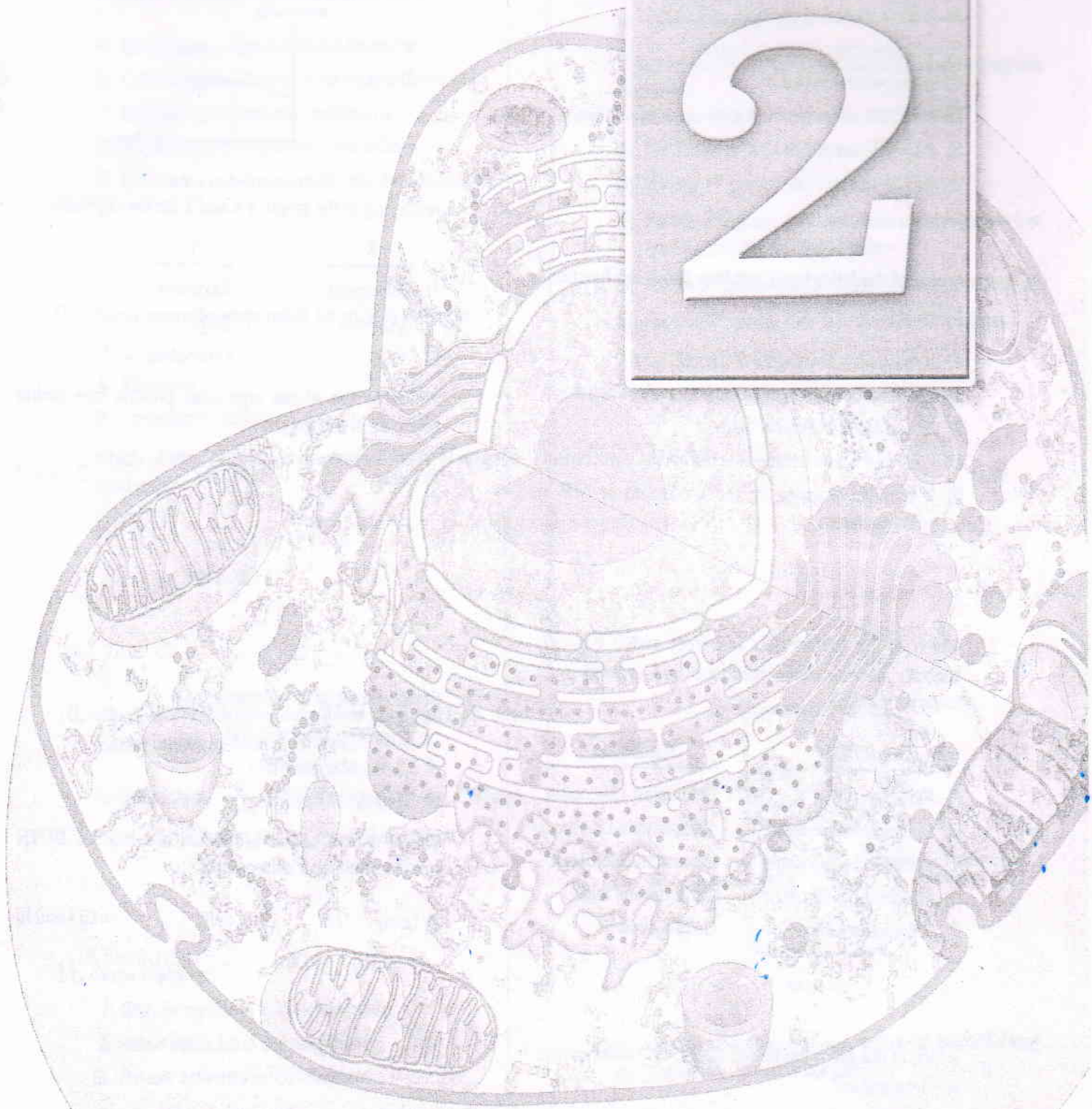


chapter

2



Microuniverse

Cell and Organelles 1

1. Which of the following properties of the mitochondrion can not be seen in the chloroplast?

- A) It is composed of a double membrane.
- B) It synthesizes organic molecules.
- C) It has respiratory enzymes.
- D) It has the ability to divide to increase its number.
- E) It synthesizes protein.

2. Which of the following is not true about the functions of the plasma membrane?

- A) It maintains the integrity of the cell.
- B) It gives protection against environmental hazards.
- C) It provides the cell with shape.
- D) It forms a barrier between the cell and its environment.
- E) It provides enzymes for the production of ATP in active transport.

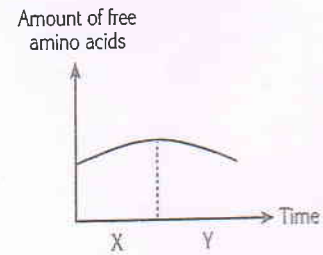
3. Which of the following is a correct match between anabolic and catabolic reactions and organelles in eukaryotic cells?

Anabolism	Catabolism
A) Ribosome-Golgi	Chloroplast-Leucoplast
B) Chloroplast-Ribosome	Mitochondria-Lysosome
C) Centrosome-Lysosome	Lysosome-Chloroplast
D) Mitochondria-Ribosome	Centrosome-Golgi
E) Chloroplast-Golgi	Golgi-Lysosome

4. Which of the following is true for BOTH mitochondria and lysosomes?

- A) They break down monomers.
- B) They increase the concentration of the cytoplasm.
- C) They include master molecules.
- D) Enzymatic reactions take place in them.
- E) They synthesize ATP with ETS.

5. Change in the amount of amino acid in the cell cytoplasm over a period of time is shown in the graph below:



According to the graph, if X and Y are the organelles:

X	Y
I. Chloroplast	Ribosome
II. Lysosome	Golgi
III. Golgi	Leucoplast

Which of the above organelles provide free amino acids, as in the graph?

- A) I only
- B) III only
- C) I and II
- D) I and III
- E) II and III

6. Some properties of eukaryotic cells:

- I. They have DNA and RNA.
- II. They synthesize ATP.
- III. They synthesize RNA.

Which of the above properties are true of BOTH mitochondria and chloroplasts?

- A) I only
- B) II only
- C) I and III
- D) II and III
- E) I, II and III

7. Which of the following organelles does not have any enzyme related to its function?

- A) Food vacuole
- B) Leucoplast
- C) Lysosome
- D) Ribosome
- E) Golgi

CHECKPOINT TEST 1

8. Some membranous organelles form other membranous organelles, in order.

Which of the following is the correct order?

- A) Endoplasmic reticulum-Golgi-lysosome
- B) Cell membrane-food vacuole-contractile vacuole
- C) Golgi-secretory vacuole-centrosome
- D) Nuclear membrane-mitochondria-Golgi
- E) Cell membrane-endoplasmic reticulum-lysosome.

9. Some organelles responsible for enzyme synthesis:

- I. Golgi
- II. Ribosome
- III. Endoplasmic reticulum

Which of the following is the correct order of enzyme synthesis?

- A) I - II - III
- B) I - III - II
- C) II - I - III
- D) II - III - I
- E) III - I - II

10. Which of the following organelles does not form any master molecule when it is broken down?

- A) Chloroplast
- B) Ribosome
- C) Golgi
- D) Mitochondria
- E) Leucoplast

11. Some reactions:

- I. Glucose synthesis in the chloroplast
- II. Active transport in the membrane
- III. Protein synthesis in the ribosome

Which of the above reactions are not directly affected if the amount of ATP produced in the mitochondria is not sufficient?

- A) I only
- B) I and II
- C) I and III
- D) II and III
- E) I, II and III

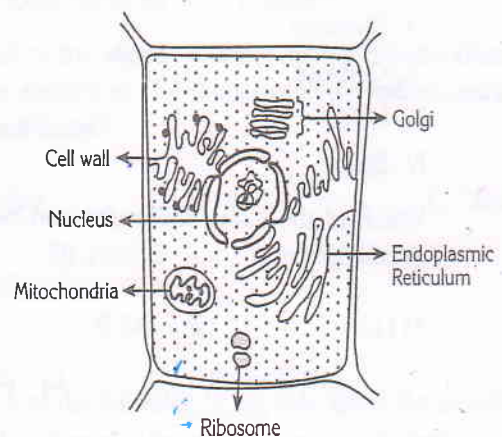
12. Some of the organelles in eukaryotic cells are grouped as:

- I. Chloroplast-mitochondria
- II. Golgi-endoplasmic reticulum
- III. Centrosome-ribosome

Which of the following is not considered when they are grouped?

- A) For the 1st group: they carry DNA
- B) For the 1st group: they increase in number
- C) For the 2nd group: they synthesize some materials that are found in the cell membrane
- D) For the 3rd group: they are non-membranous structures
- E) For the 3rd group: they are found in all cell types

- 13.

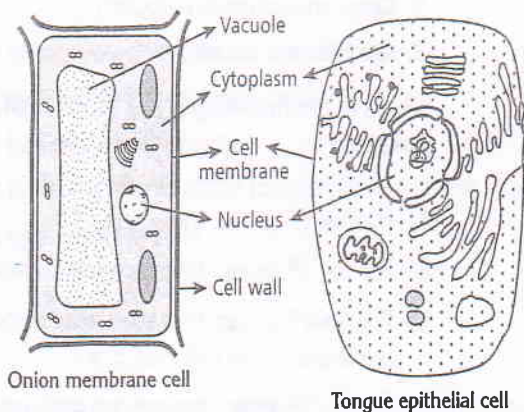


According to the figure above, which of the following can not be observed in the cell?

- A) It can respire.
- B) It can undergo photosynthesis.
- C) It can secrete.
- D) It is a eukaryotic cell.
- E) It is a plant cell.

Cell and Organelles 2

1. Onion membrane cell and tongue epithelial cell are compared in the figure below.



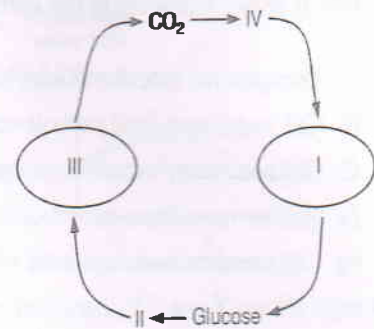
Which of the following is not true about the cells?

- A) The plant cell is an old cell.
 B) Metabolic activity of the plant cell is slow.
 C) Cell division rates of both cells are same.
 D) Both cells have different structures.
 E) Both cells are eukaryotic cells.
2. If there is a centrosome in the cells of a living organism, excess glucose can be converted into other molecules.
- I. Glycogen
 - II. Cellulose
 - III. Lipid
 - IV. Starch

Which of the above molecules can be formed from excess glucose?

- A) I only B) I and III C) II and IV
 D) I, II and III E) I, III and IV
3. Which of the following statements can indicate that the cell is a prokaryote?
- A) Protein synthesis
 B) ATP production
 C) ATP consumption
 D) Presence of chlorophyll in the cytoplasm
 E) Oxygen usage

4. Exchange of material between two different organelles in a eukaryotic plant cell is shown in the figure below.



Which of the following statements is not true according to the figure?

- A) I is a chloroplast
 B) II may be an O_2 molecule
 C) In III there is cellular respiration
 D) IV may be an H_2O molecule
 E) II and IV are products of photosynthesis
5. Some organelles:
- I. Nucleolus
 - II. Centriole
 - III. Leucoplast
 - IV. Ribosome

Which of the above organelles are common to BOTH plant and animal cells?

- A) I and II B) I and III C) I and IV
 D) II and IV E) III and IV

CHECKPOINT TEST 2

6. Which of the following matches is not true about organelles and their functions?

- | | |
|---------------|-------------------------------|
| A) Leucoplast | starch storage |
| B) Smooth ER | lipid synthesis |
| C) Rough ER | enzyme synthesis |
| D) Mesosomes | protein synthesis |
| E) Lysosome | break down of aged organelles |

7. Some cell organelles and functions are given below:

- Nucleus.
- Mitochondria
- Chloroplast
- Holding interstitial fluid in tissues

related with these organelles:

- presence of nucleic acid
- energy production
- presence of ETS
- presence of a double membrane

Which of the above properties are common to the given organelles and functions?

- A) IV only B) I and III C) II and III
D) I and IV E) III and IV

8. Some properties of an organelle are given below:

- It has respiratory enzymes.
- It can increase its number by division.
- It has a double membrane.
- It has DNA and RNA molecules.

Which of the following is the organelle with the properties above?

- A) Mitochondria B) Chloroplast C) Lysosome
D) Nucleus E) Ribosome

9. Some properties of an organelle are given below:

- It is part of the internal membrane of the cell.
- It stores Ca.
- It synthesizes lipid.
- It neutralizes toxic materials.

Which of the following is the organelle that has the properties above?

- A) Golgi body B) Vacuole C) Lysosome
D) Mitochondria E) Endoplasmic reticulum

10. Which of the following organelles does not form any master molecule when it is broken down?

- A) Chloroplast B) Ribosome C) Golgi
D) Mitochondria E) Leucoplast

11. There are some reactions:

- Glucose synthesis in the chloroplast
- Active transport in the membrane
- Protein synthesis in the ribosome

Which of the above reactions are not directly affected if the amount of ATP produced in the mitochondria is not sufficient?

- A) I only B) I and II C) I and III
D) II and III E) I, II and III

12. Which of the following is not true about the structure and function of mitochondria and chloroplasts?

- A) Mitochondrial membrane is permeable, but chloroplast membrane is impermeable.
B) Both of the organelles have distinctive DNA.
C) In mitochondria there is crista, in chloroplasts there is granum.
D) For ATP synthesis; in mitochondria O_2 is needed, in chloroplasts light is needed.
E) In the liquid part of both organelles there are ribosomes

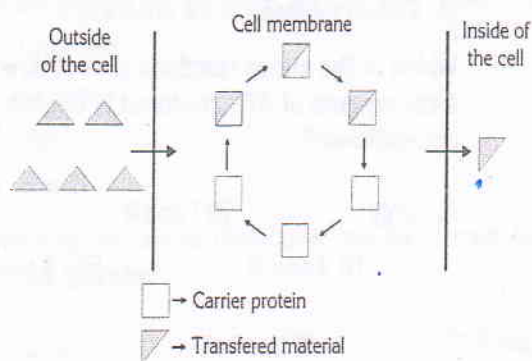
Nucleus and Cell Membrane 1

- Some statements about the nucleus of eukaryotic cells:
 - There is a certain ratio between the size of the nucleus and the mass of the cytoplasm.
 - Generally, if metabolic activities are greater, the nucleus is bigger.
 - There is only one nucleus in all types of cells.
 - All nucleated cells divide after a certain amount of development

Which of the above statements are true for the nucleus of a eukaryotic cell?

- A) I and II B) I and III C) II and III
 D) II and IV E) III and IV

- Transport through the cell membrane is shown in the figure below.



Which of the following is not true about material transport?

- Carrier protein combines with molecule in transfer
- Molecules are transferred from high concentration to low concentration
- The same enzyme can be used again and again in the transport of molecules
- ATP is used to transport molecules
- During transportation, there is no change in the cell membrane

- In the cell, molecules can be transported by:
 - Diffusion
 - Osmosis
 - Active transport

Which of the following is common to all of the above methods?

- Enzymes are used
- Can take place only in living cells
- Carrier molecules are used
- Works maximum rate if there is optimum temperature
- Molecules are transferred from high concentration to low concentration

- Which of the following is not true about the structure and function of the nucleus?

- It has a membranous structure only in eukaryotic cells.
- It directs the cell with the help of the nucleolus.
- Its pores are larger than the cell membrane pores.
- It increases in number by cell division.
- In some cells, there can be more than one.

- A cell is in osmotic balance with its environment.

Which of the following can occur if it starts to synthesize sucrose?

- Water molecules are released from the cell.
- Concentration of the cell doesn't change.
- Glucose molecules are taken inside the cell by active transport.
- Amount of glucose in the cell increases
- Amount of fructose in the cell increases

CHECKPOINT TEST 3

6. A cell lives in normal temperatures and the following are observed:

- I. Diffusion
- II. Osmosis
- III. Active transport

The reaction rate of which of the above activities can increase if the cell is at the optimum temperature?

- A) I only
- B) III only
- C) I and II
- D) II and III
- E) I, II and III

7. Which of the following molecules can pass through the cell membrane only by diffusion?

- A) O_2 and vitamin
- B) Glucose and CO_2
- C) Amino acid and H_2O
- D) CO_2 and O_2
- E) H_2O and NaCl

8. A unicellular organism is placed into distilled water. Hemolysis occurs.

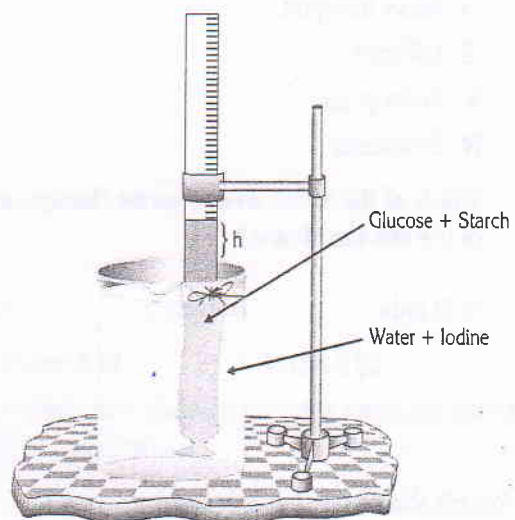
Which of the following is not found in the cell structure?

- A) Contractile vacuole
- B) Centrosome
- C) Ribosome
- D) Glycogen
- E) Nuclear membrane

9. Which of the following properties is different in plant and animal cells?

- A) Transport of materials by active transport
- B) Breakdown of protein molecules into amino acids
- C) Starch synthesis from glucose
- D) Lipid synthesis
- E) Replication of DNA

10. One end of an intestine is folded and tied. Glucose and starch solutions are poured in and a graduated pipette is placed into the intestine. Then the intestine is placed into a beaker full of water. Iodine solution is added to the water.



After two hours, a small amount of water is taken from the beaker and Benedict solution is added. This mixture is heated and the color changes to brick red.

Which of the following statements is not true about the experiment?

- A) Glucose molecules pass into the beaker by diffusion
- B) Benedict solution is an indicator for glucose
- C) Water molecules pass from the beaker into the intestine
- D) Starch can pass into the beaker by active transport
- E) Osmotic pressure of the solution decreases in the intestine

Nucleus and Cell Membrane 2

1. Some molecules can pass by diffusion through the cell membrane pores:

- I. Na^+
- II. Glucose
- III. O_2
- IV. NaCl

Which of the following is the correct order for the rate of diffusion, from fastest to slowest?

- A) I>II=III>IV B) I>II>III>IV C) III>I>IV>II
D) IV>I>III>II E) IV>I>II>III

2. Some events in the plasma membrane:

- I. Active transport
- II. Diffusion
- III. Endocytosis
- IV. Exocytosis

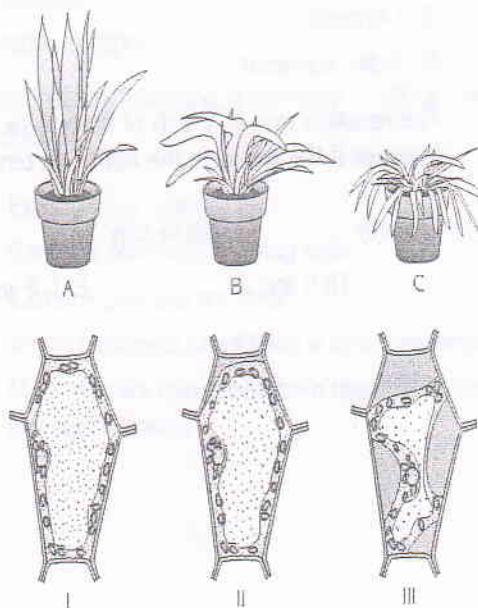
Which of the above events cause changes in the size of the cell membrane?

- A) III only B) I and II C) I and III
D) II and IV E) III and IV

3. Which of the following is not true about the nuclear membrane?

- A) It is double-layered.
- B) It is formed by the endoplasmic reticulum.
- C) Its outer membrane has ribosomes.
- D) It enables exchange of materials between the cytoplasm and the nucleoplasm.
- E) Nuclear membrane pores are smaller than plasma membrane pores.

4. The cells of three plants in different conditions are observed under the microscope and the following views are obtained:



Which of the following matches is correct?

	X	Y	Z
A)	I	II	III
B)	II	I	III
C)	III	I	II
D)	I	III	II
E)	II	III	I

5. An animal cell is placed into a medium which has the same glucose concentration as the cell.

- I Diffusion
- II Active transport
- III Phagocytosis

Which of the above methods can be used to transport glucose into the cell?

- A) I only B) II only C) I and II
D) I and III E) II and III

CHECKPOINT TEST 4

6. Some methods of transporting molecules by using energy are given below:
- I. Active transport
 - II. Pinocytosis
 - III. Phagocytosis
 - IV. Exocytosis

Which of the above methods can transport materials without changing the shape of plasma membrane ?

- A) I only B) I and II C) II and III
 D) II and IV E) III and IV

7. Some statements about transportation of molecules by diffusion across the cell membrane to the inside of the cell are given below:

- I. There is a high concentration of molecules outside the cell.
- II. The molecules' size is smaller than the pore size.
- III. The molecules can dissolve in water and lipid.

Which of the above statements are absolutely necessary for diffusion of molecules?

- A) I only B) II only C) I and II
 D) I and III E) II and III

8. Some statements about endocytosis and exocytosis:

- I. Energy is used in transporting materials.
- II. Transportation is unidirectional.
- III. Transportation occurs from the outside to the inside of the cell.

Which of the above statements are true for BOTH endocytosis and exocytosis?

- A) I only B) I and II C) I and III
 D) II and III E) I, II and III

9. Some organic molecules in a cell:

- I. Glycogen
- II. Galactose
- III. Amino acid
- IV. Fatty acid
- V. ATP

Some of the molecules above can pass through the pores of the cell membrane, but some can not.

Which of the following matches is correct?

passing molecules	non-passing molecules
A) II, III and IV	I and V
B) I, II and V	III and IV
C) III and IV	I, II, IV and V
D) I and III	II, IV and V
E) I, III and IV	I and V

10. Concentration of some molecules inside and outside the cell are given below:

	Inside the cell	Outside the cell
I. Ca	0.05	0.01
II. Na	0.01	0.06
III. K	0.07	0.02
IV. Starch	0.00	0.15
V. Cl	0.06	0.02
VI. Glycogen	0.08	0.00

Which of the above molecules are transported into the cell by active transport?

- A) I and III B) II and IV C) V and VI
 D) I, III and V E) II, III and V



Chapter Review 1

1. Which of the following does not indicate that the cell membrane is alive?

- A) Semipermeable structure of the cell membrane
- B) Passage of water molecules into the cell from a medium of low water concentration
- C) Transport of big molecules which are larger than the pores
- D) Using ATP and enzymes in transportation of molecules
- E) Transportation of molecules from low concentration to high concentration

2. Some molecules:

- I. DNA
- II. Protein
- III. RNA
- IV. ATP

Which of the above molecules can not be synthesized in the nucleus?

- A) I only
- B) II only
- C) III only
- D) II and IV
- E) I, II and III

3. Passive transport is a kind of molecule transportation method and kinetic energy of molecules is used. Diffusion is also one type of passive transport.

Some statements about diffusion:

- I. Molecules are transported from high concentration to low concentration
- II. ATP and enzyme are used during transportation
- III. It can take place in non-living and living cells
- IV. It can take place in membranous and non-membranous conditions.

Which of the statements are true about diffusion?

- A) I only
- B) I and III
- C) II and IV
- D) I, III and IV
- E) II, III and IV

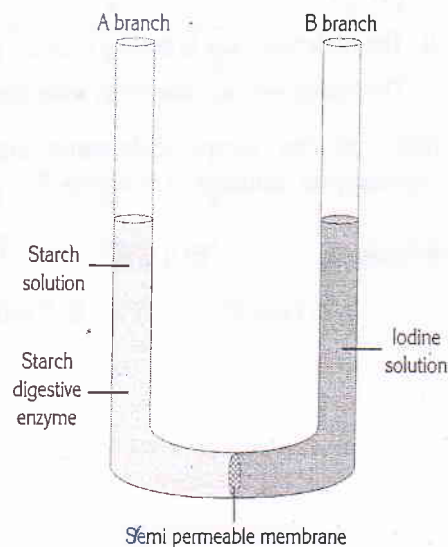
4. In a cell of salted animal leather:

- I. Active transport-hemolysis
- II. Osmosis-plasmolysis
- III. Osmosis-deplasmolysis

Which of the above can take place?

- A) I only
- B) II only
- C) III only
- D) I and II
- E) I, II and III

5. Starch solution and starch digestive enzyme are placed into one branch of a U test tube. Into the other branch, iodine (starch indicator) solution is placed.



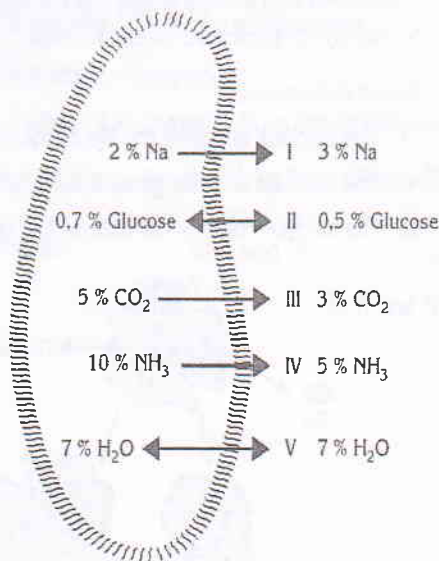
At the end of the experiment, there are some changes in the A and B branches of the test tube.

Which of the following is not true?

- A) Branch B beomes blue.
- B) In branch A, the amount of starch decreases.
- C) In branch B, glucose molecules appear.
- D) In branch A, the amount of enzyme doesn't change.
- E) In branch A, the concentration of liquid increases.

CHECKPOINT TEST 5

6. The amounts of some molecules in the paramecium and its environment are given below.



Molecules are moving according to the direction of the arrows.

The movement of which of the above molecules could indicate that the paramecium is alive?

- A) I only B) I and II C) II and IV
D) II and V E) I, II and V
7. Which of the following matches is not correct?

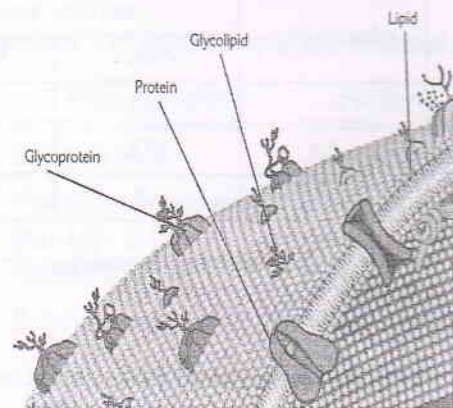
- A) Mitochondria-matrix
B) Chloroplast-granum
C) Ribosome-RNA
D) Centrosome-centriole
E) Golgi-DNA

8. When a unicellular living organism is placed in distilled water there is no hemolysis.

Which of the following organelles is found in the cell to protect the cell from hemolysis?

- A) Ribosome
B) Centrosome
C) Contractile vacuole
D) Mitochondria
E) Nuclear membrane

9. The fluid mosaic model of the plasma membrane and some of its structures are shown in the figure below.



Which of the following matches is correct about structures in the fluid mosaic model and where they are synthesized?

	Protein	Lipid	Glycolipid	Glycoprotein
A)	Mitochondria	Ribosome	Golgi	Golgi
B)	Ribosome	Lysosome	Lysosome	Lysosome
C)	Chloroplast	Golgi	Mitochondria	Mitochondria
D)	Ribosome	Golgi	Golgi	Golgi
E)	Ribosome	Golgi	Nucleus	Nucleus

10. Protein molecules are synthesized in ribosomes and pass into the endoplasmic reticulum. They then pass into Golgi bodies and finally are secreted from the cell by active vesicles.

Which of the following reactions does not take place as explained above?

- A) secretion of pepsin into the stomach
B) secretion of lipase into the small intestine
C) delivery of insulin hormone into the blood
D) formation of lysosome in the cell
E) secretion of saliva into the mouth

Chapter Review 2

1. Results of the analysis of the cytoplasm of an amoeba over a period of time are shown in the table below.

Analysis no.	Ratio in the cytoplasm	
	Protein	Amino acid
1	90 %	10 %
2	30 %	70 %
3	7 %	93 %

Which of the following organelles can cause these results?

- A) Ribosome
- B) Lysosome
- C) Golgi body
- D) Mitochondria
- E) Vacuole

2. Which of the following organelles produces ATP from the chemical energy in sugar and other molecules?

- A) Mitochondria
- B) Chloroplast
- C) Lysosome
- D) Nucleus
- E) Ribosome

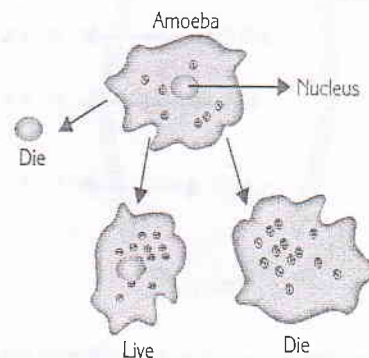
3. Which of the following matches is not correct about an organelle and its function?

- A) Chloroplast- O_2 production
- B) Nucleus-division
- C) Ribosome-protein synthesis
- D) Lysosome-cellulose synthesis
- E) Golgi body-secretion

4. In an experiment, when the nucleus of the amoeba is removed, the nucleus and the cytoplasm die. If the nucleus is removed with a small amount of cytoplasm, it continues to live and the cytoplasm renews itself.

Some conclusions:

- I. The nucleus contains the life of the cell
- II. The nucleus enables genetic continuity
- III. The nucleus controls cell division and growth in number



Which of the above conclusions can not be made from the results of the experiment?

- A) I only
- B) II only
- C) III only
- D) I and II
- E) II and III

5. Which of the following is common to plant and animal cells?

- A) Starch synthesis from glucose
- B) Cytoplasmic division by furrowing
- C) Taking in food particles by phagocytosis
- D) Transformation of light energy into chemical energy
- E) ATP synthesis from organic molecules

CHECKPOINT TEST 6

6. A unicellular organism lives in fresh water.
- It takes in O_2 from the environment.
 - It releases CO_2 to the environment.
 - It synthesizes enzymes.
 - It takes all its minerals from the environment.

Which of the above reactions take place without ATP?

- A) I and II B) II and III C) III and IV
D) I and IV E) II and IV

7. A plant cell is placed into a solution. It is in osmotic balance with the solution.

There are some events in the cell:

- Cellulose synthesis
- Starch digestion
- Protein synthesis

Which of the above reactions require H_2O from outside the cell?

- A) I only B) II only C) II and III
D) I and II E) I and III

8. Which of the following factors decreases the rate of diffusion?

- The transferred molecule's size is smaller than the pore size
- Increase in temperature
- Transfer of liquid-soluble molecules
- Increase in molecular size of transferred materials
- Increase in concentration difference

9. Glucose, fructose, galactose and molecules that are insoluble in both water and lipid are transported through the cell membrane by facilitated diffusion.

Comparison of active transport and facilitated diffusion:

Active Transport	Facilitated Diffusion
I. Energy is used.	Energy is not used.
II. Molecules are transported from high to low concentration.	Molecules are transported from low to high concentration.
III. Enzyme is used.	Enzyme is used.

Which of the above matches are correct?

- A) I only B) II only C) III only
D) I and III E) II and III

10. There are some organelles in a cell:

- Chloroplast
- Ribosome
- Mitochondria
- Vacuole

Which of the above two organelles use each other's synthesized materials?

- A) I and II B) II and III C) I and IV
D) I and III E) III and IV

11. The plasma membrane differentiates and forms different structures in different cells.

Some organelles:

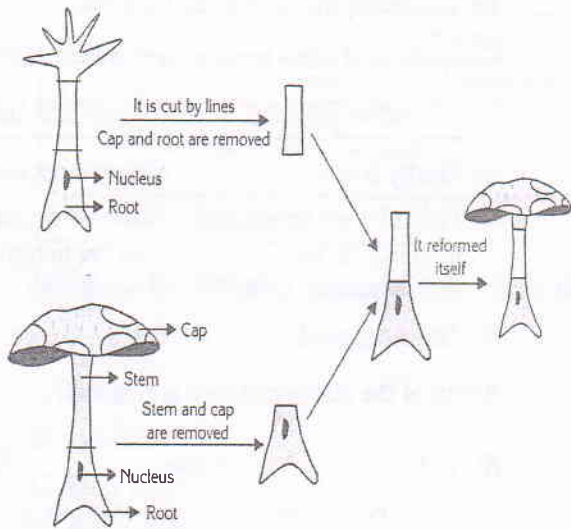
- Cilia
- Lysosome
- Microvillus
- Chloroplast
- Golgi
- Flagella

Which of the above organelles are not formed by differentiation of the plasma membrane?

- A) I and II B) II and V C) III and VI
D) I, III and VI E) II, IV and V

Chapter Review 3

1. An experiment with the nucleus of an alga is shown in the figure below.



Which of the following results can be obtained from the experiment?

- Nucleus adapts living organisms to the environment
- The rate of reproduction is different in the two algae
- In a cell, there can be different nuclei that have different properties
- Cells can live without the nucleus
- Properties of a living organism are determined by the nucleus

2. Some organelle functions are:

- It produces secretory substances.
- It produces energy.
- In the vacuole, it uses enzymes to break food particles into small pieces.

Which of the following matches is true about organelles and their functions?

I	II	III
A) Golgi body	Mitochondria	Lysosome
B) Lysosome	Mitochondria	Golgi body
C) Golgi body	Ribosome	Lysosome
D) Ribosome	Chloroplast	Golgi body
E) Lysosome	Ribosome	Golgi body

3. Some transport methods of molecules are given below.

- Diffusion
- Osmosis
- Active transport
- Phagocytosis
- Pinocytosis

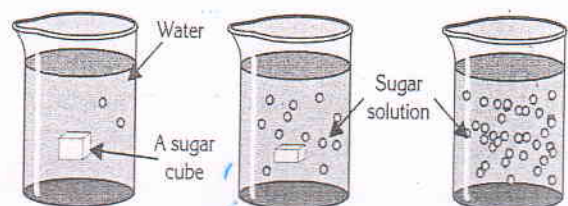
Which of the above methods require energy?

- I and II
- IV and V
- I, III and V
- III, IV and V
- II, III, IV and V

4. Which of the following transport methods can occur ONLY through the pores of the plasma membrane?

- Osmosis, diffusion, phagocytosis
- Phagocytosis, pinocytosis
- Active transport, phagocytosis, pinocytosis
- Diffusion, osmosis, active transport
- Active transport, endocytosis

5. A sugar cube dissolving in a glass of water is shown in the figure below.



Some actions:

- Increasing the temperature of the solution
- Stirring the mixture
- Adding water to the solution

Which of the above actions increases the rate at which the sugar dissolves?

- I only
- II only
- III only
- I and III
- I, II and III

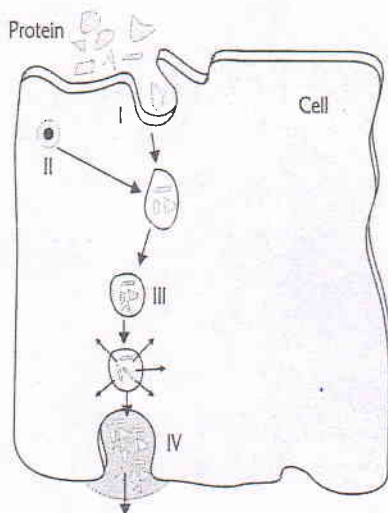
CHECKPOINT TEST 7

6. An amoeba is placed in fresh water. The fresh water includes some molecules that are smaller than the amoeba's plasma membrane pores. After a certain period of time, the fresh water was analyzed and all the small molecules were found in the cytoplasm of the amoeba.

Which of the following transport methods was used to transport the small molecules into the amoeba's cytoplasm?

- A) Phagocytosis, pinocytosis
- B) Diffusion, pinocytosis
- C) Plasmolysis, deplasmolysis
- D) Diffusion, active transport
- E) Osmosis, phagocytosis

7. Transportation of required materials from outside to inside the cell is shown in the figure below.



Which of the following matches for the numbers and organelles or events in the figure is correct?

	I	II	III	IV
A)	Food vacuole	Digestive vacuole	Lysosome	Endocytosis
B)	Lysosome	Food vacuole	Digestive vacuole	Exocytosis
C)	Mitochondria	Lysosome	Digestive vacuole	Exocytosis
D)	Cell membrane	Golgi	Exocytosis	Endocytosis
E)	Cell membrane	Lysosome	Digestive vacuole	Exocytosis

8. Which of following is not true about mitochondria?

- A) Consume organic molecules
- B) Inner membrane is folded
- C) Has a double membrane
- D) Synthesizes ATP
- E) Found in all cell types

9. Some statements about lysosomes:

- I. Have enzymes in the membrane for synthesis of lipids
- II. Have enzymes for digestion reactions
- III. Produce necessary hormones for the cell

Which of the above are correct?

- A) I only
- B) II only
- C) III only
- D) I and II
- E) I, II and III

10. The cell vacuole is formed by other structures in the cell.

Which of the following structures and organelles do not form any vacuole?

- A) Cell membrane
- B) Endoplasmic reticulum
- C) Golgi body
- D) Nuclear membrane
- E) Mitochondria

11. The number of mitochondria is different in different types of cells.

Which of the following organs includes fewer mitochondria than the others?

- A) Heart
- B) Brain
- C) Stomach
- D) Liver
- E) Skin