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| **Neha Malhotra**  **R.L. Institute M: 9416974837**  **Class : XI**  **“CELL: THE UNIT OF LIFE”** |

**Level – 1**

**(Based on Cell)**

1. A protoplast is a cell :

|  |  |
| --- | --- |
| a) without nucleus | b) undergoing division |
| c) without cell wall | d) without plasma membrane |

1. Names of Schleiden and Schwann are associated with :

|  |  |
| --- | --- |
| a) Protoplasm as the physical basis of life | b) Cell theory |
| c) Theory of cell lineage | d) nucleus functions as control centre of cell |

1. What is correct about cell theory in view of current status of our knowledge about cell structure?
2. It needs modification due to discovery of subcellular structures like chloroplasts and mitochondria.
3. Modified cell theory means that all living beings are composed of cells capable of reproducing.
4. Cell theory does not hold well because all living beings (e.g. virus) do not have cellular organization.
5. Cell theory means that all living objects consists of cells whether or not capable of reproducing.
6. What Robert Hooke first observed under microscope as a cell, were in fact?

|  |  |  |  |
| --- | --- | --- | --- |
| a) Honeycomb | b) cell membrane | c) cell wall | d) Xylem vessels |

1. ‘The living matter of an organism is not cell but protoplasm’ is called Protoplasmic theory was given by :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Max Schultz | b) Purkinje | c) Dujardin | d) F. C. Steward |

1. Who proposed the theory that ‘Cells arise only from the pre-existing cells’?

|  |  |  |  |
| --- | --- | --- | --- |
| a) Mohl | b) Virchow | c) Haeckel | d) Brown |

1. Schleiden and Schwann proposed :

|  |  |
| --- | --- |
| a) Phenomenon of Brownian movement | b) Cell theory or cell doctrine |
| c) Protoplasm as physical basis of life | d) None of the above |

1. Which of the following depicts the correct fundamental features of cell theory?
2. All cells share similar chemistry and physiology.
3. All living organisms are composed of cells and their products.
4. Each cell is made up of a small mass of protoplasm containing a nucleus inside and a plasma membrane with or without a cell wall outside.
5. Activities of an organism are the sum total of activities and interaction of its constituents cells.

|  |  |  |  |
| --- | --- | --- | --- |
| a) (i) is correct | b) (ii) & (iii) are correct | c) (ii),(iii) & (iv) are correct | d) All are correct |

1. Living beings are made up of cells. This statement belongs to :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Lamarck | b) Vol Helmont | c) Hugo de vries | d) Schleiden & Schwann |

CELL: THE UNIT OF LIFE Page No. 1

1. Select the incorrect option.
2. Anton von Leeuwenhoek first saw and described a live cell.
3. Robert Brown later discovered the nucleus.
4. Unicellular organisms are incapable of independent existence.
5. All of these
6. Difference between Prokaryotic and Eukaryotic cells in the presence or absence of :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Cell wall | b) Nuclear membrane | c) Ribosomes | d) None of these |

1. The simplest way to distinguish a prokaryotic cell from a eukaryotic cell is to check for :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Plasma membrane | b) Nucleus | c) DNA | d) Proteins |

1. Which of the following is present in both prokaryotes and Eukaryotes?

|  |  |  |  |
| --- | --- | --- | --- |
| a) Lysosomes | b) Vesicles | c) Chloroplast | d) Plasma membrane |

**(Based on Prokaryotic Cell)**

1. Which of the following statements about inclusion bodies is incorrect?

|  |  |
| --- | --- |
| a) These are involved in ingestion of food particles | b) They lie free in the cytoplasm |
| c) These represent reserve material in cytoplasm | d) They are not bound by any membrane |

1. Which of the following nucleic acid is present in an organism having 70 S ribosomes only?
2. Double stranded circular DNA with histones
3. Single stranded DNA with protein coat
4. Double stranded circular naked DNA
5. Double stranded DNA enclosed in nuclear membrane
6. Which one of the following is not an inclusion body found in prokaryotes?

|  |  |  |  |
| --- | --- | --- | --- |
| a) Cyanophycean granules | b) Glycogen granules | c) Polysomes | d) Phosphate granules |

1. Cell wall is absent in :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Funaria | b) Mycoplasma | c) Nostoc | d) Aspergillus |

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

|  |  |  |  |
| --- | --- | --- | --- |
| a) Nucleoid | b) Ribosomes | c) Cell wall | d) Mesosomes |

1. The term ‘Glycocalyx’ is used for :
2. A layer surrounding the cell wall of bacteria
3. A layer present between cell wall and membrane of bacteria
4. Cell wall of bacteria
5. Bacterial cell glycol-engineered to possess N-glycosylated proteins.
6. What is a capsule advantageous to a bacterium?
7. It allows the bacterium to attach to the surface
8. It protects the bacterium from desiccation
9. It provides means of locomotion.
10. It allows bacterium to hide from host’s immune system.
11. Nuclear membrane is absent in :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Penicillium | b) Agaricus | c) Volvax | d) Nostoc (Blue green algae) |

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1. The prokaryotic flagella possess :

|  |  |
| --- | --- |
| a) unit membrane enclosed fibre | b) Protein membrane enclosed fibre |
| c) ‘9 + 2’ membrane enclosed structure | d) helically arranged protein molecule |

1. Golgi apparatus is absent in :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Higher plants | b) Yeast | c) Bacteria & Cyanobacteria | d) None |

1. Prokaryotic cell does not have :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Nucleolus | b) membraned organelles | c) Centrioles | d) All of these |

1. Which of the following is absent in prokaryotes?

|  |  |  |  |
| --- | --- | --- | --- |
| a) DNA | b) RNA | c) Plasma membrane | d) Mitochondria |

1. Cell wall of prokaryotes is made up of :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Chitin | b) Cellulose | c) Pectin | d) Mucopeptide |

1. In prokaryotes, chromatophores are :
2. Specialized granular responsible for colouration of cells.
3. Structures responsible for organizing the shape of the organism.
4. Inclusion bodies lying free inside the cells for carrying out various metabolic activities.
5. Internal membrane system which become extensive and complex in photosynthetic bacteria (Cyanobacteria).
6. The genetic material in prokaryotes is :

|  |  |
| --- | --- |
| a) not envelope by any membrane | b) Associated with histones |
| c) enveloped by nuclear membrane | d) do not contain genetic material |

1. Arrange the following steps in a correct sequence as per Gram’s Staining technique.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1. Treatment with 0.5 % iodine solution | | | 1. Washing with water | | |
| 1. Treatment with absolute alcohol/acetone | | | 1. Staining with alkaline solution of crystal violet | | |
| a) (ii) – (i) – (iv) – (iii) | b) (iv) – (i) – (ii) – (iii) | | c) (iii) – (ii) – (i) – (iv) | d) (iv) – (iii) – (ii) – (i) | |

1. If flagella are present in prokaryotic cells, then they are :

|  |  |
| --- | --- |
| 1. Single stranded | 1. Double stranded |
| 1. Without differentiation of axoneme and sheath | 1. with differentiation of axoneme and sheath |

Choose the correct option :

|  |  |  |  |
| --- | --- | --- | --- |
| a) only (i) | b) only (ii) | c) (i) and (ii) | d) (i) and (iii) |

1. In a prokaryotic cell:

|  |  |  |
| --- | --- | --- |
| 1. Enveloped genetic material is present | 1. Ribosomes are absent | 1. An organized nucleus is absent |

Choose the correct option :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Only (i) | b) Only (ii) | c) Only (iii) | d) All the above |

1. Correct sequence of layers of bacterial cell envelope is :

|  |  |
| --- | --- |
| a) Cell membrane Glycocalyx cell wall | b) Glycocalyx cell wall Cell membrane |
| c) Cell wall Glycocalyx cell membrane | d) Glycocalyx cell membrane Cell wall |

1. A nucleoid represent genetic material of prokaryotes and is known as :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Prochromosomes | b) Genophore | c) Incipient nucleus | d) All of these |

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1. Mesosomes are the infoldings of cell membrane. They :
2. Help in cell wall formation, DNA replication and respiration.
3. Increase surface area of plasma membrane.
4. are present in both prokaryotes and eukaryotes.

Choose the correct option :

|  |  |  |  |
| --- | --- | --- | --- |
| a) (ii) and (iii) | b) (i) and (iii) | c) (i) and (ii) | d) (i) , (ii) and (iii) |

1. The four basic shapes of bacteria are :

|  |  |
| --- | --- |
| a) amoeboid , elongated , biconcave , coccus | b) elongated , bacillus , coccus , amoeboid |
| c) bacillus , coccus , vibrio , spirillum | d) bacillus , amoeboid , elongated , coccus |

1. Many bacteria have small circular DNA outside the genomic DNA. These smaller DNA are called as :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Nucleoid | b) Mesosome | c) Glycocalyx | d) plasmid |

1. Mesosomes were taken as :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Golgi bodies | b) Plastids | c) Mitochondria | d) ER |

1. If fimbriae are removed from bacterial cell, which of the following would be expected to happen?
2. Bacterium could no longer be able to swim.
3. Bacterium would not be able to attach to rocks in streams.
4. Bacteria shape would change
5. None of these
6. The longest portion of bacterial flagellum that extends from the cell surface to the outside is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Hook | b) Filament | c) Basal body | d) All of these |

1. Bacterial cells are often found in very hypotonic environments. Which of the following characters prevent them from continuing to take on water from their environment.
2. The presence of cell wall allows a buildup of turgor pressure that prevents any more water from entering the cell.
3. The presence of a cell wall allows a buildup of tonic pressure that prevents any more water from entering the cell.
4. The cell expels water as fast as it take it up.
5. None of the above.
6. Which of the following structures would you except to find in a bacterium?

|  |  |  |  |
| --- | --- | --- | --- |
| a) Nucleus | b) Plasma membrane | c) Golgi apparatus | d) Lysosomes |

1. Select the incorrect statement about inclusion bodies in prokaryotes?
2. These represent reserve food material
3. These are membrane bound bodies.
4. These are found free in the cytoplasm of prokaryotic cells.
5. Phosphate granules, Cyanophycean granules and glycogen granules are example of inclusion bodies.
6. Gas vacuoles are not reported in :

|  |  |
| --- | --- |
| a) Cyanobacteria | b) Purple/green photosynthetic bacteria |
| c) Amoeba | d) Prokaryotes |

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**Answers**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1. c | 1. b | 1. c | 1. c | 1. b | 1. b | 1. b | 1. d | 1. d |
| 1. c | 1. b | 1. b | 1. d | 1. a | 1. c | 1. c | 1. b | 1. d |
| 1. a | 1. d | 1. d | 1. d | 1. c | 1. d | 1. d | 1. d | 1. d |
| 1. a | 1. b | 1. d | 1. c | 1. b | 1. d | 1. c | 1. c | 1. d |
| 1. c | 1. b | 1. b | 1. a | 1. b | 1. b | 1. c |  |  |

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| **Neha Malhotra**  **R.L. Institute M: 9416974837**  **Class : XI**  **“CELL: THE UNIT OF LIFE”** |

**Level – 2**

**(Based on Eukaryotic Cell)**

**[Except Cytoskeleton & Nucleus]**

1. Which is the important site of formation of glycoproteins and glycolipids in eukaryotic cells?

|  |  |  |  |
| --- | --- | --- | --- |
| a) peroxisomes | b) Golgi bodies | c) Polysomes | d) ER |

1. Match column I and column II

|  |  |  |
| --- | --- | --- |
| Column I | Column II | |
| A. Golgi apparatus | I. Synthesis of proteins | |
| B. Lysosomes | II. Trap waste and excretory products | | |
| C. Vacuoles | III. Formation of glycoproteins and glycolipids | |
| D. Ribosomes | IV. Digesting biomolecules | |
| a) A – I ; B – II ; C – IV ; D – III | | | b) A – III ; B – IV ; C – II ; D – I | | |
| c) A – IV ; B – III ; C – I ; D – II | | | d) A – III ; B – II ; C – IV ; D – I | | |

1. Which of the following cell organelles is present in the highest number in secretory cells?

|  |  |  |  |
| --- | --- | --- | --- |
| a) Lysosomes | b) Mitochondria | c) Golgi complex | d) ER |

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

|  |  |  |  |
| --- | --- | --- | --- |
| a) Ribosomes | b) Chloroplast | c) Mitochondria | d) Lysosomes |

1. Mitochondria and chloroplast are :
2. Semi – autonomous organelle
3. Formed by division of pre-existing organelles and they contain DNA but lack protein synthesizing machinery.

Which one of the following option is correct ?

|  |  |
| --- | --- |
| a) Both (a) & (b) are correct | b) (b) is true but (a) is false |
| c) (a) is true but (b) is false | d) Both (a) & (b) are false |

1. Which one of the following cell organelle is enclosed by a single membrane?

|  |  |  |  |
| --- | --- | --- | --- |
| a) Mitochondria | b) Chloroplasts | c) lysosomes | d) nuclei |

1. DNA is not present in :

|  |  |  |  |
| --- | --- | --- | --- |
| a) ribosomes | b) Nucleus | c) Mitochondria | d) Chloroplasts |

1. Select the correct matching in following pairs :

|  |  |
| --- | --- |
| a) Smooth ER – Synthesis of lipids | b) Rough ER – Synthesis of glycogen |
| c) Rough ER – Oxidation of fatty acids | d) Smooth ER – Oxidation of phospholipids |

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1. Which one of the following are not membrane bound?

|  |  |  |  |
| --- | --- | --- | --- |
| a) Ribosomes | b) lysosomes | c) Mesosomes | d) Vacuoles |

1. Match column I and column II

|  |  |  |
| --- | --- | --- |
| 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 – I ; D – II | | | b) A – III ; B – I ; C – IV ; D – II | | |
| c) A – III ; B – IV ; C – II ; D – I | | | d) A – IV ; B – III ; C – I ; D – II | | |

1. Cellular organelles with membranes are :

|  |  |
| --- | --- |
| a) chromosomes, ribosomes and ER | b) ER , Ribosomes and nuclei |
| c) Lysosomes , Golgi apparatus and mitochondria | d) Nuclei , ribosomes and mitochondria |

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

|  |  |  |  |
| --- | --- | --- | --- |
| a) Mitochondria | b) vacuoles | c) Plastids | d) Ribosomes |

1. Which one of the following organelle correctly matches with its function?



|  |  |
| --- | --- |
| a) Golgi apparatus , protein synthesis | b) Golgi apparatus , formation of glycolipids |
| c) RER , protein synthesis | d) RER , formation of glycoproteins |

1. The Golgi complex plays a major role :
2. in digesting proteins and carbohydrates
3. as energy transferring organelle
4. in post translational modification of proteins and glycosidation of lipids.
5. in trapping the light and transforming it into chemical energy
6. A major site of synthesis of lipids is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) SER | b) symplast | c) Nucleoplasm | d) RER |

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

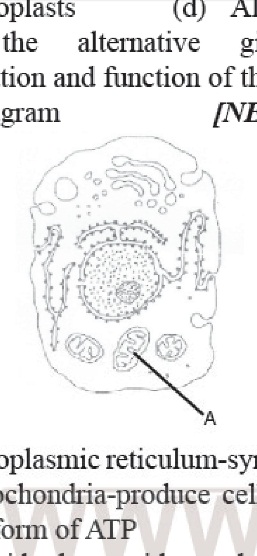
|  |  |  |  |
| --- | --- | --- | --- |
| a) Amyloplasts | b) Chromoplasts | c) Elaioplasts | d) Aleuroplasts |

1. Which one of the following structures is an organelle with in an organelle?

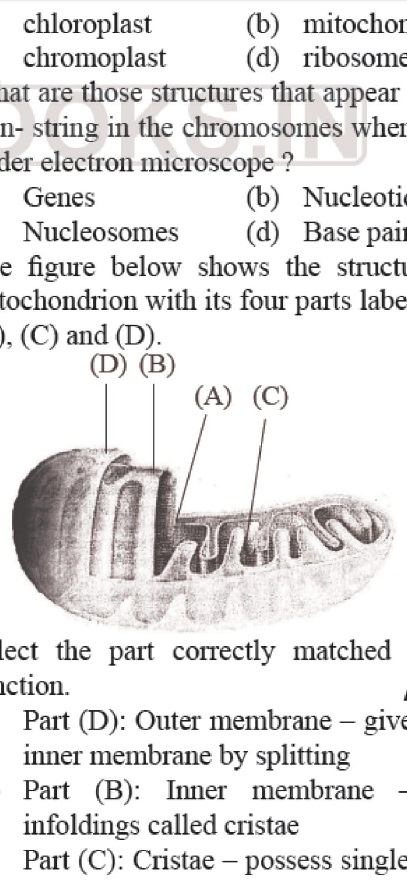
|  |  |  |  |
| --- | --- | --- | --- |
| a) Ribosome | b) peroxisome | c) ER | d) mesosome |

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1. Select the alternative giving correct identification and function of the organelle ‘A’ in the diagram.



1. Endoplasmic reticulum – Synthesis of lipids
2. Mitochondria – Produce cellular energy in the form of ATP
3. Golgi body – Provides packaging material
4. Lysosomes – secrete hydrolytic enzyme
5. What is true about ribosomes?
6. The prokaryotic ribosomes are 80 S, where “S” stands for sedimentation coefficient.
7. These are composed of ribonucleic acid and proteins.
8. These are found only in eukaryotic cell
9. These are self-splicing introns of some RNAs.
10. Select the correct statement from the following regarding cell membrane.
11. Na+ and K+ ions move across cell membrane by passive transport
12. Proteins make up 60 to 70 % of the cell membrane
13. Lipids are arranged in a bilayer with polar heads towards the inner part
14. Fluid mosaic model of cell membrane was proposed by Singer & Nicolson.
15. Which one of the following cellular part is correctly describe
16. Centrioles – Sites of active RNA synthesis
17. Lysosomes – Optimally active at a pH of about 8.5
18. Thylakoids – Flattened membranous sacs forming the grana of chloroplasts
19. Ribosomes – Those on chloroplasts are larger 80s while those in the cytoplasm are smaller 70s.
20. The figure below shows the structure of a mitochondrion with its four parts labelled (A), (B), (C) and (D).



Select the correct matched with its function.

1. Part (D) : Outer membrane – gives rise to inner membrane by splitting
2. Part (B) : Inner membrane – forms infoldings called cristae
3. Part (C) : Cristae – possess single circular DNA molecule and ribosomes
4. Part (A) : Matrix – major site for respiratory chain enzymes.

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1. Important site for formation of glycoproteins and glycolipids is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) vacuole | b) Golgi apparatus | c) Plastid | d) Lysosome |

1. Peptide synthesis inside a cell take place in :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Chloroplast | b) Mitochondria | c) Chromoplasts | d) Ribosomes |

1. In mitochondria, proteins accumulate in the :

|  |  |  |  |
| --- | --- | --- | --- |
| a) outer membrane | b) inner membrane | c) inter membrane space | d) matrix |

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

|  |  |  |  |
| --- | --- | --- | --- |
| a) Golgi complex | b) Peroxisomes | c) Vacuole | d) Lysosome |

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

|  |  |  |  |
| --- | --- | --- | --- |
| a) Plasmodesmata | b) Plastoquinone | c) ER | d) Plasmalemma |

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

|  |  |  |  |
| --- | --- | --- | --- |
| a) Mitochondria | b) Dictyosomes | c) Lysosome | d) peroxisomes |

1. The main arena of various types of activities of a cell is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) plasma membrane | b) mitochondria | c) cytoplasm | d) nucleus |

1. The plasma membrane mainly consist of :
2. Phospholipids embedded in a protein bilayer.
3. Proteins embedded in a phospholipid bilayer.
4. Proteins embedded in a polymer of glucose molecules.
5. Proteins embedded in a carbohydrates bilayer.
6. Plasmodesmata are :
7. Locomotary structures
8. Membranes connecting the nucleus with plasmalemma.
9. connections between adjacent cells
10. Lignifies cemented layer between cells.
11. Middle lamella is composed mainly of:

|  |  |  |  |
| --- | --- | --- | --- |
| a) Muramic acid | b) calcium pectate | c) phosphoglycerides | d) hemicellulose |

1. The two sub-units of ribosome remain united a critical ion level of :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Copper | b) manganese | c) Magnesium | d) calcium |

1. Vacuole in a plant cell is :
2. is membrane-bound and contains storage proteins and lipids
3. is membrane bound and contains water and excretory substances
4. lack membrane and contains air
5. lacks membrane and contains water and excretory substances
6. Select the wrong statement from the following :
7. Both chloroplasts and mitochondria have an internal compartment, the thylakoid space bounded by the thylakoid membrane
8. Both chloroplasts and mitochondria contain DNA.
9. The chloroplasts are generally much large than mitochondria
10. Both chloroplast and mitochondria contain an inner and an outer membrane

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

|  |  |  |  |
| --- | --- | --- | --- |
| a) Glycolipids | b) Proline | c) phospholipids | d) cholesterol |

1. Which one of the following statement regarding mitochondrial membrane is not correct?
2. The enzymes of the electron transfer chain are embedded in the outer membrane.
3. The inner membrane is highly convoluted forming a series of infoldings
4. The outer membrane resemble a sieve.
5. The outer membrane is permeable to all kinds of molecules
6. The main organelle involved in modification and routing of newly synthesized proteins to their destination is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) chloroplast | b) mitochondria | c) lysosome | d) ER |

1. Protein synthesis in an animal cell occurs :
2. only on the ribosomes present in cytosol
3. only on ribosomes attached to the nuclear envelope and endoplasmic reticulum
4. on ribosomes present in the nucleolus as well as in cytoplasm
5. on ribosomes present in cytoplasm as well as in mitochondria
6. In chloroplasts, chlorophyll is present in the :

|  |  |  |  |
| --- | --- | --- | --- |
| a) outer membrane | b) inner membrane | c) thylakoids | d) stroma |

1. In fluid mosaic model of plasma membrane :
2. Upper layer is non-polar and hydrophilic
3. Upper layer is polar and hydrophobic
4. Phospholipids form a bimolecular layer in middle part
5. Proteins forms a middle layer.
6. Ribosomes are produced in :

|  |  |  |  |
| --- | --- | --- | --- |
| a) nucleolus | b) Cytoplasm | c) mitochondria | d) Golgi body |

1. Element necessary for middle lamella is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Ca | b) Zn | c) K | d) Cu |

1. The cell organelle involved in glycol-sylation of protein is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Ribosome | b) Peroxisome | c) ER and Golgi | d) Mitochondria |

1. Lysosomes have a high content of

|  |  |  |  |
| --- | --- | --- | --- |
| a) Hydrolytic enzymes | b) Lipoproteins | c) Polyribosomes | d) DNA ligase |

1. The proteins are synthesized at :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Ribosomes | b) Mitochondria | c) Centrosomes | d) Golgi bodies |

1. The function of RER is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Fat synthesis | b) lipid synthesis | c) protein synthesis | d) steroid synthesis |

1. Inner membrane convolution of a mitochondria are known as:

|  |  |  |  |
| --- | --- | --- | --- |
| a) Lamellae | b) thylakoids | c) grana | d) cristae |

1. Mitochondrial cristae are sites of :

|  |  |
| --- | --- |
| a) breakdown of macromolecules | b) protein synthesis |
| c) phosphorylation of flavoproteins | d) oxidation – reduction reactions |

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1. Organelle having flattened membrane bound cisternae and lying near the nucleus is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Golgi apparatus | b) mitochondria | c) centriole | d) nucleolus |

1. Membranous bag with hydrolytic enzymes which is used for controlling intracellular digestion of macro-molecules is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) ER | b) Nucleosome | c) lysosome | d) Phagosome |

1. Oxysomes of Fo-F1 particles occur on :

|  |  |
| --- | --- |
| a) Thylakoids | b) mitochondrial surface |
| c) inner mitochondrial membrane | d) chloroplast surface |

1. Which one is apparto reticularae?

|  |  |  |  |
| --- | --- | --- | --- |
| a) Golgi apparatus | b) ER | c) Microfilaments | d) Microtubules |

1. Fluid mosaic model was put forward by :

|  |  |
| --- | --- |
| a) Danielli and Davson | b) Singer and Nicolson |
| c) Garner and Allard | d) Watson and Crick |

1. Ribosomes were discovered by :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Golgi | b) Porter | c) De Robertis | d) Palade |

1. Cell wall shows :

|  |  |
| --- | --- |
| a) completely permeability | b) semi permeability |
| c) differential permeability | d) impermeability |

1. Addition of new cell particles amongst the existing ones is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Deposition | b) apposition | c) intussusception | d) aggregations |

1. The latest model for plasma membrane is :

|  |  |
| --- | --- |
| a) lamellar model | b) unit membrane model |
| c) Fluid mosaic model | d) molecular lipid model |

1. Plasma membrane is made up of :

|  |  |
| --- | --- |
| a) proteins and carbohydrates | b) proteins and lipids |
| c) proteins , lipids and carbohydrates | d) proteins , some nucleic acid and lipids |

1. Polyribosomes are aggregates of :
2. Ribosomes and rRNA
3. only rRNA
4. peroxisomes
5. Several ribosomes held together by string of mRNA.
6. According to fluid mosaic model plasma membrane is composed of :
7. phospholipids and oligosaccharides
8. phospholipids and hemicellulose
9. phospholipids and integral protein
10. phospholipids , extrinsic protein and intrinsic protein

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**Answers**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1. b | 1. b | 1. c | 1. c | 1. c | 1. c | 1. a | 1. a | 1. a |
| 1. a | 1. c | 1. b | 1. c | 1. c | 1. a | 1. b | 1. a | 1. b |
| 1. b | 1. d | 1. c | 1. b | 1. b | 1. d | 1. b | 1. b | 1. a |
| 1. a | 1. c | 1. b | 1. c | 1. b | 1. c | 1. b | 1. a | 1. b |
| 1. a | 1. d | 1. d | 1. c | 1. c | 1. a | 1. a | 1. c | 1. a |
| 1. a | 1. c | 1. d | 1. d | 1. a | 1. c | 1. c | 1. a | 1. b |
| 1. d | 1. a | 1. c | 1. c | 1. c | 1. d | 1. d |  |  |

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| **Neha Malhotra**  **R.L. Institute M: 9416974837**  **Class : XI**  **“CELL: THE UNIT OF LIFE”** |

**Level – 3**

**(Based on Eukaryotic Cell)**

**[Except Cytoskeleton & Nucleus]**

1. Protein synthesis in an animal cell occurs:
2. On ribosomes present in cytoplasm as well as in mitochondria
3. On ribosomes present in the nucleolus as well in cytoplasm
4. Only on ribosomes attached to the nuclear envelope and ER.
5. Only on the ribosomes present in cytosol.
6. Which of the following features are correct regarding ribosomes?
7. They are non-membrane bound
8. They take part in protein synthesis
9. They are present in the cytoplasm and RER
10. They are absent in plastids and mitochondria

|  |  |  |  |
| --- | --- | --- | --- |
| a) (i) | b) (i) and (ii) | c) (i) , (ii) , (iii) and (iv) | d) (i) , (ii) and (iii) |

1. Which of the following lacks cell wall?

|  |  |  |  |
| --- | --- | --- | --- |
| a) Gametes | b) amoeba | c) mycoplasma | d) all the above |

1. Plasma membrane is:

|  |  |
| --- | --- |
| a) selectively permeable | b) permeable |
| c) impermeable | d) semi-permeable |

1. Amphipathic molecule in plasma membrane is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) protein | b) carbohydrates | c) phospholipids | d) all of these |

1. The Singer’s model of plasma membrane differs from the Robertson’s model in the :

|  |  |
| --- | --- |
| a) Number of lipid layers | b) arrangement of proteins |
| c) Arrangement of lipid bilayers | d) absence of protein layers |

1. Ingestion of solid food by plasma membrane is called :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Endosmosis | b) Pinocytosis | c) Cytokinesis | d) Phagocytosis |

1. Which of the following layer is present nearest to the plasma membrane in plant cell?

|  |  |  |  |
| --- | --- | --- | --- |
| a) Secondary wall | b) middle lamella | c) primary wall | d) tonoplast |

1. Ion carriers are located in :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Nucleus | b) cell wall | c) cellular space | d) plasma membrane |

1. Which method of transport through plasma membrane does not require carrier molecule?

|  |  |  |  |
| --- | --- | --- | --- |
| a) Active transport | b) facilitated diffusion | c) simple diffusion | d) Na+ – K+ pump |

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1. Which of the following contributes to differences in the two sides of the cell membrane?
2. Differences in peripheral proteins
3. Different domains expressed on the ends of integral proteins.
4. Differences in phospholipid types.
5. All of the above
6. You are monitoring the diffusion of a coloured molecule across a membrane. Which of the following will result in the fastest rate of diffusion?
7. An internal concentration of 5 % and an external concentration of 60 %.
8. An internal concentration of 60 % and an external concentration of 3 %
9. An internal concentration of 35 % and an external concentration of 40 %
10. Both (a) and (b)
11. Which of the following represents a hypotonic solution?
12. The solution has a greater solute concentration than the one it is being compared to.
13. The solution has a lesser solute concentration than the one it is being compared to.
14. The solution has an equal solute concentration than the one it is being compared to.
15. None of the above
16. Which of the following statement regarding osmosis is incorrect?
17. Osmosis refers to the movement of water along a concentration gradient.
18. In osmosis, water moves to equalize solute concentration on either side of the membrane
19. If osmosis occurs across a membrane, then diffusion is not occurring.
20. The movement of water across a membrane can affect the turgor pressure of some cells.
21. Channel proteins allow ions that would not normally pass through the cell membrane to go through the channel. What properties of the proteins are responsible for this?
22. The channels are often composed of charged or polar R group
23. The channel are often composed of hydrophobic R groups
24. Both (a) and (b)
25. None of the above.
26. Which of the following limits the movement of molecules when carrier mediated facilities diffusion is involved?

|  |  |
| --- | --- |
| a) Concentration gradient | b) Availability of carrier molecules |
| c) Temperature | d) All of the above |

1. Active transport differs from passive transport in that active transport :
2. Requires energy
3. Always requires input of ATP.
4. Moves molecules against a concentration gradient.
5. Both (a) and (c)
6. Sodium and potassium pumps are common in many cells. Which of the following are necessary for the pumps to work?

|  |  |
| --- | --- |
| a) ATP driven pumping proteins | b) A signal to activate the pumps |
| c) A concentration gradient to work against | d) all of above |

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1. Which of the following may affect the rate of diffusion?

|  |  |  |  |
| --- | --- | --- | --- |
| a) temperature | b) Molecular size | c) concentration gradient | d) all the above |

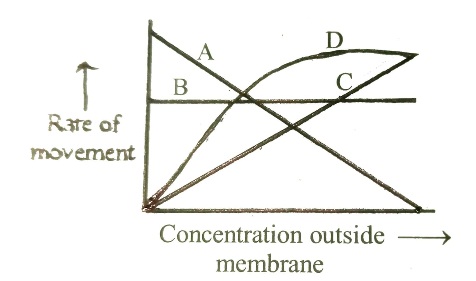
1. Which of the following is not a characteristic of the fluid mosaic model for biological membranes?

|  |  |
| --- | --- |
| a) Fluidity | b) Components symmetrically distributed |
| c) Membrane components can move about | d) Structure reflects function |

1. Which of the following substances is most likely to permeate a membrane by diffusing directly through the lipid bilayer?

|  |  |  |  |
| --- | --- | --- | --- |
| a) K+ | b) Glucose | c) Cl – | d) O2 |

1. For a substance passing through a membrane by simple diffusion, select the curve in the following figure that best shows the relationship between its concentration outside the membrane and its rate of movement through the membrane.



|  |  |  |  |
| --- | --- | --- | --- |
| a) A | b) B | c) C | d) D |

1. For a substance passing through a membrane by facilitated diffusion, which curve in the previous figure best shows the relationship between its concentration outside the membrane and its rate of movement through the membrane.

|  |  |  |  |
| --- | --- | --- | --- |
| a) A | b) B | c) C | d) D |

1. An animal cell is put into a bathing solution and it gains additional water. Choose the statements that is true.

|  |  |
| --- | --- |
| a) The cell was isosmotic to the bathing solution | b) The cell was hyposmotic to the bathing solution |
| c) The cell was hyperosmotic to the bathing solution | d) The bathing solution was hyperosmotic to cell |

1. In terms of basic structure, elephant cell and oak tree cells both:

|  |  |
| --- | --- |
| a) are eukaryotes | b) have a cell nucleus |
| c) have a plasma membrane | d) all of the above |

1. Which organelle is surrounded by a double phospholipid bilayer with many large pores?

|  |  |  |  |
| --- | --- | --- | --- |
| a) Nuclear envelope | b) plasma membrane | c) Golgi apparatus | d) Mitochondria |

1. Both chloroplast and mitochondria :

|  |  |
| --- | --- |
| a) have multiple membranes | b) have highly structured innermost membrane |
| c) are found only in eukaryotic cells | d) all of the above |

1. In which of the following cell organelles would you expect to find the biochemical reactions that harness energy from the breakdown of sugar molecules to synthesize large amounts of ATP?

|  |  |  |  |
| --- | --- | --- | --- |
| a) lysosome | b) vesicles | c) chloroplast | d) mitochondria |

1. Which of the following macromolecules are found in the plasma membrane?

|  |  |
| --- | --- |
| a) Lipids only | b) lipids and proteins |
| c) lipids , proteins and carbohydrates | d) Proteins and carbohydrates |

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1. According to fluid mosaic model of cell membrane :
2. Proteins are rigidly fixed in the phospholipids bilayer.
3. The most common types of molecules in the membrane are proteins
4. Basic membrane structures results from the ways in which proteins interact with water.
5. The membrane is a highly mobile mixture of phospholipids and proteins.
6. Eukaryotic cells are more efficient than prokaryotes because their internal compartmentalization:
7. Makes each compartment nutritionally independent of all others.
8. Allows for specialization through the sub division of particular tasks.
9. Permits the unregulated flow of materials around the cell.
10. Eliminates the need for communication with external environment
11. Which of the following organelle is directly connected to the outer membrane of nucleus in a eukaryotic cell?

|  |  |  |  |
| --- | --- | --- | --- |
| a) mitochondria | b) lysosome | c) Golgi apparatus | d) ER |

1. Where in a Eukaryotic cell can DNA be found?

|  |  |  |  |
| --- | --- | --- | --- |
| a) Nucleus | b) Mitochondria | c) chloroplast | d) all of the above |

1. Centrifugation of a cell results in the rupture of the cell membrane and the contents compacting into a pellet 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 to which of the following?

|  |  |  |  |
| --- | --- | --- | --- |
| a) Cytosol | b) mitochondria | c) lysosomes | d) Golgi bodies |

1. Eukaryotic cells are thought to be derived from prokaryotic cells underwent phagocytosis without digestion of the phagocytized cell. This mutualistic relationship is explained by the :

|  |  |
| --- | --- |
| a) Endosymbiotic theory | b) Cell theory |
| c) Evolutionary theory | d) Parasite theory |

1. Which of the following organelle are double membrane bound?

|  |  |  |  |
| --- | --- | --- | --- |
| a) Nucleus | b) Mitochondria | c) chloroplast | d) all of the above |

1. Which of the following best describes ribosomes?
2. Ribosomes guide protein synthesis
3. Ribosomes are found only in the nucleus or on the RER.
4. There are no ribosomes in the mitochondria
5. All of the above
6. RER and SER differ :
7. Only by the presence or absence of ribosomes
8. Both in the presence or absence of ribosomes and in their function.
9. only in microscopic appearance
10. None of the above
11. Which of the following colourless plastids are involved in storage of fat?

|  |  |  |  |
| --- | --- | --- | --- |
| a) Aleuroplasts | b) Amyloplasts | c) Elaioplasts | d) Oleosomes |

1. Electron transport system is found in :

|  |  |
| --- | --- |
| a) Mitochondria | b) Cell membrane of prokaryotes |
| c) Chloroplasts | d) All of the above |

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1. Which of the following cytoplasmic strands are present in pit through which the cytoplasm of one cell is in contact with other?

|  |  |  |  |
| --- | --- | --- | --- |
| a) bordered pit | b) simple pit | c) Plasmodesmata | d) intussusception |

1. Which of the following structures is present in mitochondria?

|  |  |  |  |
| --- | --- | --- | --- |
| a) Quantosome | b) Centrosome | c) Dictyosomes | d) Oxysomes |

1. The acidic condition with in the lysosome is maintained by :

|  |  |
| --- | --- |
| a) Digestive enzymes synthesized on RER | b) Pumping Cl – ion out of lysosomes |
| c) Pumping protons (H+) into the lysosomes | d) All of the above |

1. Which of the face of Golgi associated with ER?

|  |  |
| --- | --- |
| a) Forming face ; Trans face | b) Maturing face ; Trans face |
| c) Both forming and maturing face | d) Forming face ; Cis face |

1. Cell wall is present in :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Plant cell | b) prokaryotic cell | c) algae cell | d) all of these |

1. Plasmodesmata connections helps in :

|  |  |
| --- | --- |
| a) Cytoplasmic streaming | b) Synchronous mitotic division |
| c) Locomotion of unicellular organism | d) Movement of substance between the cells |

1. The plant cell held together by Calcium pectate layer called:

|  |  |  |  |
| --- | --- | --- | --- |
| a) Primary cell wall | b) secondary cell wall | c) middle lamella | d) tertiary cell wall |

1. The strength and rigidity of a cell wall is due to substance known as :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Suberin | b) cellulose | c) lignin | d) pectin |

1. Cell wall in higher plants is made up of :

|  |  |  |  |
| --- | --- | --- | --- |
| a) cellulose + lignin | b) cellulose + pectin | c) cellulose + suberin | d) cellulose + lipid |

1. The ER is present in :

|  |  |  |  |
| --- | --- | --- | --- |
| a) nucleus | b) chromosomes | c) nucleolus | d) cytoplasm |

1. Which of the following is related to glycosylation of protein?

|  |  |  |  |
| --- | --- | --- | --- |
| a) ER | b) Peroxisome | c) lysosome | d) mitochondria |

1. The most important function of ER is :

|  |  |
| --- | --- |
| a) Protein synthesis | b) nourishing the nucleus |
| c) Secretion of materials | d) To give shape to the cell |

1. Three morphological forms of Golgi complex are :

|  |  |
| --- | --- |
| a) lamellae, tubules and vesicles | b) Cisternae , tubules and vesicles |
| c) Cisternae , tubules and lamellae | d) granum , thylakoids and vesicles |

1. Golgi body is concerned with:

|  |  |  |  |
| --- | --- | --- | --- |
| a) Respiration | b) secretion | c) Excretion | d) degradation |

1. Golgi body is associated with :

|  |  |
| --- | --- |
| a) Packaging and storage of material | b) Cell plate formation |
| c) Secretion of different substances | d) all of the above |

1. Which of the following is a part of endomembrane system ?

|  |  |  |  |
| --- | --- | --- | --- |
| a) Peroxisomes | b) chloroplasts | c) mitochondria | d) Golgi complex |

1. A single unit membrane organelle is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Ribosomes | b) chloroplasts | c) mitochondria | d) lysosomes |

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1. What would happen if lysosomes gets ruptured inside the cells in which they are present?

|  |  |  |  |
| --- | --- | --- | --- |
| a) Cell will swell | b) Cell will shrink | c) Cell will die | d) nothing happens |

1. Lysosomes are so called because these contains:

|  |  |  |  |
| --- | --- | --- | --- |
| a) Carboxylating enzymes | b) respiratory enzymes | c) oxidizing enzymes | d) Digestive enzymes |

1. Lysosomes along with their food content is called :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Primary Lysosome | b) secondary Lysosome | c) residual bodies | d) cytosome |

1. Which of the following is correct for the origin of lysosomes (L)?

|  |  |
| --- | --- |
| a) ER Golgi body L | b) Golgi body ER L |
| c) Nucleus Golgi body L | d) Nucleolus ER Golgi body L |

1. Cristae are infoldings of :

|  |  |
| --- | --- |
| a) Surface of grana | b) surface of plasma membrane |
| c) Membrane of mitochondria | d) nuclear membrane |

1. Mitochondria perform all of the following functions except :

|  |  |
| --- | --- |
| a) Nucleic acid formation | b) -oxidation of fatty acid |
| c) ATP synthesis | d) Polysaccharides degradation |

1. F1 particles/Oxysomes are present in :

|  |  |  |  |
| --- | --- | --- | --- |
| a) ER | b) Chloroplast | c) mitochondria | d) Golgi complex |

1. F1 subunit of Oxysomes is called:

|  |  |  |  |
| --- | --- | --- | --- |
| a) Head | b) stalk | c) base | d) filament |

1. Foldings of inner membrane of mitochondria are called:

|  |  |
| --- | --- |
| a) Cristae | b) grana |
| c) calcium oxalate crystals | d) sacs |

1. Organelles which are regarded as ‘power house’ of the cell and in which the oxidative reactions of the respiratory process takes place are :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Chloroplasts | b) ribosomes | c) ER | d) mitochondria |

1. Which of the following plastids are helpful in starch storage?

|  |  |  |  |
| --- | --- | --- | --- |
| a) Chromoplasts | b) leucoplasts | c) chloroplast | d) lycopene |

1. lamellae of chloroplasts are known as :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Granum | b) Frets | c) thylakoids | d) Stroma lamella |

1. Grana and stroma lamellae are parts of :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Mitochondria | b) chloroplast | c) ER | d) vacuoles |

1. Which of the following substances are stored in Aleuroplasts?

|  |  |  |  |
| --- | --- | --- | --- |
| a) Starch | b) oil and lipids | c) proteins | d) Water and oils |

1. Functional unit of chloroplast is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Stroma | b) Quantosome | c) Oxysomes | d) Peroxisomes |

1. Which one of the following cell organelle is found only in plant cell?

|  |  |  |  |
| --- | --- | --- | --- |
| a) Golgi complex | b) mitochondria | c) plastids | d) Ribosomes |

1. Green pigment (chlorophyll) is present in :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Chromoplasts | b) chloroplast | c) Ribosome | d) Lysosome |

1. The bright colour of ripe fruits are due to :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Leucoplasts | b) chloroplast | c) Amyloplasts | d) Chromoplasts |

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1. What is common between chloroplasts, Chromoplasts and leucoplasts?

|  |  |
| --- | --- |
| a) presence of pigments | b) Possession of thylakoids and grana |
| c) storage of starch, proteins and lipids | d) Ability to multiply by a fission like process |

1. 70S type of ribosomes are found in :

|  |  |
| --- | --- |
| a) Prokaryotic cell | b) Prokaryotic cell , chloroplasts and mitochondria |
| c) Mitochondria | d) Nucleus, mitochondria |

1. Smallest cell organelle which is called cell engine is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Ribosome | b) Lysosome | c) Vacuoles | d) ER |

1. The ribosomes are made up of :

|  |  |  |  |
| --- | --- | --- | --- |
| a) DNA + Protein | b) RNA + Protein | c) DNA + RNA | d) none of these |

1. The 80S ribosomes are found in :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Eukaryotic cells | b) Prokaryotic cells | c) Bacterial cells | d) Cyanobacterial cells |

**Answers**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1. a | 1. d | 1. d | 1. a | 1. c | 1. b | 1. d | 1. a | 1. d |
| 1. c | 1. d | 1. d | 1. b | 1. c | 1. a | 1. d | 1. d | 1. d |
| 1. d | 1. b | 1. d | 1. d | 1. c | 1. c | 1. d | 1. a | 1. d |
| 1. d | 1. c | 1. d | 1. b | 1. d | 1. d | 1. b | 1. a | 1. d |
| 1. a | 1. b | 1. c | 1. d | 1. c | 1. d | 1. c | 1. d | 1. d |
| 1. d | 1. c | 1. c | 1. b | 1. d | 1. a | 1. a | 1. b | 1. b |
| 1. d | 1. d | 1. d | 1. c | 1. d | 1. b | 1. a | 1. c | 1. d |
| 1. c | 1. a | 1. a | 1. d | 1. b | 1. c | 1. b | 1. c | 1. b |
| 1. c | 1. b | 1. d | 1. d | 1. b | 1. a | 1. b | 1. a |  |

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**Level – 4**

**(Based on Cytoskeleton & Nucleus]**

1. Microtubules are the constituents of :

|  |  |
| --- | --- |
| a) cilia , flagella and peroxisomes | b) spindle fibres , centrioles and cilia |
| c) centrioles , spindle fibres and chromatin | d) centrosome , Nucleosome and centrioles |

1. Nuclear envelope is a derivative of :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Golgi apparatus | b) Microtubules | c) RER | d) SER |

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

|  |  |  |  |
| --- | --- | --- | --- |
| a) Microtubules | b) Microfilaments | c) Intermediate filament | d) Lamins |

1. Match column I and column II

|  |  |  |
| --- | --- | --- |
| Column I | Column II | |
| A. Centriole | I. Infoldings of 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 | | |

1. Ribosomal RNA is actively synthesized in :

|  |  |  |  |
| --- | --- | --- | --- |
| a) lysosomes | b) Nucleolus | c) Nucleoplasm | d) Ribosomes |

1. What are those structures that appears as beads on string in the chromosomes when viewed under electron microscope?

|  |  |  |  |
| --- | --- | --- | --- |
| a) genes | b) nucleotides | c) nucleosomes | d) base pairs |

1. Cytoskeleton is made up of :

|  |  |
| --- | --- |
| a) callose deposits | b) Cellulosic microfibril |
| c) proteinaceous filament | d) calcium carbonate granules |

1. Centromere is required for :

|  |  |
| --- | --- |
| a) movement of chromosomes towards poles | b) cytoplasmic cleavage |
| c) crossing over | d) transcription |

1. 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) microtubule organization and type of movement | d) microtubular organization and function |

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1. Which of the following occur more than one and less than five in a chromosome?

|  |  |  |  |
| --- | --- | --- | --- |
| a) chromatid | b) Chromosome | c) Centromere | d) Telomere |

1. Mitotic spindle is mainly composed of which protein?

|  |  |  |  |
| --- | --- | --- | --- |
| a) Actin | b) Myosin | c) Tubulin | d) Myoglobin |

1. Microtubules absent in :

|  |  |  |  |
| --- | --- | --- | --- |
| a) mitochondria | b) centriole | c) flagella | d) spindle fibres |

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

|  |  |  |  |
| --- | --- | --- | --- |
| a) liposomes | b) Golgi bodies | c) microsomes | d) Glyoxysomes |

1. In plant cells, peroxisomes are associated with :

|  |  |  |  |
| --- | --- | --- | --- |
| a) photorespiration | b) phototropism | c) photoperiodism | d) photosynthesis |

1. An outer covering membrane is absent over :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Nucleolus | b) lysosome | c) mitochondria | d) plastid |

1. How do actin and tubulin protein relate to eukaryotic cell structure and function?
2. They are both embedded proteins in plasma membrane
3. They are both components in the reactions of photosynthesis
4. They are both participants in the production of large amounts of ATP.
5. They are both components of cytoskeleton.
6. Nuclear DNA exists as a complex of proteins called \_\_\_\_\_\_ that condenses into \_\_\_\_\_\_ during cellular division.

|  |  |
| --- | --- |
| a) chromosomes , chromatin | b) chromatid , chromosome |
| c) chromatids, chromatin | d) chromatin , chromosomes |

1. Microtubule are responsible for :

|  |  |
| --- | --- |
| a) Holding membrane proteins | b) controlling cleavage and Cyclosis |
| c) Conversion of fat to carbohydrate | d) Formation of spindle and flagella |

1. The principle protein of cilia and flagella is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Tubulin | b) Nexin | c) Myosin | d) albumin |

1. The organelle devoid of DNA but capable of duplication is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Plastids | b) nucleus | c) Centriole | d) Mitochondria |

1. The protein present in the axoneme of cilia/flagella, having ATPase activity is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Nexin | b) Dynein | c) Myofibrils | d) tubulin |

1. Each centriole has a cert wheel organization having a whorl of 9 peripheral fibrils, can be represented with:

|  |  |
| --- | --- |
| a) 9 singlet + 0 central | b) 9 doublet + 0 central |
| c) 9 triplet + 2 central singlet | d) 9 triplet + 0 central |

1. Which cell structure occur in epidermal cells of human but not in epidermal cells of leaves?

|  |  |  |  |
| --- | --- | --- | --- |
| a) Mitochondria | b) Chloroplasts | c) Centriole | d) Cell membrane |

1. The poly nucleated condition appeared by free nuclear division without cytokinesis is :

|  |  |
| --- | --- |
| a) Syncytium | b) Coenocytic |
| c) Found in amphibian oocyte | d) All the above |

1. During germination, which cell organelle converts fatty acid into soluble carbohydrate?

|  |  |  |  |
| --- | --- | --- | --- |
| a) Peroxisomes | b) Glyoxysomes | c) sphaerosomes | d) Lysosomes |

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1. Which of the following enzymes are found in matrix of peroxisomes?

|  |  |
| --- | --- |
| a) NADH cytochrome reductase | b) Glyoxidases and malate dehydrogenase |
| c) Acid phosphatases and isocitric lysase | d) Catalases and oxidases |

1. Peroxisomes are rich in :

|  |  |  |  |
| --- | --- | --- | --- |
| a) DNA | b) RNA | c) Catalytic enzymes | d) Oxidative enzymes |

1. Peroxisomes in plant cell are involved in :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Photo oxidation | b) Photo respiration | c) Photo phosphorylation | d) Photolysis of water |

1. Cilia and flagella both have :

|  |  |
| --- | --- |
| a) 9 + 2 arrangement of microtubule | b) protective structure of cells |
| c) Only present in protozoa animals | d) Only outgrowth structure of cytoplasm |

1. Cilia and flagella arises from :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Basal bodies | b) basal granules | c) Blepharoplasts | d) all the above |

1. Centrioles and centrosomes are present in cells of :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Bacteria | b) cyanobacteria | c) green plants | d) animals |

1. Function of centriole is :

|  |  |
| --- | --- |
| a) Formation of spindle fibres | b) Formation of nucleolus |
| c) Initiation of cell division | d) Formation of cell plate |

1. The function of centrosome is :

|  |  |
| --- | --- |
| a) To inhibit cell division | b) to initiate cell division |
| c) To increase protein synthesis | d) none of the above |

1. The main structure of centriole is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) 9 + 3 fibrils | b) 9 + 2 fibrils | c) Nine triplets | d) 13 globular subunits |

1. Number of protofilament in microtubule is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) 10 | b) 12 | c) 5 | d) 13 |

1. Similarity between plant and animal flagella microtubules is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) 9 + 3 | b) 9 + 2 | c) 9 + 6 | d) 9 + 1 |

1. Which of the following pair lacks the unit membrane?

|  |  |
| --- | --- |
| a) Nucleus and ER | b) Mitochondria and Chloroplasts |
| c) Ribosome and Nucleolus | d) Golgi body and lysosome |

1. Chromosome with centromere at one end is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Metacentric | b) Sub-metacentric | c) Telocentric | d) Acrocentric |

1. Hereditary characters are due to :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Chromosomes | b) gene | c) Blood | d) Placenta |

1. Which type of set of chromosome has one genome?

|  |  |  |  |
| --- | --- | --- | --- |
| a) haploid | b) Diploid | c) Triploid | d) Polyploid |

1. Which structures is present in chromosomes?

|  |  |  |  |
| --- | --- | --- | --- |
| a) Nucleus | b) Centromere | c) Centrosome | d) Golgi body |

1. Part of chromosome which joins with spindle fibres is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Chromatid | b) Chromonema | c) chromomere | d) centromere |

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1. The cells without nuclei are present in:

|  |  |
| --- | --- |
| a) vascular cambium | b) root hair |
| c) companion cell | d) members of sieve tube |

1. Nucleolus is found in :

|  |  |  |  |
| --- | --- | --- | --- |
| a) protoplasm | b) nucleus | c) cytoplasm | d) none of these |

1. The function of nucleolus is the synthesis of:

|  |  |  |  |
| --- | --- | --- | --- |
| a) DNA | b) mRNA | c) rRNA | d) tRNA |

1. In nucleoplasm, a conspicuous body of spherical shape attached to a particular chromosome on a definite position is called:

|  |  |  |  |
| --- | --- | --- | --- |
| a) Plasmid | b) karyolymph | c) nucleolus | d) nuclear reticulum |

1. Microtubules, motor proteins and actin filaments are all parts of the :
2. Mechanism of photosynthesis that occurs in chloroplast
3. Rough ER in prokaryotic cells
4. Cytoskeleton of eukaryotic cells
5. Process that moves small molecules across cell membranes.

**Answers**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1. b | 1. c | 1. b | 1. a | 1. b | 1. c | 1. c | 1. a | 1. c |
| 1. a | 1. c | 1. a | 1. d | 1. a | 1. a | 1. d | 1. d | 1. d |
| 1. a | 1. c | 1. b | 1. d | 1. c | 1. b | 1. b | 1. d | 1. d |
| 1. b | 1. a | 1. d | 1. d | 1. a | 1. d | 1. c | 1. d | 1. b |
| 1. c | 1. c | 1. b | 1. a | 1. b | 1. d | 1. d | 1. b | 1. c |
| 1. c | 1. c |  |  |  |  |  |  |  |

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