

1.

Which one of the following cell organelle is not the part of endomembrane system?

1. Vacuole
2. Lysosome
3. Golgi bodies
4. Peroxisome

2.

Choose incorrect statement

1. Leeuwenhoek first saw and described a living cell
2. Robert Brown discovered cell
3. Electron microscope revealed all the structural details of cell
4. A large cell has a higher volume: surface ratio than a smaller cell

3.

The plasma membrane of human RBC contains

1. 70% phospholipids and 30% sterols
2. 52% proteins and 40% lipids
3. 40% proteins and 52% lipids
4. 90% water and 10% integral proteins

4.

The lipid-like steroidal hormones are synthesized in SER among

1. Hopanoid containing bacterial cell
2. Plant cells
3. Animal cells
4. More than one option is correct

5.

Match the following

Column I

Column II

- |                  |                   |
|------------------|-------------------|
| a. Cristae       | i. Chromatin      |
| b. Glycosylation | ii. Mitochondria  |
| c. Rubisco       | iii. Chloroplast  |
| d. Histones      | iv. Golgi complex |

1. a(ii), b(iv), c(iii), d(i)
2. a(i), b(ii), c(iii), d(iv)
3. a(i), b(iii), c(iv), d(ii)
4. a(iv), b(iii), c(ii), d(i)

6.

Find out the incorrect match

- |                  |                             |
|------------------|-----------------------------|
| 1. Lysosome      | - Intracellular scavenging  |
| 2. Golgi complex | - Metabolism of xenobiotics |
| 3. Elaioplast    | - Oil and fat storage       |
| 4. Glyoxysomes   | - Gluconeogenesis           |

7.

Which of the following synthesizes proteins for export?

1. Free ribosomes
2. SER
3. Lysosome
4. RER

8.

For the fluid mosaic model of membrane given by Singer and Nicolson, which of the following conditions are not associated?

1. Lipids enable the lateral movement of proteins in the membrane
2. Fluid nature of membrane helps in secretion
3. Lipids can show flip flop movement from one layer of membrane to other
4. The fluidity of membrane is mainly due to oligosaccharides

9.

Select the incorrect statement(s) w.r.t. functions of various cellular components

- a. Middle lamella works as glue to hold the adjacent cells together.
- b. Mitochondria, chloroplast and vacuoles are part of the endomembrane system as their functions are coordinated.
- c. Lipoidal steroid hormones are synthesized by ER component which is not associated to 80 S ribosomes.

1. Only b
2. Only a
3. Both a and c
4. Both b and c

10.

Select the correct match

- |                    |                      |
|--------------------|----------------------|
| 1. 70 'S' ribosome | - Bacterial mesosome |
| 2. Cytoskeleton    | - Lipoproteins       |
| 3. Kinetochore     | - Centromere         |
| 4. Lysosome        | - Catalase           |

11.

Both chloroplast and mitochondria show similarity in

1. Presence of DNA with more AT
2. Presence of 70s ribosome
3. Presence of porins
4. More than one option is correct

12.

How many microtubules are associated with the structure of centriole?

1. 11
2. 18
3. 20
4. 27

13.

Kinetochore are associated with

1. Outer part of primary constriction
2. Centromere in its inner central part
3. Secondary construction
4. Satellite

14.

Cilia and flagella in a eukaryotic cell

1. Are motile at base
2. Are made of 20 microtubules
3. Are devoid of matrix and flagellar sheath
4. Shows rotatory movement

15.

Choose incorrect statement regarding cells

1. Mycoplasma, the smallest cell, is only 0.3  $\mu\text{m}$  in length while bacteria could be 3 to 5  $\mu\text{m}$
2. Hemoglobin associated human cells are about 7  $\mu\text{m}$  in diameter
3. The shape of the cell may not vary with the function they perform
4. Nerve cells are longest cells

16.

The ability of proteins to move laterally within the overall bilayer lipid molecules of plasma membrane is measured as its

1. Stability
2. Thickness
3. Degree of permeability
4. Fluidity

17.

Neutral solutes directly pass through the lipid bilayer of plasma membrane because

1. Plasma membrane has special carrier for them
2. They are lipid soluble
3. They have specific hydrophilic areas for their passage
4. They consume ATP

18.

Find the incorrect statement

1. Middle lamella is mainly made up of calcium and magnesium pectate
2. Cell wall is formed on the inner side of the cell therefore secondary wall formed first
3. Middle lamella glues the neighbouring cells together
4. Cell wall helps in cell to cell interaction and provides barrier to undesirable macromolecules

19.

According to fluid mosaic model of plasma membrane the quasifluid nature of

1. Protein enables lateral movement of lipids within the overall bilayer
2. Lipid and protein enable the lateral movement of carbohydrates
3. Lipid enables lateral movement of proteins within the overall bilayer
4. Lipid enables the flip-flop movement of proteins

20.

Cell theory formulated by Schleiden and Schwann does not explain which one of the following features?

1. Organisms are composed of cells and their products
2. All cells are basically alike in their structure and metabolism
3. New cells originate from pre-existing cells
4. The function of an organism is an outcome of activities and interactions of its constituent cells

21.

The outer as well as inner membrane of mitochondria

1. Form a number of infoldings towards the matrix
2. Both have a similar amount of cardiolipin
3. Have more lipids than proteins
4. Have their own specific enzymes

22.

Select the incorrect statement w.r.t. Golgi apparatus

1. The cis and trans faces of the organelle are similar but interconnected
2. The Golgi cisternae are concentrically arranged near the nucleus
3. It remains in close association with the endoplasmic reticulum
4. The ER vesicles fuse with the cis face

23.

Which of the following sequence is correct w.r.t. size?

1. Eukaryotic cell > PPLO > Viruses > Bacteria
2. Eukaryotic cell > Bacteria > PPLO > Viruses
3. Eukaryotic cell > PPLO > Bacteria > Viruses
4. Eukaryotic cell > Viruses > PPLO > Bacteria

24.

Both cilium and flagellum arise from the part which is structurally similar to

1. Centriole
2. Kinetochore
3. Kinetosome
4. Centrosphere

25.

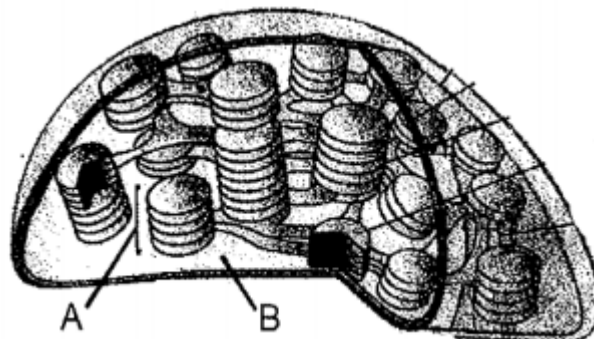
Read the statements carefully and select the set of correct statements

- a. Palade particles are found in all cellular organisms
- b. A membrane bound structure in nucleus is the site of ribosomal RNA synthesis
- c. The mitochondria can be divide meiotically to produce daughter mitochondria
- d. Vacuoles can occupy about 90% of the volume of a plant cell

1. All except b
2. a & c
3. b & d
4. a & d

26.

For the sectional view of chloroplast which is given below. Choose the correct statement



1. Envelope possess fully permeable membranes
2. 'B' possess the enzymes required for protein and carbohydrates synthesis
3. 'A' structure giving piles of coins like appearance is the site of  $C_3$  cycle
4. 'A' Possess ribosomes, large ss circular DNA

27.

All are membrane-bounded cell organelles in a typical plant cell, except

1. Mitochondria
2. Lysosome
3. Ribosome
4. Chloroplast

28.

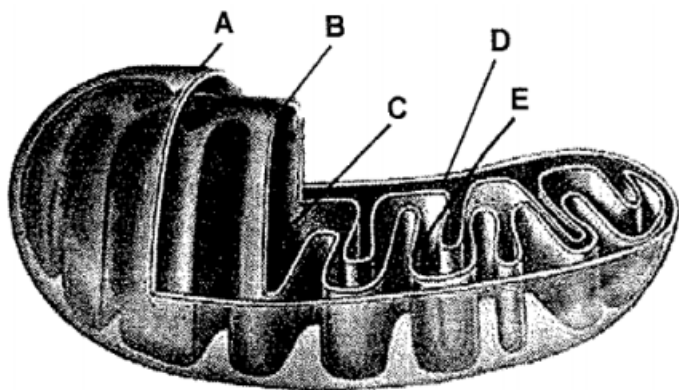
Lysosomal enzymes act at

1. Basic pH
2. Acidic pH
3. Neutral pH
4. Acidic pH inside lysosome and basic pH in cytosol

29. Plasmodesmata connections help in
1. Cytoplasmic streaming
  2. Mitotic division
  3. Movement of substances between the cells
  4. Osmosis only
30. A nuclear pore allows
1. Unidirectional movement of DNA
  2. RNA movement only
  3. RNA and protein movement
  4. Protein movement only
31. Vesicles from ER fuse with
1. Maturing face of Golgi body
  2. Forming face of Golgi body
  3. Primary lysosome for intercellular digestion
  4. Plasma membrane to remove them out from cell
32. The content of the nucleolus is continuous with nucleoplasm
1. Through microtubules
  2. Through nuclear pores
  3. Due to lack of membrane
  4. Due to presence of channels in membrane
33. The part of chromosome beyond secondary constriction is known as
1. Chromomere
  2. Satellite
  3. Kinetochore
  4. Centromere
34. The central part of proximal region of centriole is called hub which is made of
1. Protein
  2. Lipoprotein
  3. Phospholipid
  4. Oligosaccharide
35. Select the incorrect match
1. Elaioplast - Oil and fats storage
  2. Amyloplast - Carbohydrate storage
  3. Proteinoplast - Protein storage
  4. Aleuroplast - Starch storage
36. Which of the following is not a part of the cytoskeleton?
1. Microtubule
  2. Microfilament
  3. Intermediate filament
  4. Microfibril

37.

Which of the following statement is correct for the given diagram?



1. 'C' possesses DNA molecule, RNA molecule and 80 S ribosomes
2. 'A' and 'B' have their own specific enzymes
3. 'E' made by inner membrane towards the intermembrane space
4. 'B' forms the continuous limiting boundary of the organelle

38.

In prokaryotes, ribosomal RNAs

1. As well as proteins are synthesized in cytoplasm
2. Are synthesized in the nucleolus while proteins in cytoplasm
3. Are synthesized in the cytoplasm while proteins in the nucleolus
4. As well as proteins are synthesized in nucleus

39.

A number of proteins synthesized by ribosomes on the endoplasmic reticulum are modified in the \_\_\_\_\_ of the Golgi apparatus before they are released from its trans face

1. Tubules
2. Vesicles
3. Cisternae
4. More than one option is correct

40.

The granular endoplasmic reticulum is associated with which of the following functions?

1. Synthesis of secretory as well as non-secretory proteins
2. Synthesis of non-secretory proteins
3. Synthesis of steroidal hormones
4. Synthesis of secretory proteins

41.

Which of the following plastid store fats?

1. Elaioplast
2. Aleuroplast
3. Proteinoplast
4. Amyloplast

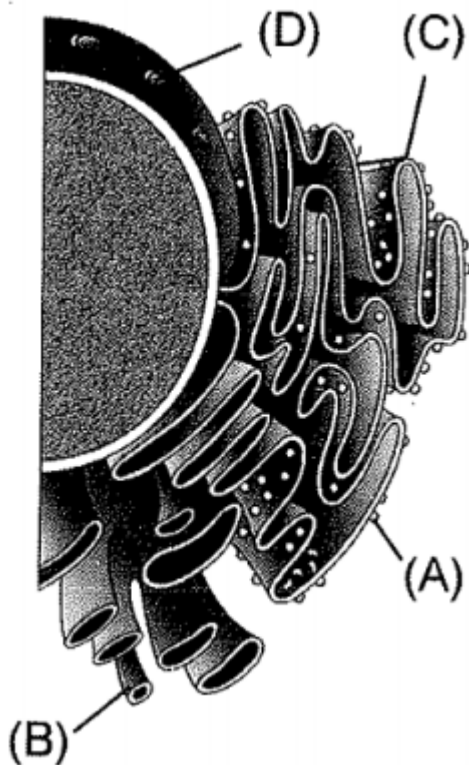
42.

Lysosomes are membrane-bound vesicular structures and are very rich in

1. DNAs, proteases, and lipases
2. Enzymes optimally active at the basic pH
3. Almost all types of hydrolases
4. RNAs, carbohydrase and cathepsin

43.

Examine the figure given below and select the part correctly matched with its function/structure



1. Part (A) : Ribosome-made up of 30S and 50S subunits
2. Part (C) : RER - principally performs the function of packaging materials
3. Part (D) : Nuclear pore - passage through which movement of RNA takes place in one direction only
4. Part (B) : SER - synthesis of steroidal hormones

44.

Which of the following statements are correct?

- a. The rough endoplasmic reticulum is frequently observed in the cells actively involved in protein synthesis.
  - b. Proteins that are to be used outside the cell are synthesized on free ribosomes.
  - c. In the eukaryotic cell there is an extensive compartmentalization of cytoplasm through the presence of membrane-bound organelles
  - d. ER is found prominently in human eggs and sperms.
1. All are correct
  2. b & d
  3. a, b & d
  4. a & c

45.

Chromatin contains

1. DNA, histone protein, basic non-histone protein, dsRNA
2. DNA, basic histone protein, non-histone protein, RNA
3. DNA, acidic histone protein, basic non-histone protein, RNA
4. DNA, acidic histone protein, non-histone protein, dsRNA

46.

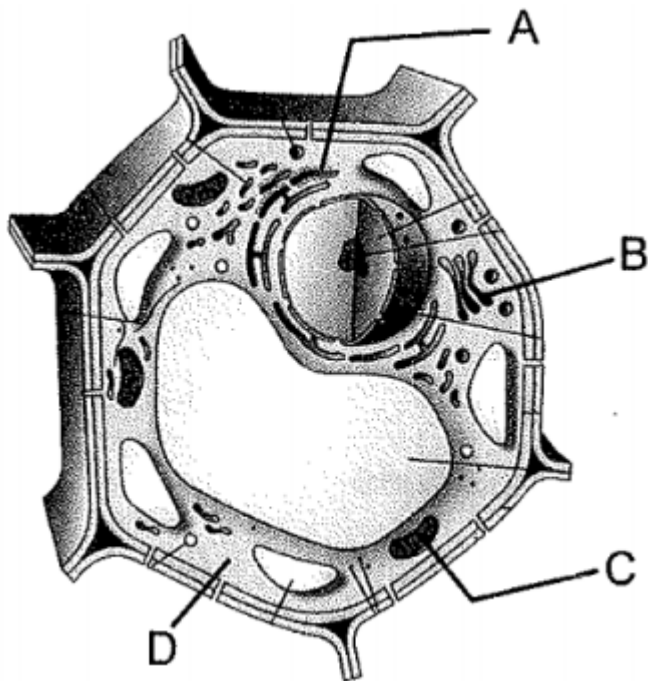
Choose odd one w.r.t. composition of cell wall of algae

1. Cellulose, galactans
2. Mannanas, minerals
3. Hemicellulose, pectin
4. Cellulose, minerals



47.

Identify the cell organelles labelled as A, B, C and D. Mark the correct option w.r.t. organelle and its function.



1. A - Major site for synthesis of lipid.
2. B - Performs the function of packaging materials, to be delivered to only intracellular targets.
3. C - Sites of anaerobic respiration.
4. D - Main arena of cellular activities

48.

The spherical structures present in the nucleoplasm

1. Has contents continuous with the rest of the nucleoplasm.
2. Is a membrane bound structure
3. Is a site of active messenger RNA synthesis
4. Are smaller and more numerous in cells actively carrying out protein synthesis

49.

Bacterial flagellum is composed of

1. Basal body, axoneme and centrosome
2. Basal body, hook and filament
3. Axoneme, basal body and tubulin protein
4. Centriole, hook and axoneme

50.

Cell envelope in bacteria consists of

1. Plasma membrane only
2. Plasma membrane and mesosome
3. Glycocalyx only
4. Glycocalyx, cell wall and plasma membrane

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