

Q1. (2018)

7			A ✓	1	1.1	
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Q2. (2019)

10			A	1	1.1	
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Q3. (2019)

A)

17	(a)		alcohol / ethanol and carbon dioxide ✓	1	1.1	ALLOW either order ALLOW correct formulae
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B)

17	(b)		Any two from: alcohol produced in yeast (not humans) / ORA ✓ lactic acid produced by humans (not yeast) / ORA ✓ carbon dioxide produced by yeast (not humans) / ORA ✓	2	1.1	If any incorrect product is stated, then max 1 mark. If yeast or humans are not stated assume answer refers to yeast IGNORE reference to oxygen debt / ATP production
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Q4. (2020)

9			A ✓	1	2.1	
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Q5. (2021)

4			C ✓	1	1.1	
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Q6. (2021)

8			C ✓	1	2.2	
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Q7. (2022)

21	(a)	(i)	Any two from: A process occurring in all cells/in mitochondria ✓ Breakdown/use of glucose to release/transfer/provide energy ✓ Producing ATP ✓	2	2 x 1.1	DO NOT ALLOW produces energy IGNORE reference to the use of oxygen ALLOW energy stored as ATP Second or third marking points can be awarded from an equation if it shows energy or ATP
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Q8. (2023)

A)

25	(a)		Any two from: Respiration is a universal chemical process ✓ Plants need (to produce) ATP ✓ Named example of ATP/energy use in plants ✓	2	2 x 2.1	ALLOW all organisms need to respire ALLOW plant cells have mitochondria which are the site of respiration. E.g., active transport / protein synthesis / cell division / translocation / photosynthesis IGNORE growth unqualified
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B)

	(b)	Hydrogen ions cannot build up in the space/cannot become concentrated, as the outer membrane is missing ✓ Therefore, they cannot diffuse back in(to the mitochondria) ✓	2	2 x 3.2a	
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Q9. (2024) – 21c

	(c)	Carbon dioxide ✓	1	1.1	ALLOW CO ₂
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