



BIOLOGY MIND

Edexcel

A-Level

BIOLOGY

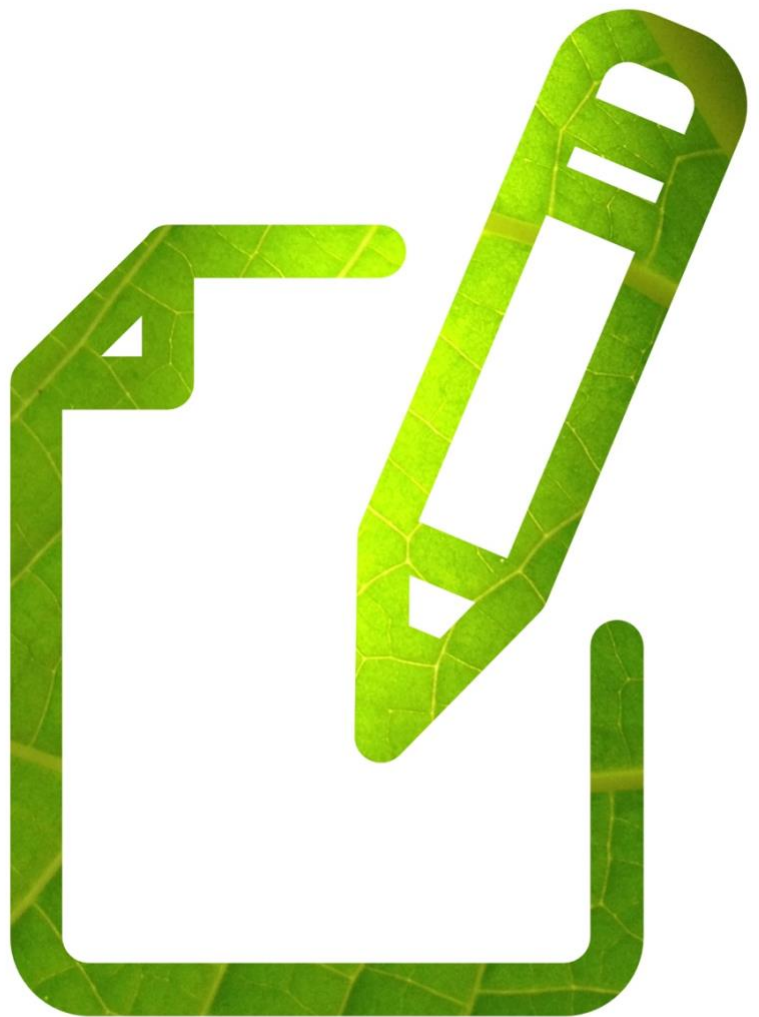
Biological Molecules

Lipids 2

Time allowed

32 minutes

MARK SCHEME



Score

/27

Percentage

%

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)





Lipids

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)



Lipids

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)	<ol style="list-style-type: none"> (total) cholesterol levels in people with mutation are not higher than people without mutation / eq ; LDL (cholesterol) levels in people with mutation are not higher than people without mutation / eq ; HDL (cholesterol) levels in people with mutation are not lower than people without mutation / eq ; credit correct use of manipulated figures ; 	<p>1, 2, 3: ACCEPT converse, similar / little difference. Decreased/reduced is not equivalent to lower.</p> <p>1. IGNOR same</p> <p>2. IGNOR same</p> <p>3. CCEPT ref to HDL to LDL ratio higher in people with the mutation.</p> <p>4. m t be manipulated e.g. difference calculated and not just quoted (difference in LDL= 10, total cholesterol= 7) ACCEPT without units</p>	(2)

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



Lipids

Question Number	Answer	Additional Guidance	Mark
3(b)(iii)	<ol style="list-style-type: none"> muscle {inflammation / pain / eq} liver {damage / failure / eq} joint {aches / pains / eq} nausea/ constipation / diarrhoea / indigestion / flatulence / loss of appetite / eq kidney {damage /failure /eq} cataracts / blurred vision diabetes allergies / skin inflammation / skin rash / eq respiratory problems / persistent cough / nosebleeds / eq headaches / dizziness / depression / insomnia / ringing in ears / fatigue / eq ; 	<p>NOT cancer or reduced vitamin absorption IGNORE affect ACCEPT problems as equivalent to damage etc</p> <ol style="list-style-type: none"> CCEPT disease CCEPT vomiting CCEPT kidney disease CCEPT mood swings 	(1)

