

AQA, OCR, Edexcel

A Level

A Level Biology

**Transcription and Translation
Answers**

Name:

M

M

E

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Total Marks: /29

Answer	Marks
<p>1. a) -DNA Helicase unwinds the double strand. -RNA nucleotides complimentary base pair with the DNA template strand. -Thymine bases are replaced with uracil in mRNA -RNA polymerase forms the sugar phosphate backbone/ phosphodiester bonds. - mRNA produced.</p> <p>c) i) – in a series of codons/triplets – consisting of three nucleotides -each one coding for an amino acid</p> <p>ii) -nucleotide triplet/ 3 bases at the end of the mRNA - Tells the ribosome to end translation.</p> <p>iii) - substitution mutation could result in the same amino acid. - Protects against mutation/ same protein coded for.</p>	<p>4 marks</p> <p>2 marks</p> <p>2 marks</p> <p>2 marks</p>
<p>2. a) -ribosome/enzymes required not in nucleus.</p> <p>b) i) <u>Any 3 from:</u> -single strand of RNA -Held in place by hydrogen bonds -Contains three bases which are an anti-codon to the mRNA strand -Specific amino acid attached</p>	<p>1 mark</p> <p>3 marks</p>

<p>ii) - reads the mRNA strand/ base pairs with codon. -to determine which order the amino acids should be attached</p> <p>c) i) Condensation reaction - Energy required from ATP - to form peptide bond between amino acids.</p> <p>ii) <u>4 points required</u> -folding/bond formation forms a functional protein -Occurs in rough ER -Sent to golgi -glycosylation/modification in the golgi body - sends it in a <u>vesicle</u> to cell surface.</p>	<p>2 marks</p> <p>3 marks</p> <p>4 marks</p>
<p>3. (START) SERINE ALANINE SERINE LEUCINE VALINE (STOP)</p>	<p>6 marks</p>