

Test Bank for Guyton and Hall Textbook of Medical Physiology 13th Hall

TEST BANK SAMPLE PREVIEW

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RESOURCE TYPE

Test Bank

Chapter 02: The Cell and Its Functions

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MATCHING

Use the terms in the following list to identify the cellular location for the steps involved in the synthesis and packaging of a secreted protein.

- A. Nucleolus
- B. Nucleus
- C. Agranular endoplasmic reticulum
- D. Granular endoplasmic reticulum
- E. Golgi apparatus
- F. Endosomes
- G. Peroxisomes
- H. Lysosomes
- I. Cytosol

1. Initiation of translation
2. Protein sorting and packaging
3. Gene transcription

- | | |
|-----------|--------|
| 1. ANS: I | PTS: 1 |
| 2. ANS: E | PTS: 1 |
| 3. ANS: B | PTS: 1 |

MULTIPLE CHOICE

1. Which of the following is true for both pinocytosis and phagocytosis?
 - A. Involves recruitment of actin filaments
 - B. Occurs spontaneously and nonselectively
 - C. Permits uptake of bacterium into cytosol
 - D. Is only observed in macrophages and neutrophils
 - E. Does not require adenosine triphosphate

ANS: A PTS: 1

2. The cell membrane is **least** permeable to which of the following substances?
 - A. Sodium
 - B. Oxygen
 - C. Ethanol
 - D. Carbon dioxide
 - E. Water

ANS: A PTS: 1

3. Which of the following best describes the glycocalyx of a cell?
 - A. Negatively charged carbohydrate chains that protrude into cytosol
 - B. Negatively charged carbohydrate layer on cell surface
 - C. Layer of anions aligned on the cytosolic surface of plasma membrane

- D. Large glycogen stores found in “fast” muscles
- E. A mechanism of cell-cell attachment

ANS: B PTS: 1

4. Proteins are sorted for their delivery to lysosomes, secretory vesicles, and the plasma membrane in which of the following?
- A. Golgi apparatus
 - B. Smooth endoplasmic reticulum
 - C. Nucleus
 - D. Endocytotic vesicle

ANS: A PTS: 1

5. Ubiquinone, an electron acceptor in the electron transport chain (oxidative phosphorylation), is found in which of the following?
- A. Inner mitochondrial membrane
 - B. Mitochondrial matrix
 - C. Outer mitochondrial membrane
 - D. Nucleus

ANS: A PTS: 1

6. The citric acid cycle (Krebs cycle) takes place in which of the following?
- A. Mitochondrial matrix
 - B. Inner mitochondrial membrane
 - C. Outer mitochondrial membrane
 - D. Inner mitochondrial space

ANS: A PTS: 1

7. All the following processes depend on adenosine triphosphate **except** which of the following?
- A. Ciliary movement
 - B. Positive chemotaxis
 - C. Movement of oxygen across lipid bilayer
 - D. Endocytosis
 - E. Smooth muscle contraction

ANS: C PTS: 1

8. This cytoskeletal element plays a role in certain forms of cell movement and is an essential component of the mitotic spindle _____.
- A. Phospholipids
 - B. Glycocalyx
 - C. F-actin
 - D. Microtubules
 - E. Clathrin

ANS: D PTS: 1

9. Lipid synthesis occurs in which of the following locations?
- A. Trans-Golgi network
 - B. Granular, or “rough,” endoplasmic reticulum

- C. Agranular, or “smooth,” endoplasmic reticulum
- D. Nucleus
- E. Lysosome

ANS: C PTS: 1

10. The abnormal cleavage of mannose residues during the posttranslational processing of glycoproteins has been shown to result in the development of a lupus-like autoimmune disease in mice. The abnormal cleavage is due to a mutation of the enzyme α -mannosidase II. Based on your understanding of the processing of membrane proteins, you would predict this enzyme to be localized to which of the following?
- A. Nucleus
 - B. Cytosol
 - C. Golgi apparatus
 - D. Lysosomes
 - E. Peroxisomes

ANS: C PTS: 1

11. The observation that abnormal cleavage of mannose residues from glycoproteins causes an autoimmune disease in mice is **most** consistent with the role of which of the following structures in the normal immune response?
- A. Cytoskeleton
 - B. Glycocalyx
 - C. Peroxisomes
 - D. Lysosomes
 - E. Microtubules

ANS: B PTS: 1

12. A pure phospholipid bilayer is most permeable to which of the following?
- A. Sodium
 - B. Calcium
 - C. Chloride
 - D. Water
 - E. Oxygen

ANS: E PTS: 1

13. Which of the following substances is most likely to represent the highest percent of cell mass in a typical cell of the body?
- A. Carbohydrates
 - B. Ions
 - C. Lipids
 - D. Proteins
 - E. Water

ANS: E PTS: 1

14. Cholesterol in the cell membrane most likely serves which of the following functions?
- A. Increases membrane permeability
 - B. Increases membrane turnover

- C. Decreases membrane fluidity
- D. Decreases membrane stability

ANS: C PTS: 1

15. Protein molecules are most likely to be actively folded and cross-linked in which of the following structures?
- A. Granular endoplasmic reticulum
 - B. Lysosome
 - C. Ribosome
 - D. Golgi apparatus
 - E. Secretory granule

ANS: A PTS: 1