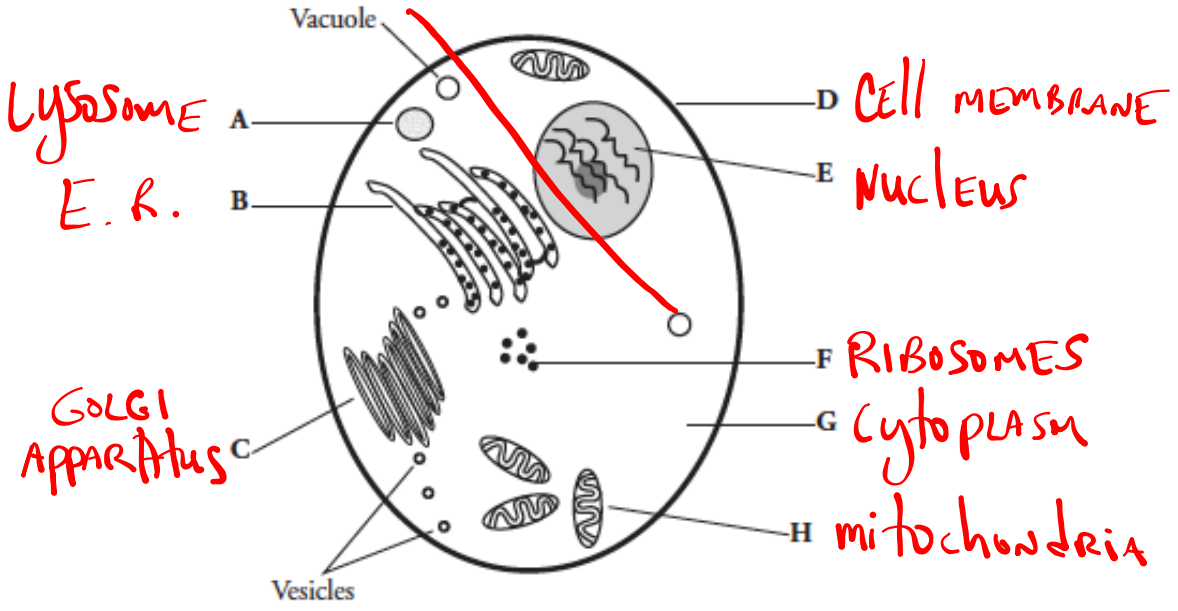
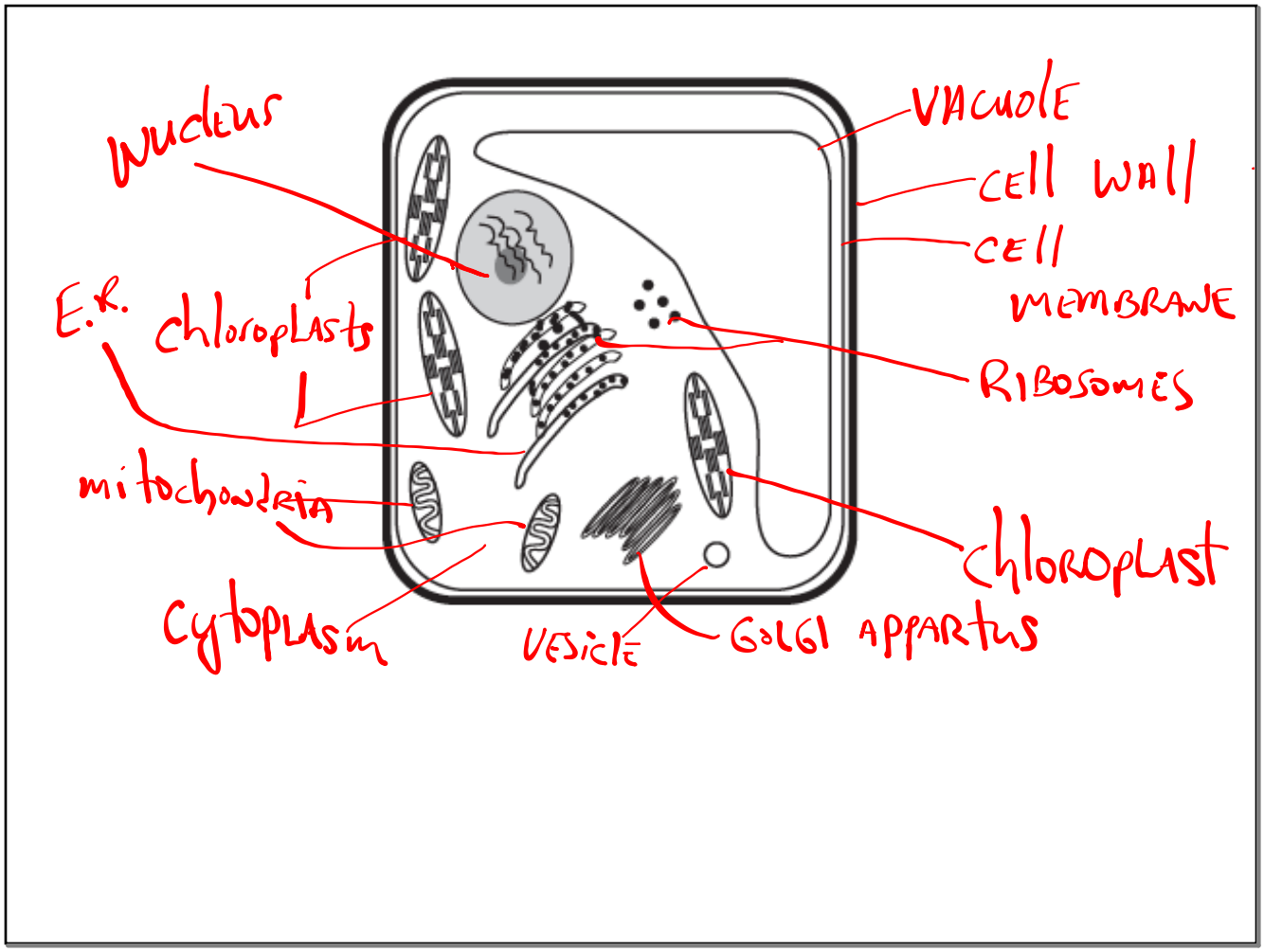
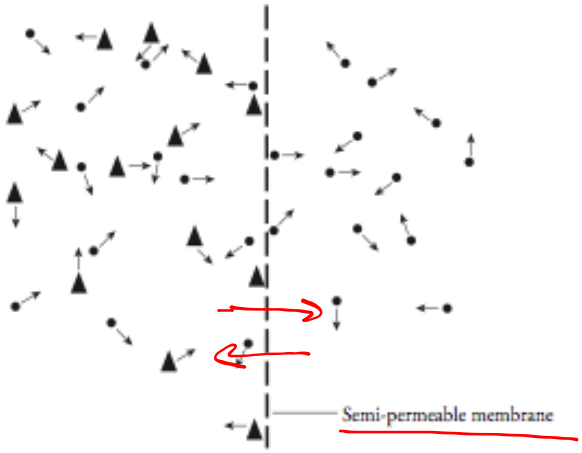
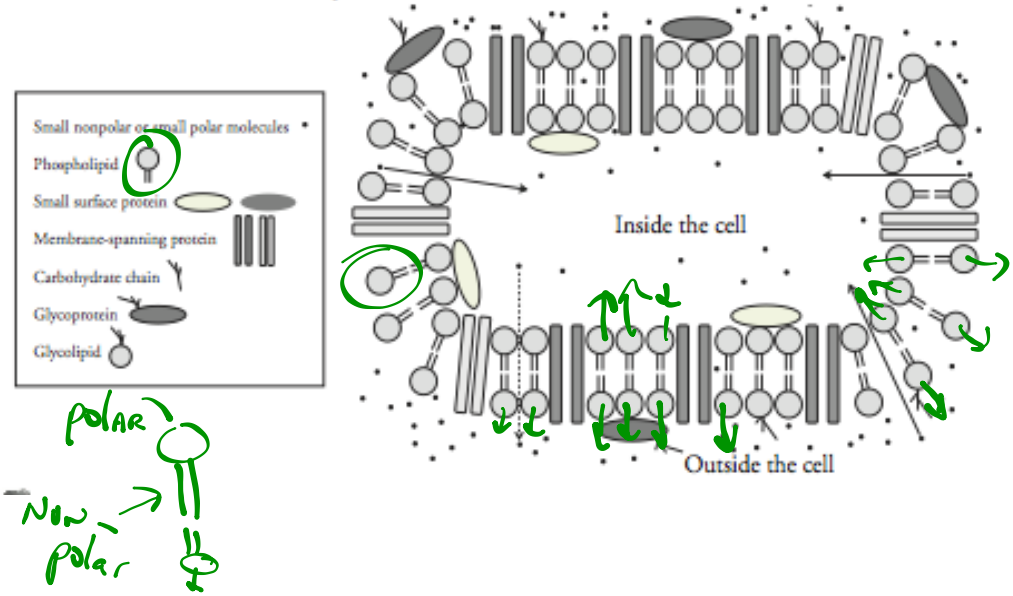

Vacuole
LYSOSOME A
E.R. B
GOLGI APPARATUS C
Vesicles
D CELL MEMBRANE
E NUCLEUS
F RIBOSOMES
G CYTOPLASM
H mitochondria


nucleus
E.R.
chloroplasts
mitochondria
cytoplasm
vesicle
Golgi apparatus
chloroplast
ribosomes
cell membrane
cell wall
vacuole

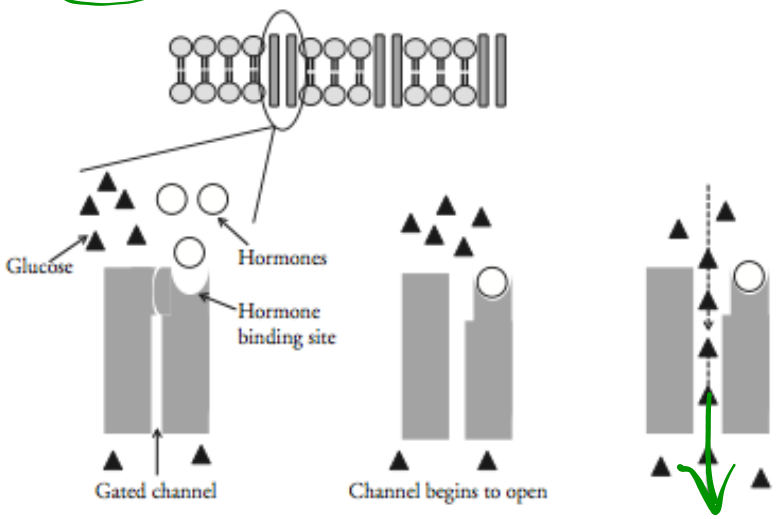
Model 1 – Simple Diffusion



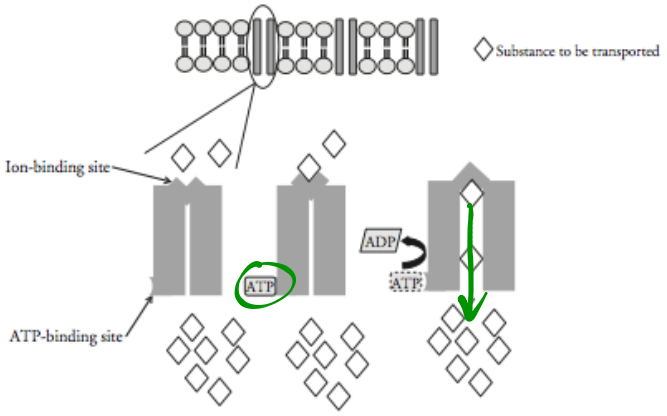
Model 2 – The Selectively Permeable Cell Membrane



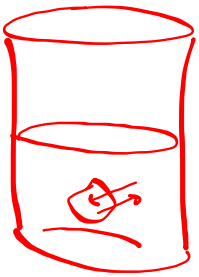
Model 3 – Facilitated Diffusion



Model 4 – Active Transport

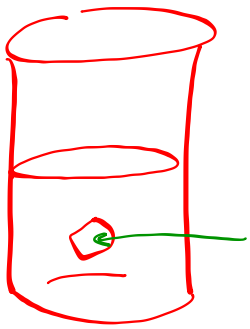


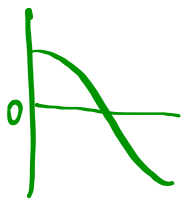
osmosis - diffusion of H_2O across a selectively-permeable membrane



isotonic - equal conc. of solute outside + in.
- no mass change

hypotonic solution - Solute conc. outside cell is lower than in.

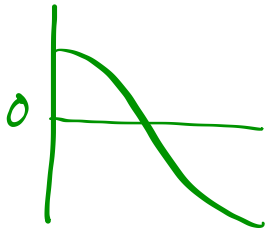


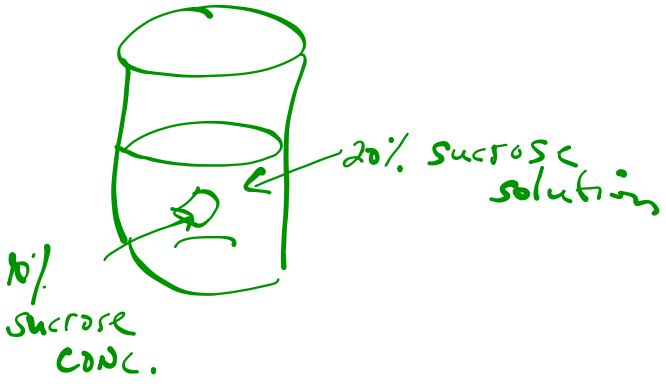


H_2O moves in - cell gains mass

hypertonic - solute conc. outside is higher than in.

H_2O moves out - cell loses mass




20% sucrose solution
10% sucrose conc.

بسم الله