

Post graduation (M.D. - Biochemistry) Preliminary Theory Examination  
Government Medical College , Bhavnagar  
Paper-3 ( (Molecular Biology , Immunology and Cancer)

Date : 13/08/2025

Marks : 100

**Q-1 Write detailed notes on following. (20 Marks)**

- Define and differentiate DNA damage and mutation. Write the factors responsible for it and it's repair mechanism in detail. Explain disease related to defect of repair mechanism.

**Q-2 Write detailed notes on following. (20 Marks)**

- Type and role of vector and restricted endonuclease enzyme in Recombinant DNA technology. Explain Detection of clone colony of the bacteria after recombinant DNA process.

**Q-3 Write short notes on the following. (20 Marks)**

1. Type and Genetical basis of diversification of Immunoglobulin. Explain somatic hypermutation.
2. Define and type of polymorphism. Write it's detail role for RFLP for prenatal screening.

**Q-4 Write short notes on the following. (40 Marks)**

1. Mechanism of adenosine in treatment of supra-ventricular tachycardia (tachyarrhythmia )
2. Explain “ Role of supplementary folic acid in pregnant women”
3. Significance of BRAC gene
4. Initiation of Transcription
5. Define cDNA library and it's significance.
6. micro-RNA
7. Quantitative Real time PCR
8. Mechanism of intron removal and splicing.