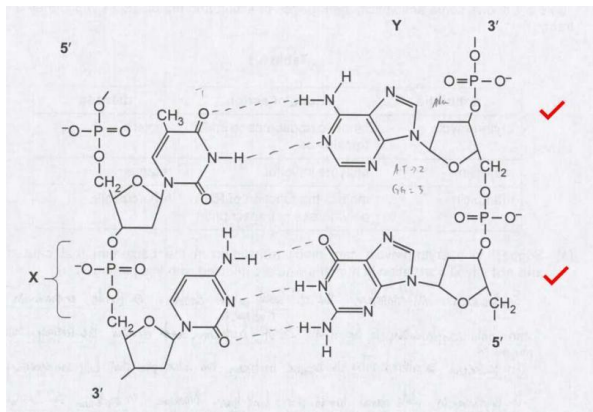


Multiple Choice Answers

Q24: D

4(a)(i)	<u>repeating</u> , units / sub-units / molecules / nucleotides (used to make a, polymer / polynucleotide / strand (of DNA)) ;
4(a)(ii)	any one from: (pentose / sugar is) ribose (not deoxyribose) ; C2 on the, pentose / sugar, is -OH not -H ;
4(a)(iii)	respiration ;
4(b)(i)	two hydrogen bonds drawn correctly between A and T ; three hydrogen bonds drawn correctly between C and G ; <i>for positioning of H bonds on C-G, A from either H on amine group on C to link with oxygen on G</i>  <i>if no marks gained but A-T has two lines and C-G has three lines between bases award 1 mark</i>
4(b)(ii)	phosphodiester ;

1(a)	A oxygen ; B ethanol ; C aerenchyma ;												
1(b)	<i>ref. to</i> ethanol dehydrogenase (to break it down) ; A alcohol dehydrogenase												
1(c)(i)	as gibberellin concentration increases, the length of stem increases or positive correlation between concentration of gibberellin and length of stem ; data quote – two concentrations and two lengths with units ; <table border="1"> <thead> <tr> <th>conc gibberellin / au</th><th>length of stem / mm ± 0.5 mm</th></tr> </thead> <tbody> <tr> <td>1</td><td>3</td></tr> <tr> <td>2</td><td>19</td></tr> <tr> <td>3</td><td>27</td></tr> <tr> <td>4</td><td>45</td></tr> <tr> <td>5</td><td>52</td></tr> </tbody> </table>	conc gibberellin / au	length of stem / mm ± 0.5 mm	1	3	2	19	3	27	4	45	5	52
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1(c)(ii)	any three from : 1 ethylene causes break down of ABA, so gibberellin, active / stimulated / functional ; 2 plants grow tall(er) / stems increase in length / stem elongation / increase in internodal length ; 3 (so) leaves / flowers, held above the water ; 4 (so) photosynthesis can occur / increased access to light / AW or (so) gas exchange / reproduction, can occur ;
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7(a)	any three from: 1 breaks down / hydrolyses to / converted to, ADP / AMP, and Pi ; 2 releases energy / energy donor ; 3 reversible reaction / high turnover / can be regenerated ; 4 small / soluble, so can, diffuse / move (freely), in cell ; 5 AVP ;
7(b)	any six from: 1 ETC / electron flow, less / stops ; 2 no / less, energy, available / released / supplied (from electron flow) ; 3 no / fewer, H⁺ ions / protons, <u>pumped</u> to intermembrane space ; 4 no / smaller, H⁺ / proton, gradient ; 5 no / fewer, protons <u>diffuse</u> through ATP synthase ; 6 no / fewer, electrons reach, last carrier / end of chain ; 7 no / fewer, electrons can react with oxygen to form water ; 8 (oxidised) <u>NAD</u> not regenerated / lack of <u>NAD</u> ; 9 no / less, glycolysis / link reaction / Krebs cycle ; 10 AVP ;

9(a)	1 NAD ; 2 <u>coenzyme A</u> ;
9(b)	any three from: 1 enzyme activity decreases over time at both concentrations (of hydrogen peroxide) ; 2 activity decreases, more / faster / at a greater rate, at high(er) H₂O₂ concentration or enzyme less active with, with high(er) H₂O₂ concentration ; 3 paired data quote ; 4 H₂O₂, acts as an inhibitor / inhibits enzyme activity ;
9(c)	any four from: 1 energy is used to <u>pump</u>, protons / H⁺, into intermembrane space ; 2 proton gradient (formed) ; 3 protons <u>diffuse</u> through ATP synthase ; 4 ATP produced from ADP and Pi ; 5 oxygen accepts electrons to form water ; 6 <i>ref. to chemiosmosis</i> ;
9(d)	any three from: 1 respiration in anaerobic conditions ; 2 produces lactate ; 3 need oxygen, to oxidise lactic acid to CO₂ and H₂O / for breakdown of lactic acid in Krebs cycle plus oxidative phosphorylation / (for ETC) to make extra ATP ; 4 ATP used for lactate → glucose / glycogen ; 5 <i>idea of re-paying oxygen debt</i> ;