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

**MOLECULAR BASIS OF INHERITANCE**

**[Translation , Gene expression , HGP and DNA Fingerprinting]**

1. Multiple choice questions : [ 1 X 3 = 3]
2. Part of operator producing repressor is known as :

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

1. Amino acid sequence, in protein synthesis is decided by the sequence of :

|  |  |  |  |
| --- | --- | --- | --- |
| a) rRNA | b) tRNA | c) mRNA | d) cDNA |

1. Match column I and column II

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Column I | | Column II | | |
| A. RNA polymerase I | | I. Formation of tRNA | | |
| B. RNA polymerase II | | II. Formation of rRNA | | |
| C. RNA polymerase III | | III. Formation of hnRNA | | |
| a) A – II ; B – III ; C – I | | b) A – I ; B – II ; C – III |
| c) A – III ; B – I ; C – II | | d) A – II ; B – I ; C – III |

1. How is repetitive/satellite DNA separated from Bulk genomic DNA for various genetic experiments? [ 1 ]
2. Expand VNTR. [ 1 ]
3. Define Aminoacylation. [ 1 ]
4. State which human chromosome has : [ 1 ]
5. The maximum number of genes (ii) The one which have least number of genes.
6. Define Bioinformatics. [ 1 ]
7. List two role of ribosomes during translation. [ 2 ]
8. Why is Human genome project called a Mega project? [ 2 ]
9. List two methodologies which were involved in human genome project. Mention how they were used. [ 2 ]
10. Describe how the lac operon operates in the presence of inducer. [ 3 ]
11. 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 ]
12. Explain the process of protein synthesis in bacterium and demonstrate the role of mRNA, tRNA and ribosome on it. [ 5 ]