Question Number	Answer	Additional Guidance	Mark
1(a)(i)	**B** (are R and S) ;		**(1)**

Question Number	Answer	Additional Guidance	Mark
1(a)(ii)	**C** (is P only) ;		**(1)**

Question Number	Answer	Additional Guidance	Mark
1(b)	1. glycerol plus three fatty acids as reactants ; 2. ester bond labelled ; 3. water shown ;	**2 ACCEPT** an ester bond drawn out correctly even if not labelled	**(3)**

Question Number	Answer	Additional Guidance	Mark
1(c)(i)	condensation / polymerisation ;	**ACCEPT** polymerization	**(1)**

Question Number	Answer	Additional Guidance	Mark
1(c)(ii)	glycosidic / 1,4 glycosidic ;	**ACCEPT** glycoside **ACCEPT** missing commas and commas replaced with dashes **NOT** 1,6 glycosidic **IGNORE** link or bond	**(1)**

Question Number	Answer	Additional Guidance	Mark
1(c)(iii)	Amylose is {coiled / unbranched / eq } / amylose has only 1,4 (glycosidic) bonds / eq ;	**ACCEPT** glycogen is not coiled / branched / has 1,4 and 1,6 glycosidic bonds	**(1)**

Question Number	Answer	Additional Guidance	Mark
1(c)(iv)	1. contain glucose / eq ; 2. idea that they are compact so large {numbers of glucose / amylose / glycogen } molecules can fit into a small volume ; 3. insoluble therefore {does not affect osmosis / eq } ; 4. large molecules therefore { remains in cells / too big to diffuse / eq} ;	**ACCEPT if each described separately but allow each Mp once only** 1. **ACCEPT** can be hydrolysed / broken down to release glucose 2. **ACCEPT** large amounts of energy in a small volume 3. **IGNORE** insoluble so will not dissolve	**(2)**

Question Number	Answer	Mark
2(a)(i)	D ;	(1)

Question Number	Answer	Mark
2(a)(ii)	A ;	(1)

Question Number	Answer	Mark
2(a)(iii)	B ;	(1)

Question Number	Answer	Mark
2(a)(iv)	D ;	(1)

Question Number	Answer	Additional guidance	Mark
2(b)(i)	1. idea that only one factor has changed ; 2. if intake went up, increase risk / obesity a risk factor / if intake went down could decrease CHD risk / eq ;	1. CCEPT Less valid investigation / method , to allow comparison, variables need to be controlled IGNORE reliability, fair test	(2)

Question Number	Answer	Additional guidance	Mark
2(b)(ii)	1. both diets decrease the risk / eq ; 2. both diets have less saturated fats / eq ; 3. saturated fat associated with heart disease / eq ; 4. idea that changing to unsaturated lipids has the greater effect ; 5. idea that excess carbohydrates may be stored as saturated lipids ; 6. idea that unsaturated lipids change HDL/LDL ratio ;	4. 30% more decrease	(3)

Question Number	Answer	Mark
3(a (i)	D ;	(1)

Question Number	Answer	Mark
3(a (ii)	B ;	(1)

Question Number	Answer	Mark
3(a)(iii)	B ;	(1)

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

Question Number	Answer	Additional Guidance	Mark
3(b)(i)	1. (total) cholesterol levels in people with mutation are not higher than people without mutation / eq ; 2. LDL (cholesterol) levels in people with mutation are not higher than people without mutation / eq ; 3. HDL (cholesterol) levels in people with mutation are not lower than people without mutation / eq ; 4. credit correct use of manipulated figures ;	1, 2, 3: ACCEPT converse, similar / little difference. Decreased/reduced is **not** equivalent to lower. 1. IGNOR same 2. IGNOR same 3. CCEPT ref to HDL to LDL ratio higher in people with the mutation. 4. m t be manipulated e.g. difference calculated and not just quoted (difference in LDL= 10, total cholesterol= 7) ACCEPT without units	(2)

Question Number	Answer	Additional Guidance	Mark
3(b)(ii)	(plant) statin ;	IGNORE named drug, sterol, stanin	(1)

Question Number	Answer	Additional Guidance	Mark
3(b)(iii)	1. muscle {inflammation / pain / eq} 2. liver {damage / failure / eq} 3. joint {aches / pains / eq} 4. nausea/ constipation / diarrhoea / indigestion / flatulence / loss of appetite / eq 5. kidney {damage /failure /eq} 6. cataracts / blurred vision 7. diabetes 8. allergies / skin inflammation / skin rash / eq 9. respiratory problems / persistent cough / nosebleeds / eq 10. headaches / dizziness / depression / insomnia / ringing in ears / fatigue / eq ;	NOT cancer or reduced vitamin absorption IGNORE affect ACCEPT problems as equivalent to damage etc 2. CCEPT disease 4. CCEPT vomiting 5. CCEPT kidney disease 10. CCEPT mood swings	(1)