

KEY KEY Quiz 1C for Monday 3-4

Your Name 1C KEY KEY KEY Section # _____111-113

1. Denaturation results in

- A. cleavage of peptide bonds
- B. a change in the tertiary structure
- C. a change in the primary structure
- D. irreversible modification of the shape of a protein
- E. covalent modification of the protein

2. In a typical globular protein found in the cytosol of the cell, you would expect to find

- A. hydrophilic amino acids on the surface of the protein
- B. only hydrophobic amino acids
- C. only hydrophilic amino acids
- D. no tertiary structure
- E. only quaternary structure

3. The fatty acids in a phosphatidylcholine molecule would be localized

- A. only in the nuclear membrane
- B. at the outer surface of a biological membrane
- C. randomly throughout both the outer and inner surface of the membrane
- D. in the interior of a biological membrane
- E. only in the plasma membrane

4. Which of the following statements, if any, concerning DNA and RNA is true?

- A. only DNA contains phosphodiester bonds
- B. only RNA contains purines
- C. only DNA contains pyrimidines
- D. only RNA uses nucleotides as its building block
- E. none of the above are true

5. During the formation of a sucrose molecule,

- A. a dehydration reaction occurs
- B. a glycosidic bond is formed
- C. an ester is produced
- D. only A and B are correct
- E. A, B, and C are correct

6. Which of the following molecules would be a reliable marker for the peroxisome during cell fractionation?

- A. hemoglobin
- B. cytochrome oxidase
- C. catalase
- D. chlorophyll
- E. beta-carotene

7. You have discovered a new stain that specifically reacts with DNA. If you were to stain a eukaryotic autotrophic cell, you would find DNA in

- A. the nucleus
- B. the chloroplast
- C. the mitochondria
- D. only A and B
- E. in A, B, and C

8. Bound ribosomes are required for

- A. the synthesis of proteins to be secreted from the cell
- B. the synthesis of all cellular proteins
- C. the synthesis of proteins in the peroxisome
- D. the transport of proteins into the nucleus
- E. the synthesis of most of the mitochondrial proteins

9. Secreted proteins are

- A. synthesized on bound ribosomes
- B. modified by the addition of sugar groups in the rough ER
- C. synthesized in the nucleus
- D. only A and B are correct
- E. A, B, and C are all correct

10. Active transport

- A. occurs when a component is moved against a concentration gradient
- B. requires a source of energy
- C. occurs only in eukaryotic cells
- D. only A and B are correct
- E. A, B, and C are all correct

11. The fluidity of a biological membrane is affected by

- A. carbohydrates that are associated with the membrane proteins
- B. the composition of the lipid found in the membrane
- C. the nature of the ions that interact with the membrane
- D. the specific peripheral proteins associated with the membrane
- E. the binding of the cytoskeleton to the membrane

12. Briefly explain the following statement: "Sickle cell anemia is a molecular disease."

Sickle cell anemia is due to an alteration in the conformation of hemoglobin. The change is due to the substitution of only one amino acid (hydrophilic to hydrophobic). There are two main components to the answer. They must mention change in hemoglobin shape and that it is due a substitution of an amino acid (of course this is due to a mutation in the DNA).

1B	2A	3D	4E	5D	6C
7E	8A	9D	10D	11B	

Quiz 1C Rubric - Lavie

# -- Grading Scheme	Partial list of wrong answers (how graded)
0	totally off-base, no mention of hemoglobin, Δ protein shape, or amino acids
1	Vague idea of the cause of the disease, answers that are "almost" right.
2	• Mentions at least 1 of 2 main points
3	• mentions a.a. substitution • hydrophilic \rightarrow hydrophobic • change in hemoglobin conformation