



Mark Scheme (Results)

Summer 2023

Pearson Edexcel GCE In Biology B (9BI0) Paper 01: Advanced Biochemistry, Microbiology, and Genetics

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General Marking Guidance

- All candidates must receive the same treatment. Examiners must mark the first candidate in exactly the same way as they mark the last.
- Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than penalised for omissions.
- Examiners should mark according to the mark scheme not according to their perception of where the grade boundaries may lie.
- There is no ceiling on achievement. All marks on the mark scheme should be used appropriately.
- All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme. Examiners should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme.
- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.
- When examiners are in doubt regarding the application of the mark scheme to a candidate's response, the team leader must be consulted.
- Crossed out work should be marked UNLESS the candidate has replaced it with an alternative response.

Question Number	Answer	Additional Guidance	Mark
1(a)(i)	• (calcium) pectate (1)	IGNORE middle lamella DO NOT ACCEPT any other molecule	(1)

Question	Answer	Mark
1(a)(ii)	The only correct answer is C	
	A is incorrect because statements 1 and 2 are correct and statement 3 is incorrect	
	B is incorrect because statements 1 and 2 are correct and statement 3 is incorrect	
	D is incorrect because statements 1 and 2 are correct and statement 3 is incorrect	(1)

Question	Answer	Additional Guidance	Mark
Number			
1(b)	An explanation that makes reference to four of the following:		
	 (decrease in concentration) due to K⁺ {leaving (cell) / being used in synthesis of correct named molecule} AND (increase in concentration) due to K⁺ being taken up (by cell) (1) 	PIECE TOGETHER	
	 ions decrease {by (facilitated) diffusion / move down a concentration gradient} (1) 		
	 ions taken up by active transport (1) 	ACCEPT active transport cannot take place in anaerobic conditions	
	• (in aerobic conditions) oxygen available for aerobic <u>respiration</u> (1)	ACCEPT converse	
	 aerobic respiration generates (more) {ATP / energy} (1) 	ACCEPT converse	(4)

Question Number	Answer	Additional Guidance	Mark
2(a)	An explanation that makes reference to the following:		
	 not Bacteria as Archaea do not have a peptidoglycan cell wall (1) 	IGNORE refs to gram negative and gram positive bacteria prokaryotes DO NOT ACCEPT if wrong reason given as well	
	 not Eukaryota as these organisms {have 70S ribosomes / do not have a nucleus} (1) 	ACCEPT do not have 80S ribosome IGNORE refs to other membrane-bound organelles DO NOT ACCEPT if wrong reason given as well	(2)

PMT

Question Number	Answer	Additional Guidance	Mark
2(b)(i)	An answer that makes reference to three of the following:	IGNORE incorrect explanations of what the enzymes are doing with ATP and GTP	
	 (two enzymes) because enzymes found in different locations (1) 	ACCEPT enzymes cannot move between mitochondria and cytoplasm	
	• pH is different / their substrates are found in different locations (1)	ACCEPT ATP in cytoplasm and GTP in mitochondria	
	• (two enzymes) because their substrates are different (1)	ACCEPT because one uses ATP and the other uses GTP	
	• therefore their <u>active site</u> will be different {shape / structure} (1)		
	 {similar structure / both are AK enzymes / both are kinases} because both {are transferring phosphate / have similar roles (1) 		(3)

Question Number	Answer	Additional Guidance	Mark
2(b)(ii)	 An explanation that makes reference to two of the following: Archaea {do not have mitochondria / only have cytoplasm} so do not need two enzymes (1) {pH / temperature} of Archaea different to human's (1) 		
	 Archaea's enzymes need to be able to {bind / fit} to {two substrates / both ATP and GTP} (1) 	ACCEPT need to form ESCs with different substrates NB ref to induced-fit may access this point provided in the context of substrate	
	 {genetic code / (DNA) base sequence} is different OR different primary structure (1) 		(2)

Question Number	Answer	Additional Guidance	Mark
3(a)	• (a group of similar) cells that perform a similar function (1)		(1)

Question	Answer			Mark			
Number							
3(b)						1	
	Type of tissue						
	Statement	both xylem and phloem	xylem only	phloem only	neither xylem nor phloem		
	Contain sieve plates			Х			
	Have cellulose in the cell walls	Х					
	Has mitochondria			Х			
							(3)

Question Number	Answer	Mark
3(c)(i)	The only correct answer is D	
	A is incorrect because fructose is a monosaccharide	
	B is incorrect because glucose is a monosaccharide	
	C is incorrect because lactose is not found in plants	(1)

	Answer	Additional Guidance	Mark
Question			
Number			
3(c)(ii)			
	 14 / 14.3 / 14.29 (cm hr⁻¹) 		(1)

Question	Answer	Additional Guidance	Mark
3(c)(iii)	A description that makes reference to three of the following:		
	 by mass flow / as a solution (flowing through the phloem) (1) 	ACCEPT mass transport / dissolved in water IGNORE hypothesis DO NOT ACCEPT cohesion / adhesion / osmosis / active transport / diffusion / apoplast / symplast	
	 {sugars / sucrose} {loaded / pumped / actively transported} into phloem {in the leaf / at the source} (1) 	DO NOT ACCEPT glucose	
	 {sugars / sucrose} {move out / diffuse} (out of phloem) into {sink tissues / roots / storage sites / named storage site} (1) 	DO NOT ACCEPT glucose, but only penalise once pumped out / by active transport	
	 description of how water enters phloem at source <u>and</u> leaves at sink (1) 	DO NOT ACCEPT diffusion	
	 (sugars / contents) move to region of lower <u>hydrostatic</u> pressure (in the phloem) (1) 	DO NOT ACCEPT diffusion	(3)

Question	Answer	Mark
Number		
4(a)	The only correct answer is A	
	B is incorrect because TMV does not have an envelope	
	C is incorrect because lambda phage is a DNA virus and does not have an envelope	(1)
	D is incorrect because TMV does not have an envelope and lambda phage is a DNA virus and does not have an envelope	\` /

Question Number	Answer	Mark
4(b)	The only correct answer is C A is incorrect because influenza is predominantly transmitted by respiratory droplets and only a few cases by contaminated surfaces	
	B is incorrect because influenza is predominantly transmitted by respiratory droplets	
	D is incorrect because influenza is predominantly transmitted by respiratory droplets	(1)

Question Number	Answer	Additional Guidance	Mark
4(c)	An explanation that makes reference to three of the following:	IGNORE refs to retroviruses and latency throughout NB must be a ref to a time delay for all 3 marks to be awarded	
	 (because it takes time) for {enough / large number of / other} cells to be damaged (by viruses) (to cause the symptoms) (1) Any TWO from: 	ACCEPT for {enough / large number of} virus particles to be produced to infect other cells for {the immune system to be activated / an immune response to occur}	
	 (because time taken) for attachment to host cell (1) 		
	 (because time taken) for {penetration / infection} of host cell with {virus / RNA / genetic material} (1) 	DO NOT ACCEPT DNA	
	• (because time taken) for synthesis of RNA (from RNA) (1)	DO NOT ACCEPT DNA	
	 (because time taken) for synthesis of proteins (1) 		
	 (because time taken) for {assembly of (new) viruses /viral components to be put together} (1) 	IGNORE replicated / produced	(3)

Question Number	Answer	Additional Guidance	Mark
4(d)(i)	• 1:0.30/1.00:0.30 (1)	ACCEPT 3.35 : 1 / 3.35 : 1.00	(1)

Question Number	Answer	Additional Guidance	Mark
4(d)(ii)	An explanation that makes reference to the following:		
	• because the antibiotics will not work as viruses are not {living / cells} (1)	DO NOT ACCEPT viruses are dead IGNORE antibiotics only target cell wall / viruses do not have a cell wall	
	 (and unnecessary usage) will act as a selection pressure to {cause / increase} antibiotic resistance (in bacteria) (1) 	ACCEPT description of selection pressure e.g. resistant bacteria will survive and non- resistant ones will not DO NOT ACCEPT immune causes mutation	(2)

Question Number	Answer	Additional Guidance	Mark
5(a)	The only correct answer is B A is incorrect because injection of antibodies is passive C is incorrect because injection of antibodies is artificial and passive		
	D is incorrect because injection is artificial		(1)

Question	Answer	Additional Guidance	Mark
Number			
5(b)(i)	• $6 \times 10^3 / 6.0 \times 10^3 / 6000$ (1)		(1)

Question Number	Answer	Additional Guidance	Mark
5(b)(ii)	An answer that makes reference to three of the following:	IGNORE attempts to explain data	
	 time taken to agglutinate decreases with increase in antibody concentration (1) 	ACCEPT inverse (proportional) relationship (weak) negative correlation	
	• credit comment about lack of error bars (in graph 1) (1)	ACCEPT significant / valid IGNORE reliable / accurate / precise	
	 antibody {reduces / prevents} sperm from escaping (1) 		
	 concentration of antibody does not affect the percentage of sperm escaping (1) 		
	 credit comment about overlapping error bars (in graph 2) (1) 	ACCEPT significant / valid IGNORE reliable / accurate / precise	(3)

Question	Answer	Additional Guidance	Mark
Number			
5(b)(iii)	An explanation that makes reference to three of the following:		
	• because antibodies have (more than one identical) binding sites (1)	NB careful with the term 'variable region' as it is used for the antigen-binding site	
	 antibodies are specific to (one) antigen (1) 		
	 (bind head and flagellum) there may be the same {antigen / antibody-binding site} on both the head and the flagellum (1) 	ACCEPT on all parts of cell tail to mean flagellum	
	 (only bind head or flagellum) there may be different {antigen / antibody-binding site} on the head and the flagellum (1) 		
	 because there may be (three) different types of antibody present (in the contraceptive) (1) 		(3)

Question	Answer	Additional Guidance	Mark
Number			
5(c)	An explanation that makes reference to the following:		
	 because at low concentrations the collision between antibody and {antigen / sperm} {will take longer / are less frequent} (1) 	ACCEPT chances of attaching are lower	
	 because at high concentrations there may be insufficient antibodies (1) 	ACCEPT lower antibody : sperm IGNORE too many sperm cells unless qualified with a comment relating to antibody limiting factor unless qualified	(2)

Question	Answer	Additional Guidance	Mark
Number			
6(a)(i)	A drawing that labels three of the following:		
	• DNA (loop) (1)	DO NOT ACCEPT if drawn as linear DNA	
	• stroma (1)	DO NOT ACCEPT stoma	
	 starch {grain / granule} (1) 	ribosome intergranal membrane	
	 inner membrane / envelope (1) 		
	 inter membrane space (1) 	inner membrane	
	 intergranal membrane / (stromal) lamellae / intergranal thylakoid (1) 	lipid droplets intermembrane space	
	• (small / 70S) ribosome (1)	stroma starch grain	
	lipid droplets	DNA	
	IGNORE thylakoid membrane / lumen of thylakoid / grana drawing quality, unless completely wrong e.g. strand of DNA	NB 1 correct + 1 or 2 wrong = 1 mark 1 correct + 3 wrong = 0 marks	
		2 correct + 1 wrong = 2 marks 2 correct + 2 or 3 wrong = 1 mark 3 correct + 1 wrong = 2 marks 3 correct + 2 wrong = 1 mark 3 correct + 3 wrong = 0 marks	(3)

Question	Answer	Additional Guidance	Mark
Number 6(a)(ii)	 length measured and converted to µm / length measured and actual chloroplast length converted into same units (1) (magnification given to 2 significant figures, with no units) 27 000 (1) 	80 000 / 81 000 / 82 000 + 3 80 / 81 / 82 + 0.003 8.0 / 8.1 / 8.2 + 0.0003 80 000 ÷ 3 = 26,666.66 81 000 ÷ 3 = 27,000 82 000 ÷ 3 = 27,333.3333 ECF figures of 27 given but wrong order of magnitude NB Correct answer with no working = 2 marks Correct answer with too many sig figs = 1 mark Figures of 27 given but wrong order of magnitude = 1 mark	(2)

Question	Answer	Additional Guidance	Mark
Number			
6(b)	An explanation that makes reference to four of the following:		
	 (contain) {photosystems / PSI / PSII / chlorophyll / named pigment} so that {light / photons} can be <u>absorbed</u> (1) 		
	 (contain) electron {carrier proteins / carriers / transport chain} so that {reduced NADPH is formed / hydrogen is pumped into thylakoid (space) / so that a series of redox reactions can take place} (1) 	ACCEPT ETC	
	 (contain) ATP synthase so that hydrogen ions can pass through (1) 	ACCEPT ATPase	
	 membranes {enclose a space / form a barrier} so that hydrogen ions can accumulate (1) 	ACCEPT membranes trap hydrogen ions protons	
	 membranes are the site of {photolysis / chemiosmosis / photophosphorylation} (1) 	ACCEPT compartmentalisation / description of	
			(4)

Question Number	Answer	Additional Guidance	Mark
6(c)(i)	 RUBISCO / ribulose bisphosphate carboxylase / ribulose bisphosphate oxygenase 	ACCEPT ribulose biphosphate carboxylase / ribulose biphosphate oxygenase RUBISCO in capitals / lowercase / mixture	(1)

Question	Answer	Additional Guidance	Mark
Number			
6(c)(ii)	An explanation that makes reference to two of the following:		
	 keep the thylakoids and enzymes <u>close</u> together (1) 	ACCEPT other terms meaning close e.g. nearby, constant contact, touching, small distance {products / named products} of light- dependent stage needed in {light-independent stage / Calvin cycle / carbon fixation / by enzymes}	
	 so that products of the light-dependent stage {are not lost / can collide with enzymes more frequently} (1) 	ACCEPT easier for collisions to occur	
	 because enzymes need to be in solution to function (1) 		(2)

Question Number	Answer	Additional Guidance	Mark
7(a)	• 7×10^4	ACCEPT 7.0 × 10 ⁴	(1)

Question Number	Answer	Additional Guidance	Mark
7(b)(i)	 number of guanine and cytosine bases given as 317 203 092 		
	OR		
	number of thymine bases given as 204 202 736		
	OR		
	number of adenine and thymine bases given as 408 405 472		
	 number of guanine bases calculated as 158 601 546 	Correct answer with no working get 2 marks	(2)

Question	Answer	Additional Guidance	Mark
7(b)(ii)	 one set of correct figures {selected / calculated} for Yap hadal snailfish (1) 85.8 (%) (1) 	14 750 / 12 685 / 2 092 85.81694915254237288135593220339	
	 OR one set of correct figures {selected / calculated} for Mariana hadal snailfish (1) 85.6 (%) (1) 	 14 783 / 12 658 / 2 125 85.625380504633700872623959954001 1 mark if {incorrect rounding / too many dps given in answer} ECF correct % for correct numbers {used / added up} from diagram wrongly 	(2)

Question Number	Answer	Additional Guidance	Mark
7(b)(iii)	A description that makes reference to three of the following:	NB IGNORE years given unless contradictory	
	 All four fish {share the same (original) common ancestor / came from the same species} (1) 		
	 Yap hadal and Mariana snailfish are <u>most closely-related</u> / the zebrafish is the <u>least closely-related</u> (1) 		
	 Yap hadal and Mariana snailfish evolved from the same {species / common ancestor} (1) 	ACCEPT had the most recent common ancestor Tanaka's snailfish is <u>closer-related</u> to the zebrafish than the other snailfish as they have the closest common ancestor	
	 The common ancestor of the {Yap hadal snailfish / Mariana snailfish} {evolved from / had} the same common ancestor as the Tanaka's snailfish (1) 	ACCEPT evolved from the same species	
	 Zebrafish are the <u>most distantly-related</u> because they diverged from the others {about 240 million years ago / the longest time ago} (1) 	ACCEPT the three snailfish are <u>more closely</u> <u>related</u> as they share a (more) recent common ancestor	(3)

Question	Indicative content
Number	
7(b)(iv)	Indicative content:
	Aspect 1 : I solation • common ancestor lived in same area • example of allopatric speciation • because in different trenches • geographical barrier • which is shallower water
	Aspect 2 : Selection pressures • conditions in two areas were different • e.g. temperature, food, predators • therefore different selection pressures / description of
	Aspect 3 : Natural selection story • two species evolved from the common ancestor they shared • mutations occurred (in DNA) • some giving rise to advantageous alleles • new phenotypes enabling survival • example of phenotype described • survivors reproduced and passed down their alleles • increase in allele frequencies
	 Aspect 4 : Decrease in gene flow gene flow reduced between two populations no longer interbreed together over time became two separate species as they cannot interbreed to produce fertile offspring as would have become reproductively isolated because {did not recognise mating behaviour / incompatible genitalia}
	 Aspect 5 : Epigenetics epigenetic modification occurred different genes became permanently switched off in the two species these changes were inherited

Level 1

1 mark = any relevant comment

2 marks = demonstration of some understanding of 1 aspect

Level 2

3 marks = Good understanding of 1 aspect + 1 other aspect mentioned

4 marks = Good understanding of 2 aspects + 1 other mentioned

Level 3

5 marks = Good understanding of 2 aspects + 2 others mentioned

6 marks = Good understanding of 3 aspects + 1 other aspect mentioned which includes some specific detail relating to question scenario

Question	Answer	Additional Guidance	Mark
8(a)	 A description that makes reference to four of the following: mRNA used (by macrophage in translation) to synthesise {(poly)peptide / protein / antigen / amino acid} (1) 	IGNORE ref to {viral antigens / reverse transcription} for mp 3, 4 and 5 ACCEPT mRNA is translated / translation of mRNA DO NOT ACCEPT transcription	
	 polypeptide {transported in RER / modified in Golgi / packaged in Golgi} (1) 		
	 {antigen / protein} expressed on (macrophage) {surface of cell / membrane} (1) 	DO NOT ACCEPT mRNA attaches IGNORE antigen moved towards membrane unles	
	 antigen attached to MHC (molecule) (1) 	qualified that this is for presentation	
	 binding of macrophage to T helper cells (1) 	ACCEPT macrophage binds to CD4 (antigen on T helper cells)	(4)

Question	Answer	Additional Guidance	Mark
8(b)	An answer that makes reference to four of the following: Similarities: • both are active forms of immunity (1)	NB do not piece together except two adjacent sentences making single comparative point or comparative points linked between two sentences At least one similarity and one difference for	
	 both involve T helper cells (1) 	full marks.	
	 both involve cytokines (1) 	DO NOT ACCEPT cytokinins	
	 both result in the production of memory cells (1) 	IGNORE types of memory cells, even if muddled up	
	Differences		
	 antigen presentation in HIR is by {B cells (themselves) / antibody bound to B cells} AND in CMI the infected host cells present the antigen (1) 	IGNORE macrophages present antigen if mentioned in both but DO NOT ACCEPT if only mentioned in one	
	 {B cells / plasma cells} involved in the HIR but not in the C-MIR OR T killer cells involved in the C-MIR but not in the HIR (1) antibodies involved in HIR AND 	ACCEPT T cytotoxic cells ACCEPT {B cells / plasma cells} involved in the HIR but T killer cells involved in the C-MIR IGNORE T helper cells if mentioned in both but DO NOT ACCEPT if only mentioned in one	
	{not in the C-MIR / enzymes in C-MIR} (1)	ACCEPT perforin	
	 HIR involved in (cell-free) {antigens / pathogens} (and infected host cells and cancer cells) AND C-MIR involved with host-infected cells (1) 		(4)
			(4)

Question Number	Answer	Additional Guidance	Mark
8(C)	An explanation that makes reference to the following:	ACCEPT in context of either primary or secondary immune response	
	 {chemicals / enzymes / perforins} (from T killer cells / CMI) will cause destruction of cancer cells (1) 	IGNORE T killer cells bind to cancer cells	
	 antibodies (from HI) will bind to the cancer cells / opsonisation of cancer cells (by antibodies) (1) 	IGNORE agglutination B cells produce antibodies refs to pathogens DO NOT ACCEPT antibodies destroy cancer cells	
	 therefore macrophages will engulf the cancer cells (as a result of the HIR) (1) 	ACCEPT neutrophils / phagocytes	
	 and {enzymes break down the cancer cells / cancer cells are digested} (by phagocytes) (1) 		(4)

Question	Answer	Additional Guidance	Mark
Number			
9(a)(i)			
	The only correct answer is A		
	B is incorrect because electron transport chain is located on the inner membrane C is incorrect because electron transport chain is located on the inner		
	membrane D is incorrect because electron transport chain is located on the inner membrane		(1)

Question	Answer	Additional Guidance	Mark
Number			Marix
9(a)(ii)	An explanation that makes reference to the following:		
	• because the electron transport chain can no longer function (1)	ACCEPT {electrons transfer can no longer occur/ electrons cannot flow through the cytochromes} slower / less DO NOT ACCEPT in context of no oxygen present	
	• resulting in protein carriers / named carrier} becoming reduced (1)	ACCEPT cannot become oxidised / {NAD / FAD} cannot be regenerated / redox reactions cannot occur	
	 therefore cells can only respire anaerobically (1) 	ACCEPT oxidative phosphorylation will be prevented / no protons pumped into intermembrane space /ATPase cannot synthesise ATP	
	 therefore insufficient {ATP / energy} generated to sustain the fish (1) 	ACCEPT a reason for fish not being able to survive e.g. {heart / muscles} to contract, active transport, metabolism, chemical reactions lactic acid build up denaturing enzymes / stopping muscle contraction IGNORE no energy for respiration energy to swim too vague	(3)

Question Number	Answer	Additional Guidance	Mark
9(b)(i)	 changes in {gene expression / phenotype} without a change in {base sequence / DNA / gene / genotype / genetic code} (1) 	ACCEPT switching genes on or off DO NOT ACCEPT mutation	(1)

Question	Answer	Additional Guidance	Mark
Number			
9(b)(ii)			
	The only correct answer is B		
	A is incorrect because deletion mutation changes the base sequence		
	<i>C</i> is incorrect because translation is the synthesis of a peptide chain		
	D is incorrect because translocation affects the DNA base sequence		(1)

number "9(c) First generation fish • male fish from environment with H ₂ S have more DMRs than female fish from environment without H ₂ S • number of DMRs increase up to a CpG density of 3 a. u. and then decrease • the number of female DMRs and male DMRs show a similar pattern • female fish have more DMRs than male fish Second generation fish • second generation fish show similar patterns of DMRs as the original fish • but there are differences e.g. male fish showing more DMRs at a CpG density of 2 than (original fish / female • there are significant differences for the males at lower CpG densities, original females higher but 2nd gen females lower Lower level discussion points : recall of knowledge of epigenetics / experimental design : • DNA methylation of cytosine at CpG sites • Methylations adds a CH ₃ • DNA methylation causes silencing of genes • by preventing transcription • epigenetic modifications are { inherited / passed down} • no details of experiment • no statistical analysis Higher level discussion points : • the presence of H ₂ S could be causing {DNA-methylation / epigenetic modification} • but no indication of other differences in the water that could be causing this • (wild) males could be less susceptible to DNA-methylation than female fish (so increase not so great) / genetii • females have more methylation sites on second X chromosome	
 *9(c) male fish from environment with H₂S have more DMRs than male fish from environment without H₂S female fish from environment with H₂S have more DMRs than female fish from environment without H₂S number of DMRs increase up to a CpG density of 3 a.u. and then decrease the number of female DMRs and male DMRs show a similar pattern female fish have more DMRs than male fish Second generation fish second generation fish show similar patterns of DMRs as the original fish but there are differences e.g. male fish showing more DMRs at a CpG density of 2 than {original fish / female there are significant differences for the males at lower CpG densities, original females higher but 2nd gen females lower Lower level discussion points : recall of knowledge of epigenetics / experimental design : DNA methylation adds a CH₃ DNA methylation causes silencing of genes by preventing transcription epigenetic modifications are {inherited / passed down} no statistical analysis Higher level discussion points : the presence of H₂S could be causing {DNA-methylation / epigenetic modification} but no indication of other differences in the water that could be causing this (wild) males could be less susceptible to DNA-methylation than female fish (so increase not so great) / genetic 	
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females have more methylation sites on second X chromosome	effects
female fish already more adapted to toxic environment	
DMRs have been retained by the second generation of fish	
 and stable / retained even after H₂S no longer present 	
 but it appears that the laboratory conditions are also causing more DMRs to be formed in male fish 	
DNA methylation is a survival advantage	
 fish with more DNA methylation are better adapted to H₂S 	
 as interruption to mitochondrial respiration is reduced / ETC can continue 	
• DIVA memorialion can stimulate gene expression	
 so proteins synthesised that { inhibit H₂S / provide an alternative to cytochrome c oxidase} 	

NB IGNORE all values given unless clearly wrong

Level 1 : Data commented on without any discussion

1 mark = any relevant comment

2 marks = some comparison of data

Level 2 : Some data discussed

3 marks = 1 discussion point

4 marks = 2 discussion points

Level 3 : Data discussed with some application of ideas

5 marks = comparisons described + 3 discussion points, including at least one higher level point

6 marks = comparisons described + 4 discussion points, including at least one higher level point

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