

# School of Basic and Applied Sciences

BioScience  
ETE - Jun 2023

Time : 3 Hours

Marks : 100

## Sem II - C2UH201T - Genomics and Proteomics

*Your answer should be specific to the question asked*

*Draw neat labeled diagrams wherever necessary*

1. List 5 applications of fluorescence dyes in genomic techniques. K1 CO1 (5)
2. Define with examples Unipartite and Multipartite Genomes. K1 CO1 (5)
3. Describe the chemical components of SDS-PAGE gel with their function. K2 CO2 (5)
4. Sketch two types of phylogenetic trees with proper labelling and describe them. K3 CO2 (10)
5. Discuss the characteristics of chloroplast genome. Identify the evidences that indicates that cyanobacteria might be the predecessor of chloroplast genome. K2 CO1 (10)
- 6) Demonstrate the working principle and applications of phage display. K3 CO3 (10)

### OR

- Use your knowledge of genetic mutations to show their role in genetic variations. K3 CO3 (10)
7. Examine the role of dideoxy nucleotides in Sanger sequencing. Compare Sanger sequencing with next-generation sequencing. K4 CO2 (10)
  8. Analyze the PCR based and restriction enzyme-based DNA fingerprinting techniques. K4 CO4 (15)
  9. Sketch the schematics of protein mass fingerprinting along with description. Demonstrate advantages and disadvantages of this technique. K3 CO3 (15)
  - 10) Analyze protein complementation assay with suitable diagrams. K4 CO4 (15)

### OR

- Examine the process of FISH as a cytogenetic technique. Compare FISH and RT-PCR. K4 CO4 (15)