

Course No: CON 5311  
Course Title: General Biology  
Date:  
No. of Questions:  
Time: 2 hours  
Using Calculator (No)

University of Palestine



Final term Exam  
2014/2015  
Total Grade: 60

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

**Question 1: Multiple Choice (20 Marks)**

**1- What are rod-shaped bacteria called?**

- A. cocci                      B. bacilli                      C. spirilla                      D. halophiles

**2- The eukaryotic nucleus houses all of the following except the**

- A. RNA                      B. DNA                      C. nucleolus                      D. endoplasmic reticulum

**3- What is the name of the molecule in plants that stores sugars?**

- A. starch                      B. protein                      C. cellulose                      D. glycogen

**4- Which of the followings is a type of active transport?**

- A. cytolysis                      B. diffusion                      C. ion channel                      D. endocytosis

**5- Which of the following is not a function of polysaccharides**

- A. energy storage                      C. energy source  
B. storage of genetic information                      D. structural support

**6- Which of the following statements is false?**

- A. A wax is a lipid.  
B. Starch is a lipid.  
C. Saturated fats are solid at room temperature.  
D. Unsaturated fats are liquid at room temperature

**7- How do bacteria produce yogurt from milk?**

- A. by conjugation                      C. by fermentation  
B. by nitrogen fixation                      D. by aerobic respiration

**8- Genetic recombination in bacteria can occur during which process?**

- A. conjugation                      C. binary fission  
B. capsule formation                      D. endospore production

**9- What is the function of the mitochondria in the cell?**

- A. to make ATP                      C. to make proteins  
B. to make carbohydrates                      D. to move proteins through the cell

**10- Which of the following molecules make up the basic structure of a cell membrane?**

- A. waxes                      B. steroids                      C. glucose                      D. phospholipids

**11- Which process do some animal cells use to enter, digest, and destroy invading bacteria?**

- A. exocytosis.                      B. pinocytosis.                      C. phagocytosis.                      D. All of them

**12- Which of the following molecules stores hereditary information?**

- A. ATP                      B. DNA                      C. protein                      D. carbohydrates

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**13- What process occurs that leads to the decrease in the cell's DNA mass?**

- A. prophase                      B. metaphase                      C. anaphase                      D. telophase/cytokinesis

**14- Crossing-over occurs during which process?**

- A. mitosis                      B. meiosis I                      C. meiosis II                      D. interphase

**15- Which process removes waste products out of the cell?**

- A. osmosis.                      B. exocytosis.  
C. facilitated diffusion.                      D. a cell membrane pump

**16- The sodium-potassium pump transports which of the following?**

- A. both  $\text{Na}^+$  and  $\text{K}^+$  into the cell.  
B. both  $\text{Na}^+$  and  $\text{K}^+$  out of the cell.  
C.  $\text{Na}^+$  into the cell and  $\text{K}^+$  out of the cell.  
D.  $\text{Na}^+$  out of the cell and  $\text{K}^+$  into the cell.

**17- Which of the following is one reason why viruses are NOT considered living organisms?**

- A. Viruses are able to replicate.                      B. Viruses do not metabolize.  
C. Viruses can cause diseases.                      D. Viruses are too small to be easily observed.

**18- Which of the following statements about prokaryotic chromosomes is true?**

- A. Prokaryotes have at least two chromosomes.  
B. Prokaryotic chromosomes consist of a circular DNA molecule.  
C. Prokaryotic chromosomes include histone and nonhistone proteins.  
D. Prokaryotic chromosomes are made of DNA wrapped tightly around histone proteins.

**19- During diffusion, molecules tend to move in what direction?**

- A. the molecules involved in diffusion never move.  
B. in a direction that doesn't depend on the concentration gradient.  
C. from an area of lower concentration to an area of higher concentration.  
D. from an area of higher concentration to an area of lower concentration

**20- Which of the following statements about RNA is true?**

- A. RNA is found only in proteins.  
B. RNA is found only in the nucleus.  
C. RNA is found only in the cytoplasm.  
D. RNA is found in the nucleus and cytoplasm.

**Question 2: True (T) or False (F) (10 Marks)**

1- (T / F) In mitosis, spindle fibers connect two sister chromatids.

2 - (T / F) Virulent viruses reproduce by the lysogenic cycle.

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- 3- (T / F) A pathogen is an agent that is harmful only to plants.
- 4- (T / F) Biologists now know that viruses consist of a protein surrounded by a nucleic acid coat.
- 5- (T / F) A virus is a nonliving particle made up of nucleic acid and a protein or lipoprotein coat.
- 6- (T / F) It is important to distinguish between Gram-positive and Gram-negative bacteria because Gram- Positive bacteria never cause fatal diseases.
- 7- (T / F) The major component sugar of plant cell wall is peptidoglycan.
- 8- (T / F) Meiosis results in 2 haploid daughter cells.
- 9- (T / F) The cycle of viral infection, replication, and cell destruction is called the lysogenic cycle.
- 10- (T / F) Interphase is an important stage of mitosis.
- 11- (T / F) Linear chromosomes are found in eukaryotic cells but NOT in bacterial cells.
- 12- (T / F) Bacteria do not have nuclei and therefore also do not have genetic material.
- 13- (T / F) Bacterial cells have membrane-bound organelles and chromosomes.
- 14- (T / F) Diffusion is an active process that requires a cell to expend a great deal of energy.
- 15- (T / F) Meiosis is a type of cell division that produces zygotes.
- 16- (T / F) All euokaryotic cells undergo meiosis.
- 17- (T / F) Gram-negative bacteria have a thick layer of peptidoglycan that stains purple.
- 18- (T / F) A cell placed in a strong salt solution would probably burst because of an increase in osmotic pressure.
- 19- (T / F) Viruses are destroyed by antibiotics.
- 20- (T / F) The sex of the individual can be determined from a karyotype.

**Question 3: Fill in the Space (5 Marks)**

- 1- In mitosis, anaphase follows -----
- 2- Exchange of segments of DNA in meiosis is called -----

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- 3- When water is removed during monomers linking to form polymers, this chemical reaction is called-----
- 4- ----- can be obtained from bacteria or fungi and used to treat pathogenic bacteria.
- 5- Active transport systems are a form of cell transport that requires energy from molecules of-----
- 6- Spherical bacteria are called -----
- 7- Proteins are formed from the linkage of amino acids by -----
- 8- HIV contains -----that enable it to convert RNA to DNA.
- 9- The procedure used to distinguish between two types of bacterial cell wall structures is called -----
- 10- Following replication of its DNA, each chromosome contains two chromatids, which are attached to each other by -----

**Question 4: Match the correct answers (5 Marks)**

- |  |                         |
|--|-------------------------|
| 1- A single-celled microorganism that lacks a nucleus is               | ----- retrovirus        |
| 2- A virus that contains reverse transcriptase enzyme                  | ----- capsid            |
| 3- An infectious particle made only of protein                         | ----- alpha helix       |
| 4- Secondary structure of protein.                                     | ----- prion             |
| 5- The outer protein coat of a virus is                                | ----- antibiotic        |
| 6- structures on some cells that is used for movement                  | ----- lytic cycle       |
| 7- A spherical bacteria.   | ----- nitrogen fixation |
| 8- Converting nitrogen gas into ammonia is                             | ----- cocci             |
| 9- Kill bacterial cells  | ----- flagella          |
| 10- The process of destroying bacterial cells during viral replication | ----- prokaryote        |



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