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**Max Time : 1 hr** **Class = 12th Biology Test**  **Max Marks :25**

**MOLECULAR BASIS OF INHERITANCE**

**[After Transcription]**

1. Multiple choice questions : [ 1 X 7 = 7 ]
2. A functional piece of mRNA has 66 codons. What is the maximum number of amino acids that could be present in the protein, coded for this mRNA?

|  |  |  |  |
| --- | --- | --- | --- |
| a) 22 | b) 64 | c) 65 | d) 66 |

1. ous and non-degenerate
2. triplet, universal, non-ambiguous and degenerate
3. triplet, universal, ambiguous and non-degenerate
4. Who gave the First experimental proof of triplet code?

|  |  |  |  |
| --- | --- | --- | --- |
| a) George Gamow | b) Nirenberg | c) Kornberg | d) Khorana |

1. Which one of the following group of codons is called as non-sense codons?

|  |  |
| --- | --- |
| a) UAA, UAG and UGA | b) GUA, GUG, GCA, GCG and GAA |
| c) UUC, UUG CCU, CAA and CUG | d) UUA, UUG CUU, CUC, CUA and CUG |

1. tRNA recognizes ribosome by:

|  |  |  |  |
| --- | --- | --- | --- |
| a) Tψ C loop | b) DHU loop | c) Anticodon | d) AA site |

1. Many ribosomes may associate with single mRNA to form multiple copies of a polypeptide simultaneously. Such strings of ribosomes are termed as:

|  |  |  |  |
| --- | --- | --- | --- |
| a) Polysome | b) Polyhedral bodies | c) Nucleosome | d) Plastidome |

1. Part of operon producing repressor is known as:

|  |  |  |  |
| --- | --- | --- | --- |
| a) Repressor gene | b) Operator gene | c) Regulatory gene | d) Promoter gene |

1. The movement of a gene from one linkage group to another is called:

|  |  |  |  |
| --- | --- | --- | --- |
| a) Duplication | b) Translocation | c) Crossing over | d) Inversion |

1. Describe Bioinformatives? [ 1 ]
2. Why lactose is considered as inducer in lac operon? [ 1 ]
3. How is satellite DNA separated from bulk DNA for various genetic experiments? [ 1 ]
4. Write the percentage of total human genome that codes for proteins and the percentage of discovered genes above functions are known as observed during HGP. [ 1 ]
5. Write any 4 characters of genetic code. [ 2 ]
6. Why is the Human Genome Project called a ‘Mega Project’. [ 2 ]
7. Draw a schematic diagram of lac operon in its switch off position and label the following parts : [ 2 ]

(i) The structural gene (ii) Repressor bound to its correct position

(iii) Promoter gene (iv) Regulatory gene

1. A criminal blew himself up in a local market when was chased by cops. His face was beyond recognition. Suggest and describe a modern technique that can help establish his identify. [ 3 ]
2. Explain the process of protein synthesis in bacterium and demonstrate the role of mRNA, tRNA and ribosome on it. [ 5 ]