

M.Sc. [Medical Biochemistry]

(BF/2023/12)

Molecular Biology

[Paper - I]

M.M. : 100

Time : 3 Hours

- Note:*
- 1.) *Attempt all questions.*
 - 2.) *NO SUPPLEMENTARY SHEET SHALL BE ALLOWED /PROVIDED*
 - 3.) *The Student must write Q.P. Code in the space provided on the Title Page of the Answer Book.*
 - 4.) *Illustrate your answers with suitable diagrams.*

1. Discuss briefly the enzymes used in recombinant DNA technology. Also discuss various applications of recombinant DNA technology. [10]
2. Discuss briefly Tryptophan operon & lac operon. [10]
3. Write short notes on: [5×2=10]
 - a. Genetic linkage
 - b. Western blotting
4. Describe all the steps of eukaryotic translation. Add a note on inhibitors of protein synthesis. [10]
5. Briefly discuss semi conservative replication of DNA. Also mention differences in eukaryotic and prokaryotic replication. [10]
6. Discuss briefly [5×2=10]
 - a. Base excision repair mechanism
 - b. Post translational modifications
7. Discuss the role of various motifs in DNA-protein interactions. Also discuss the role of histone modifications in regulation of gene expression. [10]
8. Differences between [5×2=10]
 - a. Auto somal dominant & auto somal recessive
 - b. Southern & northern blotting techniques
9. Discuss the mechanism of molecular switching between lysogenic and lytic phase of bacteriophage lambda. [10]
10. Briefly discuss DNA sequencing technologies which are key to human genome project. Also mention various applications of human genome project.
