

Active Reading

Section: Cell Features

Read the passage below. Then answer the questions that follow.

Located in the lipid bilayer of the cell membrane are various proteins. The middle part of a membrane protein is mostly nonpolar; it is attracted to the interior of the lipid bilayer but is repelled by the water on either side of the lipid bilayer. In contrast, the inner and outer parts of the protein are mostly polar and are therefore attracted to water. This dual attraction to water holds the protein in the lipid bilayer. However, the motion and fluidity of phospholipids enable the cell-membrane proteins to move around within the lipid bilayer.

There are different types of proteins in the cell membrane. Each type plays a vital role in the life of a cell. Marker proteins, which are attached to a carbohydrate on the cell's surface, help other cells recognize their cell type—liver cell or heart cell, for example. Receptor proteins recognize and bind to specific substances, such as signal molecules, outside the cell. Various enzymes in the cell membrane are involved in important biochemical reactions in the cell. Transport proteins aid the movement of substances into and out of the cell.

SKILL: RECOGNIZING CAUSE AND EFFECT

Read each question, and write your answer in the space provided.

1. The first paragraph describes a cause-and-effect relationship between the structure of a membrane protein and the lipid bilayer. The cause in this relationship is the nonpolar middle part of a membrane protein. What is the effect?

2. Another cause-and-effect relationship detailed in the first paragraph explains that the inner and outer parts of a membrane protein are attracted to water. What is the cause?

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3. What causes a membrane protein to be held in the lipid bilayer?

4. The last sentence in the first paragraph describes another cause-and-effect relationship. Identify the cause and then the effect.

5. What is the main idea of the second paragraph?

SKILL: ORGANIZING INFORMATION

The second paragraph of this passage identifies three different types of proteins found in the cell membrane. Complete the table below by writing the correct words or phrases in the spaces provided.

Type of protein	Function
6.	7.
8.	9.
10.	11.

In the space provided, write the letter of the term or phrase that best answers the question.

- _____ 12. What is the function of enzymes found in the cell membrane?
- a. to move substances out of the cell
 - b. to bind to specific substances
 - c. to help cells recognize their cell type
 - d. to assist biochemical reactions in the cell