



BIOLOGY MIND

# Edexcel

## A-Level

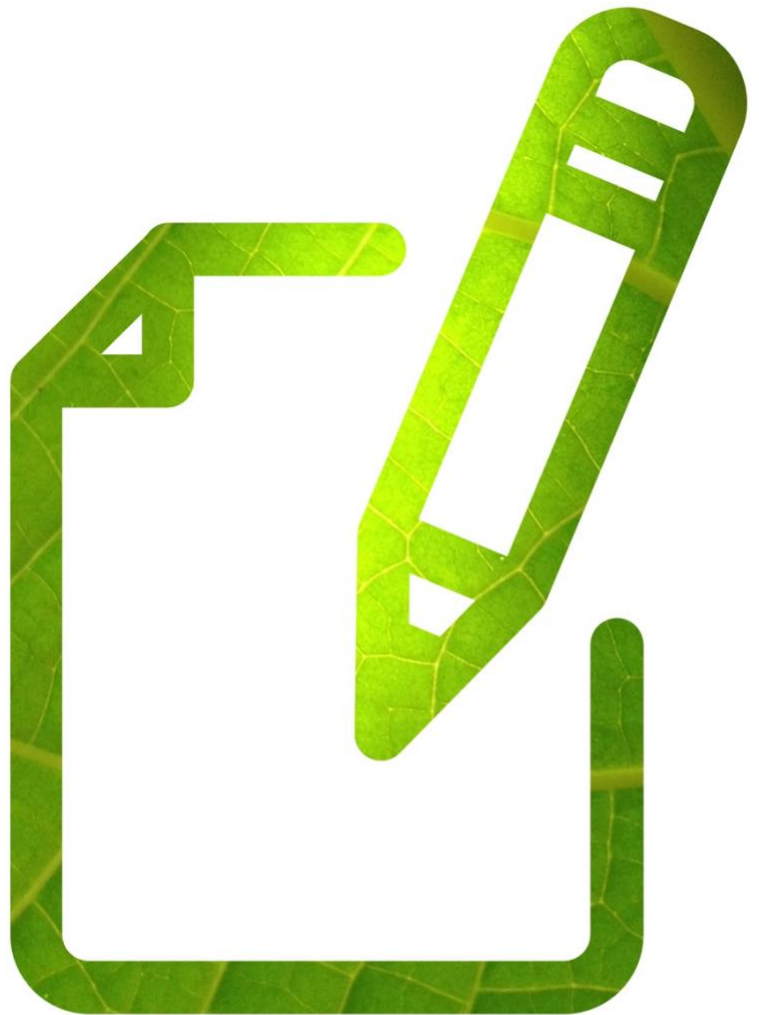
# BIOLOGY

Biological Molecules

Water

Time allowed  
**20 minutes**

**MARK SCHEME**



Score

/17

Percentage

%

Question Number	Answer	Mark
<b>1(a)(i)</b>	A a hydrogen bond ;	<b>(1)</b>

Question Number	Answer	Mark
<b>1(a)(ii)</b>	D a peptide bond ;	<b>(1)</b>

Question Number	Answer	Mark
<b>1(a)(iii)</b>	D glucose ;	<b>(1)</b>

Question Number	Answer	Mark
<b>1(a)(iv)</b>	C glycerol ;	<b>(1)</b>

Question Number	Answer	Additional Guidance	Mark
<b>1(b)</b>	nitrogen ;	<b>IGNORE</b> N if it is the only response	<b>(1)</b>

Question Number	Answer	Additional Guidance	Mark
<b>1(c)</b>	1. glycosidic bond correctly drawn ; 2. molecule of water shown to be produced ; 3. remaining groups around disaccharide drawn correctly ;	1. <b>IGNORE</b> labelling of bond 2. <b>ACCEPT</b> water named or formula 3. <b>DO NOT ACCEPT</b> two separate glucose molecules NB: check carefully H on C5	<b>(3)</b>

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





# Water

Question Number	Answer	Mark
2(a)(i)	reference to {chemical / air / gravity / light / eq} ;	(1)

Question Number	Answer	Mark
2(a)(ii)	<ol style="list-style-type: none"><li>1. idea of {breakdown / digestion / eq} of style ;</li><li>2. (breaks down) protein / pectin / middle lamella ;</li><li>3. reference to hydrolysis / eq ;</li><li>4. easier for pollen tube to grow / reduced resistance / eq ;</li><li>5. supplies {nutrients / named nutrient / energy} for (pollen tube) growth / eq ;</li></ol>	max (3)

Question Number	Answer	Mark
2(b)	<ol style="list-style-type: none"><li>1. photosynthesis ;</li><li>2. {component / eq} of {cytoplasm / sap} ;</li><li>3. water as a solvent /eq ;</li><li>4. water as a transport medium /eq ;</li><li>5. involved in thermoregulation / eq ;</li><li>6. reference to role in structural support ;</li><li>7. reference to involvement in hydrolysis ;</li><li>8. reference to turgor changes ;</li></ol>	max (3)

