



BIOLOGY MIND

# Edexcel

## A-Level

# BIOLOGY

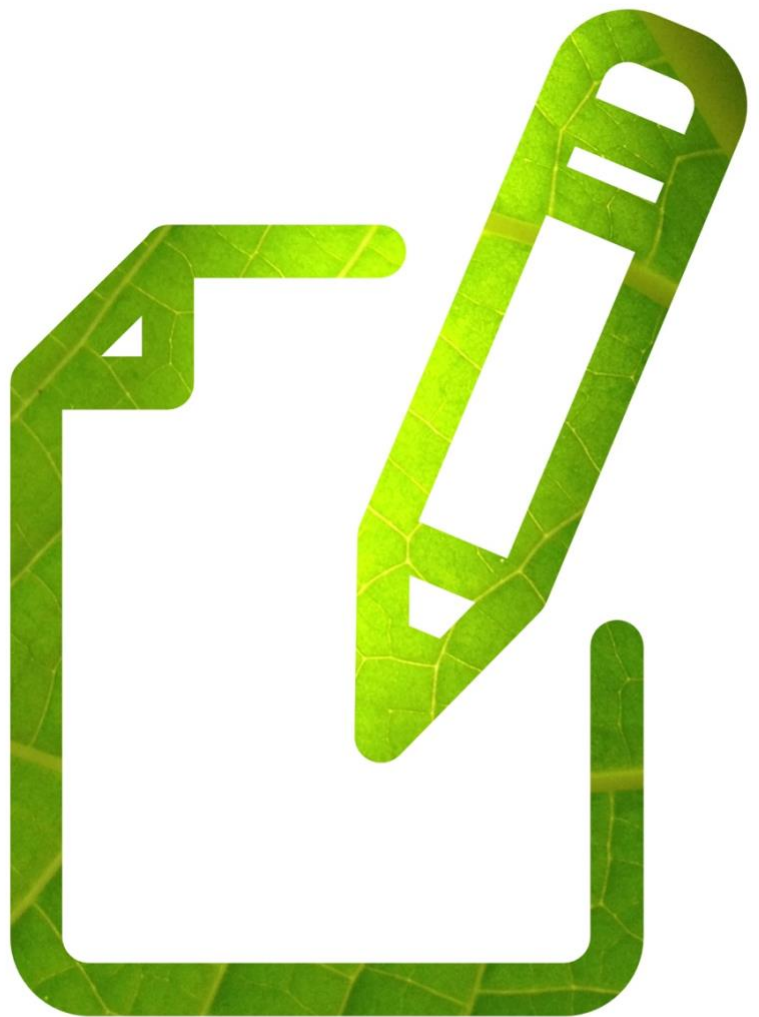
Biological Molecules

Proteins 4

Time allowed

**35 minutes**

**MARK SCHEME**



Score

/29

Percentage

%



# Proteins

Question Number	Answer	Additional guidance	Mark
<b>1(a)(i)</b>	<ol style="list-style-type: none"><li>1. idea that interferon involved in viral infections, lysozyme affects bacteria;</li><li>2. idea of interferon produced by infected cells, lysozyme present in {secretions / phagocytes / neutrophils / macrophages / eq };</li><li>3. interferon {inhibits / eq} {replication / eq} of viruses, lysozyme {kills / destroys} bacteria;</li></ol>	<p><b>Piece together</b> throughout <b>Accept</b> lysosome throughout <b>Ignore</b> pathogen throughout</p> <p><b>2. Acce</b> named secretion {produced / released}</p> <p><b>3. Acce</b> a reference to lysozyme destroying cell walls</p>	<b>(3)</b>

Question Number	Answer	Additional guidance	Mark
<b>1(a)(ii)</b>	<ol style="list-style-type: none"><li>1. reference to (lysozyme) is an enzyme ;</li><li>2. idea that {proteins / active sites / enzymes} have a specific shape ;</li><li>3. idea that lysozyme acts on cell wall ;</li><li>4. of bacteria ;</li></ol>	<p><b>Accept</b> lysosome in this context</p>	<b>(4)</b>



Question Number	Answer	Additional guidance	Mark
<b>1(b)(i)</b>	<ol style="list-style-type: none"> <li>reference to histamine released as a result of damaged {tissue / cells} ;</li> <li>(histamine released from) {basophils / mast cells / platelets} ;</li> <li>detail of effect of histamine e.g arterioles dilate, vasodilation, increased blood flow, capillaries more permeable ;</li> <li>named effect of inflammation e.g. {oedema / swelling /redness / heat / pain / eq} ;</li> </ol>	<p><b>2. Accep</b> white blood cells, macrophages and neutrophils</p> <p><b>4. Acce</b> raises temperature</p>	<b>(3)</b>

Question Number	Answer	Additional guidance	Mark
<b>1(b)(ii)</b>	<ol style="list-style-type: none"> <li>idea of (only) {a local reaction produced / histamines produced around bite area} ;</li> <li>idea that cream {has been applied to actual site of production of histamine } ;</li> <li>idea of {effect / treatment / relief / eq} {more rapid / immediate / eq };</li> <li>idea of higher concentration of antihistamine at site ;</li> <li>idea that the antihistamines will not be {digested (by enzymes) / destroyed (by acid / enzymes) / eq} ;</li> <li>idea that tablets may lower immune response generally / lead to side-effects ;</li> </ol>	<p><b>2-6 Accept</b> converse</p>	<b>(3)</b>





# Proteins

Question Number	Answer	Mark
2(a)	<ol style="list-style-type: none"><li>1. presence of amine group /eq ;</li><li>2. presence of carboxyl group / eq ;</li><li>3. reference to R group ;</li><li>4. reference to central carbon atom ;</li></ol> <p>[award marks on correctly drawn diagram]</p>	(2)

Question Number	Answer	Mark
2(b)	<ol style="list-style-type: none"><li>1. correct reference to transcription ;</li><li>2. DNA {unwinds / strands separate / eq} ;</li><li>3. (RNA) (mono)nucleotides {line up against / attach / eq} to one (DNA) { strand / template / eq} ;</li><li>4. reference to <u>complementary</u> base pairing (between DNA and (mono)nucleotides) ;</li><li>5. reference to {(mono)nucleotides joining together / formation of phosphodiester bonds} ;</li><li>6. correct reference to condensation reaction ;</li><li>7. correct reference to named enzymes involved / eq ;</li><li>8. mRNA detaches (from DNA) / eq ;</li></ol>	(4)





# Proteins

Question Number	Answer	Mark
2(c)(i)	DISCOUNTED QUESTION / DO NOT MARK	(0)

Question Number	Answer	Mark
2(c)(ii)	B ;	(1)

Question Number	Answer	Mark
2(c)(iii)	D ;	(1)





# Proteins

Question Number	Answer	Mark
3(a)	A ;	(1)

Question Number	Answer	Mark
3(b)	C ;	(1)

Question Number	Answer	Mark
3(c)	C ;	(1)

Question Number	Answer	Mark
3(d)	D ;	(1)

Question Number	Answer	Mark
3(e)	D ;	(1)

Question Number	Answer	Mark
3(f)	C ;	(1)

Question Number	Answer	Mark
3(g)	A ;	(1)

