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

**MOLECULAR BASIS OF INHERITANCE – 1**

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

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

1. The net electric charge on DNA and histones is

|  |  |
| --- | --- |
| a) Both positive | b) Both negative |
| c) Negative and positive respectively | d) Zero |

1. Purine found both in DNA and RNA is

|  |  |
| --- | --- |
| a) Adenine and Thymine | b) Adenine and guanine |
| c) Guanine and cytosine | d) Cytosine and thymine |

1. Who introduce the transforming principle

|  |  |  |  |
| --- | --- | --- | --- |
| a) Frederick Griffith | b) Avery | c) Macleod | d) Mc Carty |

1. Nitrogenous base linked to sugar by

|  |  |
| --- | --- |
| a) Hydrogen bond | b) Phosphodiester bond |
| c) N-glycosidic bond | d) Covalent bond |

1. Calculate the length of DNA of bacteriophage that has 48502 base pairs. [ 1 ]
2. A template strand is given below. Write down the sequence of coding strand and mRNA [ 1 ]

**3’ ATGCATGCATGCATGCATGC 5’**

1. Define capping? [ 1 ]
2. Define replication fork? [ 1 ]
3. The amount of purine is equal to amount of pyrimidines is suggested by [ 1 ]
4. A DNA segment has a total of 1500 nucleotides, out of which 410 are guanine containing nucleotides. How many pyrimidine bases this DNA segment possess? [ 2 ]
5. Why tRNA is called as adapter molecule? [ 2 ]
6. Describe the Hershey and chase experiment. Write down the conclusion they arrived at after the experiment. [ 3 ]
7. Write down the different steps that helps in DNA replication. [ 3 ]
8. Explain the process of transcription in Prokaryotes. [ 5 ]