types of proteins found in a plasma membrane?



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10. Who gave fluid mosaic model w.r.t. cell membrane?



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11. Which cell organelles constitute an endomembrane system?



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12. Give an important function of Golgi complex.



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13. Name the structures formed towards the matrix of mitochondria which help to increase the surface area for enzyme action



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14. which structures connect the thylakoids of different grana?



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15. which type of arrangement of microtubules is found in eukaryotic flagella?



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16. Name any organelles which are bound by two membranes?



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Exercise

1. Which layer of the cell envelope determines the shape of the cell and provides a strong structural support to prevent the bacterium from bursting or collapsing ?

A. Slime layer

B. Capsule

C. Cell membrane

D. Cell wall

Answer: D



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2. Who observed few living cells capable of moving ,such as bacteria, protozoa,

spermatozoa and red blood corpuscles under his designed microscope?

- A. Aristotle
- B. Robert Hooke
- C. Leeuwenhoek
- D. Purkinje

Answer: C



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3. Cells that have membrane bound nucleus includes

A. Rhizobium

B. Meristem

C. Mature sieve tube

D. Nostoc

Answer: B



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4. The semifluid nature of biomembrane

- A. Helps in quick repair
- B. Provides dynamic nature
- C. Give semipermeable nature
- D. More than one option is correct

Answer: D



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5. Intercellular matrix or common layer between the primary walls of adjacent cells is

- A. Middle lamella
- B. primary wall
- C. Secondary wall
- D. periplasmic space

Answer: A



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6. Endomembrane system of cell includes

A. Golgi complex

B. Lysosome and vacuoles

C. ER

D. All of these

Answer: D



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7. Agranular ER of muscle cells is also called as

A. Sarcoplasmic reticulum

B. Nissome and granules

C. Desmotubules

D. Dictyosome

Answer: A



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8. RER is found abundantly in those cells which are actively involved in

A. protein synthesis

B. Lipid synthesis

C. steroidal hormones synthesis

D. Dictyosome

Answer: A



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9. Which face of Golgi complex gives rise to the secretory vesicles?

A. Trans face

B. Proximal face

C. Convex face

D. Cis face

Answer: A



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10. Polymorphic cell organelle is

A. Vacuole

B. Lysosome and vacuoles

C. Golgi bodies

D. Endoplasmic reticulum

Answer: B



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11. Inner mitochondrial membrane is different from outer mitochondrial membrane in presence of

A. Less protein and more lipid

B. Cristae

C. Porins and cholesterol

D. Porins and cardiolipin

Answer: B



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12. which of the following feature is not associated with mitochondria?

A. Circular nucleic acid

B. Elementary particles in matrix

C. 70s ribosomes

D. Division through fissions

Answer: B



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13. which one the following plastid involved in storage of proteins in maize?

A. Chromoplast

B. Chloroplast

C. Amyloplast

D. Aleuroplast

Answer: D



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14. Which of the following organelles is concerned with photophosphorylation?

A. Mitochondria

B. plastochondria

C. Chloroplast

D. More than one option is correct

Answer: C



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15. Many ribosomes may associate with a single mRNA to form multiple copies of a

polypeptide simultaneously. Such strings of ribosomes are termed as

- A. polyhedral bodies
- B. Ergasome or Polysome
- C. Nucleosme
- D. plastidome

Answer: B



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16. which one of the following function is not associated with microtubules?

A. Helps in anaphasic movement of chromosomes

B. Form the cytoskeleton of cilia and flagella

C. Help in pseudopodia formation

D. Spindle and astral ray formation

Answer: C



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17. Centrioles have

- A. 9+2 arrangement of microtubules
- B. 9 peripheral doublet microtubules
- C. 2 centrally located microtubules
- D. An organisation like the wheel

Answer: D



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18. In flagella and cilia, the number of doublets present in the peripheral region of axoneme are

A. 18

B. 20

C. 9

D. 2

Answer: C



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19. The interdouplet links in eukaryotic flagellum are made up of a protein called

A. Nexin

B. Dynein

C. Flagellin

D. Action

Answer: A



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20. Match the column I with column II

Column I

- a. Fat storage
 - b. Cilia
 - c. Mitochondria
 - d. Microfilaments
- (1) a(ii), b(i), c(iv), d(iii)
- (3) a(iii), b(i), c(iv), d(ii)

Column II

- (i) Tubulin
 - (ii) Elaioplast
 - (iii) Contractile
 - (iv) Oxysomes
- (2) a(ii), b(i), c(iii), d(iv)
- (4) a(i), b(ii), c(iv), d(iii)

A. a(ii),b(i), c(iv),d(iii)

B. a(ii), b(i), c(iii), d(iv)

C. a(iii),b(i), c(iv), d(ii)

D. a(i), b(ii), c(iv),d(iii)

Answer: A



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21. Karyotheca or nuclear membrane is absent
in

A. Nostoc

B. Rhizobium

C. Drosophila

D. Both (1)&(2)

Answer: D



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22. Nucleolus is

- A. Dense acidophilic body
- B. Present in cytoplasm
- C. Spherical, colloidal and basophilic body
- D. Is a membrane bound structure

Answer: A



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23. Lightly stained region of chromatin during interphase is

- A. Genetically inactive
- B. Highly condensed region
- C. Rich in loosely packed DNA
- D. Rich in tightly packed DNA

Answer: C



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24. Choose odd one out w.r.t. nuclear membrane.

A. inner membrane is smooth

B. Cytoplasmic surface of envelope may bear ribosomes

C. Outer membrane bears 70S ribosomes

D. Peribuclear space is 10 to 50nm

Answer: C



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25. kinetochore is associated with

A. Primary constriction

B. Secondary constriction

C. Satellite

D. More than one option is correct

Answer: A



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26. How many SAT- chromosomes are present in human diploid cell ?

A. 23 pairs

B. 5pairs

C. 10pairs

D. 3pairs

Answer: B



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27. Find the incorrect match

A. Allosomes -sex chromosomes

B. Lampbrush chromosomes- Diplotene bivalents

C. Polytene chromosomes- Oocytes of amphibians

D. Sub-metacentric chromosome- L-shaped chromosome

Answer: C



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28. Mark the correct option w.r.t. informosomes.

A. mRNA+ribosomes

B. mRNA+protein

C. DNA+protein

D. polyribosomes

Answer: B



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29. Organelle involved in light dependent respiration in plant is

A. Sphaerosomes

B. Glyoxysomes

C. Peroxisomes

D. Lysosome

Answer: C



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30. Isobrachial chromosomes are

- A. Acrocentric
- B. Telocentric
- C. Sub- metacentric
- D. Metacentric

Answer: D



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1. Robert Hooke discovered the - of a cell

A. cell membrane

B. Nucleus

C. cell wall

D. cytoplasm

Answer: C



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2. The statement *Omnis cellula e cellula* , which means all cells arise from pre-existing cells was given by

A. Rudolf virchow

B. Schleiden

C. Robert Brown

D. Anton von Leeuwenhoek

Answer: A



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3. which of the following cell organelles is nonmembrane bound and found in both prokaryotes?

A. Lysosomes

B. Ribosomes

C. Centrioles

D. Mitochondria

Answer: B



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4. which of the following structure is present only in prokaryotic cell ?

A. Plasmid

B. Nucleus

C. Mitochondria

D. Ribosomes

Answer: A



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5. The smallest cell of 0.3 μm in length is

- A. Ostrich egg
- B. Cyanobacteria
- C. Bacteria
- D. Mycoplasma

Answer: D



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6. The genomic DNA of a bacterium is

A. Circular nucleic acid

B. Linear

C. Segmented

D. Rod shaped

Answer: A



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7. Which of the following components provides sticky character to the bacterial cell

A. cell wall

B. Nuclear membrane

C. plasma membrane

D. Glycocalyx

Answer: D



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8. The subunits of ribosomes of a prokaryotic cell are

A. 60S and 40S

B. 20S and 90S

C. 50S and 30S

D. 30S and 30S

Answer: C



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9. The genetic material of a prokaryotic cell is known as

A. Nucleus

B. centrosome

C. Nucleoid

D. Mesosome

Answer: C



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10. which of the following cell organelles is known as protein factory?

A. Lysosomes

B. Mitochondria

C. Nucleolus

D. Ribosomes

Answer: D



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11. which type of vacuoles provide buoyancy to bacteria?

A. Sap vacuoles

B. contractile vacuoles

C. Gas vacuoles

D. Food vacuoles

Answer: C



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12. which of the following is not a structure of prokaryotic flagella ?

A. Filament

B. centriole

C. Hook

D. Fimbriae

Answer: B



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13. The _____ are small bristle like fibres sprouting out of the bacterial cell.

A. pili

B. Mesosomes

C. Cilia

D. Fimbriae

Answer: D



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14. The animal cell is different from a plant cell
in having

A. Ribosomes

B. Nucleus

C. Golgi apparatus

D. Centrosomes

Answer: D



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15. The model given by Singer and Nicolson in ___ was ___ for plasma membrane.

A. 1982, fluid mosaic model

B. 1992, bilayer model

C. 1972, fluid mosaic model

D. 1952, bilayer model

Answer: C



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16. Gas vacuoles are found in

A. Blue green algae

B. Green and purple bacteria

C. Bacillus

D. More than one option is correct

Answer: D



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17. The major component of fungal cell wall is a polymer called

A. peptidoglycan

B. Chitin

C. Hemicellulose

D. pectin

Answer: B



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18. which of the following statement is incorrect?

- A. Middle lamella is chiefly made up of calcium and magnesium pectate
- B. Secondary cell wall is found in harder woody parts of a plant
- C. plasmodesma are cytoplasmic bridges that connect the neighbouring plant cells
- D. Secondary wall is formed on the outer side of the cell

Answer: D



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19. which of the following cell organelles is not considered as a part of an endomembrane system?

A. Mitochondria

B. ER

C. Golgi complex

D. Lysosomes

Answer: A



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20. A cell organelle 'x' is divided into two types on the basis of a cell organelle 'y' , that helps in the protein synthesis. Identify 'x' and 'y' respectively

- A. Golgi complex and ribosome
- B. ER and mitochondria
- C. ER and rinosome
- D. Lysosomes and ER

Answer: C



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21. The surface of RER has

- A. Lysosome and vacuoles
- B. Ribosomes
- C. Golgi complex
- D. plastids

Answer: B



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22. which of the following cell organelle is responsible for the synthesis of steroids and lipids?

A. SER

B. RER

C. Mitochondria

D. Ribosome

Answer: A



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23. Large number of RER are found in the cells actively involved in

- A. Lipid synthesis
- B. Steroidogenesis
- C. Protein synthesis
- D. Starch synthesis

Answer: C



24. which of the following statement is incorrect W.r.t. Golgi apparatus?

A. It is a non-membrane bound organelle

B. It is composed of flattened sacs called cisternae

C. Cisternae resemble with SER

D. Golgi apparatus has two faces- cis and trans

Answer: A



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25. which of the following is sommon to both ER and Golgi complex ?

- A. Both are double membrane bound
- B. Both have cisternae
- C. Both contain their own DNA
- D. Both are semi-autonomous organelles

Answer: B



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26. A number of proteins synthesised by ribosomes present on the ER are transferred to

A. Vacuoles

B. Lysosome

C. plastids

D. Gogli apparatus

Answer: D



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27. which of the following statement is incorrect w.r.t. Lysosomes ?

A. Lysosomes are simple tiny spherical sac-like structures

B. They are distributed in the cytoplasm of the cell

C. The enzymes of lysosomes work in basic condition

D. The enzymes of lysosomes are synthesised by RER

Answer: C



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28. which of the following cell organelles is involved in the synthesis of the cell organelle that contains hydrolytic enzymes?

A. Mitochondrion

B. Golgi apparatus

C. plastids

D. Nucleus

Answer: B



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29. which of the following vacuoles help in osmoregulation in Amoeba?

A. gas vacuole

B. food vacuole

C. contractile vacuole

D. sap vacuole

Answer: C



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30. The vacuoles which help in the digestion of food particles engulfed by protists are

A. Contractile vacuoles

B. Gas vacuoles

C. Sap vacuoles

D. Food vacuoles

Answer: D



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31. which of the following stain is used to observe mitochondria?

A. Methylene blue

B. Safranin

C. Janus green

D. Gram stain

Answer: C



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32. Which of the following cell organelle is know as powerhouse of the cell?

A. Golgi apparatus

B. ER

C. Lysosomes

D. Mitochondria

Answer: D



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33. Folding of inner membrane of mitochondria are called

A. Cisternae

B. Cristae

C. Microtubules

D. Mesosome

Answer: B



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34. The type of ribosomes found inside the Mitochondria is

A. 90S

B. 60S

C. 80S

D. 70S

Answer: D



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35. The plastids which store proteins are

A. Aleuroplasts

B. Elaioplasts

C. Amyloplast

D. chromoplast

Answer: A



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36. which of the following plastid is coloured and contains carotenoids?

A. Aleuroplasts

B. Elaioplasts

C. Amyloplast

D. chromoplast

Answer: D



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37. which type of plastid contains chlorophyll and responsible for photosynthesis?

A. chloroplast

B. chromoplast

C. Aleuroplast

D. Elaioplast

Answer: A



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38. The orange colour of carrot root is due to the presence of

A. Aleuroplasts

B. Elaioplasts

C. chromoplast

D. Amyloplast

Answer: C



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39. Thylakoids are present in

A. Mitochondria

B. vacuoles

C. Chloroplast

D. Ribosomes

Answer: C



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40. which of the following statement is incorrect w.r.t ribosomes?

A. The type of ribosomes of prokaryotes is

70S

B. Ribosomes were discovered by George Palade

C. They are made up of RNA only

D. Ribosome are also known as protein factories

Answer: C



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41. Centrosome is an organelle containing two cylindrical structures called

A. Cristae

B. Cisternae

C. Centrioles

D. Thylakoids

Answer: C



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42. The nucleus was discovered by_____in

A. Robert Hooke, 1931

B. Anton von Leeuwenhoek, 1906

C. Robert Brown,1831

D. Schleiden, 1981

Answer: C



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43. What is common in mitochondria, chloroplast and nucleus?

A. They are double membrane bound organelles

B. They are single membrane bound organelles

C. They are included in endomembrane system

D. They have 80S ribosomes.

Answer: A



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44. The structure present inside the nucleus responsible for ribosomal unit formation is

- A. Mesosomes
- B. Nucleoplasm
- C. Nucleolus
- D. DNA

Answer: C



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45. Chromatin found in nucleus was discovered by

A. Flemming

B. Schleiden

C. Schwann

D. Robert Brown

Answer: A



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46. Chromatin is essentially composed of

- A. DNA only
- B. DNA and histones
- C. RNA only
- D. RNA and ribosomes

Answer: B



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47. The chromatids of a chromosome are held together at a point called



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48. An elaborate network of filamentous proteinaceous structures present in the cytoplasm which helps in the maintenance of cell shape is called

A. Thylakoid

B. Endoplasmic reticulum

C. Plasmalemma

D. Cytoskeleton

Answer: D



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49. Select the incorrect statement w.r.t mitochondria.

A. They divide by fission

B. The matrix possesses single circular DNA

C. The cristae decrease the surface area

D. They produce cellular energy in the form
of ATP

Answer: C



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50. The chromosomes having centromere at terminal end are called

A. sub-metacentric

B. Metacentric

C. Telocentric

D. Acrocentric

Answer: C



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51. Satellite chromosomes have

A. Primary constriction only

B. Secondary constriction only

C. Tertiary constriction only

D. Both primary and secondary constriction

Answer: B



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52. Microbodies are

A. membrane bound minute vesicles

B. Non-membrane bound organelles

C. present only in animals

D.

Answer: A



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53. Match the column I with column II

Column I	Column II
a. Glyoxysome	(i) Plant lysosomes
b. Sphaerosome	(ii) Glyoxylate cycle
c. Mitochondria	(iii) Photorespiration
d. Peroxisome	(iv) Succinate dehydrogenase

A. a(ii), b(i) c(iv) d(iii)

B. a(ii), b(i), c(iii), d(iv)

C. a(ii), b(i),c(iv), d(ii)

D. a(i), b(ii),c(iv), d(iii)

Answer: A



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54. Which of the following organelles shown polymorphism ?

A. Golgi apparatus

B. Lysosome

C. Mitochondria

D. Chloroplast

Answer: B



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55. which structure is/are considered as semiautonomous organelle?

A. Ribosomes

B. Golgi body

C. Mitochondria and choroplast

D. Mitochondria only

Answer: C



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56. Animals cannot carry out gluconeogenesis as they do not possess

- A. Glycolysis enzyme
- B. Glycolate enzyme
- C. Glyoxylate enzyme
- D. Lysosome

Answer: C



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57. Diagrammatic representation of karyotype of a species is called

A. Cladogram

B. Dendogram

C. Idiogram

D. More than one option is correct

Answer: C



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58. Incorrect statement in relation to nucleolus is

A. It is a spherical structure

B. It is separated from nucleoplasm by nuclear envelope

C. It is the site of rRNA synthesis

D. They are larger and more numerous in cells actively engaged in protein synthesis

Answer: B





59. Microfilaments perform all the following functions, except

A. Provide support to plasma membrane

B. Involved in cytokinesis

C. Help in cell plate method during cell division

D. Help in pseudopodia formation

Answer: C



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60. Mark the mis- matched pair

A. Peroxisomal - Catalase

B. Ribosomes - Palade particles

C. Glyoxylate enzymes - plants and animals

D. Massule -MTG

Answer: C



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Assignment Section B Subjective Type Question

1. Cell is the fundamental structural and functional unit of all living organisms because

A. Unicellular organisms are incapable of independent existence

B. The cell is the basic unit of life

C. Anything less than a complete structure of a cell does ensure independent living

D. Essential life function can be performed
in only multicellular organisms

Answer: B



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2. Gas vacuole ,Single envelope system
Cytoskeleton Non cellulosic wall
Microfilaments , Cytoplasmic streaming Lack
any cell organelles

How many of the above features are associated with procarytic cell ?

A. One

B. Four

C. Two

D. Three

Answer: D



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3. The function of polysome in bacterial cell is to

A. Translate the mRNA into protein

B. Store reserve food materials

C. Synthesize pigments

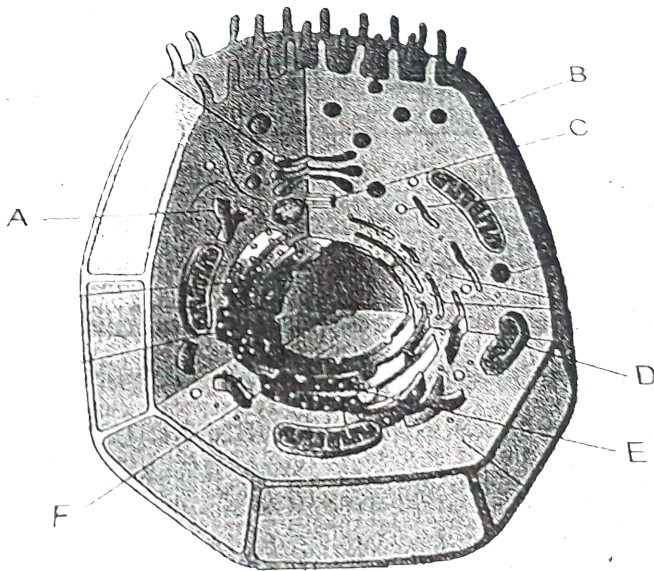
D. Help in buoyancy

Answer: A



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4. Identify the correct statement w.r.t. the given cell



A. Concerned with lipid and steroidal hormone synthesis

B. Outer non- living rigid structure which gives shape to the cell and protects from mechanical damage and infection .

C. Both lie perpendicular to each other and each has an organisation like the cart wheel .

D. Responsible for trapping light energy for the synthesis of sugar.

E. Present in cells actively involved in protein synthesis and secretion.

F. Spherical structures rich in hydrolytic enzymes.

A. A, D & E

B. B , C & n D

C. A, C & E

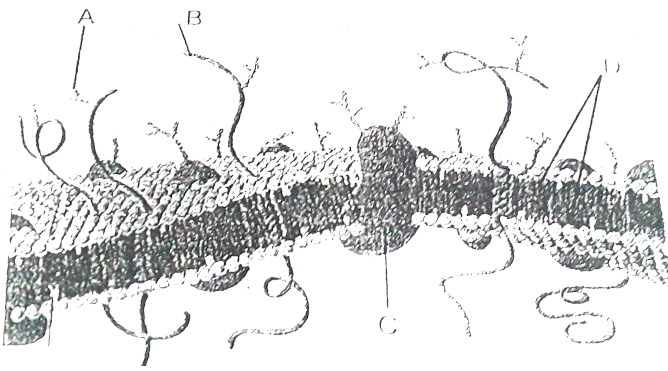
D. A, B , C & F

Answer: C



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5. Identify the structures marked as A, B, C and D w.r.t. Fluid mosaic model of plasma membrane



	A	B	C	D
(1)	Protein	Sugar	Integral protein	Lipid monolayer
(2)	Sugar	Protein	Peripheral protein	Lipid bilayer
(3)	Protein	Sugar	Peripheral protein	Lipid bilayer
(4)	Sugar	Protein	Integral protein	Lipid bilayer

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6. Plasma membrane is

A. Semipermeable and symmetric

B. Selectively permeable , elastic and asymmetric

C. Permeable and asymmetric

D. Selective permeable with monolayer phospholipids

Answer: B



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7. Select the correct combination of the statements regarding the characteristics of middle lamella

a. It holds the different neighbouring cells together.

b. It is composed of mg pactate only.

c. It gets dissolved during ripening of fruits.

Correct statement si / are.

A. a & c

B. b & c

C. Only a

D. a, b , & c

Answer: A



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8. Which of the following is associated with the detoxification of drugs and muscle contraction by the release and Ca^{2+} ions?

A. Golgi complex

B. RER

C. SER

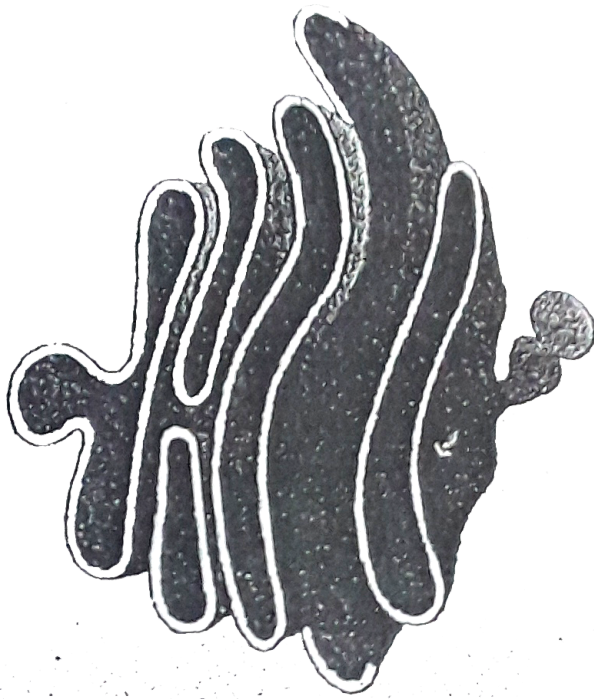
D. Free ribosomes

Answer: C



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9. Study the organelle given below and identify its function.



- A. It is a site for formation of glycoproteins and glycolipids
- B. Site for synthesis of steroidal hormone
- C. These have enzymes that are capable of digesting carbohydrates proteins lipids

and nucleic acids.

D. It divides intracellular space into two distinct compartments i.e., luminal and extra luminal cytoplasm.

Answer: A



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10. Which of the following statement is incorrect about golgi apparatus?

A. It helps in recycling of the plasma membrane pinched off by pinocytosis and phagocytosis.

B. Secretion is the main function of the golgi complex

C. it helps in glycosidation and glycosylation of lipids and proteins

D. Golgi body helps in animal cytokinesis

Answer: D



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11. Certain golgain vesicles which are budded-out from the trans - face contains acid hydrolases. Such vesicles are better termed as

A. Heterophagosomes

B. Microsomes

C. Phragmosomes

D. Primary lysosomes

Answer: D



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12. In plants the tonoplast facilitates the transport of a number of ions and other materials

A. Against concentration gradient into vacuole

B. Along concentration gradient into vacuole

C. Along concentration gradient into gas vacuoles

D. Against concentration gradient in contractile vacuole

Answer: A



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13. Mitochondria and chloroplasts are semi-autonomous as they possess

A. DNA

B. DNA + RNA

C. DNA + RNA + ribosomes

D. Proteins

Answer: C



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14. The symbiont hypothesis suggests that there are similarities between prokaryotes, mitochondria, and chloroplasts like

- A. Presence of circular DNA associated with histones and 70 S ribosomes
- B. Presence of circular DNA not associated with histones and 70 S ribosomes
- C. 50 S ribosomes and DNA
- D. 30 ribosomes and DNA

Answer: B



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15. How many organelles of a eukaryotic cell are considered to have an independent existence during early events of evolution ?

A. 1

B. 2

C. 3

D. 4

Answer: B



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16. Find the correct set of structures / organelles not surrounded by membrane

A. Ribosomes , centrosome , lysosome

B. Peroxisome, nucleolus , centriole

C. Ribosome , nucleolus , centriole

D. Nucleolus , spherosome , ribosome

Answer: C



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17. The larger sub- unit of a ribosome is found to contain 28S , 5,8S and 5S types RNA. This ribosome is found in

- A. Bacterium
- B. Mitochondrion
- C. Animal cell
- D. Chloroplast

Answer: C



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18. Organelle lacking DNA but capable of duplication is

- A. Ribosome
- B. Centriole
- C. Chloroplast
- D. Nucleus

Answer: B



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19. Each centriole has a cart wheel organisation having a whorl of tubulin fibrils at periphery. These peripheral fibrils are composed of how many microtubules?

A. 11

B. 18

C. 9

D. 27

Answer: D



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20. Find out all the proteins that make eukaryotic flagellum.

A. Nexin , tubulin and flagellin

B. Tubulin nexin , dynein and flagellin

C. Actin , myosin , dynein , nexin and tubulin

D. Dynein , tubulin and nexin

Answer: D



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21. Consider the following statement and choose the incorrect option.

a. Large and more numerous nucleoli are present in cells actively carrying out protein synthesis.

b. Nuclear pores allow bidirectional movement of molecules.

c. Cytoskeleton is a glycolipid structure for mechanical support , motility and maintenance of the shape of the cell.

d. Steroidal hormones are synthesized by Golgi complex .

A. a and b

B. b and c

C. c and d

D. a and d

Answer: C



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22. Eukaryotic cells have a well organised nucleus and

a. Both 70 S and 80 S types of ribosomes

b. Flagella associated with 9 + 2 organisation

c. Shows cytoplasmic streaming

d. their DNA is complexed with histones to constitute the chromatin

A. All are correct

B. Only a is incorrect

C. Only c and d are correct

D. Both b and c are incorrect

Answer: A



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23. 9 + 2 organisation is present in

A. Flagella of bacteria

B. Flagella and cilia of eukaryotic cell
Basal
body

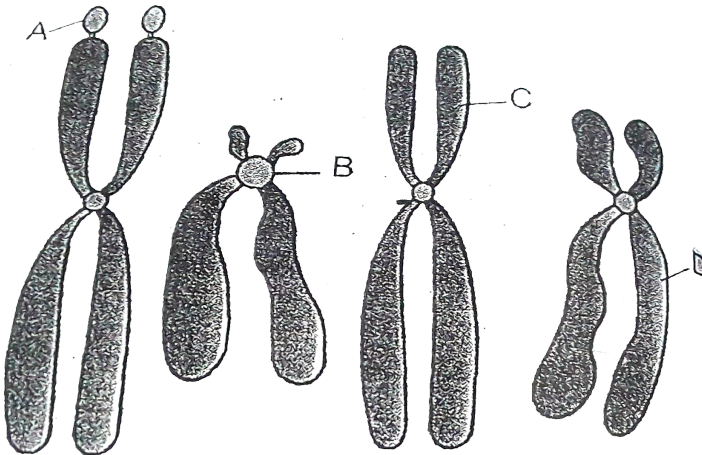
C. Basal body

D. Centriole and basal body

Answer: B

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24. Find out the correct option on the basis following diagrams



A. A - Satellite B- Secondary constriction C -

Short arm ,D- Long arm

B. A - Satellite , B- Centromere C- Short arm

,D- Long arm

C. A - Secondary constriction ,B- Satellite C -

Long arm , D - Short arm

D. A - NOR , B - Secondary constriction C -

Short arm ,D- Long arm

Answer: B



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25. Nucleolus is formed by

A. Primary constriction

B. Nucleolar organiser

C. Endoplasmic reticulum

D. Ribosomes

Answer: B



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26. All the following statements are correct except ,

A. Peroxisomes are quite common in the photosynthetic cells . Their number can be 70 - 100 per mesophyll cell, Wherein they interact with mitochondria and chloroplasts to take part in photorespiration

B. Glyoxysomes are numerous in the endosperm of wheat

C. The ER-bound ribosomes synthesis secretory membrane and lysosomal protein

D. Ribosomes when associated with ER are attached with their 60S sub - unit

Answer: B



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27. Triglyceride metabolism to convert fats into carbohydrates is helped by glyoxylate cycle. The organella responsible for this is found in .

A. Rice seeds

B. Castor seeds

C. Wheat seeds

D. More than one option is correct

Answer: B



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28. Catalase and urate oxidase enzymes are associated with the organelle which is also involved in

- A. Gluconeogenesis
- B. Photorespiration
- C. Glycolate oxidation
- D. More than one option is correct

Answer: D





29. In fluid mosaic model of plasma membrane

,

A. Upper layer is non- polar and hydrophilic

B. Upper layer is polar and hydrophilic

C. Phospholipids form a bimolecular layer

in middle part

D. Proteins form a middle layer

Answer: C



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Assignment Section C Previous Year Qusetion

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

A. Lysosome

B. Ribosome

C. Chloroplast

D. Mitochondrion

Answer: D



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2. Which of the following components provides sticky character to the bacterial cell

A. Cell wall

B. Nuclear membrane

C. plasma membrane

D. Glycocalyx

Answer: D



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3. Select the mismatch

A. Gas vacuoles - Green bacteria

B. Large central vacuoles - Animal cells

C. Protists - Eukaryotes

D. Methanogens - Prokaryotes

Answer: B



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4. A cell organelle containing hydrolytic enzymes is

A. Lysosome

B. Microsome

C. Ribosome

D. Mesosome

Answer: A



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5. Water soluble pigments found in plant cell vacuoles are

A. Anthocyanins

B. Xanthophylls

C. Chlorophylls

D. Carotenoids

Answer: A



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6. Mitochondria and chloroplast are

(a) Semi-autonomous organelles

(b) Formed by division of pre-existing organelles and they contain DNA but lack protein synthesizing machinery

Which one of the following options is correct

A. Both (a) and (b) are false

B. Both (a) and (b) are correct

C. (b) is true but (a) is false

D. (a) is true but (b) is false

Answer: D



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7. Microtubules are the constituents of

A. Centrosome , Nucleosome and

Centrioles

B. Cilla, Flagella and Peroxisomes

C. Spindle fibres , Centrioles and Cilia

D. Centrioles , Spindle , fibres and
Chromatin

Answer: C



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8. Which one of the following cell organelles is enclosed by a single membrane

A. Nuclei

B. Mitochondria

C. Chloroplasts

D. Lysosomes

Answer: D



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9. Which of the following structures is not found in a prokaryotic cell?

A. Plasma membrane

B. Nuclear envelope

C. Ribosome

D. Mesosome

Answer: B



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10. Which of the following are not membrane bound ?

A. Mesosomes

B. Vacuoles

C. Ribosomes

D. Lysosomes

Answer: C



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11. Cellular organelles with membranes are

A. Lysosomes , Golgi apparatus and mitochondria

B. Nuclei , ribosomes and mitochondria

C. Chromosomes , ribosomes and endoplasmic reticulum

D. Endoplasmic reticulum, ribosomes and nuclei

Answer: A



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12. Cell wall is absent in:

A. Nostic

B. Aspergillus

C. Funaria

D. Mycoplasma

Answer: D



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13. A protoplast is a cell

- A. Without cell wall
- B. Without plasma membrane
- C. without nucleus
- D. undergo division

Answer: A



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14. Chromatophores take part in

A. Respiration

B. Photosynthesis

C. Growth

D. Movement

Answer: B



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15. The structure that help some bacteria to attach to rocks and host tissues are

A. Holdfast

B. Rhizoids

C. Fimbriae

D. Mesosomes

Answer: C



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16. Match the column and identify the correct option

Column I	Column II
(a) Thylakoids	(i) Disc-shaped sacs in Golgi apparatus
(b) Cristae	(ii) Condensed structure of DNA
(c) Cisternae	(iii) Flat membranous sacs in stroma
(d) Chromatin	(iv) Infoldings in mitochondria

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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17. Balbiani rings are sites of

- A. RNA and protein synthesis
- B. Lipid synthesis
- C. Nucleotide synthesis
- D. Polysaccharide synthesis

Answer: A



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18. In photosynthesis, light independent reactions take place at

- A. Stroma matrix
- B. Thylakoid lumen
- C. Photosystem I
- D. Photosystem II

Answer: A



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19. Nuclear envelope is a derivative of

- A. Rough endoplasmic reticulum
- B. Smooth endoplasmic reticulum
- C. Membrane of Golgi complex
- D. Microtubules

Answer: A



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20. True nucleus is absent in

A. Volvox

B. Anabaena

C. Mucor

D. Vaucheria

Answer: B



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21. The structures that are formed by stacking of organized flattened membranes sacs in the chloroplasts are

A. Stroma

B. Cristae

C. Grana

D. Stroma lamellae

Answer: C



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22. DNA is not present in :

A. Mitochondria

B. Chloroplast

C. Ribosomes

D. Nucleus

Answer: C



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23. Select the correct matching in the following pairs:

A. Rough ER- Oxidation of fatty acids

B. Smooth ER- Oxidation of phospholipids

C. Smooth ER- Synthesis of lipids

D. Rough ER- Synthesis of glycogen

Answer: C



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24. Which one of the following is not an inclusion body found in prokaryotes ?

A. Polysome

B. Phosphate granule

C. Cyanophycean granule

D. Glycogen granule

Answer: A



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25. the chromosomes in which centromere is situated close to one end are :

A. Sub-metacentric

B. Metacentric

C. Acrocentric

D. Telocentric

Answer: C



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26. A somatic cell that has just completed the S phase of its cell cycle, as compared to the gamete of the same species, has :

- A. Four times the number of chromosomes and twice twice the amount of DNA
- B. Twice the number of chromosomes and twice the amount of DNA
- C. Same number of chromosomes and four amount of DNA
- D. Twice the number of chromosomes and four times the amount of DNA

Answer: D



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27. Which structures perform the function of mitochondria in bacteria ?

A. Nucleoid

B. Ribosomes

C. Cell wall

D. Mesosomes

Answer: D



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28. The solid linear cytoskeletal elements having a diameter of 6 nm and made up of a single type of monomer are known as

- A. Microtubules
- B. Microfilaments
- C. Intermediate filaments
- D. Lamins

Answer: B



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29. The osmotic expansion of cell kept in water is chiefly regulated by :

A. Mitochondria

B. Vacuoles

C. Plastids

D. Ribosomes

Answer: B



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30. Match the following and select the correct

answer

	Column I	Column II
a.	Centriole	(i) Infoldings in mitochondria
b.	Chlorophyll	(ii) Thylakoids
c.	Cristae	(iii) Nucleic acids
d.	Ribozymes	(iv) Basal body, cilia or flagella

A. a (iv) , b(ii) , c(i) , d (iii)

B. a(i) , b(ii) , c(iv) , d(iii)

C. a(i) , b(iii) , c(ii) , d(iv)

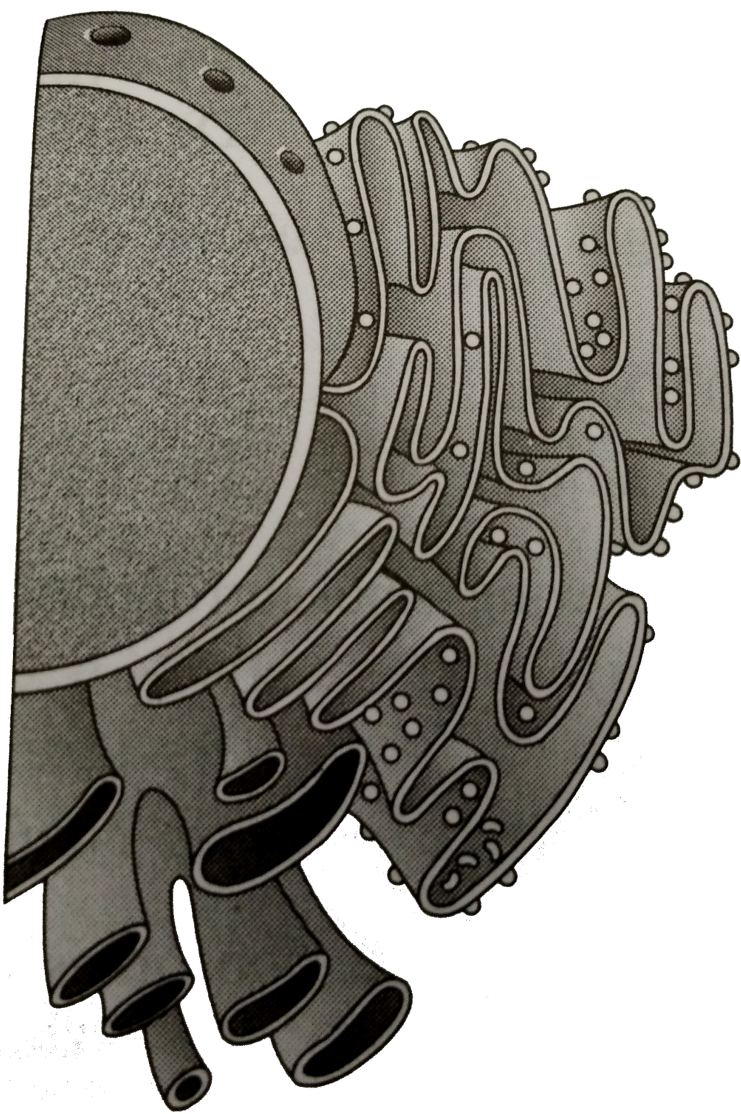
D. a(iv) , b(iii) , c(i) , d(ii)

Answer: A



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31. Which one of the following organelle in the figure correctly matches with its functions?



A. Golgi apparatus , protein synthesis

B. Golgi apparatus formation of glycolipids

C. Rough endoplasmic reticulum protein synthesis

D. Rough endoplasmic reticulum, formation of glycoproteins

Answer: C



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32. The Golgi complex plays a major role

A. In digesting proteins and carbohydrates

B. As energy transferring organelles

C. In post translational modification of proteins and glycosylation of lipids

D. In trapping the light and transforming it into chemical energy

Answer: C



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33. A major site for synthesis of lipids is

A. SER

B. Symplast

C. Nucleoplasm

D. RER

Answer: A



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34. Nuclear membrane is absent in

A. Volvox

B. Nostoc

C. Penicillium

D. Agaricus

Answer: B



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35. Which one of the following does not differ in E.coli and Chlamydomonas?

A. Cell wall

B. Cell membrane

C. Ribosomes

D. Chromosomal organization

Answer: B



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36. Select the correct statement from the following regarding cell membrane.

A. Lipids are arranged in a bilayer with polar heads towards the inner part

B. Fluid mosaic model of cell membrane was proposed by Singer and Nicolson

C. Na^+ and K^+ ions move across cell membrane by passive transport

D. Proteins make up 60 to 70% of the cell membrane

Answer: B



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37. What is true about ribosomes ?

- A. These are found only in eukaryotic cells
- B. These are self-splicing introns of some RNAs
- C. The prokaryotic ribosomes are 80S , where "s" stands for sedimentation coefficient

D. These are composed of ribonucleic acid
and proteins

Answer: D



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38. Ribosomal RNA is actively synthesized in :-

A. Nucleoplasm

B. Ribosomes

C. Lysosomes

D. Nucleolus

Answer: D



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39. Which one of the following structures is an organelle within an organelle

" " Or

Which of the following cell organelle lacks DNA and bounding membrane

A. Ribosome

B. Peroxisome

C. ER

D. Mesosome

Answer: A



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40. Which one of the following cellular parts is correctly described

- A. Thylakoids- flattened membranous sacs
forming the grana of chloroplasts
- B. Centrioles - sites for active RNA
synthesis
- C. Ribosomes - those on chloroplasts are
larger (80S) while those in the cytoplasm
are smaller (70 S)
- D. Lysosomes - optimally of a pH of about
8.5

Answer: A



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41. Important site for formation of glycoproteins and glycolipids is

- A. Lysosome
- B. Vacuole
- C. Golgi apparatus
- D. Plastid

Answer: C



42. Peptide synthesis inside a cell takes place in

- A. Ribosomes
- B. Chloroplast
- C. Mitochondria
- D. Chromoplast

Answer: A



43. In eubacteria, a cellular component that resembles eukaryotic cell is

A. Cell wall

B. Plasma membrane

C. Nucleus

D. Ribosomes

Answer: B



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44. In mitochondria, protons accumulate in the

A. Intermembrane space

B. matrix

C. Outer membrane

D. Inner membrane

Answer: A



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45. Which one of the following is not considered as a part of the endomembrane system ?

A. Vacuole

B. Lysosome

C. Golgi complex

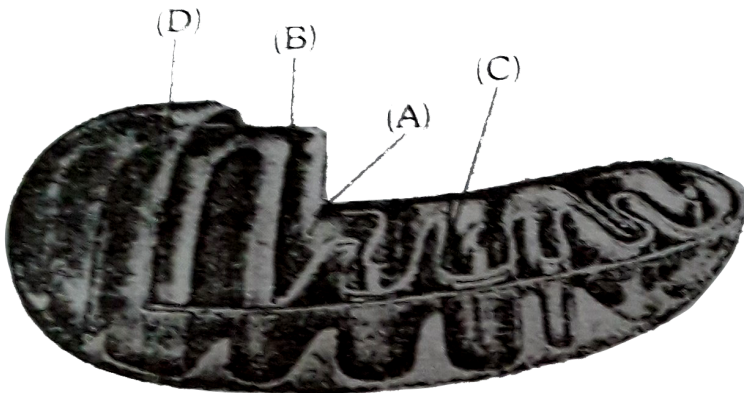
D. Peroxisome

Answer: D



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46. The figure below shows the structure of a mitochondrion with its four parts labelled (A), (B), (C) and (D). Select the part correctly matched with its function



A. Part (C): Cristae - possess single circular DNA molecule and ribosomes

B. Part (A) : Matrix - major site for
respiratory chain enzymes

C. Part (D) : Outer membrane - gives rise
to inner membrane by splitting

D. Part (B) : Inner membrane - forms
Infolding called cristae

Answer: 4



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47. The main arena of various types of activities of a cell is

- A. Nucleus
- B. Plasma membrane
- C. Mitochondrion
- D. Cytoplasm

Answer: D



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48. The plasma membrane consists mainly of

A. Proteins embedded in a carbohydrate bilayer

B. Phospholipids embedded in a protein bilayer

C. Proteins embedded in a phospholipid bilayer

D. Proteins embedded in a polymer of glucose molecules

Answer: C



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49. Which one of the following has its own DNA ?

A. Peroxisome

B. Mitochondria

C. Dictyosome

D. Lysosome

Answer: B



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50. Which one of the following statement about the particular entity is true ?

A. Centromere is found in animal cells which produces aster during cell division

B. The gene for producing insulin is present in every body cell

C. Nucleosome is formed of nucleotides

D. DNA consists of a core of eight histones

Answer: B



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51. An elaborate network of filamentous proteinaceous structures present in the cytoplasm which helps in the maintenance of cell shape is called

A. Thylakoid

B. Endoplasmic reticulum

C. Plasmalemma

D. Cytoskeleton

Answer: D



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52. The plasma membrane consists mainly of

A. Proteins embedded in a carbohydrate bilayer

B. Phospholipids embedded in a protein bilayer

C. Proteins embedded in a phospholipid bilayer

D. Proteins embedded in a polymer of glucose molecules

Answer: C



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53. Plasmodesmate are :-

- A. Locomotory structures
- B. Membranes connecting the nucleus with
plasmalemma
- C. Connections between adjacent cells
- D. Lignified cemented layers between cells

Answer: C



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54. Middle lamella is composed mainly of :

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

Answer: B



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55. Cytoskeleton is made up of

A. Callose deposits

B. Cellulosic microfibrils

C. Proteinaceous filaments

D. Calcium carbonate granules

Answer: C



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56. Vacuole in a plant cell

A. Lacks membrane and contains water and excretory substances

B. Is membrane - bound and contains storage proteins and lipids

C. Is membrane - bound and contains water and excretory substances

D. Lacks membrane and contains air

Answer: C



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57. Polysome is formed by

- A. Ribosomes attached to each other in a linear arrangement
- B. Several ribosomes attached to a single mRNA
- C. Many ribosomes attached to a strand of endoplasmic reticulum
- D. A ribosome with several subunits

Answer: B



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58. 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 mono layer to the other (described as flip flop movement)

A. Neither lipids nor proteins can flip-flop

B. Both lipids 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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59. In germinating seeds fatty acids are degraded exclusively in the

A. Mitochondria

B. Proplastids

C. Glyoxysomes

D. Peroxisomes

Answer: C



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60. The two sub-units of ribosome remain united at a critical ion level of

A. Calcium

B. Copper

C. Manganese

D. Magnesium

Answer: D



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61. Which one of the following is not a constituent of cell membrane

A. Phospholipids

B. Cholesterol

C. Glycolipids

D. Proline

Answer: D



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62. Select the wrong statement from the following

A. the chloroplasts are generally much larger than mitochondria

B. Both chloroplasts and mitochondria have an inner and an outer membrane

C. Both chloroplasts and mitochondria have a internal compartment the thylakoid space bounded by the thylakoid membrane

D. Both chloroplasts and mitochondria contain DNA

Answer: C



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63. Which of the following statements regarding mitochondrial membrane is NOT correct ?

A. The outer membrane is permeable to
the all kinds of molecules

B. the enzymes of the electron transfer
convoluted embedded in the outer
membrane

C. The inner membrane is highly
convoluted forming a series of
infoldings

D. The outer membrane resembles a sieve

Answer: B



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64. A major breakthrough in the study of cells came with the development of electron microscope. This is because

A. The resolution power of the electron microscope is much higher than that of the light microscope

B. The resolving power of electron microscope is 200- 350 nm as compared

to 0.1 -0.2 nm for the light microscope

C. Electron beam can pass through thick materials whereas light microscopy requires for the light microscope

D. The electron microscope is more powerful than the light microscope as it uses a beam of electrons which as wavelength much longer than that of photons

Answer: A



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65. Which of the following statements regarding cilia is not correct

A. the organized beating of cilia is controlled by fluxes of Ca^{2+} across the membrane

B. Cilia are hair-like cellular appendages

C.

D. Microtubules of cilia are composed of tubulin

Answer: A



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66. Organelle involved in modification and routing of newly synthesised proteins to their destination is

A. Mitochondria

B. Endoplasmic reticulum

C. Lysosomes

D. Chloroplast

Answer: B



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67. A student wishes to study the cell structure under a light microscope having 10X eyepiece and 45 X objective. He should illuminate the object by which one of the following colours

of light so as to get the best possible resolution

A. Yellow

B. Green

C. Blue

D. Red

Answer: C



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68. In chloroplasts the chlorophyll is located in

A. Grana

B. Pyrenoid

C. Stroma

D. Both(1)&(3)

Answer: A



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69. Protein synthesis in an animal cell occurs

A. only on the ribosomes present in cytosol

B. on ribosomes present in cytoplasm as well as in mitochondria

C. only on ribosomes attached to the nuclear envelope and endoplasmic reticulum

D. On ribosomes present in the nucleolus as well as in cytoplasm

Answer: B



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70. According to widely accepted "Fluid mosaic model" cell membranes are semi-fluid, where lipids and integral proteins can diffuse randomly. In recent years, this model has been modified in several respects. In this regard, which of the following statements is incorrect

- A. Proteins in cell membranes can travel within the lipid bilayer
- B. Proteins can remain confined within certain domains of the membrane
- C. Proteins can also undergo flip-flop movements in the lipid bilayer
- D. Many proteins remain completely embedded within the lipid bilayer

Answer: C



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71. Genes for cytoplasmic male sterility in plants are located in

A. Mitochondrial genome

B. Cytosol

C. Chloroplast genome

D. Nuclear genome

Answer: A



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72. The term 'glycocalyx' is used for

A. A layer surrounding the cell wall of bacteria

B. A layer present between cell and membrane of bacteria

C. cell wall bacteria

D. Bacterial cell genetically engineered to possess N-glycosylated proteins

Answer: A



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73. Why is a capsule advantageous to a bacterium

A. It allows the bacterium to attach to the surface

B. It protects the bacterium from desiccation

C. It provides means of locomotion

D. It allows bacterium to hide from host's immune system

Answer: D



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74. Which one of the following organisms is not an example of eukaryotic cells

A. Amoeba proteus

B. Paramecium caudatum

C. *Escherichia coli*

D. *Euglena viridis*

Answer: C



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75. Prokaryotic flagella possess

A. Helically arranged protein molecule

B. "9+2" membran enclosed structure

C. Unit membrane enclosed fibre

D. Protein membrane enclosed fibre

Answer: A



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76. In bacteria, site of respiration is

A. Ribosome

B. Microsome

C. Episome

D. Mesosome

Answer: D



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77. in prokaryotes, the genetic material is

- A. Linear DNA without histones
- B. Circular DNA without histones
- C. Linear DNA with histones
- D. circular DNA with histones

Answer: B



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78. Algae have cell wall made up of :

- A. cellulose, hemicellulose and pectins
- B. cellulose, galactans and mannan
- C. Hemicellulose, pectins and proteins
- D. Pectins, cellulose and proteins

Answer: B



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79. Which one of the following structures between two adjacent cells is an effective transport pathway ?

A. Plasmaiemma

B. plasmodesmata

C. plastoquinones

D. Endoplasmic reticulum

Answer: B



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80. The rough endoplasmic reticulum (RER) in the cells are because of the presense of



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81. Which one of the following statements about cytochrome P_{450} is wrong

A. It is a coloured cell

B. It is an enzyme involved in oxidation reactions

C. It has an important role in metabolism

D. It contains iron

Answer: A



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82. which cell organelles is concerned with glycosylation of protein?

A. Ribosome

B. Peroxisome

C. Endoplasmic reticulum

D. Mitochondria

Answer: C



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83. The Golgi apparatus

A. is found only in animals

B. is found in prokaryotes

C. is a site of rapid ATP production

D. Modifies and packages proteins

Answer: D



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84. Which one of the following organelles is located near the nucleus and contains a collection of flattened membrane bound cisternae?

A. Nucleolus

B. Mitochondrion

C. Centriole

D. Golgi apparatus

Answer: D



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85. which of the following organelles contain enzymes that have digestive action ?

A. Ribosomes

B. Polysomes

C. Plastids

D. Lysosomes

Answer: d



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86. Lysosomes are rich in

A. Nucleic acids

B. Hydrolytic enzymes

C. Carbohydrates

D. Hormones

Answer: B



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87. Heterophagosomes are

A. Primary lysosomes

B. Secondary lysosomes

C. Autophagic vacuole

D. Tertiary lysosomes

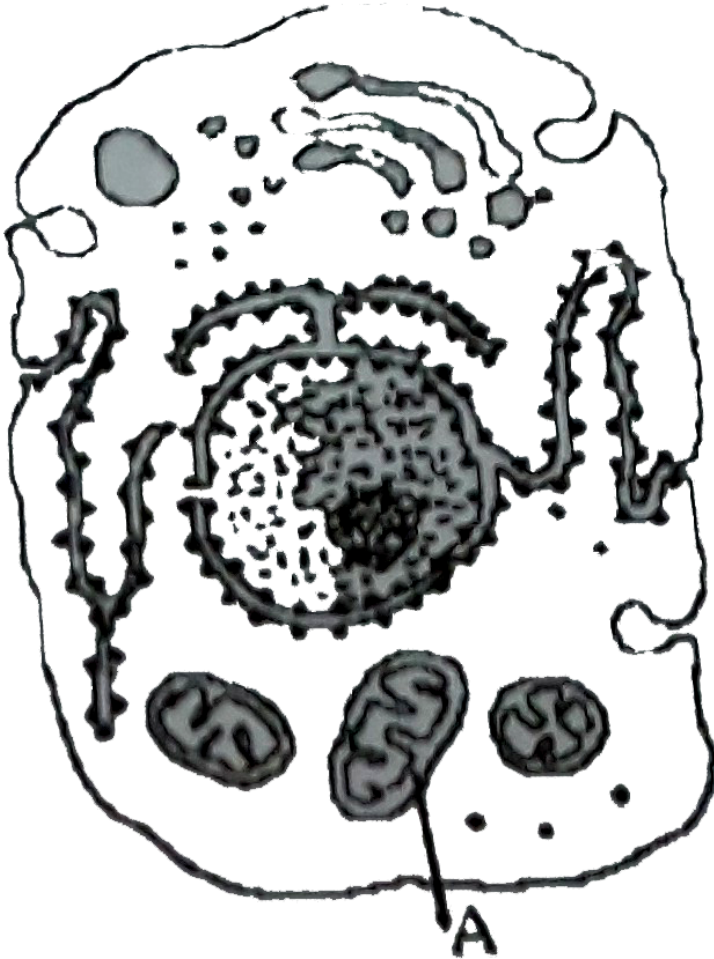
Answer: B



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88. Select the alternative giving correct identification and function of the organelle 'A'

in the diagram



A. Endoplasmic reticulum - synthesis of

lipids

B. Mitochondria- produce cellular energy in the form of ATP

C. Golgi body-provides packaging material

D. Lysosomes- secrete hydrolytic enzymes

Answer: B



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89. The inner membrane of the mitochondria is usually highly convoluted, forming a series of infoldings known as

A. Thylakoids

B. Lamellae

C. Cristae

D. Grana

Answer: C



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90. In Mitochondria, Cristae act as sites for

A. Protein synthesis

B. Phosphorylation of flavoproteins

C. Breakdown of macromolecules

D. Oxidation- reduction reaction

Answer: D



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91. The bright colours of ripe fruits are due to

'' Or

Which of the following type of plastids does not contain stored food material

A. Amylopiasts

B. chromoplast

C. Elaioplasts

D. Aleuroplast

Answer: B



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92. Elaioplasts store

A. Starch

B. Proteins

C. Fats

D. Essential amino acids

Answer: C



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93. Extranuclear DNA is found in :-

A. Lysosome and chloroplast

B. Chloroplast and mitochondria

C. Mitochondria and lysosome

D. Golgi and E.R

Answer: B



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94. In chloroplasts, chlorophyll is present in the

A. Outer membrane

B. Inner membrane

C. Thylakoids

D. Stroma

Answer: C



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95. Stroma in the chloroplasts of higher plant contains

A. Chlorophyll

B. Light-independent reaction enzymes

C. Light- dependent reaction enzymes

D. Ribosomes

Answer: D



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96. The proteins are synthesized at

A. Centrosomes

B. Golgi bodies

C. Ribosomes

D. Mitochondria

Answer: C



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97. Microtubule is involved in the

A. Muscle contraction

B. Membrane architecture

C. cell division

D. DNA recognition

Answer: C



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98. Microtubules are absent in

A. Mitochondria

B. Flageella

C. Spindle fibres

D. Centrioles

Answer: A



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99. Flagella of prokaryotic and eukaryotic cells differ in

- A. Type of movement and placement in cell
- B. Location in cell and mode of functioning
- C. Microtubular organization and type of movement
- D. Microtubular organization and function

Answer: C



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100. Centromere is required for

- A. Replication of DNA
- B. Chromosome segregation
- C. Poleward movement of chromosome
- D. Cytoplasmic cleavage

Answer: C



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101. The point at which the polytene chromosomes appear to be attached together is known as

- A. Centromere
- B. Chromomere
- C. Chromocentre
- D. Centriole

Answer: C



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102. The polytene chromosomes were discovered for the first time in

- A. *Drosophila*
- B. *Musca domestica*
- C. *Chironomus*
- D. *Musca nebula*

Answer: C



103. The maximum synthesis of m-RNA occurs
in :

- A. Ribosome
- B. Nucleoplasm
- C. Cytolasm
- D. Nucleolus

Answer: B



104. Lampbrush chromosomes are seen in which typical stage?

A. Mitotic metaphase

B. Meiotic prophase

C. Mitotic anaphase

D. Mitotic prophase

Answer: B



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105. Centromere is a part of:

A. Chromosome

B. Endoplasmic reticulum

C. Ribosomes

D. Mitochondria

Answer: A



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106. DNA is mainly found in

A. Nucleous

B. Nucleus only

C. Cytolasm only

D. None of these

Answer: B



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107. Function of telomers in nucleus is

A. Poleward movement

B. To initiate the RNA synthesis

C. To seal the end of chromosome

D. To recognise the homologous
chromosome

Answer: C



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108. Which of the following occurs more than one and less than five in a chromosome?

- A. Chromatid
- B. Chromosome
- C. Centromere
- D. Telomere

Answer: D



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109. Ribosomes are produced in

A. Nucleolus

B. Cytoplasm

C. Mitochondria

D. Golgi body

Answer: A



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110. The salivary gland Chromosomes in the dipteran larvae, are useful in gene mapping because

A. These are fused

B. These are much longer in size

C. These are easy to stain

D. They have endoreduplicated chromosomes

Answer: C





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111. Genetically inactive and highly condensed region with tightly packed DNA is

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

Answer: B



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112. Some of the enzymes, which are associated in converting fats into carbohydrates, are present in

" " Or

Site of gluconeogenesis is

- A. Microsomes
- B. Glyoxysomes
- C. Liposomes
- D. Golgi bodies

Answer: B



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113. Which of the following organ has single membrane ?

- A. Mitochondria
- B. Sphaerosomes
- C. Nucleus
- D. cell wall

Answer: B



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114. The motile bacteria are also to move by

A. Fimbria

B. Flagella

C. Cilia

D. Pili

Answer: B



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Assinmer Section D Assertion Reason Type
Question

1. Assertion : RBC membrane is highly flexible

Reason: The amount of external protein in the cytoplasmic face of membrane is more.

A. if both Assertion & Reason are true and the reason is the correct explanation of the assertion, then mark(1).

B. if both Assertion & Reason are true and the reason is the correct explanation of the assertion, then mark(2).

C. if Assertion is the true statement but Reason is false, then mark(3)

D. if both Assertion and Reason are false statements, then mark(4)

Answer: A



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2. A: Lampbrush chromosomes show transcriptionally active loops R: Lampbrush chromosomes can be used in future for embryo development

A. if both Assertion & Reason are true and the reason is the correct explanation of the assertion, then mark(1).

B. if both Assertion & Reason are true and the reason is the correct explanation of the assertion, then mark(2).

C. if Assertion is the true statement but Reason is false, then mark(3)

D. if both Assertion and Reason are false statements, then mark(4)

Answer: B



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3. Assertion : Centriole does not form any compartment in a cell.

Reason: Centriole is a non-membranous cell organelle.

A. if both Assertion & Reason are true and the reason is the correct explanation of the assertion, then mark(1).

B. if both Assertion & Reason are true and the reason is the correct explanation of the assertion, then mark(2).

C. if Assertion is the true statement but Reason is false, then mark(3)

D. if both Assertion and Reason are false statements, then mark(4)

Answer: A



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4. Assertion: Janus green B is a vital stain for locating mitochondria.

Reason :Janus green is oxidized by cytochrome a_2 present in mitochondria.

A. if both Assertion & Reason are true and the reason is the correct explanation of the assertion, then mark(1).

B. if both Assertion & Reason are true and the reason is the correct explanation of the assertion, then mark(2).

C. if Assertion is the true statement but Reason is false, then mark(3)

D. if both Assertion and Reason are false statements, then mark(4)

Answer: A



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5. Assertion Lysosomes help in the digestion of foreign particles in the mitochondria .

Reason : They have respiratory enzyme.

A. if both Assertion & Reason are true and the reason is the correct explanation of the assertion, then mark(1).

B. if both Assertion & Reason are true and the reason is the correct explanation of the assertion, then mark(2).

C. if Assertion is the true statement but Reason is false, then mark(3)

D. if both Assertion and Reason are false statements, then mark(4)

Answer: C



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6. A: Chromoplast is coloured plastid in corolla and ripened fruits.
R: It has water soluble chlorophyll and carotenoid pigments.

A. if both Assertion & Reason are true and the reason is the correct explanation of the assertion, then mark(1).

B. if both Assertion & Reason are true and the reason is not the correct explanation of the assertion, then mark(2).

C. if Assertion is the true statement but Reason is false, then mark(3)

D. if both Assertion and Reason are false statements, then mark(4)

Answer: C



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7. A: The axoneme of eukaryotic flagellum possesses a number of microtubules running parallel to the long axis. It has a pair

of peripheal doublet and pair of centrally located microtubules.

A. if both Assertion & Reason are true and the reason is the correct explanation of the assertion, then mark(1).

B. if both Assertion & Reason are true and the reason is the correct explanation of the assertion, then mark(2).

C. if Assertion is the true statement but Reason is false, then mark(3)

D. if both Assertion and Reason are false statements, then mark(4)

Answer: C



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8. A: Telocentric chromosome has two unequal arms. The centromere is situated close to its end forming one extremely short arm.

A. if both Assertion & Reason are true and the reason is the correct explanation of the assertion, then mark(1).

B. if both Assertion & Reason are true and the reason is the correct explanation of the assertion, then mark(2).

C. if Assertion is the true statement but Reason is false, then mark(3)

D. if both Assertion and Reason are false statements, then mark(4)

Answer: D



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9. A: Chloroplast is a semi-autonomous organelle. R: The ribosomes of the chloroplast are smaller than cytoplasmic ribosomes

A. if both Assertion & Reason are true and the reason is the correct explanation of the assertion, then mark(1).

B. if both Assertion & Reason are true and the reason is the correct explanation of the assertion, then mark(2).

C. if Assertion is the true statement but Reason is false, then mark(3)

D. if both Assertion and Reason are false statements, then mark(4)

Answer: B



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10. A: Lipids are arranged within the cell membrane with hydrophobic tails towards the inner part. Reason: This ensures that non-polar tail of saturated hydrocarbons is protected from the aqueous environment.

A. if both Assertion & Reason are true and the reason is the correct explanation of the assertion, then mark(1).

B. if both Assertion & Reason are true and the reason is not the correct explanation of

the assertion, then mark(2).

C. if Assertion is the true statement but

Reason is false, then mark(3)

D. if both Assertion and Reason are false

statements, then mark(4)

Answer: A



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Try Yourself

1. The first person who observed and described a living cell was

A. Anton von Leeuwenhoek

B. Robert Brown

C. Robert Hooke

D. Rodolf Virchow

Answer: A



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2. The nucleus of a cell was discovered by

A. Schleiden

B. Schwann

C. Robert Brown

D. Camillo Golgi

Answer: C



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3. The cell theory was put forward by

A. Schleiden and Schwann

B. Anton Von Leeuwenhoek

C. Robert Brown

D. Robert Hooke

Answer: A



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4. Which of the following organelle is non-membrane bound ?

A. Golgi complex

B. Endoplasmic reticulum

C. Ribosome

D. Mitochondrion

Answer: C



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5. The only organelle found in a prokaryotic cell is

A. Golgi complex

B. Plastids

C. Nucleus

D. Ribosomes

Answer: D



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6. The smallest cell is

A. Ostrich egg

B. Mycoplasma

C. WBC

D. Liver cell

Answer: B



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7. Which of the following statement is incorrect w.r.t. Prokaryotes ?

A. They have primitive type of cells that lack nucleus

B. They have membrane bound cell organelles like ER

C. They have 70S ribosomes

D. They multiply much faster than eukaryotic cells

Answer: B



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8. In some photosynthetic prokaryotes pigments containing structure is

- A. Chloroplast
- B. Chromatophore
- C. Chromoplast
- D. Capsule

Answer: B



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9. A special membranous structure mainly associated with respiration secretion process and replication is

- A. Mesosomes
- B. Plasmids
- C. Chromatophores
- D. Ribosomes

Answer: A



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10. Plasmid contains

A. ds circular DNA

B. ss circular DNA

C. ds linear DNA

D. ss linear DNA

Answer: A



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11. Which of the following is not a surface structure found in bacteria ?

A. Pilli

B. Flmbriae

C. Flagella

D. Plasmids

Answer: D



12. The membrane of RBSs of human protein lipid content respectively in the ratio of

- A. 40 percent and 52 percent
- B. 52 percent and 40 percent
- C. 60 percent and 40 percent
- D. 70 percent and 30 percent

Answer: B



13. Which of the following statement is incorrect w.r.t plasma membrane ?

A. It is selectively permeable

B. It is made up of lipids carbohydrates and proteins

C. It is permeable

D. it helps in endocytosis process

Answer: C



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14. Which type of transport of molecules across the plasma membrane requires energy ?

A. Facilitated diffusion

B. Simple diffusion

C. Osmosis

D. Active transport

Answer: D



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15. Which part of the cell wall is chiefly made up of calcium pectate ?

- A. Primary wall
- B. Middle lamella
- C. Secondary wall
- D. Middle lamella primary wall

Answer: B



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16. Which of the following cell organelle is specialised for the synthesis of lipids and steroids ?

A. SER

B. RER

C. Golgi complex

D. Vacuole

Answer: A



17. Which of the following cell organelle contains hydrolytic enzymes ?

A. Lysosome

B. Vacuole

C. ER

D. Golgi complex

Answer: A



18. Golgi apparatus is an important site for the formation of

- A. Lipids and protens
- B. Starch and lipids
- C. Glycoproteins and glycolipids
- D. Starch and glycoproteins

Answer: C



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19. The membrane of a a vacuole is

- A. Cell envelope
- B. Cell membrane
- C. Cell wall
- D. Tonoplast

Answer: D



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20. The plasma which stores oil is known as

A. Chromoplast

B. Chloroplast

C. Aleuroplast

D. Elaioplast

Answer: D



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21. The type of eukaryotic ribosome is

A. 70S

B. 60S

C. 80S

D. 40S

Answer: C



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22. Cilia and flagella are outgrowth of

A. Cell wall

B. Cell membrane

C. Nucleus

D. ER

Answer: B



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23. Nucleolus is the main site for the assembly of

- A. Nuclear pores
- B. Proteins
- C. Ribosomal subunits
- D. Mesosomes

Answer: C



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24. The material of nucleus was named as chromatin by

A. Anton von Leeuwenhoek

B. Robert Brown

C. Robert Hooke

D. Flemming

Answer: D



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25. A single human cell has approximately _____ metre long thread of DNA distributed among its forty six chromosomes

A. 2

B. 10

C. 1

D. 4.6

Answer: A



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26. In which type of chromosomes centromere is located at the centre ?

A. Telocentric

B. Metacentric

C. Sub- metacentric

D. Acrocentric

Answer: B



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