EXAM PAPERS PRACTICE

Mark Scheme

Q1.

Question number	Answer	Notes	Marks
(a) (i)	Any two from: • (movement of substances/named solute or gas) against a concentration gradient(1) • using energy/ATP(1)		2
(ii)	Any two from: • parent homozygous recessive/heterozygous / carriers (1) • one (recessive) allele inherited from each parent (1) • reference to homozygous recessive disorder/caused by recessive alleles (1)		2
(iii)	• protein/CFTR is not modified/folded/protein has an incorrect shape(1) • protein/CFTR not transported (to its destination)(1)		2
(iv)	1408 x 3 (1) 4224	Full marks for correct final answer. Max 2 marks ecf for final answer if it is correct from calculation	2

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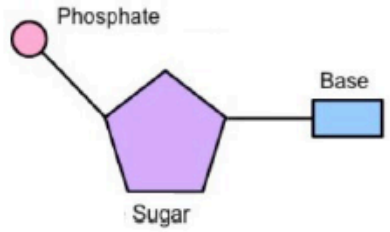
(v)	• (deoxyribose) sugar(1) • joined to a (nitrogenous) base/named base(1) • phosphate group attached to sugar (1)  	Allow one mark only if all 3 components just listed Fully labelled diagram for full marks	3
(b)	any three from • deletion(1) • of one codon/TTT (1) • phenylalanine missing from protein (1) • shape of final protein changed/different protein formed (1)	allow description of deletion	3
		Total for Question = 14 Marks	

Q2.

Question number	Answer	Notes	Marks
(a) (i)	<table><tr><th>Part</th><th>Name of part</th><th>Function</th></tr><tr><td>X</td><td>mitochondria;</td><td></td></tr><tr><td>Y</td><td></td><td>controls activities of the cell/stores DNA / genetic information;</td></tr></table>		1 1
(ii)	**A,** more cell structures can be seen with greater resolution		1
(iii)	60mm/6cm; 60 ÷ 0.05; 1200;	Ecf two marks for correct calculation from incorrect measurement Full marks for correct final answer	3
(b)	• diffusion; • from a high concentration (in the cell) to a lower concentration (in the blood)/down a concentration gradient;		1 1
		Total question = 8 marks	

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Q3.

Question number	Answer	Notes	Marks
(a)	• movement of molecules; • from high to low concentration/down a diffusion/concentration gradient;		2marks
(b)	any three of • movement of molecules against a concentration gradient/low to high concentration; • using energy; • in the form of ATP; • ref protein channels;		3marks
(c)	any two of • movement of water; • from high to low water potential/down a water potential gradient; • across a partially/selectively/semi permeable membrane;	ignore ref to high/low conc of water	2marks
			Total 7 marks

Q4.

Question number	Answer	Mark
(a)	A graph showing: • vertical axis scale half grid and linear (1) • lines drawn connecting points (1) • horizontal axis labelled hours and vertical axis labelled grams (1) • points plotted correctly (1) • key for amylase Q/amylase P (1)	5

Question number	Answer	Mark
(b)(i)	An explanation that makes reference to the following points: • starch digested/broken down to glucose (1) • therefore causes water to enter tubing (1) • by osmosis (1)	3

Question number	Answer	Mark
(b)(ii)	An explanation that makes reference to the following points: • substrate/starch concentration reduced (1) • less for enzymes to digest (1)	2

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Question number	Answer	Mark
(b)(iii)	An explanation that makes reference to the following points: *concentration* amylase will change the rate of reaction (1) *pH* enzyme activity changes with pH (1)	2

Question number	Answer	Mark
(c)	To ensure that the mass is not affected by water	1

Question number	Answer	Mark
(d)	Salivary glands (1) Pancreas (1)	2

Question number	Answer	Mark
(e)	A description that makes reference to three of the following points: • Benedict's test (1) • heat sample (1) • brick red/orange colour shows presence of glucose (1)	3

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