

Question Number	Answer	Additional Guidance	Mark
7 (a)	<p>A description which includes two of the following:</p> <ul style="list-style-type: none"> • condensation reaction (1) • phosphodiester bonds (1) • DNA polymerase (1) 	<p>Must be in context of forming a DNA strand</p> <p>ALLOW hydrogen bonding between bases (in context of double strand)</p> <p>ALLOW bonds forming between phosphate and deoxyribose</p>	(2)

Question Number	Answer	Additional Guidance	Mark
7 (b)	<p>An explanation which includes the following:</p> <ul style="list-style-type: none"> • The conservative model was rejected / the semi-conservative model was accepted (1) • (due to) generation 1 has a single band which is halfway between ^{15}N and ^{14}N (1) • (because) the DNA has one strand containing ^{15}N and one strand containing ^{14}N (1) • (in semi-conservative model) further generations would have {a band which is halfway between ^{15}N and ^{14}N / no band at ^{15}N} (1) 	<p>ALLOW light band for ^{14}N and heavy band for ^{15}N ALLOW nitrogen - 14 / nitrogen - 15 ALLOW the evidence {supports semi-conservative model / does not support conservative model} ALLOW medium density</p> <p>ALLOW DNA contains half heavy nitrogen and half light</p> <p>ALLOW (in conservative model) further generations would have { no band halfway between ^{15}N and ^{14}N / a band at ^{15}N }</p>	(4)

Question Number	Answer	Additional Guidance	Mark
7 (c)	<p>An answer that that makes reference to the following:</p> <p>Similarity</p> <ul style="list-style-type: none"> • both contain phosphate, pentose sugar and a base (1) <p>and two of the following</p> <p>Differences</p> <ul style="list-style-type: none"> • a DNA nucleotide contains deoxyribose whereas ATP contains ribose (1) • a DNA nucleotide could contain other bases whereas ATP contains only {adenine / one base type} (1) • a DNA nucleotide contains one phosphate whereas ATP {contains three phosphates / is a triphosphate} (1) 	<p>ACCEPT DNA could contain C, T or G whereas ATP only contains A</p>	<p>(3)</p>