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

**MOLECULAR BASIS OF INHERITANCE**

**[Replication , Transcription , Genetic code]**

1. Multiple choice questions : [ 1 X 5 = 5]
2. Removal of introns and joining of exons in a defined order in a transcription unit is called \_\_\_\_\_\_\_\_\_.

|  |  |  |  |
| --- | --- | --- | --- |
| a) Tailing | b) Transformation | c) Splicing | d) Capping |

1. The formation of DNA from RNA is called as :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Translation | b) Transcription | c) Replication | d) Reverse transcription |

1. Methyl guanosine triphosphate is added at 5’ end of hnRNA in a process of :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Tailing | b) splicing | c) Capping | d) None of these |

1. Which of the following RNAs should be most abundant in animal cell?

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

1. Match column I and column II

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Column I | | Column II | | |
| A. Sigma factor | | I. 5’ – 3’ | | |
| B. Capping | | II. Initiation | | |
| C. Tailing | | III. Termination | | |
| D. Coding strand | | IV. 5’ end  V. 3’ end | | |
| a) A – III ; B – V ; C – IV ; D – II | | b) A – II ; B – IV ; C – V ; D – I |
| c) A – II ; B – IV ; C – V ; D – III | | d) A – III ; B – V ; C – IV ; D – I |

1. Discuss the role of enzyme DNA ligase plays during DNA replication. [ 1 ]
2. Why tRNA is called as adapter molecule? [ 1 ]
3. Explain dual function of AUG codon. [ 1 ]
4. State the function of : (a) m-RNA (ii) r-RNA. [ 2 ]
5. A template strand is given below. Write down the corresponding coding strand and mRNA that can be formed, along with their polarity. 3’ ATGCATGCATGCATGCATGC 5’ . [ 2 ]
6. What are the characteristics of genetic code? [ 2 ]
7. Describe Meselson and Stahl experiment on E.coli. Write down the conclusion they arrived after the experiment. [ 3 ]
8. Explain the process of transcription in a bacterium. [ 3 ]
9. Write down the different steps that helps in DNA replication [ 5 ]