BIOLOGY

BOOKS - KUMAR PRAKASHAN KENDRA

BIOLOGY (GUJRATI ENGLISH)

THE FUNDAMENTAL UNIT OF LIFE

Questions And Answers Answer The Following Questions In Very Short

1. What is a cork?

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2. What is the meaning of cell and from which language this word has its origin?

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3. What would happen if the plasma membrane ruptures or breaks down?

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4. Where do the lipids and proteins constituting the cell membrane get synthesized ?

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5. What is osmosis ?

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6. Name the process by which CO_2 and water (H_2O) move in and out of the cell.

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7. What is meant by endocytosis? Name the organism which uses this process.

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8. State what will be observed when a de-shelled egg is placed in a concentrated salt solution for five minutes.

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9. How does an Amoeba obtain its food ?

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10. What will happen if the medium has a lower concentration of water than the cell ?

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11. Classify cell wall and cell membrane as living or dead.

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12. Why do plant cells and fungal cells do not burst even when kept in hypotonic solution ?

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13. Which cell organelle detoxifies poisons and drugs in the liver of vertebrates ?

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14. Which is the cell organelle that always forms a network in the cell?

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15. What is the function of leucoplasts?

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16. What is membrane biogenesis ?

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17. Name the cell organelle involved in the formation of lysosomes.

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18. Identify the plastid which contains a pigment necessary for photosynthesis

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19. What is the function of a large central vacuole in plant cells?

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20. Which organisms do not show characteristics of life unless they enter a living body? Why?

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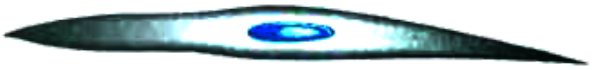
Questions And Answers Choose The Correct Option From Those Given Below Each Question

1. What is the name of cell shown in the figure ?



(A) Liver

(B) Nerve cell

(C) Muscle cell

(D) Kidney cell

A. Liver

B. Nerve cell

C. Muscle cell

D. Kidney cell

Answer: C

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2. Who coined the word cell?

(A) Robert Hook

(B) Robert Brown

(C) Watson and Crick

(D) Fleming

A. Robert Hooke

B. Robert Brown

C. Watson and Crick

D. Fleming

Answer: B

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3. Which organelle is the powerhouse of the cell ?

(A) Plastid

(B) Mitochondrion

(C) Golgi apparatus

(D) Nucleus

A. Plastid

B. Mitochondrion

C. Golgi apparatus

D. Nucleus

Answer: C::D

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4. Which organelle is known as 'suicide bag of a cell

(A) Centrosome

(B) Mesosome

(C) Lysosome

(D) Chromosome

A. Centrosome

B. Mesosome

C. Lysosome

D. Chromosome

Answer:

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5. Structually they are membrane-bound sacs filled with digestive enzymes :

(A) Mitochondria

(B) Plastids

(C) Nucleus

(D) Lysosomes

A. Mitochondria

B. Plastids

C. Nucleus

D. Lysosomes

Answer:

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6. Which organelle of some plant cells may occupy 50-90 % of the cell volume ?

(A) Nucleus

(B) Cell Wall

(C) Central Vacuole

(D) Chloroplast

A. Nucleus

B. Cell Wall

C. Vacuolc

D. Chloroplast

Answer: A::C

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7. Which of the following organelle pair possesses its own DNA and ribosomes ?

(A) Nucleus - Endoplasmic reticulum

(B) Lysosome-Oxisome

(C) Chloroplast - Mitochondrion

(D) All of the given

A. Nucleus - Endoplasmic reticulum

B. Lysosome-Oxisome

C. Chloroplast - Mitochondrion

D. All of the given

Answer: A::C::D

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8. In the process of storing the energy of the cell, what is used as a cellular currency?

(A) DNA

(B) RNA

(C) Amino acid

(D) ATP

A. DNA

B. RNA

C. Amino acid

D. ATP

Answer: A

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9. Which organelle of the cell helps in the manufacture of fat molecules ?

A. Golgi body

B. Rough endoplasmic reticulum

C. Lysosome

D. Smooth endoplasmic reticulum

Answer: A::C::D

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10. In cell, the inner membrane of which cell organelle possesses deep folds ?

(A) Mitochondria

(B) Golgi apparatus

(C) Chloroplast

(D) Centrosome

A. Mitochondria

B. Golgi apparatus

C. Chloroplast

D. Centrosome

Answer: A::C::D

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11. What happens when a normal animal cell is kept in hypotonic solution ?

(A) It swells up.

(B) It shows plasmolysis

(C) It remains unaffected.

(D) It gets shrunk

A. It swells up.

B. It shows plasmolysis

C. It remains unaffected.

D. It gets shrunk

Answer:

Watch Video Solution

12. What happens when a normal animal cell is kept in hypotonic solution ?

(A) It swells up.

(B) It shows plasmolysis

(C) It remains unaffected.

(D) It gets shrunk

A. Water enters the cell.

B. Cell loses water.

C. Water regulation takes place by vacuoles.

D. Digestion takes place by food vacuoles

Answer: A::C

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13. Which cell organelle is found only in plants ?

(A) Mitochondria

(B) Nucleus

(C) Chloroplast

(D) Ribosome

A. Mitochondria

B. Nucleus

C. Chloroplast

D. Ribosome

Answer: A::C

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14. In which organisms is membrane absent surrounding the nucleus and organelles ?

(A) Prokaryotes

(B) Eukaryotes

(C) Haploid

(D) Diploid

A. Prokaryotes

B. Eukaryotes

C. Haploid

D. Diploid

Answer: A

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15. Which cell organelle is related with protein synthesis ?

A. Golgi apparatus

B. Lysosome

C. Ribosome

D. Peroxisomes

Answer: B

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16. Which organelle is responsible for the exchange of materials between the nucleoplasm and cytoplasm?

(A) Cell Wall

(B) Plasma membrane

(C) Nuclear membrane

(D) Mitochondrion

A. Cell Wall

B. Plasma membrane

C. Nuclear membrane

D. Mitochondrion

Answer: A::B::C

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17. Where are the chromosomes located ?

(A) in nucleus

(B) in cell wall

(C) in mitochondrion

(D) in ribosomes

A. in nucleus

B. in cell wall

C. in mitochondrion

D. in ribosomes

Answer: C

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18. Which of the following cell can change its shape ?

(A) Amoeba

(B) Bacteria

(C) Paramoecium

(D) Chlamydomonas

A. Amoeba

B. Bacteria

C. Paramoecium

D. Chlamydomonas

Answer: A::B

Watch Video Solution

19. Which organelle is responsible for the exchange of materials between the nucleoplasm and cytoplasm?

(A) Cell Wall

(B) Plasma membrane

(C) Nuclear membrane

(D) Mitochondrion

A. Golgi apparatus

B. Endoplasmic reticulum

C. Plasma membrane

D. Nuclear membrane

Answer: A::C::D

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20. Statement X: Golgi apparatus constitute the another part of a complex cellular membrane.

Statement Y: Lysosome is connected in the formation of golgi apparatus. Which alternative is true for statements X and Y?

A. Both statements X and Y are true.

B. Statement X is true and statement Y is false.

C. Statement X is false and statement Y is true.

D. Both statements X and Y are false.

Answer: A::D

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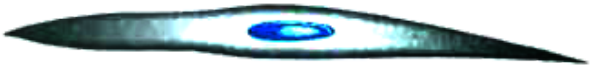
21. What is the name of cell shown in the figure ?



A. Liver

B. Nerve cell

C. Muscle cell

D. Kidney cell

Answer: C

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22. Who coined the word cell?

A. Robert Hooke

B. Robert Brown

C. Watson and Crick

D. Fleming

Answer: B

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23. Which organelle is the powerhouse of the cell ?

A. Plastid

B. Mitochondrion

C. Golgi apparatus

D. Nucleus

Answer: B

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24. Which organelle is known as 'suicide bag of a cell

A. Centrosome

B. Mesosome

C. Lysosome

D. Chromosome

Answer:

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25. Structually they are membrane-bound sacs filled with digestive enzymes :

A. Mitochondria

B. Plastids

C. Nucleus

D. Lysosomes

Answer:

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26. Which organelle of some plant cells may occupy 50-90 % of the cell volume ?

A. Nucleus

B. Cell Wall

C. Vacuolc

D. Chloroplast

Answer: A::C

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27. Which of the following organelle pair possesses its own DNA and ribosomes ?

A. Nucleus - Endoplasmic reticulum

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C. Chloroplast - Mitochondrion

D. All of the given

Answer: C

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28. In the process of storing the energy of the cell, what is used as a cellular currency?

A. DNA

B. RNA

C. Amino acid

D. ATP

Answer: A

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29. Which organelle of the cell helps in the manufacture of fat molecules ?

A. Golgi body

B. Rough endoplasmic reticulum

C. Lysosome

D. Smooth endoplasmic reticulum

Answer: A::C::D

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30. In cell, the inner membrane of which cell organelle possesses deep folds ?

A. Mitochondria

B. Golgi apparatus

C. Chloroplast

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Answer: A::C::D

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31. What happens when a normal animal cell is kept in hypotonic solution ?

A. It swells up.

B. It shows plasmolysis

C. It remains unaffected.

D. It gets shrunk

Answer:

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32. What happens when animal/plant cell is put in aqueous hypotonic solution ?

A. Water enters the cell.

B. Cell loses water.

C. Water regulation takes place by vacuoles.

D. Digestion takes place by food vacuoles

Answer: A::C

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33. Which cell organelle is found only in plants ?

A. Mitochondria

B. Nucleus

C. Chloroplast

D. Ribosome

Answer: C

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34. In which organisms is membrane absent surrounding the nucleus and organelles ?

A. Prokaryotes

B. Eukaryotes

C. Haploid

D. Diploid

Answer: A

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35. Which cell organelle plays an important role in protein-synthesis ?

A. Golgi apparatus

B. Lysosome

C. Ribosome

D. Peroxisomes

Answer: B

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36. Which organelle is responsible for the exchange of materials between the nucleoplasm and cytoplasm?

A. Cell Wall

B. Plasma membrane

C. Nuclear membrane

D. Mitochondrion

Answer: A::B::C

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37. Where are the chromosomes located ?

A. in nucleus

B. in cell wall

C. in mitochondrion

D. in ribosomes

Answer: C

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38. Which of the following cell can change its shape ?

A. Amoeba

B. Bacteria

C. Paramoecium

D. Chlamydomonas

Answer: A::B

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39. Which organelle serves as channels for the transport of materials in the cell ?

A. Golgi apparatus

B. Endoplasmic reticulum

C. Plasma membrane

D. Nuclear membrane

Answer: A::C::D

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40. Statement X: Golgi apparatus constitute the another part of a complex cellular membrane.

Statement Y: Lysosome is connected in the

formation of golgi apparatus. Which alternative is true for statements X and Y?

A. Both statements X and Y are true.

B. Statement X is true and statement Y is false.

C. Statement X is false and statement Y is true.

D. Both statements X and Y are false.

Answer: B

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Questions And Answers Fill In The Blanks

1. Biologists ..... and ..... presented the cell theory.

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2. ..... plays an important role in gaseous exchange between cells.

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3. ..... is a living, thin and selectively permeable membrane.

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4. The plant cell wall is mainly composed of.....

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5. The molecules of ..... present in chromosomes contain the information of hereditary characters.

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6. ..... connects nuclear membrane with the plasma membrane.

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7. Mitochondria release the energy in the form of .....

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8. Which organelle of some plant cells may occupy 50-90 % of the cell volume ?

(A) Nucleus

(B) Cell Wall

(C) Central Vacuole

(D) Chloroplast

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9. Lysosomes contain powerful digestive enzymes that are made by .....

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10. In Amoeba food vacuole is formed by process known as .....

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11. Biologists ..... and ..... presented the cell theory.

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View Text Solution

15. ..... connects nuclear membrane with the plasma membrane.

View Text Solution

16. In Amoeba food vacuole is formed by process known as .....

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Questions And Answers State Whether The Following Statements Are True Or False

1. Amoeba and Paramoecium are unicellular organism.

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2. Osmosis is a specific type of diffusion.

View Text Solution

3. In plant cell, cytoplasm is a living matter.

View Text Solution

4. Absorption of water by plant roots occurs by osmosis.

View Text Solution

5. All multicellular organisms arise from only one cell.

View Text Solution

6. Unicellular fresh water organisms tend to get water through osmosis.

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Questions And Answers Answer The Following Questions In Short

1. Who discovered cells in living organisms? Give an example of unicellular organism.

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2. Describe the process in details by which an Amoeba obtains its food.

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3. Which organelle is the powerhouse of the cell ?

(A) Plastid

(B) Mitochondrion

(C) Golgi apparatus

(D) Nucleus

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4. Justify the statement, “Mitochondria are power houses of the cell”.

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5. Explain the structure of mitochondria.

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6. Describe the structure of plastids.

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7. What are different types of plastids ? Mention their functions.

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8. List two similarities between Mitochondria and plastids.

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9. What are the functions of Golgi apparatus?

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10. Describe any three functions of Golgi apparatus.

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11. What would happen to the life of a cell if there was no Golgi apparatus?

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12. Who discovered cells in living organisms? Give an example of unicellular organism.

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13. Describe the process in details by which an Amoeba obtains its food.

View Text Solution

14. Which organelle is known as the powerhouse of the cell? Why?

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15. Explain why mitochondria is called the powerhouse of the cell.

View Text Solution

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View Text Solution

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Questions And Answers Give Scientific Reasons For The Following Statements

1. Cell is the fundamental unit of organisms.

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2. Lysosome is called the digestive bag as well as the suicidal bag of the cell.

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3. Nucleus is the most important organelle for the cell.

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4. ATP is called energy currency of the cell.

View Text Solution

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Questions And Answers Match The Following Property

1.

(1)

Column I	Column II
1. Nucleus	a. Photosynthesis
2. Mitochondrion	b. Regulates activities occurring in the cell
3. Chloroplast	c. Protein synthesis
4. Ribosome	d. Cellular respiration
	e. Conduction of secretion

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Column I (Name of scientists)	Column II (Discovery)
1. Schleiden and Schwann	a. Cell
2. Robert Brown	b. Protoplasm
3. Robert Hooke	c. Cell theory
4. Purkinje	d. Nucleus
	e. Cell wall

2.

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Column I	Column II
1. Powerhouse	a. Vacuole
2. Network of lamellar structure	b. Endoplasmic reticulum
3. Waste disposal system	c. Mitochondrion
4. Turgidity of the cell	d. Lysosome

3.

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6.

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(3)

Column I	Column II
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2. Network of lamellar structure	b. Endoplasmic reticulum
3. Waste disposal system	c. Mitochondrion
4. Turgidity of the cell	d. Lysosome

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Questions And Answers Distinguish Between The Following

1. Mitochondrion and Chloroplast

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2. Rough endoplasmic reticulum and Smooth endoplasmic reticulum.

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3. Plasma membrane and Cell wall.

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4. vacuole in plant cell and Vacuole in animal cell

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5. Hypotonic solution, Hypertonic solution and Iosotonic solution.

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6. Plant cell and Animal cell

View Text Solution

7. Prokaryotic cells and Eukaryotic cells

View Text Solution

8. Mitochondrion and Chloroplast

View Text Solution

9. Rough endoplasmic reticulum and Smooth endoplasmic reticulum.

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12. Hypotonic solution, Hypertonic solution and Iosotonic solution.

View Text Solution

13. Plant cell and Animal cell

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14. Prokaryotic cells and Eukaryotic cells

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Questions And Answers Answer The Following Questions In Brief

1. Differentiate between diffusion and osmosis. Write any two examples where a living organs uses osmosis the absorb water.

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2. Discuss the shape of the following cell apparatus.

View Text Solution

3. Explain the structure and function of nucleus.

View Text Solution

4. What will happen if :

(a) Ribosomes are removed from the cell.

(b) Golgi apparatus is removed from cell.

(c) Plasma membrane ruptures.

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5. A cell is placed in a solution swelled up. What kind of solution is it? Why does it happen?

View Text Solution

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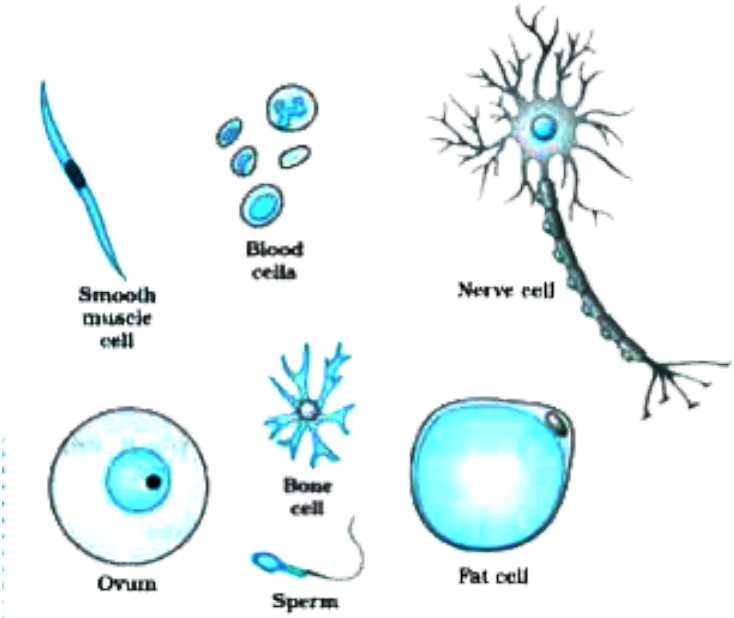
Questions And Answers Answer The Following Questions In Detail

1. Do all cells of our body look alike in terms of shape, size and structure? What similarities do they have ? Illustrate by drawing diagrams of

various cells present in the human body



: Various cells from the human body

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2. Draw a net diagram of animal cell and label it's any four parts. Give two of distintion

between plant cell and animal cell.

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3. Draw a neat labelled diagram of prokaryotic cell.

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4. Why are organism such as bactria called prokaryotes ?

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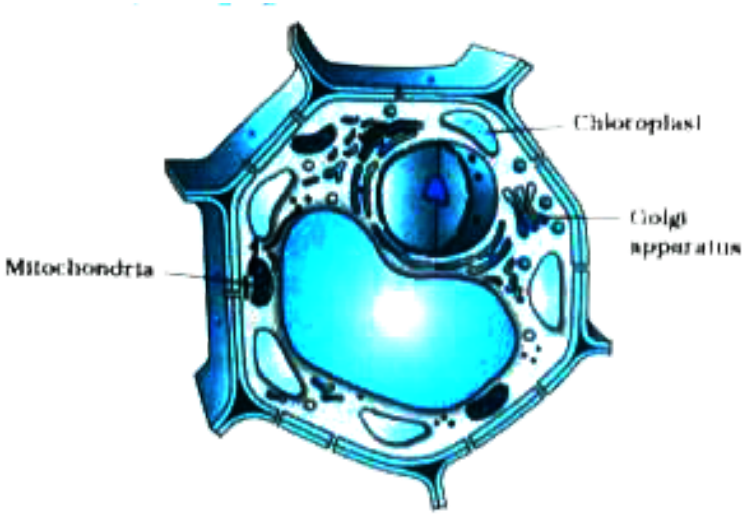
5. Write a short note on vacuole.s

View Text Solution

6. Draw a plant cell and label the parts that (a) Synthesize food (b) Produce energy (c) Do

packaging of material.



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7. What is endoplasmic reticulum?

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8. Describe it structure.

View Text Solution

9. Name the two types of endoplasmic reticulum.

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10. What crucial role does it play in the liver cells of vertebrates ?

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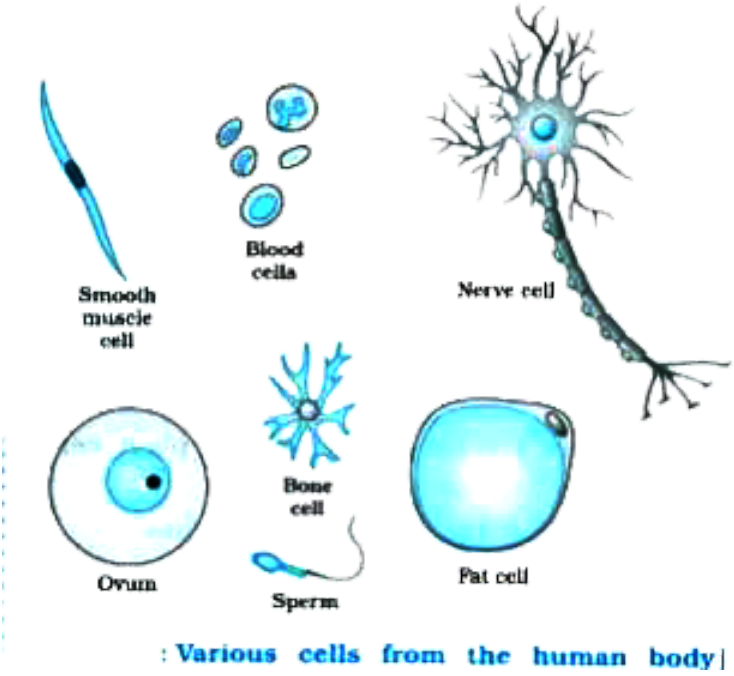
11. Do all cells of our body look alike in terms of shape, size and structure? What similarities do they have ? Illustrate by drawing diagrams of various cells present in the human body



: Various cells from the human body

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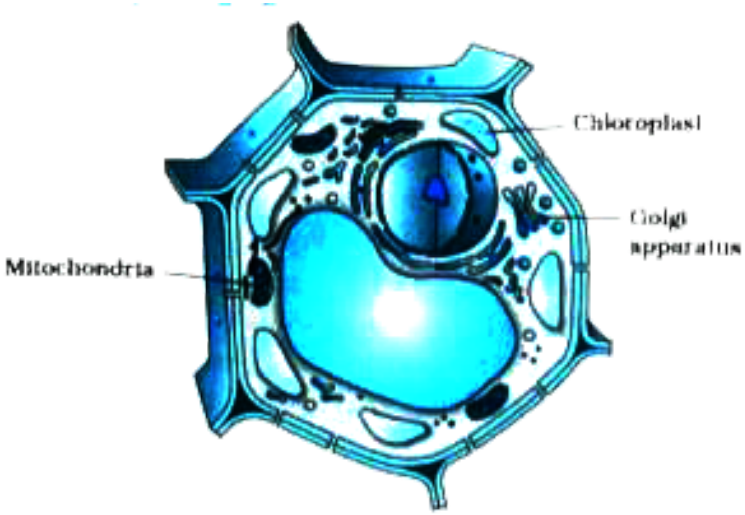
16. Draw a plant cell and label the parts that (a) Synthesize food (b) Produce energy (c) Do packaging of material.



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18. Describe it structure.

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19. Name the two types of endoplasmic reticulum.

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20. What crucial role does it play in the liver cells of vertebrates ?

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Questions And Answers Carry Out The Following Osmosis Experiment

1. Take four peeled potato halves and scoop each one out to make potato cups. One of these potato cups should be made from a

boiled potato. Put each potato cup in a trough containing water. Now,

(a) Keep cup A empty. (b) Put one teaspoon sugar in cup B. (c) Put one teaspoon salt in cup C.

(d) Put one teaspoon sugar in the boiled potato cup D.

Keep these for two hours. Then observe the four potato cups and answer the following:

Explain why water gathers in the hollowed portion of B and C.

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2. Take four peeled potato halves and scoop each one out to make potato cups. One of these potato cups should be made from a boiled potato. Put each potato cup in a trough containing water. Now,

(a) Keep cup A empty. (b) Put one teaspoon sugar in cup B. (c) Put one teaspoon salt in cup C.

(d) Put one teaspoon sugar in the boiled potato cup D.

Keep these for two hours. Then observe the four potato cups and answer the following:

Why is potato A necessary for this experiment?

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3. Take four peeled potato halves and scoop each one out to make potato cups. One of these potato cups should be made from a boiled potato. Put each potato cup in a trough containing water. Now,

(a) Keep cup A empty. (b) Put one teaspoon sugar in cup B. (c) Put one teaspoon salt in

cup C.

(d) Put one teaspoon sugar in the boiled potato cup D.

Keep these for two hours. Then observe the four potato cups and answer the following:

Explain why water does not gather in the hollowed out portions of A and D.

View Text Solution

4. Take four peeled potato halves and scoop each one out to make potato cups. One of

these potato cups should be made from a boiled potato. Put each potato cup in a trough containing water. Now,

(a) Keep cup A empty. (b) Put one teaspoon sugar in cup B. (c) Put one teaspoon salt in cup C.

(d) Put one teaspoon sugar in the boiled potato cup D.

Keep these for two hours. Then observe the four potato cups and answer the following:

Explain why water gathers in the hollowed portion of B and C.

View Text Solution

5. Take four peeled potato halves and scoop each one out to make potato cups. One of these potato cups should be made from a boiled potato. Put each potato cup in a trough containing water. Now,

(a) Keep cup A empty. (b) Put one teaspoon sugar in cup B. (c) Put one teaspoon salt in cup C.

(d) Put one teaspoon sugar in the boiled potato cup D.

Keep these for two hours. Then observe the

four potato cups and answer the following:

Why is potato A necessary for this experiment?

View Text Solution

6. Take four peeled potato halves and scoop each one out to make potato cups. One of these potato cups should be made from a boiled potato. Put each potato cup in a trough containing water. Now,

(a) Keep cup A empty. (b) Put one teaspoon

sugar in cup B. (c) Put one teaspoon salt in cup C.

(d) Put one teaspoon sugar in the boiled potato cup D.

Keep these for two hours. Then observe the four potato cups and answer the following:

Explain why water does not gather in the hollowed out portions of A and D.

View Text Solution

Questions And Answers

1. What is cell theory? Give detail about

View Text Solution

2. Explain in detail about cell theory.

View Text Solution

3. Describe an activity to demonstrate exosmosis and endosmosis. Draw a diagram also.

View Text Solution

4. Describe the role played by the lysosomes. Why are these termed as suicide bags? How do they perform their function ?

View Text Solution

5. What is cell theory? Give detail about

View Text Solution

6. Explain in detail about cell theory.

View Text Solution

7. Describe an activity to demonstrate exosmosis and endosmosis. Draw a diagram also.

View Text Solution

8. Describe the role played by the lysosomes. Why are these termed as suicide bags? How do they perform their function ?

View Text Solution

Value Based Questions With Answers

1. Payal went to botanical garden with her family. She was observing different coloured leaves and flowers. She asked her father why is

there so much colour difference between the different leaves. Her father being unaware of the exact answer, told her that it is due to God's gift to this garden.

Payal's elder brother Prasad intervened and told the exact answer to Payal.

(1) What must have been told by Prasad to Payal ?

(2) What are the names of other plant pigments?

(3) What values are shown by Prasad and Payal ?

View Text Solution

2. Raghunath accidentally dropped bag of raisinsinto water. He did not remove it from water by mistake. Later his Master scolded him for spoilling raisins. So he placed them in sun. After few hours, the raisins were apparently dry and resembled to the original raisins.

(1) What did he observe initially and later ?

(2) Which membrane acts as semi-permeable membrane in this endosmosis and exosmosis?

(3) What values are seen in Raghunath ?

View Text Solution

3. Payal went to botanical garden with her family. She was observing different coloured leaves and flowers. She asked her father why is there so much colour difference between the different leaves. Her father being unaware of the exact answer, told her that it is due to God's gift to this garden.

Payal's elder brother Prasad intervened and told the exact answer to Payal.

(1) What must have been told by Prasad to

Payal ?

(2) What are the names of other plant pigments?

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View Text Solution

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After few hours, the raisins were apparently dry and resembled to the original raisins.

(1) What did he observe initially and later ?

(2) Which membrane acts as semi-permeable membrane in this endosmosis and exosmosis?

(3) What values are seen in Raghunath ?

View Text Solution

Questions Based On Practical Skills With Answers Select The Appropriate Option And Complete The Sentence

1. While preparing a temporary mount of human cheek cells the excess of glycerin on the slide ...

A. is left as it is

B. is drained by tilting the slide.

C. is allowed to avaporate.

D. Is drained by tilting the slide and then the slide is wiped using a filter paper.

Answer: A::B::D

View Text Solution

2. Geeta was asked to prepare a temporary mount of onion peel and list the steps. While writing she wrote following steps which may not be in proper sequence : The correct sequence would be ....

(1) Add few drops of safranin stain and transfer to slide.

(2) Cover it with a cover slip.

(3) Add a drop of glycerine.

(4) Take out onion peel.

(5) Keep the peel in water in a petri dish.

A. (1) (2) (3) (4) (5)

B. (4) (5) (3) (2) (1)

C. (4) (5) (1) (3) (2)

D. (5) (4) (1) (3) (2)

Answer: A::B::C::D

View Text Solution

3. Raisins swell up after being placed them in beaker containing water for sometimes because .....

A. water inside the raisins exits when placed in a beaker of water.

B. the concentration of water in the cell sap is the same as that of water in the beaker,

C. the concentration of water in the cell sap is higher than the water in the

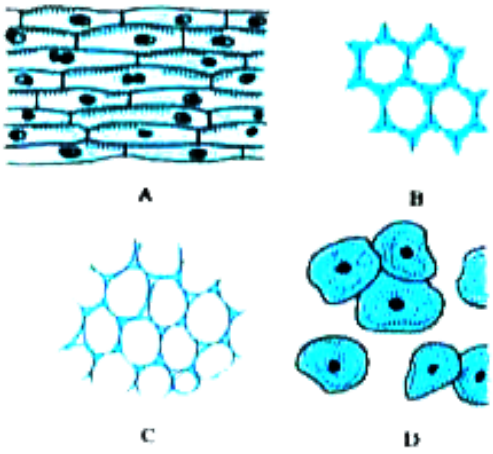
beaker

D. the concentration of water in the cell sap is lesser than that of water in the beaker.

Answer: A::B::C

View Text Solution

4. Which one of the following diagram depicts the structure of onion peel?



The correct answer is ...

A. A

B. B

C. C

D. D

Answer: A

View Text Solution

5. Animal cells are commonly stained with .....

A. methylene blue

B. acetocarmine

C. safranin

D. iodine solution

Answer: B

View Text Solution

6. A student soaked 10 g raisins in 75 mL of distilled water in two beakers A and B. He maintained beaker A at $20^{\circ}C$ and beaker B at $40^{\circ}C$. After an hour, the percentage of water absorbed will be ...

A. Same in beaker A and B

B. More in A than in B

C. More in B than in A

D. Twice as much in B as in A

Answer: A::B

View Text Solution

7. Amit is observing temporary mount of an onion peel stained with safranin under a microscope. The colour of the cell wall appears...

A. deep blue

B. black

C. pinkish red

D. yellow

Answer: D

View Text Solution

8. Which stain is used for staining in onion peel slide?

A. Methylene blue

B. Safranin

C. Eosin

D. Any of the above

Answer: A

View Text Solution

9. 5g raisins were placed in distilled water for 24 hours. The weight of soaked raisins was found to be

A. 0.2

B. 0.25

C. 0.4

D. 0.45

Answer: D

View Text Solution

10. What is the name and composition of the outermost layer of human cheek cell ?

A. Cell membrane, cellulose

B. Cell membrane, phospholipids

C. Cell wall, cellulose

D. Cell wall, phospholipids

Answer: A::B::C::D

View Text Solution

11. Which one of the following sets is the correct sequence for preparing a temporary mount of an onion peel?

A. (1) Take out the onion peel.

(2) Keep the peel on the slide.

(3) Add a drop of glycerin on it.

(4) Add a few drops of safranin stain.

(5) Cover it with a coverslip.

B. (1) Take out the onion peel.

(2) Keep the peel in water in a petri dish.

(3) Add a few drops of safranin stain and transfer to the slide.

(4) Add a drop of glycerin on it.

(5) Cover it with a coverslip.

C. (1) Take out the onion pcel. (2) Keep it on the slide and add a safranin stain.

(3) Transfer it to water in a petri dish. (4) Remove water and add glycerin.

(5) Cover it with a coverslip.

D. (1) Take out the onion peel.

(2) Cover it with a coverslip.

(3) Add water in a petri dish to clean it

(4) Add a drop of glycerin.

(5) Add a few drops of safranin stain.

Answer: A::B::C::D

View Text Solution

12. The cell organelle which is not found in human cheek cells is ....

A. cell membrane

B. nucleolus

C. cell wall

D. cytoplasm

Answer: A::B::C::D

View Text Solution

13. Nikita observed a slide of human cheek cells under a microscope in its (1) low magnifying power, (2) high magnifying power settings. In the first setting, she must have observed ...

A. fewer cells in a darker field of view

B. more cells in a brighter field of view.

C. more cells in a darker field of view.

D. fewer cells in a brighter field of view

Answer: A::B::C::D

View Text Solution

14. To observe cells in an onion peel, we must prepare the slide by mounting on it...

A. crushed pulp of onion.

B. dry scale leaf.

C. green leaf of onion (spring onion)

D. thin layer of fishy leaf of onion.

Answer: A

View Text Solution

15. The cellular component NOT seen while observing the slide of an onion peel under a compound microscope is...

A. chromosomes

B. cell wall

C. nucleus

D. cytoplasm

Answer: C

View Text Solution

16. While preparing a temporary mount of human cheek cells the excess of glycerin on the slide ...

A. is left as it is

B. is drained by tilting the slide.

C. is allowed to avaporate.

D. Is drained by tilting the slide and then the slide is wiped using a filter paper.

Answer: D

View Text Solution

17. Geeta was asked to prepare a temporary mount of onion peel and list the steps. While writing she wrote following steps which may not be in proper sequence : The correct sequence would be ....

(1) Add few drops of safranin stain and transfer to slide.

(2) Cover it with a cover slip.

(3) Add a drop of glycerine.

(4) Take out onion peel.

(5) Keep the peel in water in a petri dish.

A. (1) (2) (3) (4) (5)

B. (4) (5) (3) (2) (1)

C. (4) (5) (1) (3) (2)

D. (5) (4) (1) (3) (2)

Answer: B

View Text Solution

18. Raisins swell up after being placed them in beaker containing water for sometimes because .....

A. water inside the raisins exits when placed in a beaker of water.

B. the concentration of water in the cell sap is the same as that of water in the beaker,

C. the concentration of water in the cell sap is higher than the water in the beaker

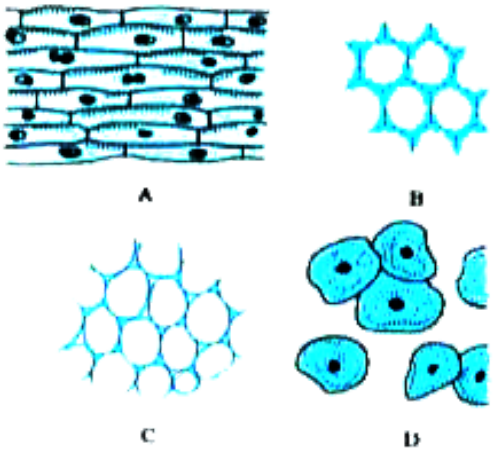
D. the concentration of water in the cell sap is lesser than that of water in the

beaker.

Answer: A::B::C

View Text Solution

19. Which one of the following diagram depicts the structure of onion peel?



The correct answer is ...

A. A

B. B

C. C

D. D

Answer: A

View Text Solution

20. Animal cells are commonly stained with .....

A. methylene blue

B. acetocarmine

C. safranin

D. iodine solution

Answer: B

View Text Solution

21. A student soaked 10 g raisins in 75 mL of distilled water in two beakers A and B. He maintained beaker A at $20^{\circ}C$ and beaker B at $40^{\circ}C$. After an hour, the percentage of water absorbed will be ...

A. Same in beaker A and B

B. More in A than in B

C. More in B than in A

D. Twice as much in B as in A

Answer: A::B

View Text Solution

22. Amit is observing temporary mount of an onion peel stained with safranin under a microscope. The colour of the cell wall appears...

A. deep blue

B. black

C. pinkish red

D. yellow

Answer: D

View Text Solution

23. Which stain is used for staining in onion peel slide?

A. Methylene blue

B. Safranin

C. Eosin

D. Any of the above

Answer: A

View Text Solution

24. 5g raisins were placed in distilled water for 24 hours. The weight of soaked raisins was found to be

A. 0.2

B. 0.25

C. 0.4

D. 0.45

Answer: D

View Text Solution

25. What is the name and composition of the outermost layer of human cheek cell ?

A. Cell membrane, cellulose

B. Cell membrane, phospholipids

C. Cell wall, cellulose

D. Cell wall, phospholipids

Answer: B

View Text Solution

26. Which one of the following sets is the correct sequence for preparing a temporary mount of an onion peel?

A. (1) Take out the onion peel.

(2) Keep the peel on the slide.

(3) Add a drop of glycerin on it.

(4) Add a few drops of safranin stain.

(5) Cover it with a coverslip.

B. (1) Take out the onion peel.

(2) Keep the peel in water in a petri dish.

(3) Add a few drops of safranin stain and transfer to the slide.

(4) Add a drop of glycerin on it.

(5) Cover it with a coverslip.

C. (1) Take out the onion pcel. (2) Keep it on the slide and add a safranin stain.

(3) Transfer it to water in a petri dish. (4) Remove water and add glycerin.

(5) Cover it with a coverslip.

D. (1) Take out the onion peel.

(2) Cover it with a coverslip.

(3) Add water in a petri dish to clean it

(4) Add a drop of glycerin.

(5) Add a few drops of safranin stain.

Answer: B

View Text Solution

27. The cell organelle which is not found in human cheek cells is ....

A. cell membrane

B. nucleolus

C. cell wall

D. cytoplasm

Answer: A::B::C::D

View Text Solution

28. Nikita observed a slide of human cheek cells under a microscope in its (1) low magnifying power, (2) high magnifying power settings. In the first setting, she must have observed ...

A. fewer cells in a darker field of view

B. more cells in a brighter field of view.

C. more cells in a darker field of view.

D. fewer cells in a brighter field of view

Answer: A::B::C::D

View Text Solution

29. To observe cells in an onion peel, we must prepare the slide by mounting on it...

A. crushed pulp of onion.

B. dry scale leaf.

C. green leaf of onion (spring onion)

D. thin layer of fishy leaf of onion.

Answer: A

View Text Solution

30. The cellular component NOT seen while observing the slide of an onion peel under a compound microscope is...

A. chromosomes

B. cell wall

C. nucleus

D. cytoplasm

Answer: C

View Text Solution

Questions Based On Practical Skills With Answers

Answer The Following As Asked

1. Mention the two main differences you would expect to see in human check cell and onion cell.

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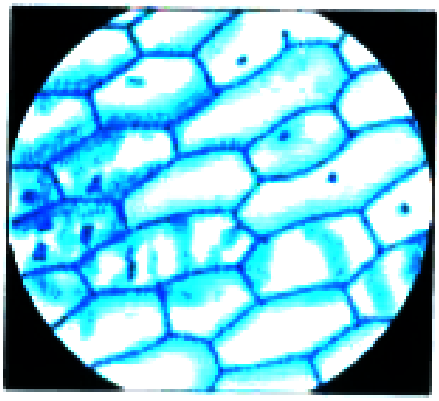
2. Raman while doing an experiment to find out the percentage of water absorbed by raisins measured the mass of dry raisins as 50g. He soaked the raisins in water for four hours and again measured the mass as 80 g

Calculate the percentage of water absorbed by the raisins. He then placed swollen raisins in concentrated salt solution for four hours. What will he observe ?

View Text Solution

3. A teacher focused the slide given below under a compound microscope. Which of the following students identified it correctly? Why?



(a) Sheela identified it as cheek cells.

(b) Madhu identified it as squamous epithelium.

(c) Balaji identified it as parenchyma.

(d) Shanti identified it as onion peel

View Text Solution

4. Name the stain used to stain onion peel and human cheek cell.

View Text Solution

5. A teacher advised students that while placing cover slip on the slide during preparation of temporary mount of onion peel a lot care is to be taken. Asif didn't follow the instructions. What problem, he must have faced while observing the slide under the

focus of a microscope. How could it have been avoided ?

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6. If 'X' is the initial mass of the raisins and 'Y' is the final mass of raisins after soaking in water. Calculate the percentage of water absorbed by raisins.

View Text Solution

7. Mention the two main differences you would expect to see in human check cell and onion cell.

View Text Solution

8. Raman while doing an experiment to find out the percentage of water absorbed by raisins measured the mass of dry raisins as 50g. He soaked the raisins in water for four hours and again measured the mass as 80 g

Calculate the percentage of water absorbed by the raisins. He then placed swollen raisins in concentrated salt solution for four hours. What will he observe ?

View Text Solution

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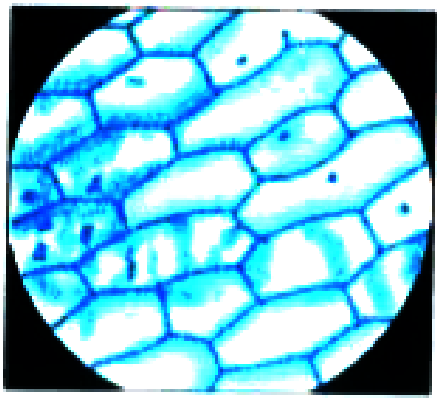

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View Text Solution

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View Text Solution

12. If 'X' is the initial mass of the raisins and 'Y' is the final mass of raisins after soaking in water. Calculate the percentage of water absorbed by raisins.

View Text Solution

Activity 5 1

1. Let us tak a smallpiece from an onion bulb. With the help of a pair of forceps. We can peel off the skin (called epidermis) from the concave side (inner layer) of the onion. This layer can be put immediately in a watch-glass containing water. This will prevent the peel from getting folded or getting dry.

Let us take a glass slide, put a drop of water on it and transfer a small piece of the peel from the watch-glass to the slide. Make sure

that the peel is perfectly flat on the slide. A thin camel hair paintbrush might be necessary to help transfer the peel. Now we put a drop of safranin solution on this piece followed by a cover slip. Take care to avoid air bubbles while putting the cover slip with the help of a mounting needle. We have prepared a temporary mount of onion peel. We can observe this slide under low power followed by high powers of a compound microscope. What do we observe as we look through the lens ?

What do we observe as we look through the lens ?

View Text Solution

2. Let us tak a smallpiece from an onion bulb. With the help of a pair of forceps. We can peel off the skin (called epidermis) from the concave side (inner layer) of the onion. This layer can be put immediately in a watch-glass containing water. This will prevent the peel from getting folded or getting dry.

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What do we observe as we look through the lens ?

What do we observe as we look through the lens ?

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Activity 5 2

1. Try preparing temporary mounts of leaf peels, tip of roots of onion or even peels of onions of different sizes :

After performing the above activity, let us see what the answers to the following questions would be:

Do all cells look alike in terms of shape and size?

View Text Solution

2. Try preparing temporary mounts of leaf peels, tip of roots of onion or even peels of onions of different sizes :

After performing the above activity, let us see

what the answers to the following questions would be:

Do all cells look alike in structure?

View Text Solution

3. Try preparing temporary mounts of leaf peels, tip of roots of onion or even peels of onions of different sizes :

After performing the above activity, let us see what the answers to the following questions would be:

Could we find differences among the cells from different parts of a plant body?

View Text Solution

4. Try preparing temporary mounts of leaf peels, tip of roots of onion or even peels of onions of different sizes :

After performing the above activity, let us see what the answers to the following questions would be:

What similarities could we find ?

View Text Solution

5. Try preparing temporary mounts of leaf peels, tip of roots of onion or even peels of onions of different sizes :

After performing the above activity, let us see what the answers to the following questions would be:

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View Text Solution

6. Try preparing temporary mounts of leaf peels, tip of roots of onion or even peels of onions of different sizes :

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View Text Solution

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After performing the above activity, let us see what the answers to the following questions would be:

Could we find differences among the cells from different parts of a plant body?

View Text Solution

8. Try preparing temporary mounts of leaf peels, tip of roots of onion or even peels of onions of different sizes :

After performing the above activity, let us see what the answers to the following questions would be:

What similarities could we find ?

View Text Solution

Activity 5 3

1. Remove the shell of an egg by dissolving it in dilute hydrochloric acid. The shell is mostly calcium carbonate. A thin outer skin now

encloses the egg. Put the egg in pure water and observe after 5 minutes.

What do we observe ?

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2. Place a similar de-shelled egg in a concentrated salt solution and observe for 5 minutes.

The egg shrinks. Why?

View Text Solution

3. Remove the shell of an egg by dissolving it in dilute hydrochloric acid. The shell is mostly calcium carbonate. A thin outer skin now encloses the egg. Put the egg in pure water and observe after 5 minutes.

What do we observe ?

View Text Solution

4. Place a similar de-shelled egg in a concentrated salt solution and observe for 5

minutes.

The egg shrinks. Why?

View Text Solution

Activity 5 4

1. Put dried raisins or apricots in plain or tap water and leave them for some time. Then place them into a concentrated solution of sugar or salt.

Observe what happens :

View Text Solution

2. Put dried raisins or apricots in plain or tap water and leave them for some time. Then place them into a concentrated solution of sugar or salt.

Significance of diffusion and osmosis :

View Text Solution

3. Put dried raisins or apricots in plain or tap water and leave them for some time. Then

place them into a concentrated solution of sugar or salt.

Endocytosis

View Text Solution

4. Put dried raisins or apricots in plain or tap water and leave them for some time. Then place them into a concentrated solution of sugar or salt.

Observe what happens :

View Text Solution

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Significance of diffusion and osmosis :

View Text Solution

6. Put dried raisins or apricots in plain or tap water and leave them for some time. Then place them into a concentrated solution of

sugar or salt.

Endocytosis

View Text Solution

Activity 5 6

1. Mount the peel of a Rheo leaf in water on a slide and examine cells under the high power of a microscope. Put a strong solution of sugar or salt on the mounted leaf on the slide. Wait for a minute and observe under a

microscope.

What do we see?

View Text Solution

2. Mount the peel of a Rheo leaf in water on a slide and examine cells under the high power of a microscope. Put a strong solution of sugar or salt on the mounted leaf on the slide. Wait for a minute and observe under a microscope.

What do we find ? Did plasmolysis occur now?

View Text Solution

3. Mount the peel of a Rheo leaf in water on a slide and examine cells under the high power of a microscope. Put a strong solution of sugar or salt on the mounted leaf on the slide. Wait for a minute and observe under a microscope.

What do we see?

View Text Solution

4. Mount the peel of a Rheo leaf in water on a slide and examine cells under the high power of a microscope. Put a strong solution of sugar or salt on the mounted leaf on the slide. Wait for a minute and observe under a microscope.

What do we find ? Did plasmolysis occur now?

View Text Solution

Activity 5 7

1. Let us take a glass slide with a drop of water on it. Using an ice cream spoon gently scrape the inside surface of the cheek. Does any material get stuck on the spoon ? With the help of a needle we can transfer this material and spread it evenly on the glass slide kept ready for this. To colour the material we can put a drop of methylene blue solution on it. Now the material is ready for observation under microscope. Do not forget to put a cover-slip on it.

What do we observe? What is the shape of the cells we see?

View Text Solution

2. Let us take a glass slide with a drop of water on it. Using an ice cream spoon gently scrape the inside surface of the cheek. Does any material get stuck on the spoon ? With the help of a needle we can transfer this material and spread it evenly on the glass slide kept ready for this. To colour the material we can put a drop of methylene blue solution on it. Now the material is ready for observation under microscope. Do not forget to put a

cover-slip on it.

Was there a darkly coloured, spherical or oval, dot-like structure near the centre of each cell ? Were there similar structures in onion peel cells?

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3. Let us take a glass slide with a drop of water on it. Using an ice cream spoon gently scrape the inside surface of the cheek. Does any material get stuck on the spoon ? With the

help of a needle we can transfer this material and spread it evenly on the glass slide kept ready for this. To colour the material we can put a drop of methylene blue solution on it. Now the material is ready for observation under microscope. Do not forget to put a cover-slip on it.

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View Text Solution

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Was there a darkly coloured, spherical or oval,

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Were there similar structures in onion peel cells?

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Intex Questions And Answers

1. Who discovered cells and how ?

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2. Why the cell is called the structural and functional unit of life?

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3. What is the living organisms made-up of? Why are they called structural and functional unit of life?

Watch Video Solution

4. How do substances like CO_2 and water move in and out of the cell ? Discuss.

Watch Video Solution

5. Why the plasma membrane is called a selectively permeable membrane ?

Watch Video Solution

6. Can you name the two organelles we have studied that contain their own genetic material?

Watch Video Solution

7. If the organization of a cell is destroyed due to some physical or chemical influence, what will happen?

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8. Why are lysosomes known as suicide bags?

Watch Video Solution

9. Where are proteins synthesized inside the cell?

Watch Video Solution

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View Text Solution

17. Why are lysosomes known as suicide bags?

View Text Solution

18. Where are proteins synthesized inside the cell?

View Text Solution

Questions And Answers Answer The Following Question In One Word Or One Sentence

1. Who discovered cells and how ?

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2. What are the characteristics of prokaryotic cells ?

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3. Name any two major cell organelles of a eukaryotic cell.

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4. How do substances like CO_2 and water move in and out of the cell ? Discuss.

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5. Where are chromosomes located ?

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6. State the full form of ATP.

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7. Which organelle possesses digestive enzymes ?

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8. Name the cell organelle involved in the formation of lysosomes.

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9. Who discovered cell ?

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10. Write any one characteristic of a prokaryotic cell.

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11. Name any two major cell organelles of a eukaryotic cell.

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12. How do CO_2 and water move in and out of the cell ?

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13. Where are chromosomes located ?

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14. State the full form of ATP.

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15. Which organelle possesses digestive enzymes ?

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16. Which organelle of the cell is involved in the formation of lysosomes ?

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Questions And Answers Fill In The Blanks By Selecting The Correct Alternative From Those Given In The Bracket

1. Who gave the word Protoplasm ?

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2. The organelle responsible for exchange of some materials is ..... (cell wall,

mitochondrion, nuclear membrane)

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3. ..... is a structure that is not included in the major components of the nucleus. (Nuclear membrane, Chromatin material, Cell wall)

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4. Which cell organelle detoxifies poisons and drugs in the liver of vertebrates ?

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5. The undefined nuclear region, containing only nucleic acids, in the cells of bacteria included in prokaryotes and blue-green algae is called ..... (nucleold, nucleolus, nucleoplasm)

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6. In plant cell, ... is a non-living organelle. (cell membrane, cytoplasm, cell wall)

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7. Lysosomes contain powerful digestive enzymes that are made by .....

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8. ..... is a unicellular organism. (Chlamydomonas, Spirogyra, Virus)

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9. How does an Amoeba obtain its food ?

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10. Absorption of water by plant roots is an example of ..... (diffusion, osmosis, endocytosis)

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11. Nucleoid contains ..... (nucleic acids, lipid, cellulose)

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12. ..... is a large network of membrane-bound tubes and sheets. (Nucleus, Endoplasmic reticulum, Lysosome)?

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13. The scientist ..... coined the term 'protoplasm for the living substance of the cell. (Robert Brown, Crick, Purkinje)

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14. The organelle responsible for exchange of some materials is ..... (cell wall, mitochondrion, nuclear membrane)

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15. ..... is a structure that is not included in the major components of the nucleus. (Nuclear membrane, Chromatin material, Cell wall)

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16. ..... plays a crucial role in detoxifying many poisons and drugs. (Smooth endoplasmic reticulum, Mitochondrion, Nucleus)

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17. The undefined nuclear region, containing only nucleic acids, in the cells of bacteria included in prokaryotes and blue-green algae is called ..... (nucleold, nucleolus, nucleoplasm)

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18. In plant cell, ... is a non-living organelle. (cell membrane, cytoplasm, cell wall)

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19. The digestive enzymes in membrane-bound sac (lysosome) are made by ..... (smooth endoplasmic reticulum, rough endoplasmic reticulum, golgi apparatus)

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20. ..... is a unicellular organism. (Chlamydomonas, Spirogyra, Virus)

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21. Amoeba acquires its food through ..... (diffusion, ectocytosts, endocytosis)

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22. Absorption of water by plant roots is an example of ..... (diffusion, osmosis, endocytosis)

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23. Nucleoid contains ..... (nucleic acids, lipid, cellulose)

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24. ..... is a large network of membrane-bound tubes and sheets. (Nucleus, Endoplasmic reticulum, Lysosome)?

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