

**AQA, OCR, Edexcel**

**A Level**

# **A Level Biology**

**Introduction to Genetics  
Questions**

Name:

**M M E**

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**Total Marks: /21**

### **Introduction to genetics**

1. DNA is the genetic material that is stored within cells that contains all the information that an organism requires to grow and function.

- a) i) What is the difference between prokaryotic and eukaryotic DNA? (3 marks)
- ii) Other than the Nucleus, where else is DNA found in animal and plant cells? (2 marks)
- iii) The DNA sequence codes for genes; what is the purpose of a gene? (1 mark)

b) Genes determine the development of organisms.

- i) What is the relationship between genes and enzymes in organism development? (3 marks)
- ii) Not all the DNA that is found in the nucleus is coded into proteins. Explain? (2 marks)

2. Mutations occur in human DNA roughly once in every 30 million base pairs. Some mutations are advantageous and lead to variation while others are disadvantageous and cause disease.

- a) There are different types of mutation for example; addition, substitution and deletion.
  - i) What is a mutation? (1 mark)
  - ii) Why could some mutations be harmful to the cell? (3 marks)
  - iii) What is a substitution mutation? (1 mark)
  - iv) Why is an insertion mutations potentially more detrimental than a substitution mutation? (5 marks)