

ESSAY QUESTION

Explain how material passes in and out of cells by crossing plasma membranes.

Informal Outline

Types of Transport

1. Passive—no use of cellular energy; random movement of molecules
 - a. Diffusion—molecules move from areas of high to areas of low concentration (example: open bottle of perfume, aroma spreads)
 - b. Facilitated diffusion—similar to simple diffusion; differs in that some kinds of molecules are moved more easily than others (helped by carrier proteins in cell membrane)
 - c. Osmosis—diffusion of water across membranes from area of lower to area of higher solute concentration

2. Active—requires cellular energy; usually movement against the concentration gradient
 - a. Facilitated active transport—carrier molecules move ions across a membrane
 - b. Endocytosis—material is surrounded by a plasma membrane and pinched off into a vacuole
 - c. Exocytosis—cells expel materials