

Course No: CON 5311  
Course Title: General Biology  
Date: 23-03-2013  
No. of Questions: (4)  
Time: 1 hour  
Using Calculator (No)

University of Palestine



Midterm Exam  
2012-2013  
Total Grade: 20

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

**Q1: Multiple choice (5 Marks)**

**1- All the following are proteins except:**

- a) haemoglobin    b) keratin    c) enzymes    d) antibodies    e) glycogen

**2- The main difference between the secondary and quaternary structure of a protein is**

- a) bond angles between amino acids  
b) sequence of amino acids  
c) number of polypeptides in the molecule  
d) the folding pattern of the molecule

**3- The building blocks of nucleic acid molecules are called**

- a) polysaccharides    b) amino acids    c) fatty acids    d) nucleotides    e) DNA and RNA

**4- The four main categories of macromolecules are:**

- a) proteins, DNA, steroids, sugars,  
b) monosaccharides, lipids, proteins, nucleic acids;  
c) nucleic acids, glucose, lipids, amino acids;  
d) lipids, proteins, carbohydrates, nucleic acids,

**5- The chemical term organic refers possessing:**

- a) carbon;    b) oxygen;    c) nitrogen    d) hydrogen;

**6- How does DNA differ from RNA?**

- a) DNA is larger,  
b) they contain different sugars;  
c) one of their nitrogenous bases is different  
d) DNA consists of two strands in a double helix;  
e) all of these are differences.

**7- Which of the following is not an accurate description of a chromosome?**

- a) It is a colored body localized in the nucleus.  
b) It is a protein and nucleic acid complex.  
c) It is the cellular structure that contains the genetic material  
d) In eukaryotes, it is circular and located in the cytoplasm.

**8- In the nucleus of eukaryotic cells, the genetic material is complexed with protein and organized into linear structures called**

- a) centrioles    b) histones    c) chromosomes    d) plasmids

**9- Lysosomes are formed by budding from which cellular organelle?**

- a) smooth endoplasmic reticulum    b) Golgi apparatus  
c) rough endoplasmic reticulum    d) nucleus

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**10- Which one among the following describes the function of the cell membrane or plasma membrane?**

- Cell membrane separates the cell from its external environment.
- Plasma membrane gives the cell a definite size and shape
- Plasma membrane controls the movement of molecules from one side of the cell to the other.
- All of the above are the functions of cell membrane.

**Q2: Indicate whether the following statements are true (T) or false (F) (5 Marks)**

- 1- Active transport is the movement materials or ions from an area of lower concentration to an area of higher concentration. (T / F)
- 2- Symports transporter proteins move two solutes in the opposite direction. (T / F)
- 3- The sodium-potassium ( $\text{Na}^+ - \text{K}^+$ ) pump bring three  $\text{Na}^+$  into the cell and export ions two  $\text{K}^+$  ions. (T / F)
- 4- Transport through vesicles is a type of passive transport. (T / F)
- 5- As the cell grow in size, the ratio of surface area: volume decrease. (T / F)
- 6- In normal conditions, the cells use protein as the first choice to get energy. (T / F)
- 7- Prokaryotic cells house their genetic material inside their nuclei. (T / F)
- 8- All euokaryotes lack the cell wall that surrounding the plasma membranes. (T / F)
- 9- The inner membrane space is full of hydrophobic substances. (T / F)
- 10- The saturated fatty acids contain at least one double bond in their hydrocarbon tails. (T / F)

**Q3: Match the following sentence. (5 Marks)**

- |                           |   |
|---------------------------|---|
| 1- Triglycerides          | ----- stops once the carrier protein saturated by the carried solute. |
| 2- The $\alpha$ helix     | ----- source of energy inside the cell.                               |
| 3- Enzymes                | ----- composed of 3 fatty acid and one molecule glycerol.             |
| 4- RNA molecules          | ----- derived basically from cholesterol                              |
| 5- Facilitated diffusion  | ----- covalent bonding between amino acids                            |
| 6- Adenosine triphosphate | ----- do not consumed during chemical reactions                       |
| 7- Endocytosis            | ----- secondary structure of proteins                                 |
| 8- Simple diffusion       | ----- down concentration gradient                                     |
| 9- Steroid molecules      | ----- bringing substances into the cells                              |
| 10- Peptide bonds         | ----- consist of only one polynucleotide chain                        |

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**Q4: Definitions (5 Marks)**

- 1- Secondary active transport
  
- 2- Osmosis
  
- 3- Flagella of bacteria
  
- 4- Ribosomes
  
- 5- Saturated triglycerides

**GOOD LUCK**