WORKSHEET 1

CHAPTER 1 – CELL: THE STRUCTURAL AND FUNCTIONAL UNIT OF LIFE

A. Tick (✓) the correct option.

1. Nucleus was discovered by
   a. Robert Hooke. b. Robert Brown. c. Dujardin. d. Purkinje.
2. A solution is said to be hypotonic when
   a. concentration of medium is higher than that of the cell.
   b. concentration of medium is equal to that of the cell.
   c. concentration of medium is lower than that of the cell.
   d. none of the above.
3. Mitochondria stores energy in form of
   a. heat energy. b. ATP. c. light energy. d. none of these.
4. Lipid synthesis is performed by
   a. rough ER. b. smooth ER. c. both (a) and (b). d. none of these
5. Lysosomes are responsible for
   a. protein synthesis. b. digestion of organic molecules.
   c. fat synthesis. d. fat emulsification.

B. Fill in the blanks.

1. First living cell was discovered by _____
2. _____ is selectively permeable in nature. It allows or permits the entry and exit of some materials in and out of the cell.
3. _____ consists of a system of membrane bounded vesicles arranged parallel to each other in stacks called Cisternae along with some large and spherical vacuoles.
4. Vacoules are bounded by a single membrane called _____
5. _____ is a granular transparent substance also called as matrix.

C. State whether the given statements are true or false.

1. All plants and animals are composed of cells.
2. Prokaryotic cells are well-developed and complete cells.
3. Cell membrane is also called as plasma membrane or Plasmalemma.
4. Movement of solutes or ions from higher concentration to lower concentration is called osmosis.
5. Maximum mitochondria are found in metabolically active cells.

Name: ..... Teacher's signature: .....

Class: IX Date: .....

D. Match the following.

1. Discovered first living cell	(*a*) Camilo Golgi
2. Coined the term protoplasm	(*b*) Schleiden and Schwann
3. Propounded Cell theory	(*c*) Robert Brown
4. Discovered nucleus	(*d*) Purkinje
5. Discovered Golgi apparatus	(*e*) A.V. Leeuwenhoek

E. Answer the following questions.

1. Can you name the two organelles you have studied that contain their own genetic material?
2. How do substances like CO_2 and water move in and out of the cell? Discuss.
3. If the organization of a cell is destroyed due to some physical or chemical influence, what will happen?
4. Draw a neat and labelled diagram of a plant cell.
5. Differentiate between prokaryotic and eukaryotic cells.

ANSWERS

WORKSHEET 1

A. Tick (✓) the correct option.

1. b 2. c 3. b 4. b 5. b

B. Fill in the blanks.

1. A.V. Leeuwenhoek
2. Plasma membrane
3. Golgi apparatus
4. Tonoplast
5. Stroma

C. State whether the given statements are true or false.

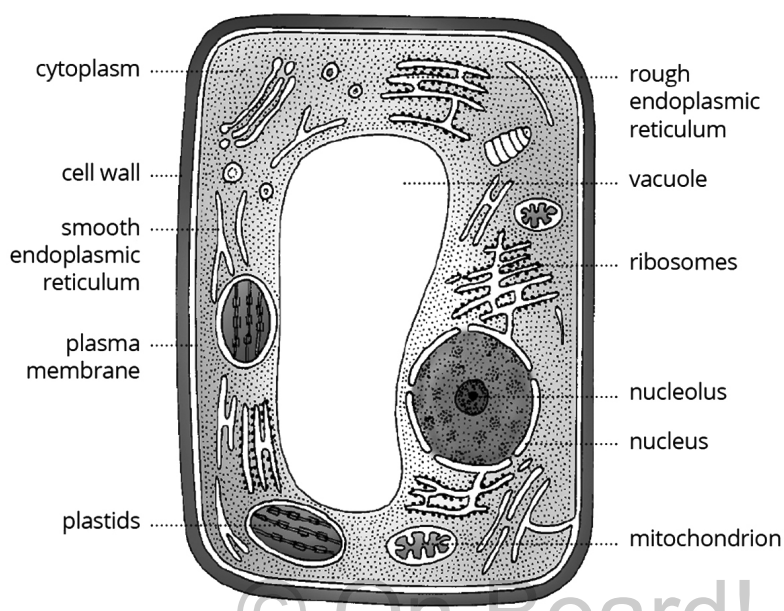
1. T 2. F 3. T 4. F 5. T

D. Match the following.

1. (e) 2. (d) 3. (b) 4. (c) 5. (a)

E. Answer the following questions.

1. Mitochondria and plastids
2. The substances like CO_2 and water move in and out of a cell by diffusion from the region of high concentration to low concentration.

   When the concentration of CO_2 and water is higher in external environment than that inside the cell, CO_2 and water moves inside the cell. When the concentration outside the cell becomes low and it is high inside the cell, they move out.
3. If the organization of a cell is destroyed due to some physical or chemical influence, then cell will not be able to perform the basic functions like respiration, nutrition, excretion, etc. This may stop all the life activities and may result in its death.
4. 

Plant cell

5. Differences between prokaryotic and eukaryotic cells

Features	Prokaryotic cell	Eukaryotic cell
size of cell	small in size (1–10 µm) $1\ \mu m = 10^{-6}\ m$	large in size (5–100 µm)
nucleus	have undefined nuclear region due to absence of nuclear membrane	have well-defined nuclear region surrounded by a nuclear membrane
chromosome	single molecule of circular DNA	more than one chromosome
nucleolus	nucleolus is absent	nucleolus is present
membrane-bound cell organelles	membrane-bound organelles are absent	membrane-bound organelles are present