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School of Medical and Allied Sciences

**M.Sc Medical Lab Technology
Mid Term Examination - May 2024**

Duration : 90 Minutes

Max Marks : 50

Sem II - L1PG201T - Molecular Biology and Genetics*General Instructions*

Answer to the specific question asked

Draw neat, labelled diagrams wherever necessary

Approved data hand books are allowed subject to verification by the Invigilator

- 1) Illustrate how site-directed mutagenesis can be used to study the function of a specific gene. K2 (2)
- 2) Recall the process of DNA replication and the enzymes involved. K1 (3)
- 3) Demonstrate the isolation of genomic DNA from a bacterial culture. K2 (4)
- 4) Summarize the benefits of molecular diagnostics over traditional serological tests. K2 (6)
- 5) Apply PCR in designing a diagnostic test for a newly discovered pathogen. K3 (6)
- 6) Organize the steps involved in gene cloning using recombinant DNA technology. K3 (9)
- 7) How does DNA sequencing using Sanger's dideoxynucleotide method differ from Maxam and Gilbert's method in terms of accuracy and applicability? K4 (8)
- 8) Categorize the different types of mutations that can result from site-directed mutagenesis and provide examples of each type. K4 (12)

OR

- Categorize the various applications of recombinant DNA technology in biotechnology and medicine, providing specific examples for each category. K4 (12)