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

**MOLECULAR BASIS OF INHERITANCE**

**[DNA Structure , Search of Genetic Material]**

1. How many base pairs would a DNA segment of length 1.36 nm have? [ 1 ]
2. Name the negatively charged and positively charged components of a nucleosome. [ 1 ]
3. Chargaff’s rule are applicable to: [ 1 ]
4. How do histones acquired positive charge? [ 1 ]
5. Name the transcriptionally active region of chromatin in a nucleus? [ 1 ]
6. A DNA segment has total 2000 nucleotides, out of which 520 are adenine containing nucleotides. How many purine bases this DNA segment possess? [ 2 ]
7. Group the following as Nitrogenous bases and nucleosides: [ 2 ]

Adenine , Cytidine , Thymine , Guanosine , Uracil and Cytosine.

1. List the salient features of double helix structure of DNA. [ 3 ]
2. List the criteria a molecule that can act as genetic material must fulfill. Which one of the criteria are best fulfilled by DNA or RNA thus making one of them a better gentic material than the other? Explain. [ 3 ]
3. Describe the packaing of DNA helix in a prokaryotic cell and an eukaryotic nucleus. [ 5 ]
4. Answer the following question based on Griffth’s experiment: [ 1 + 2 + 1 + 1 = 5]
5. Write the scientific name of the bacterium used by Frederick Griffith in his experiment.
6. How did he proved that some transforming principle is responsible for transformation of the non-virulent strains of bacteria into the virulent form?
7. State the biochemical nature of transforming principle.
8. Name the scientists who proved biochemical nature of transforming principle.