

1. What is a cell?

- a) smallest and advanced unit of life
- b) smallest and basic unit of life
- c) largest and basic unit of life
- d) largest and advanced unit of life

View Answer

Answer: b

Explanation: A cell is the smallest and most fundamental unit of life, responsible for all of life's operations. All living beings have cells that serve as structural, functional, and biological units.

2. Which of the following is a functional unit of a body?

- a) Mitochondria
- b) Cytoplasm
- c) Spleen
- d) Cell

View Answer

Answer: d

Explanation: Because all living beings are made up of cells, the cell is recognized as the structural and functional unit of life.

3. What is cell biology?

- a) Study of cell division only
- b) Study of cancerous cell
- c) Study of cell structure and function
- d) Study of metaphase of a cell

View Answer

Answer: c

Explanation: The study of cell structure and function is known as cell biology, and it is based on the idea that the cell is the most basic unit of life. Concentrating on the cell allows for a more in-depth understanding of the tissues and organisms that cells make up.

4. Which of the following is used by cells to interact with other cells?

- a) Cell tubules
- b) Cell junctions

- c) Cell adhesions
- d) Cell detectors

View Answer

Answer: b

Explanation: Cell junctions are used by cells to interact with each other in certain tissues. These are stable interactions made for the development and function of the cell.

5. In which of the following type of cells the cell junction is abundant?

- a) Cardiac cells
- b) Prokaryotic cells
- c) Hepatic cells
- d) Epithelial cells

View Answer

Answer: d

Explanation: The cell junction is abundant in epithelial cells, which provide barrier and control over the transport in the cell. It is otherwise known as intercellular bridge, which is made up of multiprotein complexes.

6. What is epithelial mesenchymal transition?

- a) Loss of migration and gain of adhesion
- b) Formation of mesenchymal cells
- c) Loss of adhesion and gain of migration
- d) Lysis of cell

View Answer

Answer: c

Explanation: Epithelial mesenchymal transition is the property of cells losing adhesion and gaining migration. It is highly useful in the pluripotency of stem cells in organ development.

7. In which of the following type of cells the Gap junctions are absent?

- a) Sperm cells
- b) Brain cells
- c) Reproductive cells
- d) Cardiac cells

View Answer

Answer: a

Explanation: Gap junctions are absent in all the cell that are motile. Gap junctions are also absent in erythrocytes. These motile cells do not have a necessity for the passage of molecules or ions.

8. In which of the following type of cells Sarcoplasmic reticulum is found?

- a) muscle cells
- b) liver cells
- c) kidney cells
- d) neurons

View Answer

Answer: a

Explanation: Smooth endoplasmic reticulum sequesters calcium ions within the cytoplasm of the cell and controlled release of Ca^{2+} from the SER of cardiac and skeletal muscle cells triggers contraction. Smooth endoplasmic reticulum (SER) in the aforementioned cells is known as sarcoplasmic reticulum.

9. Which of the following are phagocytic cells?

- a) neutrophils, mast cells
- b) mast cells, macrophages
- c) mast cells, antibodies
- d) neutrophils, macrophages

View Answer

Answer: d

Explanation: Neutrophils and macrophages are the phagocytic cells that ingest potentially dangerous microbes; the microbes are then inactivated by the low pH of lysosomes present in these cells followed by their enzymatic digestion.

10. Which of the following is known as the powerhouse of a cell?

- a) Mitochondria
- b) Cytoplasm
- c) Lysosome
- d) Nuclei

View Answer

Answer: a

Explanation: The mitochondria, also known as the “powerhouse of the cell,” are the organelles that produce energy within the cell. The mitochondria are the major site for ATP generation and play a significant role in cellular respiration.

11. Which of the following is known as the suicide bag of a cell?

- a) Mitochondria
- b) Golgi Complex
- c) Lysosome
- d) Nuclei

View Answer

Answer: c

Explanation: The digesting enzymes are found in lysosomes. When lysosomes rupture, digestive enzymes are released, which begin digesting the body’s own cells. That’s why they’re referred to as suicidal bags.

12. Lysosomes are produced by which of the following cell organelles?

- a) Mitochondria
- b) Endoplasmic Reticulum
- c) Golgi Complex
- d) DNA

View Answer

Answer: c

Explanation: They are produced by the Golgi body. The fusion of vesicles from the Golgi complex with endosomes produces lysosomes.

13. Which of the following cell organelle is responsible for transporting, modifying, and packaging proteins and lipids?

- a) Mitochondria
- b) Endoplasmic Reticulum
- c) Golgi Complex
- d) DNA

View Answer

Answer: c

Explanation: The Golgi apparatus, also known as the Golgi complex, is a factory where

proteins from the ER are further processed and sorted before being transported to their final destinations: secretion, lysosomes, or the plasma membrane.

14. Which of the following cell doesn't contain a cell wall?

- a) Plant cell
- b) Bacteria
- c) Fungi
- d) Animal cell

[View Answer](#)

Answer: d

Explanation: Plant cells require a cell wall, but animal cells do not, as plants require a stiff framework in order to grow up and out. Cell membranes are present in all cells and are flexible. Plant cells only have the shapes of their cell walls, but animal cells can have a variety of shapes.

15. Who is the father of cell biology?

- a) George N. Papanicolaou
- b) George Emil Palade
- c) Robert Hooke
- d) None of the above

[View Answer](#)

Answer: b

Explanation: Dr. George Emil Palade, a Nobel Laureate, is known as the “Father of Cell Biology” for his pioneering work in the subject. He was a pioneer in the use of the electron microscope, which he used to discover ribosomes and secretory protein activity.

16. DNA is stored in which of the following cell organelle?

- a) Cell wall
- b) Cell Membrane
- c) Nucleus
- d) Cytoplasm

[View Answer](#)

Answer: c

Explanation: DNA contains the blueprints for all of the proteins in our bodies, neatly packed in a double helix. Transcription and translation are the processes that turn DNA into proteins,

and they take place in distinct parts of the cell. The first step, transcription, takes place in the nucleus, which is where the DNA is stored.

17. In which of the following cell nucleus is not present?

- a) Eukaryotic cell
- b) Prokaryotic cell
- c) Both of the above
- d) None of the above

View Answer

Answer: b

Explanation: Nucleus is absent in prokaryotic cells. Instead, they have a nucleoid region in the cell.

18. Which of the following organisms doesn't have a cell?

- a) Virus
- b) Bacteria
- c) Fungi
- d) Algae

View Answer

Answer: a

Explanation: Viruses aren't made up of cells. Their genetic material is protected by a protein covering (either DNA or RNA). However, they lack a cell membrane and other organelles seen in cells.

19. Who proposed the cell theory?

- a) Theodor Schwann, Watson and Robert Hooke
- b) Theodor Schwann, Matthias Schleiden and Robert Hooke
- c) Theodor Schwann, Matthias Schleiden and Rudolf Virchow
- d) NTheodor Schwann, Rudolf Virchow and Robert Hooke

View Answer

Answer: c

Explanation: Theodor Schwann proposed the classical cell hypothesis. This hypothesis is divided into three parts. All organisms are made up of cells, according to the first section. Cells are the basic units of life, according to the second portion. These sections were based on

a conclusion reached by Schwann and Matthias Schleiden. Rudolf Virchow declared *Omnis cellula e cellula*, claiming that cells come from preexisting cells that had multiplied.

20. RNA is present in which of the following cell organelles?

- a) Cell wall
- b) Ribosome
- c) Nucleus
- d) Cytoplasm
- d) Golgi complex

View Answer

Answer: b

Explanation: Ribosomes are tiny organelles that contain RNA and specific proteins within the cytoplasm.

21. A cell organelle that is present in animal cells but not present in plant cells is?

- a) Cytoplasm
- b) Centrosome
- c) Mitochondrial
- d) Cytoplasm
- d) Golgi complex

View Answer

Answer: b

Explanation: Plant cells lack a centrosome and lysosomes, while animal cells do. Animal cells lack a cell wall, chloroplasts, and other specialized plastids, as well as a big central vacuole, but plant cells do.

22. Which of the following cell is found in the brain?

- a) Neuron
- b) Hepatocyte
- c) Nephron
- d) Epithelial cell

View Answer

Answer: a

Explanation: Hepatocyte is found in the liver. The nephron is the filtering unit of the kidney. Epithelial cell lines the surfaces of your body.

23. Protein synthesis takes place in which of the following cell organelle?

- a) Cell wall
- b) Ribosome
- c) Nucleus
- d) Cytoplasm

View Answer

Answer: b

Explanation: Protein synthesis takes place on ribonucleoprotein particles called ribosomes in the cytoplasm. Ribosomes in the cytoplasm transform mRNA molecules exported from the nucleus into protein (which are RNA-protein complexes, not organelles).

24. Which of the following cells are found in the intestinal lining?

- a) RBCs
- b) Neurons
- c) Epithelial cells
- d) Hepatocytes

View Answer

Answer: c

Explanation: Epithelial cells line the intestine and are responsible for the uptake and absorption of nutrients from the digestive tract. Microvilli are located at the apical end of these cells and mitochondria are located at the basal end.

25. Which of the following polysaccharide is not present in the eukaryotic plant cell wall?

- a) Chitin
- b) Hemicellulose
- c) Pectin
- d) Cellulose

View Answer

Answer: d

Explanation: Chitin is a polysaccharide that is present mainly in exoskeletons of Arthropods and are not a component of plant cell wall. Plant cell wall is majorly composed of cellulose, hemicelluloses and pectin.

26. Which of the following is the process of synthesis of glucose?

- a) saccharification

- b) glycolysis
- c) gluconeogenesis
- d) neogenesis

View Answer

Answer: c

Explanation: The anabolic pathway that leads to the formation of glucose is referred to as gluconeogenesis. A cell can synthesize glucose at the same time as utilizing glucose as the source of chemical energy.

27. Which of the following site is represented by Loops in lampbrush chromosomes?

- a) Crossing over
- b) Cell division
- c) Replication
- d) Transcription

View Answer

Answer: d

Explanation: Lampbrush chromosomes are a type of giant chromosomes found in the growing oocytes of amphibians. Twin loops arise on either side of the chromosome in the meiotic prophase. This is due to the active transcription of many genes.

28. Which of the following part of a neuron receives information from other neurons?

- a) myelin sheath
- b) dendrites
- c) cell body
- d) axon

View Answer

Answer: b

Explanation: The fine extensions from the cell body of the neurons are called dendrites which receive information from external sources, usually other neighboring neurons.

29. Which of the following is not a component of cell membranes?

- a) Phosphotriglycerides
- b) Cholesterol
- c) Sphingolipids

d) Phosphodiglycerides

[View Answer](#)

30. Which of the following promote curvature of cell membrane?

a) Phosphatidyl serine (PS)

b) Phosphatidyl inositol(PI)

c) Phosphatidyl choline (PC)

d) Phosphatidyl ethanolamine (PE)

[View Answer](#)

31. Which of the following is not a type of chromosomal aberration?

a) duplication

b) translocation

c) mutations

d) inversion

[View Answer](#)

32. Which of the following cells release insulin when glucose levels elevate in the body?

a) gamma cells

b) beta cells

c) alpha cells

d) zeta cells

[View Answer](#)

Answer: b

Explanation: The beta cells in pancreas secrete insulin when the blood glucose levels elevate while the alpha cells in the pancreas secrete glucagon when the blood glucose levels drop.

Insulin acts as an extracellular messenger molecule.

33. Which of the following cells are pluripotent?

a) embryonic stem cells

b) nucleosomes

c) hepatocytes

d) neurons

[View Answer](#)

Answer: a

Explanation: Embryonic stem cells appear very early in the development of a mammalian

embryo and possess two very unique properties, indefinite self-renewal and capability of differentiating into different cell types.

34. Which of the following cells do not lack the ability to divide?

- a) red blood cells
- b) muscle cells
- c) skin cells
- d) nerve cells

[View Answer](#)

Answer: c

Explanation: Only highly specialized cells of the body such as nerve cells, muscle cells and red blood cells lack the ability to divide, once they have differentiated they remain in that state till the end of their life cycles.

35. Which of the following cells do not usually divide but can be induced to divide?

- a) liver cells
- b) red blood cells
- c) hair cells
- d) hair follicles

[View Answer](#)

Answer: a

Explanation: Liver cells do not usually grow and divide but can be made to do so under specific conditions such as liver surgery. Lymphocytes can also be induced to regrow and divide by interaction with a proper antigen.