

Quiz 1D for Tuesday 12-1

Your Name ___ 1D KEY KEY _____ Section # 14-16

1. Proteins with a quaternary structure

- A. contain bound sugar groups
- B. are only found in the lysosome
- C. are made only on free ribosomes
- D. always contain a metal ion
- E. contain more than one polypeptide chain

2. 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

3. Amylose, amylopectin and cellulose _____.

- A. contain fructose
- B. are polymers of glucose
- C. are found in animal cells
- D. are structural polymers
- E. contain beta-glucose

4. Triglycerides are generally insoluble in water because

- A. they contain a glycerol group
- B. they contain a phospholipid group
- C. they contain several fatty acid components
- D. they contain peptide bonds
- E. they contain phosphodiester bonds

5. RNA and DNA differ because _____

- A. only RNA is exported from the nucleus
- B. RNA contains a pentose while DNA contains a hexose
- C. RNA has phosphodiester linkages while DNA has phosphoester linkages
- D. they contain different pyrimidine bases
- E. they contain different purine bases

6. In plants, the vacuole is a component of the endomembrane system. Proteins localized in the vacuole are synthesized _____ and are transported to the vacuole _____.

- A. on the smooth ER, via the lysosome
- B. in the cytosol, by carrier enzymes
- C. in the Golgi complex, via the mitochondria
- D. in the nucleus, in an energy-requiring reaction
- E. on the rough ER, via transport vesicles

7. Prokaryotic cells are distinguished from eukaryotic cells in that prokaryotic cells _____.

- A. contain a nucleus
- B. contain ribosomes
- C. are surrounded by a plasma membrane
- D. have no nucleus
- E. have no DNA

Your Name _____ Section # _____

8. Which of the following statements about ribosomes is correct?

- A. They are DNA-containing particles
- B. They are sites of protein synthesis
- C. They are found only in the cytosol
- D. They are absent from all cellular organelles
- E. They contain hydrolytic enzymes

9. Cellular organelles that are involved in oxygen utilization are ____.

- A. the mitochondria
- B. mitochondria and lysosomes
- C. lysosomes
- D. mitochondria and peroxisomes
- E. mitochondria, lysosomes and peroxisomes

10. Integral proteins interact with membrane components primarily through ____.

- A. hydrophobic bonds
- B. disulfide bonds
- C. hydrogen bonds
- D. covalent attachments
- E. ionic interactions

11. Facilitated diffusion and active transport are similar in that ____.

- A. both require membrane proteins
- B. both require peripheral proteins
- C. both utilize ATP
- D. neither shows saturation behavior
- E. the sodium-potassium ATP'ase can catalyze both processes

12. (3 points) Describe the pathway of synthesis for a protein that is localized in the cell nucleus.

Free ribosome involved. Signal or transit sequence is present that interacts with a carrier protein (importin, they needn't mention this answer). Together the carrier protein and the protein are targeted to the nucleus. Note there are three main components to the answer.

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

Quiz 1D Rubric - Lavie

Grading Scheme

Partial list of wrong answers

0

Mentions none of the three relevant points of this question

1

Mentions 1 of the 3 points

2

Mentions 2 of the 3 points

3

Mentions all 3 pts:

- Free ribosome involved
- Signal/transit sequence targets to the nucleus
- sig sequence interacts w/ carrier protein (Importin)
∴ together they are shuttled to the nucleus