B 2.1 Membrane Transport

1. You have learned about the structure of the _____ membrane. It is an effective _____. However, some molecules need to get through. There are **two** main categories of transport:

   (a) The first is _____ transport which **does not require** _____ because molecules simply move _____ the _____ gradient. Specific types include:

      (i) _____ diffusion, which is the passage of _____, non-_____ molecules directly across the _____ bilayer. Two examples of molecules that can pass this way are _____ and _____ _____ (gases). This method of transport is not _____, because only the _____ and _____ of the molecule is relevant.

      (ii) _____ diffusion is the passage of _____, _____ molecules through a _____ protein. An example of a molecule that can pass this way is _____ which can pass through a _____-_____ _____. As the name implies, these open in response to changes in _____. This means it is not _____ all the time. This helps explain how a cell can be _____ permeable.

      (iii) _____ is the _____ movement of water molecules across a _____ permeable membrane. Water will move from an area of _____ solute concentration to an area of _____ solute concentration, to _____ concentrations on either side of the membrane. Hence, water follows _____, is an important notion to understand. This will only occur if the membrane is _____ to the _____. Water molecules pass through an _____ protein called _____.

   (b) The second type is _____ transport which **does require** _____ (the full name for this molecule is _____ _____) as it moves molecules _____ the _____ gradient. This type of transport requires an _____ _____ protein. Again, it is _____ because the _____ _____ will only let certain molecules or ions through. The ____-_____ _____ protein is an example. It is crucial for nerve impulses. We will explore this further in a different part of the course.