m

Markscheme	
Passive transport	Active transport
	(170)
no energy (ATP) required	energy (AIP) required
no membrane protein pumps required	membrane protein pumps required
particles move down their concentration gradient	particles move against their concentration gradient
change in an	
statu mass	a) no change, in mass means outside concentration
	is the same as inside (isotonic)
-40	
-60	
0 20 40 60 80	
solt water solution concentration (%)	
	Concentration outside
	potato > inside
b) any concentration where potatoes lost mass (>	30% - 80%) is hypertonic . water moves out
	i loss in mass
	Concentration outside
	potato < inside
C) any concentration where potatoes gained mass (C)%-<30%) is hypertonic water moves in
3) Organs need to be bathed in an isotonic solution (one that	is the same as the concentration of the organ's cells) so that
no net movement of water enters or leaves which cou	uld damage it; bursting or shrivelling it respectively
4) aerobic respiration required Oz and produces COz as wast	e. As trillions of cells in the body respire they constantly require Oz
and are building up COz, thus these gases need to be a	exchanged :
· blood carries CO2 from all cells to the lungs where it	diffuses out
· Oz from lungs diffuses into blood and carries it to cells t	to be used
5) diffusion	osmosis
both are pas	ssive (no ATP required)
both result in an co	pullibrium (concentrations equalize)
does not require semi-preneable membrane	requires semi-permeable membrane
does not require semi-permeable membrane both solvent and solute move	requires semi-permeable membrane only solucit (water) moves