

2. What we mean by electro-chemical equilibrium?

A state when the electrical gradient (electrical forces driving diffusion of an ion) and the chemical gradient (concentration difference across a membrane) are equal but opposite in direction so that there is no net movement of ions

3. What ion is having the most negative Equilibrium Potential?

K⁺ (potassium ion)

4. Are we generating in all excitable cells the same resting membrane potentials?

Question 4b: Explain why?

No, because of the difference in permeabilities of ions for every type of cells; the number and opening of channels specific to a specific ion differ from cell to cell

5. At a plasma membrane, a resting potential of (-85) mv has been established,

Question: What happens to that potential by activation of more Cl⁻ channels?

Nothing, (-85 is very near or equal to the nernst potential for Cl⁻ ions)

6. How can we measure the membrane potential?

Using the Goldman equation

7. The patch clamp technique is useful to clamp (fix) the membrane potential at a specific voltage,

Question: What can we study by using this technique?

The changes to the activity of gated channels by changing the voltage (potential); changes to the permeability of ions with changing potential.

8. Inside cells the concentration of proteins is higher than in the extracellular fluid.

Question: Is the presence of protein in a higher concentration inside contributing in establishing resting membrane potential?

No, because the membrane is not permeable for such large molecules