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

MOLECULAR BASIS OF INHERITANCE

[After Transcription]

Q.1 Multiple choice questions : [1 X 7 = 7]

1) 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
2) Who gave the First experimental proof of triplet code?
   a) George Gamow b) Nirenberg c) Kornberg d) Khorana
3) 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
4) tRNA recognizes ribosome by:
   a) $T_{\psi}C$ loop b) DHU loop c) Anticodon d) AA site
5) 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
6) Part of operon producing repressor is known as:
   a) Repressor gene b) Operator gene c) Regulatory gene d) Promoter gene
7) The movement of a gene from one linkage group to another is called:
   a) Duplication b) Translocation c) Crossing over d) Inversion

Q.2 Describe Bioinformatives? [1]

Q.3 Why lactose is considered as inducer in lac operon? [1]

Q.4 How is satellite DNA separated from bulk DNA for various genetic experiments? [1]

Q.5 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]

Q.6 Write any 4 characters of genetic code. [2]

Q.7 Why is the Human Genome Project called a 'Mega Project'. [2]

Q.8 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

Q.9 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]

Q.10 Explain the process of protein synthesis in bacterium and demonstrate the role of mRNA, tRNA and ribosome on it. [5]