

AQA, OCR, Edexcel

A Level

A Level Biology

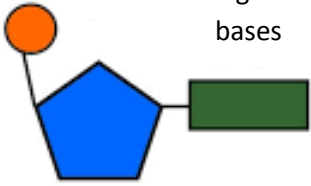
**Nucleic Acids and DNA
Replication Answers**

Name:

M M E

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Total Marks: /31

Answer	Marks
<p>1. A)</p> <p>i)</p> <p>Phosphate group</p>  <p>Deoxyribose sugar</p> <p>Nitrogenous bases</p> <p>ii) Phosphodiester</p> <p>b)</p> <p>i) -It makes the molecule more compact -stores more information -The genetic code is protected -Easily replicated</p> <p>ii) 1: Adenine/Guanine 2: Guanine/Adenine 3: Cytosine/Thymine 4: Thymine/Cytosine</p> <p>iii) During replication/to ensure the genetic is copied correctly</p> <p>iv) Package/arrange DNA in the nucleus</p>	<p>3 marks</p> <p>1 mark</p> <p>4 marks</p> <p>4 marks</p> <p>1 mark</p> <p>1 mark</p>
<p>2.</p> <p>i) A sequence of 3 nucleotides that correspond to a particular amino acid during protein synthesis</p> <p>ii) The genetic code is read in codons/each base is only read once</p>	<p>1 mark</p> <p>1 mark</p>

<p>iii)- It is used by all known organisms - Same codons code for same amino acids in different organisms.</p> <p>b)</p> <p>i) -Transcribes the genetic code of the DNA in the nucleus ready for translation in cytoplasm. - Ensures DNA doesn't have to leave the nucleus/ DNA protected.</p> <p>ii) -Anticodons base pair with codons on mRNA. -Acceptor arm has a specific amino acid attached. - Amino acid added to polypeptide -tRNA picks up another amino acid from pool in cytoplasm.</p> <p>c) mRNA: U A G G A C A U A C tRNA: A U C C U G U A U G 1 mark for correctly replacing T with U 1 mark for mRNA sequence being opposite to DNA sequence 1 mark for tRNA sequence being opposite to mRNA sequence</p>	<p>2 mark</p> <p>2 mark</p> <p>3 mark</p> <p>3 marks</p>

