

# School of Basic and Applied Sciences

BioScience  
ETE - Jun 2023

Time : 3 Hours

Marks : 50

## Sem II - MBAMBT2002 - Molecular And Genetic Engineering

*Your answer should be specific to the question asked*

*Draw neat labeled diagrams wherever necessary*

1. Illustrate the importance of primer in a PCR reaction. K2 CO4 (2)
2. Where and when do we use random priming? Why is it so important? K1 CO1 (2)
3. Illustrate the basic principle of pyrosequencing. K2 CO5 (2)
4. How are cDNA and genomic libraries different from each other? K1 CO3 (2)
5. Illustrate the common components of a wild type lambda phage chromosome. K2 CO2 (2)
6. Distinguish between:  
a. South-western blot and southern blot  
b. Far-western blot and western blot K4 CO6 (6)
7. Identify the different types of restriction enzymes and highlight the role of each one of them. K3 CO1 (5)
8. Distinguish between the lytic and lysogenic infection cycles for a bacteriophage. K3 CO2 (5)
9. Plan an experiment of developing a genomic library from a mammalian tissue. K3 CO3 (8)
10. Dissect the process of Shotgun sequencing method. K3 CO5 (8)
11. Analyze the kind of PCR required in following conditions: K4 CO4 (8)
  - a) Getting undesired PCR products repeatedly
  - b) To detect small amount of DNA in frozen tissue sample