



BIOLOGY

BOOKS - BETOPPERS

BASIC BIOLOGY

Formative Worksheet

1. Which type of cells did Robert Hooke observe under the microscope?

A. Cork cells

B. Leaf cells

C. Muscle cells

D. Liver cells

Answer:



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2. Robert Hooke studied the cork cells during his famous discovery of plant cells. The term 'cell' was coined by him. Which cell structure

was observed by Robert Hooke when he studied cork cells?

A. Nucleus

B. Cell wall

C. Cytoplasm

D. Cell membrane.

Answer:



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3. Which of the following alternatives describes the appearance of cells viewed by Robert Hooke for the first time?

A. Honey comb-like structures

B. Irregular mobile structures

C. Elongated structures

D. Spherical structures

Answer:



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4. Cells form the basic units of life and are similar in structure in different living organisms. For example, cells present in the human brain, plant leaves, and the intestine of a cow are similar. The given cells are similar in structure due to the presence of

A. nucleus, cytoplasm, and cell wall

B. nucleus, cell wall, and cell membrane

C. nucleus, cell membrane, and cytoplasm

D. cytoplasm, cell wall, and cell membrane

Answer:



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5. Which of the following corresponds to the properties of a cell?

- A. The cell is the smallest living unit of life.
- B. It is so small that it is not visible to the naked eye.

C. The shape of the cell varies in different organisms and within an organism.

D. All

Answer:



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6. Which of the following corresponds to the principles of a cell theory?

A. All living organisms are composed of one or more cells.

B. Cells are the basic unit of structure and function in an organism.

C. All cells come only from the reproduction of pre-existing cells.

D. All

Answer:



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7. Which cell organelle controls the movement of particles in and out of the cell?

A. Cell membrane

B. Mitochondria

C. Lysosomes

D. Cytoplasm

Answer:



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

A. cell membrane

B. mitochondria

C. golgi body

D. nucleus

Answer:



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9. Which of the following statements about cell membrane is correct?

A. It controls all the activities of the cell.

B. It carries out the process of photosynthesis.

C. It stores the waste material produced by the cell.

D. It regulates the movement of substances in and out of the cell.

Answer:



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10. 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:



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11. 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:



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12. Which of the following statements about plasma membrane is incorrect?

A. It is porous in nature.

B. It is present in all cells.

C. It allows the movement of substances in and out of cells.

D. It takes part in the transfer of characters from parents to offspring.

Answer:



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13. 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 →

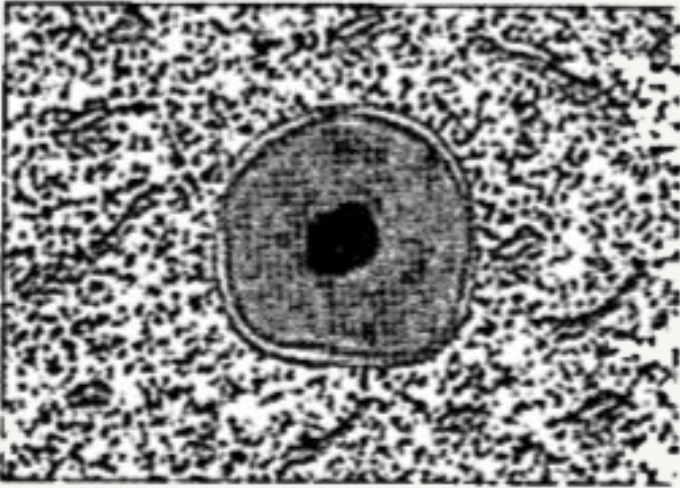
cell wall → nucleus

Answer:



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14. 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:



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15. Which of the following statements about nucleus is true?

A. It allows the movement of substances both into and out of the cell.

B. It holds information that is transferred from parents to offspring.

C. It carries out the process of photosynthesis.

D. It protects the cell from external injury.

Answer:



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16. 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:



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17. The thread-like structures present inside the nucleus that are visible only during cell division are known as

A. genes

B. plastids

C. vacuoles

D. chromosomes

Answer:



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

It also contains the hereditary information of an organism.

A. nucleus

B. ribosome

C. Chloroplast

D. mitrochondrion

Answer:



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19. The power house of a cell is

A. nucleus

B. Cell wall

C. Lysosome

D. Mitrochondria

Answer:



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20. The site of production of ATP in mitochondria are

- A. Matrix
- B. lipid membranes
- C. Crisfae
- D. Both (A) and (B)

Answer:



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21. Which of the following are the functions of mitochondria ?

A. They produce energy required for cells in the form of ATP.

B. They also regulate the free calcium ion concentration in the cytosol.

C. They participate in apoptosis or programmed cell death.

D. All the above

Answer:



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22. Which cell organelle performs the following functions ?To provide internal support to the cells.To provide transportation pathway within the cells

A. Nucleus

B. Ribosomes

C. Endoplasmic reticulum

D. Golgi body

Answer:



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23. RER has On its surface.

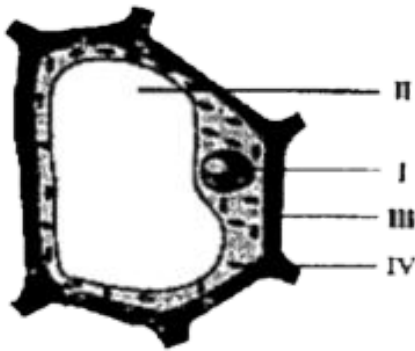
- A. Proteins
- B. Lysosomes
- C. Ribosomes
- D. Chlorophyll

Answer:



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24. The given diagram illustrates a plant cell.



Which labelled structure helps in the process of photosynthesis?

A. I

B. II

C. III

D. IV

Answer:



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25. Chloroplasts are green-coloured plastids found in the leaves of plants. They perform the function of

A. controlling the activities of the cell

B. carrying out photosynthesis

C. storing cellular waste

D. protecting the cell

Answer:



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26. 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:



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27. Which of the following structures is present as "many in number" in a plant cell?

A. Nucleus

B. Vacuole

C. Cytoplasm

D. Chloroplast

Answer:



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28. Which cell organelle produces glucose?

A. Vacuole

B. Lysosome

C. Cytoplasm

D. Chloroplast

Answer:



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29. Who discovered the cell organelle that involves in the transport of lipids within the cell?

A. Robert Brown

B. Rudolf Virchow

C. Camillo Golgi

D. Schwann

Answer:



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30. Identify the cell organelle with the following functions.

(i) It involves the transport of lipids in cells.

(ii) It involves the formation of lysosomes.

(iii) It is involved in the synthesis of cell wall in the plant cell.

A. Mitochondria

B. ER

C. Golgi apparatus

D. Plastids

Answer:



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31. Suicidal bags of a cell are

A. Ribosomes

B. Lysosomes

C. Chloroplasts

D. Vacuoles

Answer:



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32. 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:



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33. Which of the following is found only in animal cells?

A. Nucleus

B. Cytoplasm

C. Centrosome

D. Mitrochondria

Answer:



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34. Cell wall is only present 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:



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35. Which of the following statements about cell wall is correct?

A. It controls all the activities of the cell.

B. It carries out the process of photosynthesis.

C. It protects the plant cell from variations in the temperature of the external environment.

D. It contains thread-like structures called chromosomes, which take part in inheritance.

Answer:



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36. 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:



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37. Which of the following statements is/are correct?

A. Unicellular organisms are formed of single cells.

B. Multicellular organisms are formed of many cells.

C. Millions of cells are present in plants

D. All the above

Answer:



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38. The largest animal cell is

- A. Peacock egg
- B. ostrich egg
- C. Crocodile egg
- D. Hen egg

Answer:



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39. The smallest animal cell is

A. PPLO

B. ostrich egg

C. Virus

D. None

Answer:



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40. Which of the following cells change their shape continuously?

A. amoeba

B. blood cells

C. Nerve cells

D. Both (A) and (B)

Answer:



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41. Which of the following is true for nerve cells?

A. They change their shape continuously

B. They are long and conveys messages to different parts of the body,

C. They help in respiration and photosynthesis

D. All

Answer:





42. Identify the true statements.

(I) Mitosis takes place in vegetative cells

(II) Meiosis takes place in non reproductive cells

(III) Cell division in plants occur throughout their life

A. Only I

B. Both I and II

C. Both II and III

D. Both I and III

Answer:



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43. The cell division responsible for the passing on of characters from the two parents to the child is

A. Mitosis

B. Meiosis

C. Both

D. None

Answer:



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44. The cell division that is responsible for the growth of an animal body is

A. Mitosis

B. Meiosis

C. Both

D. None

Answer:



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Conceptive Worksheet

1. Who observed cork cells under the microscope for the first time?

A. Robert Hooke

B. Robert Brown

C. J.E. Purkinje

D. J.M. Schleiden.

Answer:



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2. Which part of a plant did Robert Hooke use to observe a cell using a microscope?

A. Cork

B. Leaf

C. Root

D. Flower

Answer:



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3. Which of the following facts about Robert Hooke's experiment leading to discovery of cell is not correct?

A. He observed cells as honey comb-like structures.

B. He took the sample from the stem of a tree.

C. He conducted his experiment in 1665.

D. He observed living cells.

Answer:



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4. Cell theory was proposed by

A. Schleiden

B. Schwann

C. Both

D. None

Answer:



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5. Cell theory was expanded by

A. Schleiden

B. Schwann

C. Rudolf Virchow

D. All

Answer:



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6. The given illustration represents a cell.

In the given illustration, the structure labelled

X is



A. cell membrane

B. cell wall

C. vacuole

D. plastid

Answer:



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7. Which of the following statements about cell membrane is incorrect?

A. It regulates the ent and exit of

substances in the cell

B. It separates the cell from its

surrounding medium

C. It holds together the contents of the cell

D. It controls all the functions of the cell

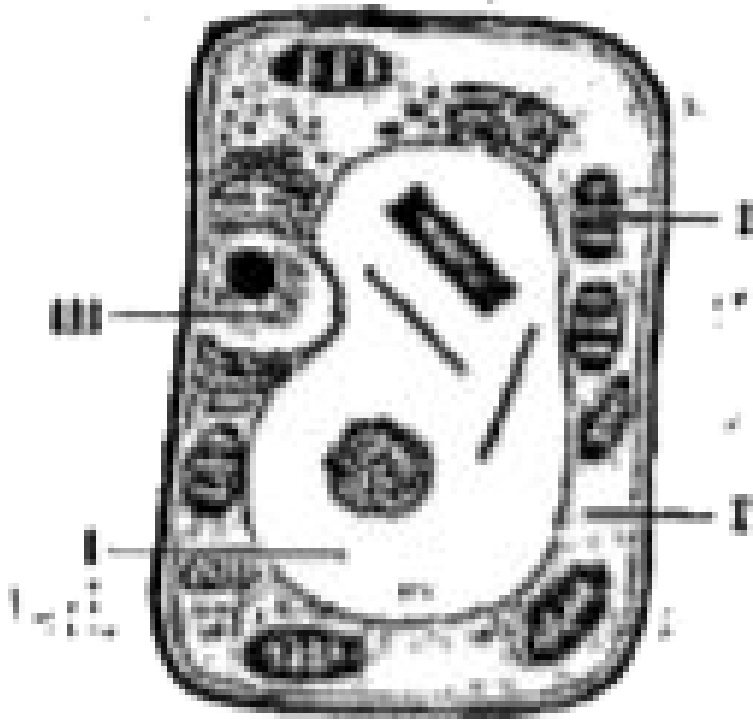
Answer:



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8. The given figure shows a labeled plant cell

In the given figure, the cytoplasm is labeled as



A. I

B. II

C. III

D. IV

Answer:

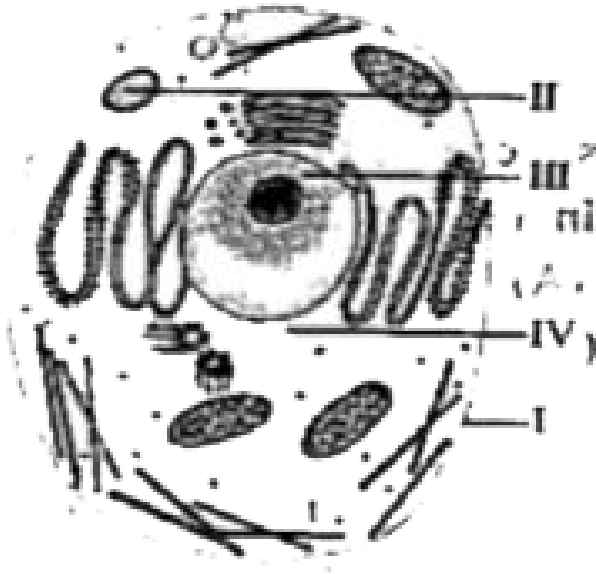


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9. The given diagram illustrates an animal cell.

Which labelled structure in animal cell

controls all the cellular activities?



A. I

B. II

C. III

D. IV

Answer:

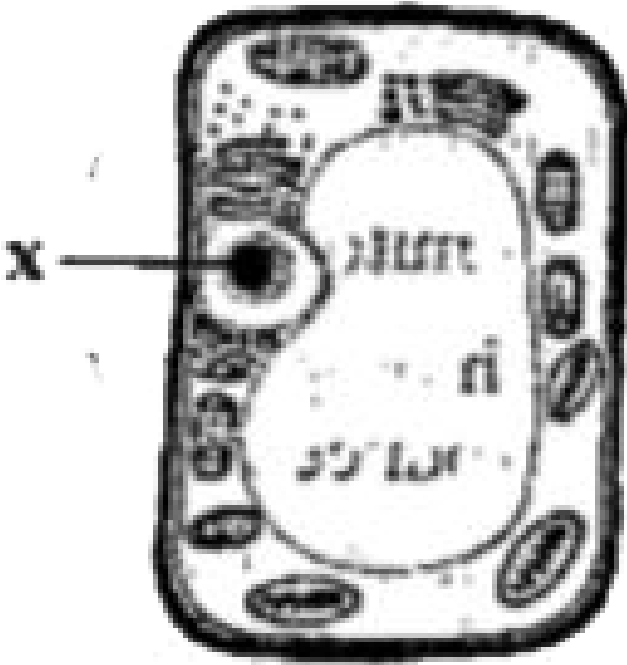


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10. The given figure illustrates structure X present in a cell

Which of the following alternatives represents

the correct function of structure X?



- A. To provide rigidity to cell
- B. To provide turgidity to cell
- C. To help in energy synthesis
- D. To transfer the hereditary information

Answer:

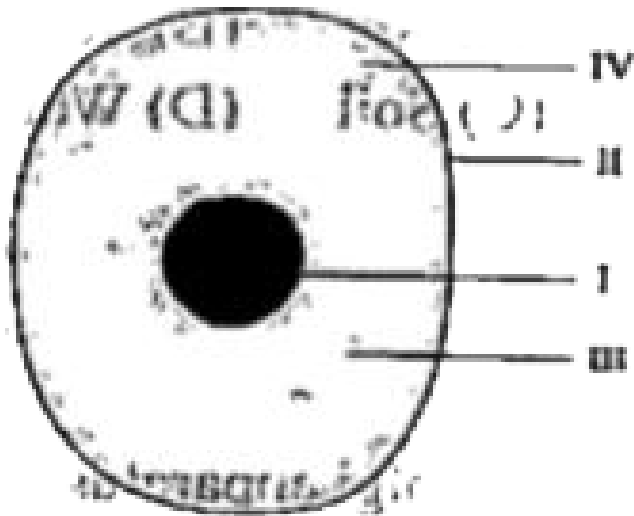


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11. The given diagram illustrates a cell.

If the image illustrated represents a constituent cell of a multi-cellular animal, then

the nucleus is labeled as



A. I

B. II

C. III

D. IV

Answer:



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12. 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 eukaryotes

D. Ribosomes are larger in prokaryotes as compared to eukaryotes

Answer:



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13. Which of the following statements about nucleus is incorrect?

A. It is surrounded by a membrane called

nuclear membrane

B. It contains thread-like structures called

chromosomes.

C. It is that part of the cell where food is stored.

D. It takes part in the transfer of characteristics.

Answer:



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

A. nuclear membrane

B. nuclear pores

C. chromosomes

D. lysosomes

Answer:



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15. Which of the following is responsible for the production of energy in eukaryotic cells?

A. Nucleus

B. Cell wall

C. Lysosomes

D. Mitochondria

Answer:



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16. Mitochondrial matrix contains

A. DNA

B. Ribosomes

C. Both

D. None

Answer:



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17. Cisternae are the flattened disk-like membranous structures are a part of

A. Chloroplast

B. Endoplasmic reticulum

C. Nucleus

D. Ribosomes

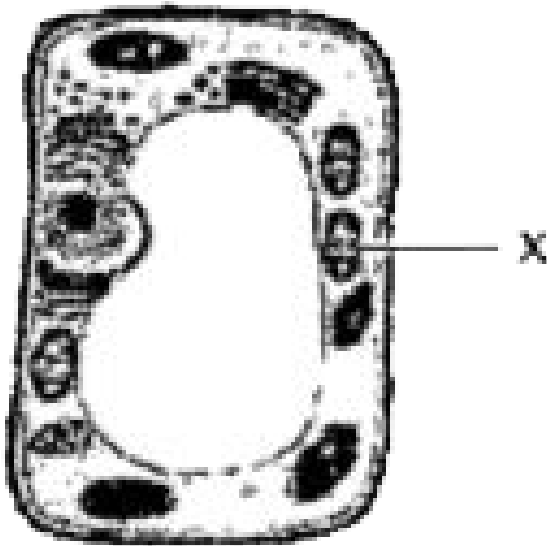
Answer:



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18. The given figure represents a plant cell. The labelled structure is present only in plant cells.

In the given figure, label X represents



A. vacuole

B. nucleus

C. nucleolus

D. chloroplast

Answer:



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19. What is the primary function of chloroplast?

A. Photosynthesis

B. Food storage

C. Cell division

D. Protection

Answer:



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20. Carbon dioxide + Water \rightarrow Glucose +
Oxygen.

The illustrated process occurs in the

A. mitochondria

B. chloroplasts

C. ribosomes

D. lysosomes

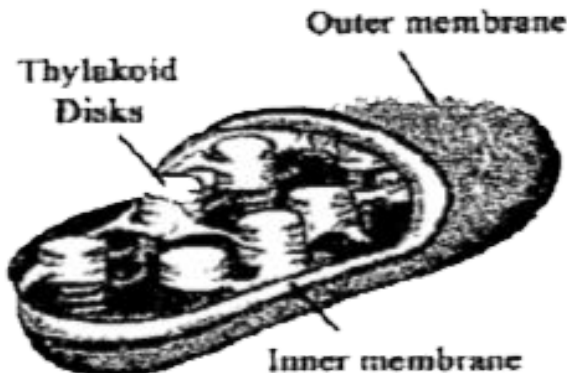
Answer:



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21. 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:



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22. The Golgi apparatus present in plant cell are called

A. Dictyosomes

B. Chromosomes

C. Plastids

D. Centromeres

Answer:



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23. Which of the following cell organelle digest a variety of substances including worn out

organelles, food particles, viruses, and bacteria?

A. Mitochondria

B. Golgi apparatus

C. Lysosomes

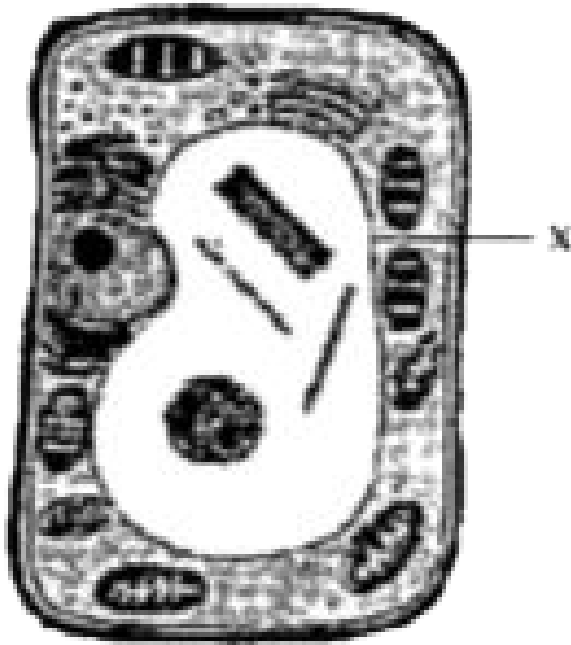
D. Chloroplasts

Answer:



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24. In the given, the structure labeled X is called



A. vacuole

B. nucleus

C. ribosome

D. chloroplast

Answer:



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

A. plastid

B. lysosome

C. ribosome

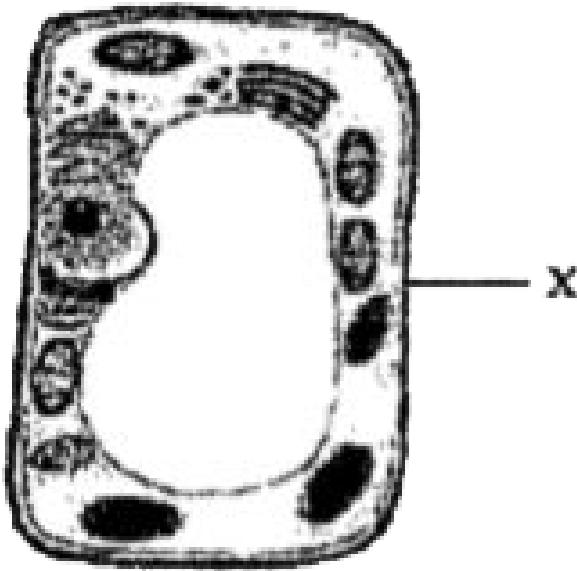
D. vacuole

Answer:



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26. Jyoti drew a diagram of a plant cell and labelled one of its parts as X.



Which cell component is labelled as X by Jyoti?

- A. Cell membrane
- B. cell wall
- C. Nucleus
- D. Plastid

Answer:



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27. Which of the following structures is prominent in plant cells?

- A. Vacuole
- B. Centriole
- C. Ribosome
- D. Chloroplast

Answer:



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28. Division of labour is seen in

A. Amoeba

B. bacteria

C. frog

D. NOne

Answer:



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29. The size of ostritch egg is:

A. $170 \times 25mm$

B. $150 \times 150mm$

C. $170 \times 135mm$

D. $150 \times 15mm$

Answer:



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30. The size of PPLO is about

- A. 0.1 to 0.5 micron
- B. 1 to 5 microns
- C. 10 to 20 microns
- D. 100 to 200 microns

Answer:



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31. Growth and inheritance is the result of

A. Mitosis

B. Meiosis

C. Both

D. None

Answer:



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32. In which of the following, the cell division takes place throughout life?

A. Frog

B. Man

C. Fish

D. Neem plant

Answer:



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Summative Worksheet Multiple Choice
Questions Tick Mark The Correct Choice

1. Each cell has a

A. Nucleus

B. Cell wall

C. Chloroplast

D. All of the above

Answer:



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2. Organelles are present in

A. Cytoplasm

B. vacuoles

C. Nucleus

D. Nuclear membrane

Answer:



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3. A cell organelle commonly called 'suicide bag'

A. Nucleus

B. lysosome

C. Chloroplast

D. Ribosome

Answer:



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4. Robert Hooke was the first person to observe(i)..... Cells. He observed these cells using aii.....

The information in which alternative completes the given statements ?

A. i-cork ii- microscope

B. i-cork ii- magnifying glass

C. i-onion peel ii- microscope

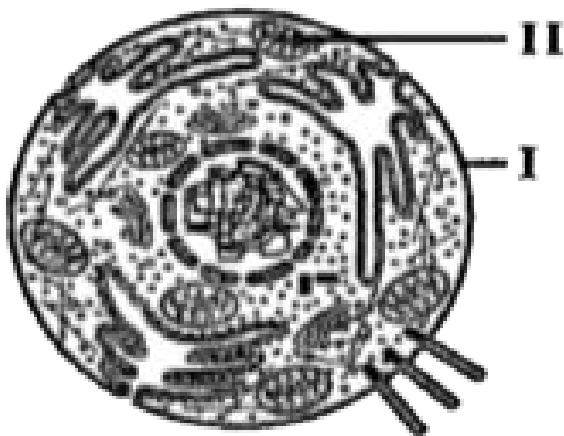
D. i-onion peel ii- magnifying glass

Answer:





5. 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:



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6. 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:



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7. Nucleus is usually spherical in shape and is located at the centre of the cell. Which of the following statements about nucleus is incorrect?

A. It controls all the activities of the cell.

B. It is surrounded by a porous nuclear membrane.

C. It takes part in the transfer of characteristics from parents to offspring.

D. It protects the plant cell from variations in the temperature of the external environment.

Answer:



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8. Tarun draws the diagram of a cell and labels one of its components as X.



The cell component labelled by Tarun is

A. nucleolus

B. nucleus

C. vacuole

D. mitochondria

Answer:



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9. 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:



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10.i..... is a type of plastid that is only present in plant cells. It carries out the process ofii..... The information in which alternative completes the given statements?

A. i- Chloroplast ii- photosynthesis

B. i- Vacuole ii- photosynthesis

C. i- Chloroplast ii- excretion

D. i- Vacuole ii- excretion ii

Answer:



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11. Which cell organelle produces oxygen?

A. Mitochondrion

B. Chloroplast

C. Lysosome

D. Ribosome

Answer:



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

A. small vacuoles

B. double membrane vacuole

C. a single membrane vacuole

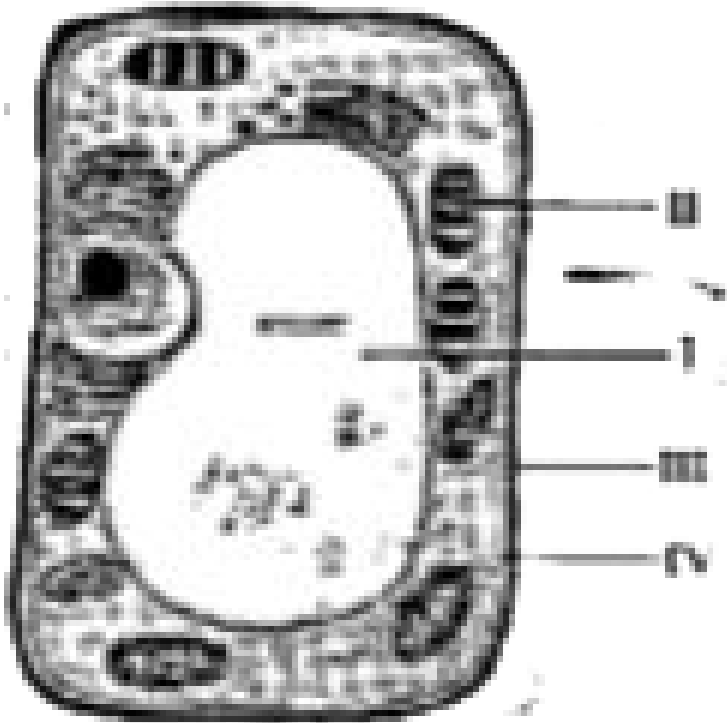
D. a large centrally placed vacuole

Answer:



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13. The given illustration represents a cell.



The function of protecting the cell from external injury is performed by the structure labelled

A. I

B. II

C. III

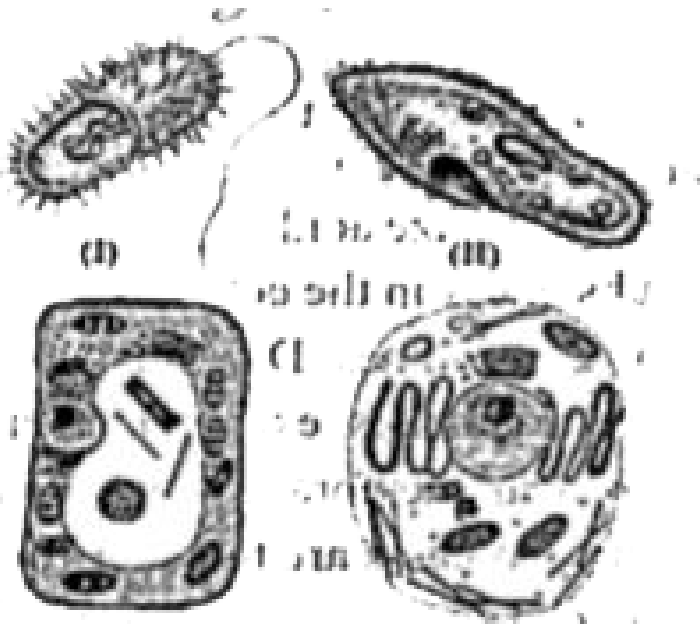
D. IV

Answer:



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14. Which figure represents a plant cell?



A. IV

B. III

C. II

D. I

Answer:



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15. The given figure illustrates five organelles of a cell



Which of the following groups represents the basic components of a cell?

A. I, II and III

B. I , II and IV

C. I, III and IV

D. III, IV and V

Answer:



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16. 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:



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17. Sunaina read in her science book that a jelly-like substance is present inside the cell which is mostly made up of water. Which cell component did sunaina read about ?

A. Nucleus

B. Cell wall

C. Cytoplasm

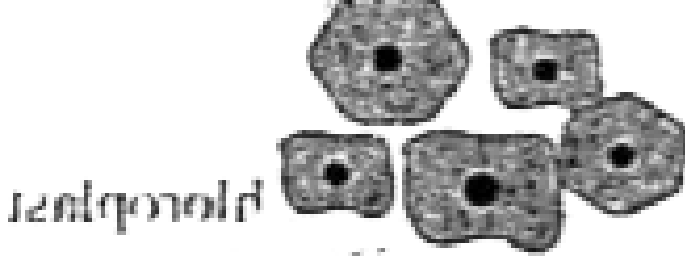
D. Cell membrane

Answer:



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18. Sonali took a toothpick and gently scraped the inner side of her cheek with it. she placed the contents of the toothpick on a clean glass slide containing a drop of water and then added a drop of methylene blue stain to it. She gently placed a cover slip over the slide and observed the glass slide under the microscope. The given illustration represents the observation made by sonali



The darkly stained region of cheek cells represents the

- A. nucleus
- B. vacuole
- C. cytoplasm
- D. Mitochondria

Answer:



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Summative Worksheet Fill In The Blank Using The Words Given Below One Word Can Be Used Twice

1. Egg, Microscope, Nucleus, Chloroplast, Cytoplasm, Cell membrane, Mitochondria, Robert Hooke, Plant

The is the control centre of the cell.



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2. Egg, Microscope, Nucleus, Chloroplast,
Cytoplasm, Cell membrane, Mitochondria,
Robert Hooke, Plant

The instrument used to see tiny objects is
called a.....



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3. Egg, Microscope, Nucleus, Chloroplast,
Cytoplasm, Cell membrane, Mitochondria,

Robert Hooke, Plant

..... is called the kitchen of a cell.



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4. Egg, Microscope, Nucleus, Chloroplast,
Cytoplasm, Cell membrane, Mitochondria,
Robert Hooke, Plant

An..... is a cell that can be seen without a
microscope.



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5. Egg, Microscope, Nucleus, Chloroplast, Cytoplasm, Cell membrane, Mitochondria, Robert Hooke, Plant

The.....,..... And Are parts of a cell.



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6. Egg, Microscope, Nucleus, Chloroplast, Cytoplasm, Cell membrane, Mitochondria, Robert Hooke, Plant

Energy is produced in cells by.....



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7. Egg, Microscope, Nucleus, Chloroplast, Cytoplasm, Cell membrane, Mitochondria, Robert Hooke, Plant

The term cell was given by



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8. Egg, Microscope, Nucleus, Chloroplast, Cytoplasm, Cell membrane, Mitochondria,

Robert Hooke, Plant

Cell wall is present in



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Summative Worksheet

1. Define cell.



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2. Define Nucleus



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3. Define Cytoplasm



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4. Define Protoplasm



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5. Define plasma membrane



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6. Define Microscopic organisms



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7. Match the statements in Column A with those in Column B.

<i>Column-A</i>		<i>Column-B</i>	
1.	Cell	(a)	Plants
2.	Nucleus	(b)	Tiny structures inside cells
3.	Cell wall	(c)	Unit of living body
4.	Chloroplast	(d)	Boss of the cell
5.	Cytoplasm	(e)	Contains green pigment
6.	Organelles	(f)	Jelly-like substance between cell membrane and nucleus





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8. Give three examples of unicellular organisms.



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9. Mention the functions of the following: (i) Cell membrane (ii) Chromosomes.



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10. Why are the following important to a plant cell?

(i) Cell wall

(ii) Chloroplast

(iii) Mitochondria

(iv) Nucleus.



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11. Draw a neat labelled diagram of an animal cell.



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12. Mention at least four differences between plant cells and animal cells.



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13. What features are possessed by both plant cells and animal cells?



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14. Name the cell organelles which are found only in the plant cell.



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15. Name the different cell organelles and the functions these organelles perform in the cell.



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16. Mention the two types of cell division.



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17. How do cells increase in number?



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