

H020/02

Mark Scheme

June 2016

Question			Answer	Marks	Guidance
3	(a)	(i)	it contains , N / nitrogen or monosaccharide does not contain nitrogen ✓	1	CREDIT any correct ref to the nitrogen-containing group in Fig. 3.1 NHCOCH_3 ACCEPT 'OH is replaced with NHCOCH_3 ' or ' NHCOCH_3 is replaced with OH' ACCEPT ref to H not being twice C / 15 H instead of 12 / 8 C instead of 6 ACCEPT has no OH on carbon 2 ACCEPT 'monosaccharide only contains C, H & O' DO NOT CREDIT 'it has a nitrogen molecule'
3	(a)	(ii)	beta / β ✓ glucose ✓	2	IGNORE alpha / α DO NOT CREDIT B / b / beta pleated sheet
3	(a)	(iii)	<i>four from</i> 1 (in chitin glycosidic bond(s) formed by) condensation ✓ 2 (molecule of) H_2O / water , produced / released ✓ 3 alternate monomers are , upside-down / flipped / rotated through 180° ✓ 4 because of the position of the , OH / H , on carbon 1 ✓ 5 forms a , straight / linear / unbranched , chain / molecule / polymer ✓ 6 similar to cellulose ✓	4	IGNORE ref to 1-4 linkage & glycosidic (as given in Q) ACCEPT shown on a diagram 3 ACCEPT sugars / units / residues / molecules DO NOT CREDIT glucose 4 Must be a clear statement ACCEPT the 2 OH groups cannot , line up / bond 5 IGNORE ref to branching IGNORE ref to polysaccharide 6 ACCEPT ref to H bonds crosslinking between , molecules / chains

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3	(b)	(i)	support or prevents the trachea(e) from collapsing / keeps the airways open ✓	1	IGNORE protection / structure / shape / squashed / strength / stability
3	(b)	(ii)	<i>idea that</i> (their presence) restricts the airflow in the trachea / blocks the airways or (leakage of haemolymph) deprives the , tissues / cells , of , oxygen / O ₂ / nutrients or use of , oxygen / O ₂ / nutrients , by mites or disease transmission or (mites) release toxins ✓	1	IGNORE statements that simply refer to the mites feeding on the haemolymph (as given in Q) ACCEPT causes the trachea to collapse IGNORE 'affects airflow' unqualified IGNORE ref to 'difficult to breathe' ACCEPT ref to inflammatory / immune , response
			Total	9	