Que	Question		Answer	Marks	Guidance
17	(a)	(i)	(pigments) absorb , light / photons ✓ electrons , excited / raised to higher energy level ✓	4 max	
			accessory pigments pass energy to , reaction centres / primary pigments ✓ primary pigments , become oxidised / lose electrons / pass electrons to ETC ✓		ALLOW named accessory pigments e.g. chlorophyll b / xanthophyll / carotenoids ALLOW chlorophyll a for primary pigment
			for light dependent reaction / photophosphorylation \checkmark		ALLOW for making , ATP / reduced NADP
		(ii)	<i>idea that</i> they have to absorb light of short (er) wavelengths ✓	1 max	ALLOW blue / blue-violet light ALLOW wavelengths between 400 and 500nm ALLOW high(er) frequency
			<i>idea that</i> some wavelengths (of light) don't reach , depths / them ✓		e.g. some wavelengths of light may not reach <i>Chromista</i> if they are in deep water
	(b)		Chromista (chloroplast) has fewer thylakoids ✓	2 max	IGNORE reference to external membrane ALLOW plants (chloroplasts) have more thylakoids
			<i>Chromista</i> (chloroplast) has no , inter-granal lamellae / lamellae between thylakoids ✓		ALLOW plant (chloroplasts) have lamellae between thylakoids
			plants (chloroplasts) have thylakoids in groups of more than three ✓		ALLOW thylakoids in plant (chloroplasts) form grana IGNORE <i>Chromista</i> (chloroplast) has thylakoids in groups of three
			plants (chloroplasts) have starch grains / <i>Chromista</i> (chloroplast) does not have starch grains ✓		groups of three

H420/01

Questic	on	Answer	Marks	Guidance
(c)	(i)		2 max	IGNORE stability for explanations
		<pre>property hydrophobic (region / fatty acid tails) ✓ explanation (helps to) form bilayer / separates two aqueous regions ✓ property (region) contains cholesterol ✓ explanation regulates (membrane) fluidity / AW✓</pre>		<i>property</i> MUST be linked to its <i>explanation</i>
(c)	(ii)	compartmentalisation OR form / surround , (named) organelles ✓	2 max	e.g. separating organelles from cytoplasm
		purpose of / need for , compartments / separation ✓ sites of , chemical reactions / electron carriers / photophosphorylation / chemiosmosis / oxidative phosphorylation ✓		e.g. form vesicles for transport is MP1 and MP2 ALLOW ETC for electron carriers
		provide attachment sites for , enzymes / pigments \checkmark allow formation of concentration gradients \checkmark		ALLOW correctly named enzyme e.g. ATP synthase
		Total	11	