

Course No: DNTS 1301
Course Title: General Biology
Date: 04-01-2014
No. of Questions: (5)
Time: 2hours
Using Calculator (No)

University of Palestine



Final term Exam
2014/2013/
Total Grade: 60

Instructor: Dr. Essameddin Elzatma

Student No.: _____

Student Name: _____

College Name: Dentistry

Dep. / Specialist: _____

Using Dictionary (No)

Q1: Circle the best choice (15 Marks)

1- Which of the following is not a function of polysaccharides

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

2- 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.

3- Which of the following molecules stores hereditary information?

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

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

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

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

- A. waxes
B. steroids
C. fatty acids
D. phospholipids

6- The eukaryotic nucleus houses all of the following except the

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

7- 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.

8- What is the function of the mitochondria in the cell?

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

9- 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.

10- The sodium-potassium pump transports which of the following?

- A. both Na^+ and K^+ into the cell.
B. both Na^+ and K^+ out of the cell.
C. Na^+ into the cell and K^+ out of the cell.
D. Na^+ out of the cell and K^+ into the cell.

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- 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 followings is a type of active transport?**
A. cytolysis. B. diffusion. C. ion channel. D. endocytosis.
- 13- Which process remove waste products out of the cell?**
A. osmosis. B. exocytosis.
C. facilitated diffusion. D. a cell membrane pump.
- 14- 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.
- 15- Crossing-over occurs during which process?**
A. mitosis. B. meiosis I. C. meiosis II. D. interphase.
- 16- What process occurs that leads to the decrease in the cell's DNA mass?**
A. prophase. B. metaphase. C. anaphase. D. telophase/cytokinesis.
- 17- How do bacteria produce yogurt from milk?**
A. by conjugation. B. by fermentation.
C. by nitrogen fixation. D. by aerobic respiration.
- 18- What are rod-shaped bacteria called?**
A. cocci. B. bacilli. C. spirilla. D. halophiles.
- 19- Genetic recombination in bacteria can occur during which process?**
A. conjugation. B. binary fission.
C. capsule formation. D. endospore production.
- 20- 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.
- 21- When a cell undergoes meiosis, it is probably a**
A. virus. B. neuron. C. sperm. D. bacteria.
- 22- Prokaryotic cells lack**
A. nucleolus. B. nuclear membrane. C. membrane bound by organelles.
D. all of these. E. non of these.

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- 5- The cycle of viral infection, replication, and cell destruction is called the lysogenic cycle. **(T / F)**
 - 6- Biologists now know that viruses consist of a protein surrounded by a nucleic acid coat. **(T / F)**
 - 7- Virulent viruses reproduce by the lysogenic cycle. **(T / F)**
 - 8- Viruses are destroyed by antibiotics. **(T / F)**
 - 9- Gram-negative bacteria have a thick layer of peptidoglycan that stains purple. **(T / F)**
 - 10- Bacteria do not have nuclei and therefore also do not have genetic material. **(T / F)**
 - 11- Bacterial cells have membrane-bound organelles and chromosomes. **(T / F)**
 - 12- Interphase is an important stage of mitosis. **(T / F)**
 - 13- In mitosis, spindle fibers connect two sister chromatids. **(T / F)**
 - 14- The sex of the individual can be determined from a karyotype. **(T / F)**
 - 15- Meiosis results in 2 haploid daughter cells. **(T / F)**
 - 16- All euokaryotic cells undergo meiosis. **(T / F)**
 - 17- Meiosis is a type of cell division that produces zygotes. **(T / F)**
 - 18- Diffusion is an active process that requires a cell to expend a great deal of energy. **(T / F)**
 - 19- A cell placed in a strong salt solution would probably burst because of an increase in osmotic pressure. **(T / F)**
 - 20- The major component sugar of plant cell wall is peptidoglycan. **(T / F)**
 - 21- Monocyte are the precursors of macrophages. **(T / F)**
 - 22- Osmosis is movement of cell against concentration gradient is called. **(T / F)**
 - 23- The immune response is terminated or decreased by suppressor B cells. **(T / F)**
 - 24- Lymphocytes are phagocytic cells. **(T / F)**
 - 25- Your body has millions of different antibodies for detecting millions of different antigens because you have millions of different antibody genes. **(T / F)**

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- 26- Activated helper T cells release interleukin- 2. (T / F)
- 27- A virus can replicate both in a living cell and a dead cell. (T / F)
- 28- Viruses are not susceptible to most of the conventional antibiotics. (T / F)
- 29- Most bacteria cause disease, and it would be better if we could find ways to kill them all. (T / F)
- 30- All therapeutic agents affect pathogens only if they are actively growing and dividing. (T / F)

Q3: Match the correct answers (5 Marks)

- | | |
|-----------------------------------------------------------------------|---------------------------|
| 1- Secondary structure of protein. | ___ Prion |
| 2- A spherical bacteria. | ___ Lysogenic cycle |
| 3- A single-celled microorganism that lacks a nucleus is | ___ Retrovirus |
| 4- structure on some cells that is used for movement | ___ Lytic cycle |
| 5- An infectious particle made only of protein | ___ Alpha helix |
| 6- A virus that contains RNA as its genetic information | ___ Capsid |
| 7- The outer protein coat of a virus is | ___ Antibiotic |
| 8- The process of destroying bacterial cells during viral replication | ___ Provirus |
| 9- Antibacterial chemical | ___ Nitrogen fixation |
| 10- Converting nitrogen gas into ammonia is | ___ Nitrogen liquefaction |
| | ___ Cocci |
| | ___ Prokaryote |
| | ___ Flagellum |
| | ___ Viriod |

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Q4: Fill in the Space (5 Marks)

- 1- Spherical bacteria are called _____
- 2- The procedure used to distinguish between two types of bacterial cell wall structures is called _____
- 3- Proteins are formed from the linkage of amino acids by _____
- 4- Monomers link to form polymers through a chemical reaction called _____
- 5- Exchange of segments of DNA in meiosis is called _____
- 6- In mitosis, anaphase follows _____
- 7- The sequence of events that occurs in a cell from one mitotic division to the next is called -----
- 8- Following replication of its DNA, each chromosome contains two chromatids, which are attached to each other by _____
- 9- Active transport systems are a form of cell transport that requires energy from molecules of -----
- 10- _____ a substance that can be obtained from bacteria or fungi and can be used as a drug to fight pathogenic bacteria.

Q5: Answer the following questions (20 Marks)

- 1- What are steps involved in mitosis (just names in ordered manner)? How many chromosomes are produced in each new cell?

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2- Write two differences at least between saturated and unsaturated fatty acids?

3- What are the components of the adenosine triphosphate (ATP)? Why it produces lots of energy?

4- Explain briefly why the secondary immune response is more effective than the primary response?

5- Is it possible to use the same way to grow the viruses and the bacteria in the lab.?

End of Questions
Good Luck