Question Number	Answer	Additional guidance	Mark
1(a)(i)	1. idea that interferon involved in viral infections, lysozyme affects bacteria; 2. idea of interferon produced by infected cells, lysozyme present in {secretions / phagocytes / neutrophils / macrophages / eq }; 3. interferon {inhibits / eq} {replication / eq} of viruses, lysozyme {kills / destroys} bacteria;	**Piece together** throughout **Accept** lysosome throughout **Ignore** pathogen throughout **2. Acce** named secretion {produced / released} **3. Acce** a reference to lysozyme destroying cell walls	**(3)**

Question Number	Answer	Additional guidance	Mark
1(a)(ii)	1. reference to (lysozyme) is an enzyme ; 2. idea that {proteins / active sites / enzymes} have a specific shape ; 3. idea that lysozyme acts on cell wall ; 4. of bacteria ;	**Accept** lysosome in this context	**(4)**

Question Number	Answer	Additional guidance	Mark
1(b)(i)	1. reference to histamine released as a result of damaged {tissue / cells} ; 2. (histamine released from) {basophils / mast cells / platelets} ; 3. detail of effect of histamine e.g arterioles dilate, vasodilation, increased blood flow, capillaries more permeable ; 4. named effect of inflammation e.g. {oedema / swelling /redness / heat / pain / eq} ;	**2. Accep** white blood cells, macrophages and neutrophils **4. Acce** raises temperature	**(3)**

Question Number	Answer	Additional guidance	Mark
1(b)(ii)	1. idea of (only) {a local reaction produced / histamines produced around bite area} ; 2. idea that cream {has been applied to actual site of production of histamine } ; 3. idea of {effect / treatment / relief / eq} {more rapid / immediate / eq }; 4. idea of higher concentration of antihistamine at site ; 5. idea that the antihistamines will not be {digested (by enzymes) / destroyed (by acid / enzymes) / eq} ; 6. idea that tablets may lower immune response generally / lead to side-effects ;	**2-6 Accept** converse	**(3)**

Question Number	Answer	Mark
2(a)	1. presence of amine group /eq ; 2. presence of carboxyl group / eq ; 3. reference to R group ; 4. reference to central carbon atom ; [award marks on correctly drawn diagram]	**(2)**

Question Number	Answer	Mark
2(b)	1. correct reference to transcription ; 2. DNA {unwinds / strands separate / eq} ; 3. (RNA) (mono)nucleotides {line up against / attach / eq} to one (DNA) { strand / template / eq} ; 4. reference to <u>complementary</u> base pairing (between DNA and (mono)nucleotides) ; 5. reference to {(mono)nucleotides joining together / formation of phosphodiester bonds} ; 6. correct reference to condensation reaction ; 7. correct reference to named enzymes involved / eq ; 8. mRNA detaches (from DNA) / eq ;	**(4)**

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)**

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)**