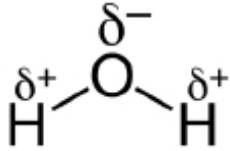


Mass Transport - Mark Scheme

Q1.

Question Number	Answer	Additional Guidance	Mark
	<ul style="list-style-type: none">• correct symbol and charge on the oxygen atom (1)• correct symbol and charge on both hydrogen atoms (1)	e.g.  ALLOW one mark for all correct charges without symbols	(2)

Q2.

Question Number	Answer	Additional Guidance	Mark
	<p>1. idea that water can form {hydrogen bonds / eq} ;</p> <p>and any one from</p> <p>2. water is a solvent / {ions / polar molecules / eq } can {dissolve / be transported / eq } in water</p> <p>3. reference to cohesion/adhesion</p> <p>4. idea of hydrogen bonds holding water together as a liquid, so that it can move in mass flow systems</p> <p>5. suitable ref. to specific heat capacity</p> <p>6. idea of distribution of thermal energy around body</p> <p>7. reference to high latent heat of vaporisation ;</p>	<p>1. ACCEPT water is slightly charged, description of charges on O and /or H IGNORE polar/ dipole as stated in Q stem</p> <p>2. ACCEPT named polar molecule IGNORE non polar molecules dissolving</p> <p>3. ACCEPT specific example e.g. surface tension on a pond</p> <p>5. ACCEPT thermal buffer / needs a lot of energy to change the temperature / eq</p> <p>IGNORE pH buffer</p>	<p>(2)</p>

Q3.

Question Number	Answer	Additional Guidance	Mark
	<ol style="list-style-type: none">1. reference to mass flow ;2. name a suitable substance transported e.g. oxygen ;3. comment on {blood pressure / fast movement of blood to cells /eq} ;4. idea of increased concentration gradient of solutes e.g. oxygen ;5. idea that diffusion alone would be too slow ;6. has high metabolic rate / eq ;	<ol style="list-style-type: none">1. ACCEPT mass transport2. IGNORE oxygenated blood3. IGNORE pump alone4. ACCEPT improved gaseous exchange5. ACCEPT surface area to volume ratio too small6. IGNORE activity level	(3)