

HOMEOSTASIS IN THE CELL

① pH: if pH is too high or low, proteins can misfold or breakdown (denature)

SOLUTION: Buffers are produced in cell -
Keep the cell in optimal pH range

② Temperature: too cold - plasma membrane loses function, too hot - enzymes breakdown (denature!)

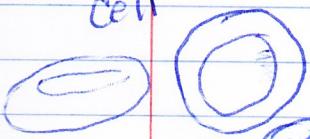
SOLUTION: too cold - shiver
too hot - sweat

③ Glucose: too high or too low →
cells starve → glucose is primary source of food for cell

SOLUTION: Insulin - protein that allows glucose to enter cell
Diabetes - low insulin or insulin resistance

④ Oxygenation of cells: tissues require oxygen to function properly
(SOME CELLS - NOT ALL TISSUES)

SOLUTION: Red blood cell has protein HEMOGLOBIN that transports oxygen to tissues and picks up carbon dioxide for disposal



⑤ Water balance - OSMOREGULATION
- Losing: sweat, breathing, excretion (peeing & pooping)
- Gaining: drinking, eating, metabolism