



BIOLOGY

BOOKS - BETOPPERS

CELL STRUCTURE AND FUNCTIONS

Worksheet 1

1. Which cell structure was observed by Robert Hooke when he studied cork cells?

A. Nucleus

B. Cell wall

C. Cytoplasm

D. Cell membrane

Answer: B



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2. Robert Hooke was the first scientist who coined the term 'cell'. Which cell did he observe under the microscope?

A. Fiber

B. Cork

C. Root

D. Leaf

Answer: B



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3. Which of the following organisms is multi-cellular?

A. Hydra

B. Amoeba

C. Paramecium

D. Dinoflagellate

Answer: A



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4. All living organisms are made up of cells.

Cells are often referred to as the building

blocks of life. Which of the following organisms is not a unicellular organism?

A. Bacteria

B. Coral

C. Yeast

D. Archaea

Answer: B



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5. Organisms that are made up of many cells are called multi-cellular organisms, whereas organisms that are made up of only a single cell that performs all functions are called unicellular organisms. Which of the following organisms is unicellular?

A. Pine

B. Algae

C. Sundew

D. Amoebae

Answer: D



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6. Bob and his father visit a construction site. Bob observes workers placing bricks in a sequence to construct a house. The architect tells them that the house will consist of four bedrooms, a dining hall, one study, and a garage. Bob's father explains to Bob that bricks are the building units of the house.

Which of the following is known as the building block of life?

A. Oxygen

B. Heart

C. Water

D. Cell

Answer: D



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7.



Which common feature is present in the illustrated organisms?

A. Cells

B. Organs

C. Tissues

D. Systems

Answer: A



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8. Multicellular organisms are made of a large number of cells, wherein each cell performs a specific function.

Which of the following organisms is not multicellular?

A. Plants

B. Protists

C. Monkey

D. Mushrooms

Answer: B



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9. Which of the following organisms is not multicellular?

A. Banyan tree

B. Pea plant

C. Diatom

D. Leech

Answer: C



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10. An organism made up of a single cell is known as a unicellular organism. Which of the following organisms is not unicellular?

A. Bacterium

B. Mushroom

C. Paramecium

D. Dinoflagellate

Answer: B



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11. In a multicellular organism, different cells are specialized to perform different functions.

Which of the following organisms is multicellular?

A. Diatom

B. Bacteria

C. Euglena

D. Hydra

Answer: D



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12. In a unicellular organism, the single cell performs all the functions necessary for its

survival. Which of the following organisms is unicellular?

A. Pine

B. Moss

C. Amoeba

D. Earthworm

Answer: C



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13. Prokaryotes are distinguished from eukaryotes by the

- A. presence of cell wall
- B. absence of nucleus
- C. presence of ribosomes
- D. absence of chloroplasts

Answer: B



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Worksheet 2

1. Which of the following statements about prokaryotes is true?

A. All prokaryotes have a cell wall

B. Nucleus is absent in all prokaryotes

C. Prokaryotes are larger than

D. Ribosomes are larger in prokaryotes as compared to eukaryotes

Answer: B



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2. Nucleus controls all life processes because of the presence of

A. nuclear membrane

B. nuclear pores

C. chromosomes

D. lysosomes

Answer: C



3. Which arrow diagram correctly illustrates the arrangement of cell organelles starting from the outermost layer of plant cells?

A. Plasma membrane → cell wall → cytoplasm → nucleus

B. Cell wall → plasma membrane → cytoplasm → nucleus

C. Cell wall → cytoplasm → plasma

membrane → nucleus

D. Plasma membrane → cytoplasm → cell

wall → nucleus

Answer: B



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4. In plant cells, nucleus is found at the periphery of cells because of the presence of a central

A. plastid

B. lysosome

C. ribosome

D. vacuole

Answer: D



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5. Living organisms are grouped into eukaryotes and prokaryotes on the basis of

A. ribosomes

B. nucleus

C. plasma membrane

D. chloroplast

Answer: B



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6. In multi-cellular organisms, cells are usually

A. independent of each other

B. dependent upon each other

C. incapable of transporting substances

D. incapable of multiplication

Answer: B



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7. Cytoplasm is composed of all cell organelles except nucleus. The contents of nucleus are separated from cytoplasm by the nuclear membrane. Nucleus and nuclear membrane

together form nucleoplasm. Cytoplasm and nucleoplasm are together referred to as

- A. protoplast
- B. cytonucleus
- C. protoplasm
- D. nucleolus

Answer: C



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8. Which of the following functions holds true for plasma membrane?

A. It protects and gives structural support to cells

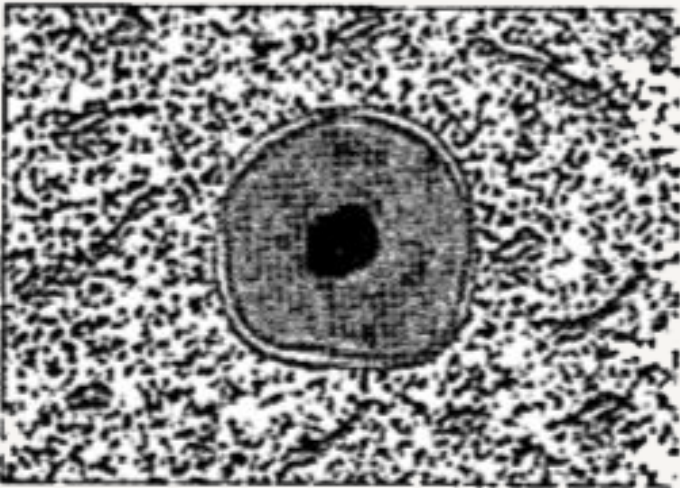
B. It contains the genetic material

C. It regulates substances moving in and out of cells

D. It maintains the shape of cells

Answer: C

9. The nucleus of a cell is a membrane-bound organelle that contains the genetic material i.e., DN(A) The cellular material present outside the nucleus is called cytoplasm.



Which membrane separates the components of nucleus and cytoplasm?

- A. Protoplasm
- B. Nucleolus
- C. Plasma membrane
- D. Nuclear envelope

Answer: D



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10. Cytoplasm is a water-like substance that is present outside the nucleus and contains all cellular organelles. In animal cells, it occupies nearly half of a 'cell's volume. It occupies less space in plant cells. Cytoplasm occupies less space in plant cells because of the

- A. presence of cell wall
- B. presence of vacuoles
- C. absence of cell wall
- D. absence of vacuoles

Answer: B



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11. Which organelle forms the outermost layer in animal cells?

- A. Mitochondria
- B. Plasma membrane
- C. Cell wall
- D. Nuclear membrane

Answer: B



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12. Chloroplasts are cell organelles found mostly in all plant cells.

Chloroplasts facilitate the process of

- A. respiration
- B. photosynthesis
- C. lipid production
- D. protein production

Answer: B



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13. Plant cells can perform certain functions which animal cells cannot perform. The function unique to a plant cell is the

- A. exchange of gases
- B. absorption of water
- C. production of starch
- D. transport of nutrients

Answer: C



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14. Cells perform the essential life functions in an animal body. Which of the following functions is not performed by animal cells?

A. Digestion

B. Respiration

C. Protein synthesis

D. Carbohydrate synthesis

Answer: D



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15. The flow of molecules in and out of a cell is regulated by

A. cell membrane

B. mitochondria

C. golgi body

D. nucleus

Answer: A



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16. Cell wall is the most distinguishing feature of plant cells.

Which of the following functions is not performed by plant cell wall?

- A. Manufacturing proteins
- B. Giving support to the cell
- C. Providing shape to the cell

D. Protecting cellular contents

Answer: A



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17. Which cell organelle produces oxygen?

A. Mitochondrion

B. Chloroplast

C. Lysosome

D. Ribosome

Answer: B



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18. Which cell organelle produces glucose?

A. Vacuole

B. lysosome

C. Chloroplast

D. Mitochondrion

Answer: C



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19. Chloroplasts perform the function of

- A. osmosis
- B. respiration
- C. transpiration
- D. photosynthesis

Answer: D



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20. The vacuoles present in animal cells are

A. small, centrally located, and a few in number

B. large, centrally located, and a few in number

C. small, scattered, and more in number

D. large, scattered, and more in number

Answer: C



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21. Which of the following processes does not occur in animal cells?

A. Photosynthesis

B. Respiration

C. Excretion

D. Osmosis

Answer: A



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22. As compared to plant cells, animal cells are found in a variety of shapes. Animal cells are found in a variety of shapes because of the presence of a flexible

A. vacuole

B. nucleus

C. cell wall

D. cell membrane

Answer: D



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23. Vacuole is cell structure present in both plant and animal cells. Which of the following statements about plant and the animal cell vacuoles is true?

- A. The plant cell has many small vacuoles, but the animal cell has one large vacuole
- B. The plant cell has one large vacuole, but the animal cell has many small vacuoles.

C. The plant as well as the animal cell has many small vacuoles.

D. The plant as well as the animal cell has one large vacuole.

Answer: B



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24. Chlorophyll plays a major role in plant photosynthesis.

Chlorophyll performs the function of

A. absorbing water in leaves

B. trapping light energy in leaves

C. releasing carbon dioxide into
atmosphere

D. releasing manufactured food into
atmosphere

Answer: B



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Competitive Worksheet

1. Green plants produce oxygen which is utilized by all animals. The cell organelle that produces oxygen in a plant cell is the

A. mitochondrion

B. chloroplast

C. vacuole

D. nucleus

Answer: B



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2. A certain cell organelle controls various activities of the cell such as protein synthesis.

It also contains the hereditary information of an organism.

The described cell organelle is the

A. nucleus

B. ribosome

C. chloroplast

D. mitochondrion

Answer: A



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3. Which of the following cell organelles is found only in the animal cell?

A. Nucleus

B. Vacuole

C. Centriole

D. Ribosome

Answer: C



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4. Plant and animal cells are surrounded by the plasma membrane. The main function of the plasma membrane is to

A. control the movement of substances across the cell

B. control the cellular activities within the cell

C. carry out protein synthesis

D. carry out lipid synthesis

Answer: A



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5. Cell wall is present in only in the plant cell.

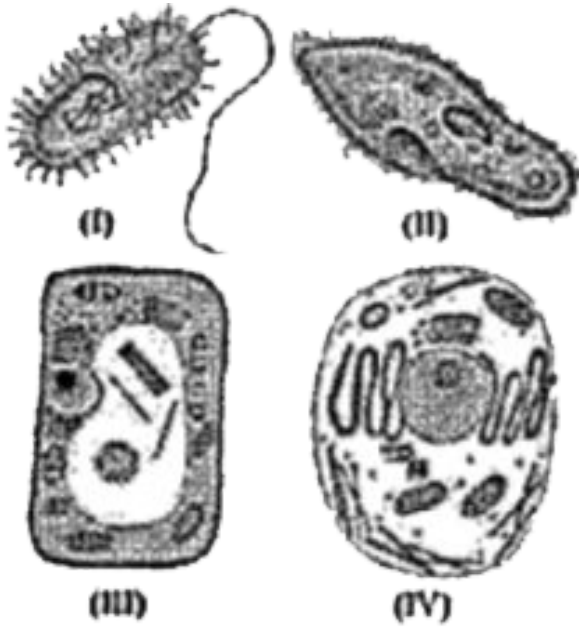
The main function of the cell wall is to

- A. protect the cell
- B. control cellular activities
- C. carry out photosynthesis
- D. perform cellular respiration

Answer: A



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6.

Which figure represents a plant cell?

A. IV

B. III

C. II

D. I

Answer: B



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7. Which of the following structures is not prominent in plant cells?

A. Vacuole

B. Centriole

C. Ribosome

D. Chloroplast

Answer: B



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8. Prokaryotes are primitive cells. They lack an organized nucleus and other membrane-bound organelles. Which of the following structures is not found in prokaryotic cells?

A. Cell membrane

B. Mitochondrion

C. Chromosome

D. Cytoplasm

Answer: D



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9. The presence of a thick cell wall is one of the important factors that differentiate plant cells from animal cells. The cell wall surrounds the cell or plasma membrane. The presence of cell wall allows plant cells to

A. exhibit mobility

B. synthesize their own food

C. separate internal contents of the cell

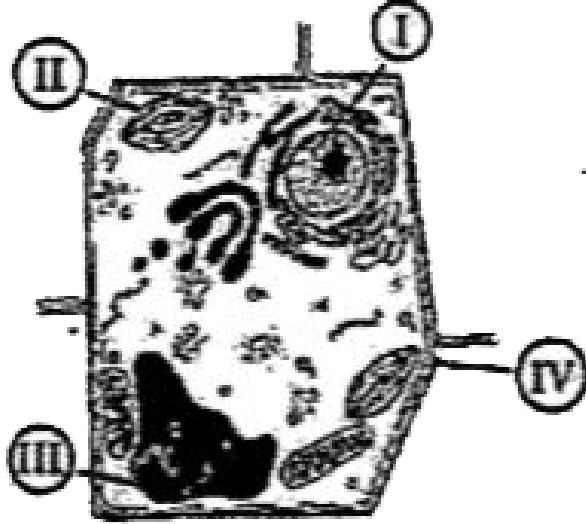
D. withstand changes in their surroundings

Answer: D



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10. A plant cell with four labeled portions is depicted in the given figure.



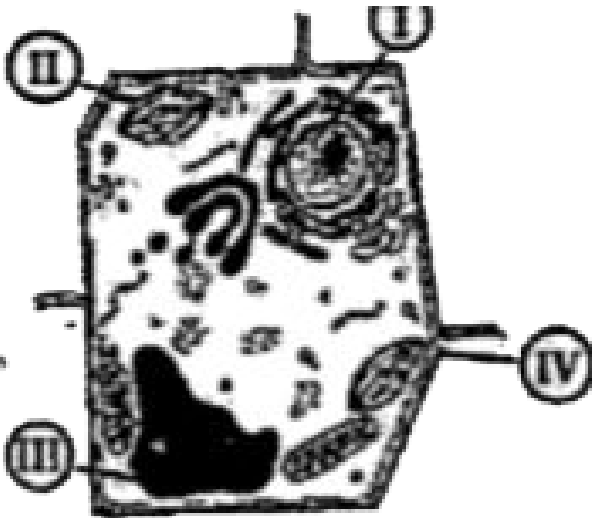
The labeled organelle present in both animal cell and plant cell is

- A. IV
- B. III
- C. II
- D. I

Answer: B

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11. A plant cell with four labeled portions is depicted in the given figure.



The labeled portion responsible for photosynthesis is

A. I

B. II

C. III

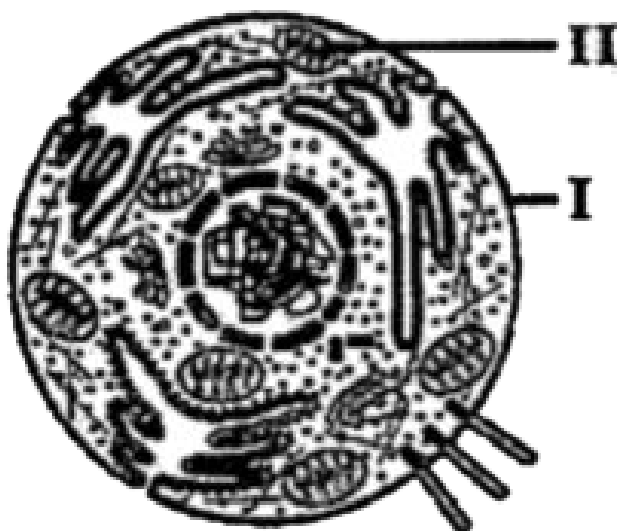
D. IV

Answer: B



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12. The given figure depicts a diagram of a eukaryotic animal cell. It shows organelles labeled I and II



The function of the part of the cell marked as I is to

A. absorb energy from the sun and prepare food

B. perform aerobic respiration and synthesize acids

C. regulate the exit and entry of substances in the cell

D. control cell metabolism, and form ribosomes, DNA and RNA

Answer: C



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13. Which of the following cell components is present only in plant cells and absent in all animal cells?

A. Cell membrane

B. Cell wall

C. Vacuole

D. Nucleus

Answer: B



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14. Chloroplasts are cell organelles in plants which help to produce food for the plant. Which of the following is a source of energy used by chloroplasts to produce food?

A. Air

B. Sun

C. Soil

D. Water

Answer: B



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15. Animal and plant cells differ from each other in a number of ways.

Which cell organelle is absent in animal cells?

A. Mitochondria

B. Chloroplast

C. Vacuole

D. Nucleus

Answer: B



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16. All single cell organisms are known as prokaryotes. The single cell performs all the functions required for the organism to survive. Which of the following cell organelles is not present in prokaryotes?

A. Nucleus

B. Cell wall

C. Ribosome

D. Cell membrane

Answer: A



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17. A cell consists of a number of organelles that perform various functions. Which cell organelle controls the movement of particles in and out of the cell?

A. Cell membrane

B. Mitochondria

C. Lysosomes

D. Cytoplasm

Answer: A



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18. The vacuole is a cell organelle present in both plant and animal cells. It stores food, water, toxic waste etc.

The vacuole present in a plant cell differs from that of an animal cell because the former has

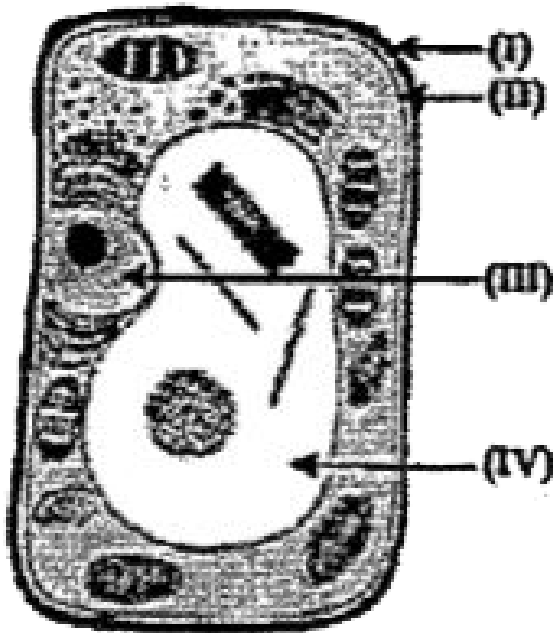
- A. many small vacuoles
- B. double membrane vacuole
- C. a single membrane vacuole
- D. a large centrally placed vacuole

Answer: D



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19. The given figure is that of a cell.



In the given figure, the cell wall is present at position

A. I

B. II

C. III

D. IV

Answer: A



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20. Cell membrane has a common function in both plants and animals.

Cell membrane performs the function of

A. controlling the movement of materials

in and out of the cell

B. manufacturing energy to carry out

various functions

C. controlling the activities of the cell

D. storing food, water, and waste

Answer: A



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