

Course No: CON 5311  
Course Title: General Biology  
Date: 24-11-2015  
No. of Questions: (4)  
Time: 1 hr  
Using Calculator (No)

University of Palestine



Mid term Exam  
2014/2015  
Total Grade: 20

Instructor: Dr. Essameddin Elzatma  
Student No.: \_\_\_\_\_  
Student Name: \_\_\_\_\_  
College Name: Dentistry  
Dep. / Specialist: \_\_\_\_\_  
Using Dictionary (No)

**Q1: Choose the best corresponding answer (0.5 mark each)**

**1. Which of the following is NOT a carbohydrate**

- A. glucose      B. sucrose      C. glycine      D. cellulose      E. glycogen

**2. Which of the following would be considered a macromolecule?**

- A. protein      B. DNA      C. RNA      D. cellulose      E. none

**3. The building blocks of proteins are:**

- A. carbohydrates      B.  $\text{NH}_2$       C. polypeptides      D. amino acids      E. none of the above

**4. The organelle whose role is to process and package proteins made by the cell**

- A. golgi apparatus      B. ribosomes      C. cytoskeleton      D. lysosome

**5. A fluid-like in the cell rich in proteins.**

- A. centriole      B. ribosomes      C. chromatin      D. cytoplasm

**6. A major component of RNA but not of DNA is:**

- A. adenine      B. guanine      C. cytosine      D. uracil      E. thymine

**7. The primary structure of a protein involves:**

- A. disulfide linkages      B. peptide bonds      C. hydrogen bonds      D. hydrophobic forces

**8. The side chains of nonpolar amino acids are best categorized as:**

- A. hydrophobic      B. positively charged      C. negatively charged  
D. uncharged      E. hydrophilic

**9. Saturated fats:**

- A. have many double bonds      B. have no double bonds  
C. tend to be oily      D. none of these

**10. Proteins that are inside the lipid bilayer of the cell membrane whose role is to transport substances into and out of the cell**

- A. peripheral protein      B. ribosome      C. integral protein

**11. Polymers of polysaccharides, fats, and proteins are all synthesized from monomers by:**

- A. connecting monosaccharides together.  
B. the addition of water to each monomer.  
C. the removal of water (dehydration synthesis)  
D. the formation of disulfide bridges between monomers.

**12. Which macromolecule catalyzes chemical reactions, thus be considered an enzyme?**

- A. RNA      B. DNA      C. lipids      D. polysaccharides      E. proteins

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**13- How does RNA and DNA differ?**

- A. type of sugar they contain  
B. how many strands they contain  
C. by the bases they contain  
D. by their function  
E. all of these

**14- About how many typical amino acids are found in proteins?**

- A. 4      B. 15      C. 20      D. 54      E. 1069

**15- What is the generalized structure of a carbohydrate?**

- A.  $(CH_2O)_n$       B.  $(CH_4)_n$       C.  $(C_3H_7O)_n$       D.  $(CCN)_n$       E. none of these

**16- The major job of the ribosome is to**

- A. make fats      B. make proteins      C. break down proteins      D. make sugars

**17- Chemical bonds that involve the sharing of electrons between atoms are called**

- A. hydrogen bonds      B. covalent bonds      C. ionic bonds  
D. hydrophobic bonds      E. none of the above

**18- Which of the following statements about living cells is false?**

- A. most are microscopic.  
B. they are found in all animals but not in all plants.  
C. they are the smallest basic units that can carry out all of the functions of life.

**19- Cristae is the name given to the:**

- A. foldings of the inner membrane of chloroplasts  
B. foldings of the outer membrane of chloroplasts  
C. foldings of the nuclear membrane.  
D. foldings of the inner membrane of mitochondria  
E. foldings of the outer membrane of mitochondria

**20- Phospholipids have:**

- A. two hydrophobic tails and one hydrophilic head  
B. two hydrophilic tails and one hydrophobic head  
C. one hydrophobic tail and one hydrophilic head  
D. three hydrophobic tails and one hydrophilic head  
E. two hydrophilic heads and one hydrophobic tail

**Q2: True or false (0.5 mark each)**

- 1- (T / F) The “rough ER” has lots of ribosomes attached to it.  
2- (T / F) Humans can digest starch but not cellulose because the monomer of starch is glucose, while the monomer of cellulose is maltose.  
3- (T / F) A molecule with the chemical formula  $C_{16}H_{32}O_{16}$  is probably a protein.

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- 4- (T / F) Nucleotides contain a nitrogen-rich base, and a ribose sugar only.
- 5- (T / F) Proteins residing in the plasma membrane of a eukaryotic cell are involved in energy production.
- 6- (T / F) The different amino acids found in polypeptides exhibit different chemical and physical properties because of different amino groups attached to an alpha carbon.
- 7- (T / F) Unsaturated fats have more oxygen than saturated fats.
- 8- (T / F) flagella are the most prominent structures that enable eucaryotic cells to move.
- 9- (T / F) Eucaryotic cells differ from procaryotic cells in having membranous organelles in the cytoplasm and most of their genetic material in the nucleus.
- 10- (T / F) The rough part of rough endoplasmic reticulum (RER) is caused by bound ribosomes in the process of synthesizing ER proteins.

**Q3- Match the following statements (0.5 mark each)**

- |                       |  |
|-----------------------|--|
| _____ 1. cytosol      | A. serves as a storage center for a cell's DNA.                                  |
| _____ 2. mitochondria | B- thick outer layer of plant cells.   |
| _____ 3. cell wall    | C- Small protein-making structures within a cell.                                |
| _____ 4. Ribosomes    | D- converts energy stored in food into ATP, energy that drive cell's activities. |
| _____ 5. nucleus      | E- aqueous space inside a cell.  |

**Q4: Define the following terms? (0.5 mark each)**

**1- Dehydration reaction**

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**2- Peptide bonds**

**3- Integral proteins**

**4- Lipid bilayer of the cell membrane.**

**5- What? is your father's name?**