

3.1 Genes & Chromosomes

Question Paper

| Course | DP IB Biology |
|------------|-------------------------|
| Section | 3. Genetics |
| Topic | 3.1 Genes & Chromosomes |
| Difficulty | Easy |

Time allowed: 10

Score: /5

Percentage: /100



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Question 1

Which of the following statements about genomes is **not** correct?

- A. Humans have around 20 000 genes
- B. Species vary in the number of genes they have
- C. The number of genes of an organism is not proportional to genome size
- D. Humans have the most genes of any organism

[1 mark]

Question 2

Which option correctly completes the sentence below?

Multiple alleles are present _____.

- A. At the same locus on homologous chromosomes
- B. At different loci on different chromosomes
- C. At different loci on the same chromosome
- D. On sister chromatids

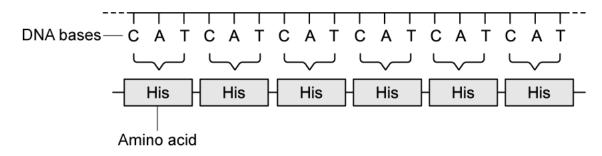
[1 mark]

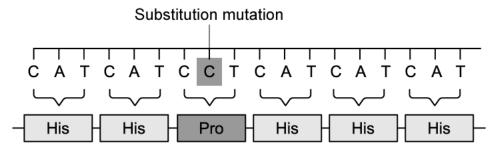


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Question 3

Which of the following statements, correctly describes the impact of the substitution mutation shown below?





- A. The codon encoding an amino acid was changed to a stop codon, truncating the polypeptide
- B. The sequence of amino acids may code for a different protein structure
- C. The resulting polypeptide chain will be elongated
- D. There will be no change in the polypeptide chain

[1 mark]

Question 4

Which row correctly describes the features of prokaryotic chromosomal DNA?

| Α. | Associated with histone proteins | Circular |
|----|--------------------------------------|----------|
| B. | Not associated with histone proteins | Linear |
| C. | Not associated with histone proteins | Circular |
| D. | Contains a few hundred genes | Circular |

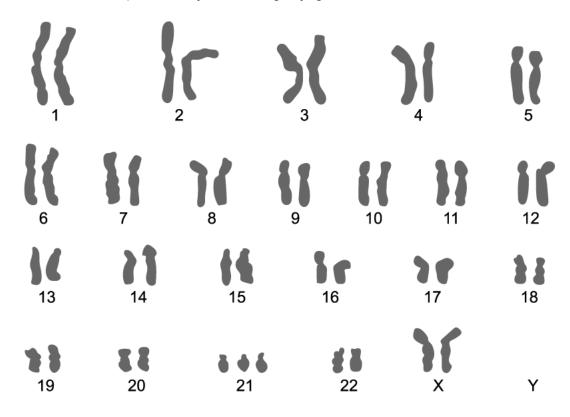
[1 mark]



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Question 5

Which of the individuals below is represented by the following karyogram?



- A. A male with a chromosomal abnormality
- B. A genetically normal female
- C. A male with Down syndrome
- D. A female with Down syndrome

[1 mark]