

**AQA, OCR, Edexcel**

**A Level**

# **A Level Biology**

**Introduction to Genetics  
Answers**

Name:

**M M E**

**Mathsmadeeasy.co.uk**

**Total Marks: /21**

Answer	Marks
<p>1.</p> <p>a)</p> <p>i) – Eukaryotic DNA is bound by the nucleus</p> <p>- Prokaryotic DNA is free-floating in the cytoplasm</p> <p>- Additional DNA is stored in plasmids in prokaryotes</p> <p>- Eukaryotes have histones.</p> <p>ii) Mitochondria Chloroplast</p> <p>iii) It is a section of DNA that codes for a specific protein.</p> <p>b)</p> <p>i) – genes code for proteins</p> <p>-enzymes are proteins</p> <p>-enzymes control our metabolic pathways</p> <p>ii) Introns – don't code for amino acids</p> <p>Exons – code for amino acids</p>	<p>3 marks</p> <p>2 marks</p> <p>1 mark</p> <p>3 marks</p> <p>2 marks</p>
<p>2.</p> <p>a)</p> <p>i) Change in the base sequence of DNA</p> <p>ii) – change in the base sequence</p> <p>-alter the specific order of amino acids</p> <p>- Protein non-functional.</p> <p>iii) Where one base is substituted for another</p>	<p>1 mark</p> <p>3 marks</p> <p>1 mark</p>

Visit <http://www.mathsmadeeasy.co.uk/> for more fantastic resources.

<p>iv) – insertion mutation means that an additional base is added to the base sequence</p> <ul style="list-style-type: none"><li>-the whole DNA base sequence is shifted to the right/ frameshifted</li><li>-all the codons/ amino acids after the mutation are affected</li><li>-substitution mutations could be silent/ genetic code is degenerate.</li><li>- may not affect the function of the protein.</li></ul>	<p>5 marks</p>
--	----------------