

04_Cell Structure and Function Questions

For all questions select all answers that apply (some questions may have more than one correct answer)

1) Which is not a function a protein?

- A) Helps make up a membrane
- B) Carries the code for translation from the nucleus to the ribosome
- C) Can be a hormone
- D) Speeds chemical reactions

2) Which of the following best describes the arrangement of phospholipids in a typical cell membrane?

- A) Phospholipids are arranged in a single layer with hydrophilic heads facing inward.
- B) Phospholipids are arranged in a single layer with hydrophobic tails facing inward.
- C) Phospholipids are arranged in a bilayer with hydrophilic heads facing outward and inward.
- D) Phospholipids are randomly distributed throughout the membrane.

3) In comparison to eukaryotes, prokaryotes _____.

- A) are more structurally complex
- B) are larger
- C) are smaller
- D) do not have membranes

4) Which of the following processes involves the polymerization of nucleotides to form a nucleic acid molecule?

- A) Translation
- B) Transcription
- C) Replication
- D) Mutation

5) You have just discovered a new organelle called the "proteasome". This organelle is in charge of breaking down proteins that are no longer useful or ones that are damaged. What kind of reactions are likely utilized in this organelle?

- A) Hydrolysis reactions
- B) Oxidation reactions
- C) Reduction reactions
- D) Dehydration reactions
- E) Photosynthesis reactions

6) The cell where you discovered the proteasome (above) is likely a _____ cell.

- A) Eukaryotic cell
- B) Prokaryotic cell

7) Which of the following statements accurately describes a feature of active transport in cells?

- A) Active transport moves substances across the cell membrane from areas of higher concentration to areas of lower concentration.
- B) Active transport requires energy input in the form of ATP to move substances against their concentration gradient.
- C) Active transport relies solely on diffusion to move molecules across the cell membrane.
- D) Active transport involves the movement of substances across the cell membrane through protein channels without the need for energy input.