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

Multi-Concept Questions

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1. In "Singer and Nicolson" model of plasma membrane, the extrinsic proteins are

a. Tightly associated with intrinsic protein and can be easily separated

b. Relatively more than intrinsic proteins

c. Loosely associated with lipid bilayer and can be easily separated

d. Loosely associated with intrinsic protein and can't be easily separated

2. Study the following table.

	Cell organelle	Function
I.	Ribosomes	Protein synthesis
II.	Golgi complex	DNA synthesis
III.	Glyoxysomes	Fat metabolism
IV.	Nucleus	Cell plate

Which two show the correct combination?

a. I and II b. II and III

c. III and IV d. I and III

3. Find out the correct match with regard to stored food

A. Aleuroplasts–Proteins

B. Elaioplasts–Fats and Oils

C. RER - Glycogen

D. Amyloplasts –Starch

a. A & B only b. A, B, C & D

c. A, B, & D d. A, C and D

4. Match the columns and find out the correct combination

A. Lysosomes	1. Protein synthesis
B. Ribosomes	2. Hydrolytic activity
C. Smooth endoplasmic reticulum	3. Steroidogenesis
D. Centriole	4. Glycolytic activity
E. Chromosomes	5. Repository of genetic information
	6. Formation of spindle apparatus

a. A-2 B-1 C-3 D-6 E-5

b. A-6 B-3 C-4 D-5 E-1

c. A-1 B-4 C-3 D-6 E-1

d. A-4 B-3 C-1 D-2 E-5

5. Chloroplast does not contain

A. Double membraned envelope

B. Grana and Stroma

C. Matrix and Cristae

D. Circular DNA and 70S ribosomes

a. A and D b. A and C

c. C only d. B and D

6. Some cellular structures bounded by single or double membranes, while some other without a membrane. Match the organelle in List I with the nature of membrane in List II and select the correct answer using the codes given below the lists.

A. Mitochondria	1. Without membrane
B. Lysosomes	2. Single membrane
C. Ribosomes	3. Double membrane
D. Nucleus	4. Double membrane with pores

a. A-1 B-4 C-3 D-2

b. A-3 B-1 C-2 D-4

c. A-3 B-2 C-1 D-4

d. A-2 B-4 C-1 D-3

7. Match the columns and find out the correct combination

A. Suicidal bags	1. Mitochondria
B. Power house of the cell	2. Lysosomes
C. Cell Brain	3. Nucleolus
D. Ribosome factory	4. Chloroplast
	5. Nucleus

a. A-2 B-4 C-5 D-3

b. A-1 B-4 C-5 D-3

c. A-2 B-1 C-5 D-3

d. A-2 B-4 C-5 D-1

8. According to fluid mosaic model (proposed by Singer & Nicolson), plasma membrane is composed of

a. Cellulose, hemicellulose

b. Phospholipid and integrated protein

c. Phospholipid, extrinsic protein and intrinsic protein

d. Phospholipid and hemicellulose

9. 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 monolayer to the other described as flip-flop movement?

a. Both lipids and proteins can flip-flop

b. While lipids can rarely flip-flop, proteins cannot

c. While proteins can flip-flop, lipids cannot

d. Neither lipids, nor proteins can flip-flop

10. The Golgi complex plays a major role

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

b. In digesting proteins and carbohydrates

c. As energy transferring organelles

d. In post-translational modification of proteins and glycosylation of lipids

11. Match the columns and find out the correct combination

A. Flimmers	1. Peripheral tubules of basal granule
B. Doublets	2. Lateral appendages of flagella
C. Singlets	3. Pairs of arms
D. Triplets	4. Central tubules of axial filament
	5. Peripheral tubules of axial filament

a. A-3 B-5 C-4 D-1

b. A-1 B-4 C-5 D-2

c. A-2 B-5 C-4 D-1

d. A-1 B-3 C-4 D-5

12. Incorrect statement is

a. The shape of the cell may vary with the function they perform.

b. The plasma membrane is the main arena of cellular activities in both, plant and animal cells.

c. Ribosomes are non-membrane bound organelles found in all cells.

d. Animal cell contain a non-membrane bound organelle called centriole which helps in cell division.

13. Match the columns and find out the correct combination

A. Endoplasmic reticulum	1. Stack of cisternae
B. Sphaerosome	2. Store oils or fats
C. Dictyosome	3. Synthesis and storage of lipids
D. Peroxisome	4. Photorespiration
E. Elaioplasts	5. Detoxification of drugs

a. A-5 B-3 C-1 D-4 E-2

b. A-5 B-3 C-2 D-4 E-1

c. A-2 B-3 C-1 D-4 E-5

d. A-4 B-3 C-1 D-5 E-2

e. A-3 B-5 C-1 D-4 E-2

14. Match the columns and find out the correct combination

A. Golgi apparatus	1. Conversion of lipids to carbohydrates
B. Glyoxysomes	2. Catabolism of long chain fatty acids
C. Peroxisomes	3. Formation of glycoproteins and glycolipids
D. Endoplasmic reticulum	4. Synthesis of lipids
	5. Osmoregulation

a. A-2 B-3 C-5 D-1

b. A-4 B-5 C-1 D-2

c. A-5 B-4 C-2 D-3

d. A-3 B-1 C-2 D-4

15. Incorrect statement is

a. All eukaryotic cells are not identical.

b. Plant cells possess cell walls, plastids and a large central vacuole, which are absent in animal cell.

c. Animal cells have centrioles and dictyosomes which are absent in almost all plant cells.

d. Eukaryotic genetic material is organised into chromosomes.

16. "Many membrane bound minute vesicles called microbodies that contain various enzymes are present in both plant and animal cells".

Above statement is correct for:

a. Organelle participating in photorespiration along with chloroplast and mitochondria.

b. Plant lysosomes.

c. Organelle having catalase as a marker enzyme.

d. All of these

17. Correct statement is

a. Unicellular organisms are capable of independent existence

b. Unicellular organisms are capable of performing essential functions of life

c. Anything less than a complete structure of a cell does not ensure independent existence

d. All of these

18. Read the following statement carefully and mark them as true (T) or false (F).

A. The content of nucleolus is continuous with the rest of the nucleoplasm.

B. In the chromoplast, water soluble carotenoid pigments like carotene and xanthophyll are present.

C. Basal body of bacterial flagellum has 9 + 2 arrangement of microtubules.

a. T, F, F b. F, T, T

c. T, F, T d. T, T, F

19. Select correct set of statements from given below.

A. The cytoplasm is the main arena of cellular activities in plants and animals.

B. Cell envelope in bacteria is tightly linked 5 - layered structure.

C. The endomembrane system does not include semi-autonomous organelles.

D. Convex face of golgi bodies is maturing face.

a. A & D b. A & C

c. A, C, D d. All are correct

20. Incorrect statement is/are

A. All cells arise from pre-existing cells.

B. Various chemical reactions occur in cytoplasm to keep the cell in the living state.

C. Plant cell have centrioles which are absent in almost all animal cells.

D. The lipid component of the plasma membrane mainly consists of phosphoglycerides.

a. A, C and D b. C only

c. B and D d. B only

21. Correct statement regarding mitochondria and Chloroplast.

A. ATP synthesis is seen in both

B. Outer membrane has more surface area in both

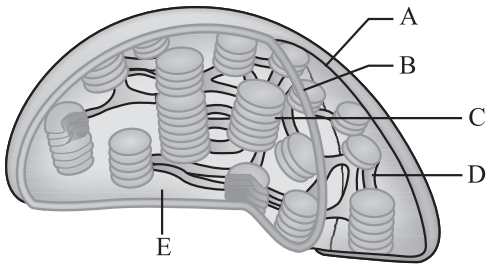
C. Circular naked DNA, RNA and 70S ribosomes are seen in both

D. Oxidative phosphorylation occurs in both

a. A and B b. B and C

c. A and C d. A and D

22. Consider the following five statements (A to E) w.r.t chloroplast shown below. Select the correct option stating which ones are True (T) and which ones are False (F)



A. It is impermeable and lack porins

B. It is selectively permeable having carrier proteins for transport

C. Stalked thylakoids one over other which is the site of production of assimilatory power

D. Present between two grana and contains enzymes of dark reaction

E. It contains enzymes for the synthesis of sugar and proteins

	A	B	C	D	E
a.	F	T	T	T	T
b.	F	T	T	F	T
c.	T	F	T	T	T
d.	T	F	F	T	T

23. Single-celled animal like *Amoeba* engulf entire cells for food. Which of the following represents the manner in which amoeba "eat"?

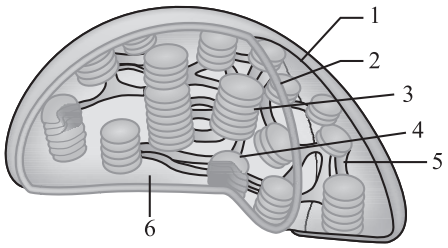
a. *Amoeba* binds only what it has receptors for, the amoeba's cell membrane surrounds the cell to be digested, a vesicle forms, and the vesicle fuses with a lysosome for digestion.

b. *Amoeba's* cell membrane surrounds the cell to be digested a vesicle forms, and the vesicle fuses with a lysosome for digestion.

c. The cell is taken into the *Amoeba's* vacuole, a vesicle is formed, and the vesicle fuses with a lysosome for digestion.

d. None of these

24. Identify correct options



a. 1 = Outer membrane, 3 = Granum, 6 = Stroma

b. 2 = Inner membrane, 3 = Stroma, 6 = Stromal lamellae

c. 1 = Outer membrane, 4 = Thylakoid, 5 = Stroma

d. 2 = Inner membrane, 3 = Thylakoid, 6 = Matrix

25. You are asked to examine a cell using a powerful light microscope. The image you see has a clearly defined nucleus and mitochondria. It also has a large central vacuole and chloroplasts. From what group of organisms did this cell most likely come?

a. Bacteria b. Protists

c. Fungi d. Plants

26. You have found a mass of cells in the sediment surrounding a thermal vent in the ocean floor, the salinity in the area is quite high. Upon microscopic examination of the cells you find no evidence of membrane-bound organelles. How would you classify this cell?

a. As a eukaryotic cell

b. As a prokaryotic cell

c. As a member of domain Archaebacteria

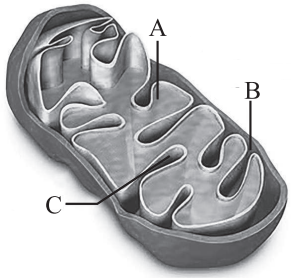
d. Both (b) and (c)

27. Centrifugation of a cell results in the rupture of the cell membrane and the contents compacting into a pellets in the bottom of the centrifuge tube. Bathing this pellet with a glucose solution yields metabolic activity including the production of ATP. One of the contents of this pellet is most likely which of the following?

a. Cytosol b. Mitochondria

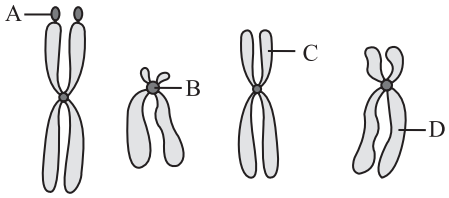
c. Lysosomes d. Golgi bodies

28. Which labeled part increases surface area in mitochondria?



a. A
b. B
c. C
d. Both (a) and (c)

29. Find out the correct option on the basis of following diagrams



a. A - Satellite, B-Secondary constriction C- Short arm, D-Long arm
b. A - 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

30. Most wild plants contain toxins that deter animals from eating them. A scientist discovered that a toxin produced by a certain plant was also toxic to the same plant if it was applied to the roots of the plants. As the first step in finding out why the plant was not normally killed by its own toxin, he fractionated some plant cell and found that the toxin was in the fraction that contained the largest cell organelle. He also found that the toxin was not longer toxic after it was heated. Which of the following statement are consistent with the scientist's observations?

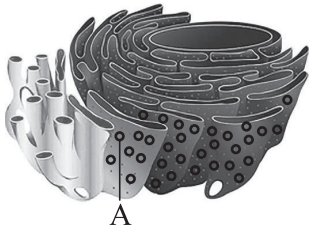
A. The toxin was stored in the central vacuole
B. The toxin can cross the plasma membrane but not the membrane of the organelle in which it is stored
C. The toxin was stored in the chloroplast
D. The toxin is likely to be lipid soluble
E. The toxin may be an enzyme

a. A, B and E
b. A, D and E
c. B and C
d. C and E

31. It is important that certain free ribosomes bind to the outer surface of the endoplasmic reticulum (ER) in order to complete their protein synthesis because

a. The ER membrane will break down without the presence of numerous ribosomes.
b. It allows for the synthesis of certain proteins to be completed in the cytosol.
c. It prevents the possibility that the synthesis of certain proteins, such as lysosomal hydrolases, would go to completion in the cytoplasm.
d. Mitochondrial ribosomes must transcribe proteins encoded for, by mitochondrial DNA in this manner.

32. Name the labeled part 'A' in given diagram of endoplasmic reticulum.



a. Mesosomes
b. Smooth Endoplasmic Reticulum
c. Nuclear pore
d. Ribosomes

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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