

BIOLOGY

CLASS-XI

NEET

MODULE-02

Cell the Unit of Life

| Structural Organization in Animal | Biomolecules
| Cell Cycle & Cell Division | Transports in Plants

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Physics Wallah

NCERT Based Questions



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- A common characteristic feature of plant sieve tube cells and most of mammalian erythrocytes is
 - Absence of mitochondria
 - Presence of cell wall
 - Presence of haemoglobin
 - Absence of nucleus
- Which one of the following structures between two adjacent cells is an effective transport pathway?
 - Plasmodesmata
 - Plastoquinones
 - Endoplasmic reticulum
 - Plasmalemma
- Select one which is not true for ribosome
 - Made up of two sub-units
 - Form polysome
 - May attach to *mRNA*
 - Have no role in protein synthesis
- Which one of these is not a eukaryote?
 - Euglena*
 - Anabaena*
 - Spirogyra*
 - Agaricus*
- Which of the following stain is not used for staining chromosomes?
 - Basic fuschsin
 - Safranin
 - Methylene blue
 - Carmine
- Satellite means
 - Terminal part of the chromosome beyond secondary constriction.
 - Terminal part of the chromosome beyond primary constriction.
 - Terminal part of chromosome beyond tertiary constriction.
 - None of the above
- Different cells have different sizes. Arrange the following cells in an ascending order of their size. Choose the correct option among the followings.

I. Mycoplasma	II. Ostrich eggs
III. Human RBC	IV. Bacteria

 - I, IV, III, II
 - I, II, III, IV
 - II, I, III, IV
 - III, II, I, IV
- Which of the following features is common to prokaryotes and many eukaryotes?
 - Chromatin material present
 - Cell wall present
 - Nuclear membrane present
 - Membrane bound sub-cellular organelles present
- Who proposed the fluid mosaic model of plasma membrane?
 - Camillo Golgi
 - Schleiden and Schwann
 - Singer and Nicolson
 - Robert Brown
- Which of the following statement is true for a secretory cell?
 - Golgi apparatus is absent
 - Rough Endoplasmic Reticulum (RER) is easily observed in the cell.
 - Only Smooth Endoplasmic Reticulum (SER) is present
 - Secretory granules are formed in nucleus
- What is a tonoplast?
 - Outer membrane of mitochondria
 - Inner membrane of chloroplast
 - Membrane of the vacuole of plant cells
 - Cell membrane of a plant cell
- Which of the following is not true for a eukaryotic cell?
 - Cell wall is made up of peptidoglycans
 - It has 80S type of ribosome present in the cytoplasm
 - Mitochondria contain circular DNA
 - Membrane bound organelles are present
- Which of the following statement is not true for plasma membrane?
 - It is present in both plant and animal cell
 - Lipid is present as a bilayer in it
 - Proteins are present integrated as well as loosely associated with the lipid bilayer
 - Carbohydrate is never found in it
- Plastid differs from mitochondria on the basis of one of the following features. Mark the right answer
 - Presence of two layers of membrane
 - Presence of ribosome
 - Presence of thylakoids
 - Presence of DNA
- Which of the following is not a function of cytoskeleton in a cell?
 - Protein synthesis
 - Maintenance of cell shape and structure
 - Support of the organelle
 - Cell motility
- The stain used to visualize mitochondria is
 - Fast green
 - Safranin
 - Acetocarmine
 - Janus green

17. Which of the following statement of a bacterial cell is/are correct?

- (i) Mesosome is formed by the extensions of plasma membrane into the cell.
- (ii) The pili are elongated tubular structures made up of a protein.
- (iii) Flagellum is composed of filament, hook and basal body.
- (iv) Ribosomes are about 30 nm by 50 nm in size.

- a. (i), (ii) and (iii) b. (iii) and (iv)
- c. (ii) and (iv) d. None of the above

18. Read the following statements and find out the incorrect statement

- a. Prokaryotes are generally smaller and multiply more rapidly than the eukaryotic cells.
- b. Glycocalyx could be a loose sheath called slime layer in some, while in others it is called the capsule.
- c. The plasma membrane of prokaryotes is structurally dissimilar to that of eukaryotes.
- d. Chromatophores are the membranous extensions into the cytoplasm of cyanobacteria which contain pigments.

19. How many of the given cell organelles are found only in prokaryotic cells?

[Vacuoles, Mesosomes, Ribosomes, Flagella, Cell wall, Mitochondria]

- a. 1 b. 2
- c. 3 d. 4

20. Bacterial cells have a chemically complex cell envelope. The cell envelope consists of a tightly bound three layer structure, i.e., the

- a. Outermost cell wall followed by the plasma membrane and then the glycocalyx
- b. Outermost glycocalyx followed by plasma membrane and the cell wall
- c. Outermost cell wall followed by the glycocalyx and then the plasma membrane
- d. Outermost glycocalyx followed by the cell wall and then the plasma membrane.

21. Read the statements given below with regard to the functions performed by Golgi apparatus?

- (i) Transport and chemically modify the materials contained within it.
- (ii) Performs the function of packaging materials.
- (iii) Important site of formation of glycoproteins and glycolipids.

Which of the following is the correct answer?

- a. (i) is wrong but (ii) and (iii) are correct
- b. (ii) is wrong but (i) and (iii) are correct
- c. (ii) and (iii) are wrong but (i) is correct
- d. All are correct

22. Fill in the blanks

- 1. In plant cells, the vacuoles can occupy up to ...A... of the volume of the cell.
- 2. In plants, the tonoplast facilitates the transport of a number of ions and other materials ...B... in concentration gradient into the vacuole, hence their concentration is significantly ...C... in the vacuole than in the cytoplasm.
- 3. In *Amoeba*, the ...D... vacuole is important for excretion.
- 4. In many cells, as in protists ...E... vacuoles are formed by engulfing the food particles.
- a. A-70%, B-along, C-higher, D-food, E-contractile.
- b. A-70 to 90%, B-against, C-higher, D-contractile, E-food
- c. A-90%, B-against, C-lower, D-contractile, E-inclusion
- d. A-90%, B-against, C-higher, D-contractile, E-food

23. Match the columns I and II, and choose the correct combination from the options given

	Column I		Column II
A.	Osmosis	1.	Without any requirement of energy
B.	Active transport	2.	ATP energy is utilised
C.	Passive transport		

- a. A-1 B-2 C-2
- b. A-2 B-2 C-1
- c. A-2 B-1 C-2
- d. A-1 B-2 C-1

24. In terms of shape and size of mitochondria, considerable degree of variability is observed. The number of mitochondria per cell is variable depending on the

- a. Morphology of the cells
- b. Biochemical activity of the cells
- c. Physiological activity of the cells
- d. All of the above

25. Choose the **incorrect** match

- a. Nucleus — RNA
- b. Lysosome — Protein synthesis
- c. Mitochondria — Respiration
- d. Cytoskeleton — Microtubules

26. A cell organelle in prokaryotes is concerned with storage of reserve food materials, e.g., cyanophycean granules, etc. It is a non-membrane bound cell organelle. Identify it among the following

- a. Gas vacuoles
- b. Mesosomes
- c. Plasmids
- d. Inclusion bodies

27. Consider the following statements

- A. In prokaryotic cell, outgrowth of plasma membrane into cell is called polysome.
- B. SER is major site for glycoprotein synthesis.
- C. RuBisCO is most abundant protein of biosphere.
- D. Mitochondria, chloroplasts and peroxisomes are not part of endomembrane system.

Which of the following statements are correct?

- a. C and D
- b. C and B
- c. B and A
- d. A and D

28. Reserve material in prokaryotic cells are stored in the cytoplasm in the form of

- a. Pyrenoid
- b. Paramylum bodies
- c. Inclusion bodies which are bounded by single membrane.
- d. Inclusion bodies which are not bounded by any membrane system

29. An outer covering membrane is absent over

- a. Nucleolus
- b. Lysosome
- c. Mitochondria
- d. Plastid

30. The lipid component of the cell membrane mainly consists of

- a. Triglycerides
- b. Phosphoglycerides
- c. Glycolipids
- d. Mono and diglycerides

31. Lysosomes are produced by

- a. Golgi complex
- b. Mitochondria
- c. Endoplasmic reticulum
- d. Leucoplasts

32. Phospholipid molecules of cell membrane possess

- a. One polar head and one polar tail
- b. One non-polar head and one non-polar tail
- c. One polar head and two nonpolar tails
- d. One non-polar head and two non-polar tails

33. Hydrolytic enzyme - lipases, proteases and carbohydrases are found in

- a. Lysosome
- b. Golgi Bodies
- c. ER
- d. Mitochondrion

34. Axonemal arrangement of microtubules is

- a. 6 peripheral pairs of doublets and one central pair of singlets
- b. 6 peripheral pairs of doublets and one central singlets
- c. 9 peripheral pairs of doublets and one central pair of singlets
- d. 9 peripheral pairs of doublets and one central singlet

35. What is common between chloroplasts, chromoplasts and leucoplasts?

- a. Presence of pigments
- b. Presence of thylakoids and grana
- c. Storage of starch, proteins and lipids
- d. Ability to multiply by a fission-like process

36. Order the following terms in a way that depicts how membranes are likely to move through the cell

- A. ER,
- B. Nuclear envelope,
- C. Golgi apparatus,
- D. Vesicle,
- E. Plasma membrane
- a. $A \rightarrow B \rightarrow C \rightarrow D \rightarrow E$
- b. $A \rightarrow D \rightarrow B \rightarrow D \rightarrow C \rightarrow D \rightarrow E$
- c. $B \rightarrow C \rightarrow A \rightarrow D \rightarrow E$
- d. $B \rightarrow A \rightarrow D \rightarrow C \rightarrow D \rightarrow E$

37. Which of the following statement is correct regarding vacuole?

- a. It is membrane-bound and contains storage proteins and lipids.
- b. It is membrane-bound and contains water and excretory substances.
- c. It lacks membrane and contains air.
- d. It lacks membrane and contains water and excretory substances.

38. Given below are some characters of a cell organelle. Identify the correct organelle which shows all the characters described above

- (i) It is a membrane bound space found in the cytoplasm.
- (ii) It is bound by a single membrane called tonoplast.
- (iii) It contains water, sap, excretory products and other materials not useful to the cell.
- (iv) It has higher concentration of sap than the cytoplasm.

- a. Golgi apparatus
- b. Lysosomes
- c. Endoplasmic reticulum
- d. Vacuoles

39. Which of the following pair are correctly matched?

- A. Microtubules – Structural components of cilia
- B. Centrioles – Store hydrolytic enzymes
- C. Amyloplasts – Store oil protein and starch in plants

- a. A, B and C
- b. A and B
- c. A only
- d. A and C

40. The organelle 'X' is associated with the detoxification of drugs. It involves in the muscle contraction by the release and uptake of Ca^{+2} ions. Identify 'X'.

- a. Golgi complex
- b. RER
- c. SER
- d. Free ribosomes

41. A student placed two cells in the same solution in two different containers. The observation was given in the table.

Container	Observation
1.	Cell burst
2.	Cell does not change its shape

Which structure maintains the shape of the cell present in container 2 and provides the most significant difference between the two cells?

- a. Nucleus
- b. Cell wall
- c. Chloroplast
- d. Cell membrane

42. How many of the following properties are related to lysosomes? Membrane bound vesicular structure, hydrolases, basic pH, formed in the RER, capable of digesting nucleic acids
- a. Two b. Three
c. Four d. Five
43. 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. SER and mitochondria
c. ER and ribosome
d. Lysosome and ER
44. If living cells similar to those found on earth, were found on another planet where there was no oxygen. Which cell organelle would most probably be absent?
- a. Cell membrane b. Ribosome
c. Mitochondria d. Chromosomes
45. If A - 70S ribosomes, B - 80S ribosomes, C - single circular DNA, D - RNA molecules, E - double helical linear DNA, F - thylakoids and G - stromal lamellae, which of the following set is found in mitochondria?
- a. B, D, E, F b. D, E, F, G
c. A, D, E d. A, C, D
-

ABOUT PHYSICS WALLAH




Alakh Pandey is one of the most renowned faculty in NEET & JEE domain's Physics. On his YouTube channel, Physics Wallah, he teaches the Science courses of 11th and 12th standard to the students aiming to appear for the engineering and medical entrance exams.

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