BBH-003-001623 Seat No. _____

B. Sc. (Biotechnology) (Sem. VI) (CBCS) Examination

July – 2021

BT - 603 : Advance Molecular Technique and Bio-Informatics

(Old Course)

Faculty Code : 003

Subject Code : 001623

Time : $2\frac{1}{2}$ Hours] [Total Marks : **70**

Instructions : (1) All questions are compulsory

(2) Right side figures indicate marks of the question

1 Answer all the questions : **20**

(1) Define annealing.

(2) Write the application of western blotting.

(3) Define autoradiography.

(4) RAPD is dominant marker–True/False.

(5) What is random primer?

(6) Which technique is used to study DNA-protein interaction.

(7) State position effect in chromosome.

(8) Define term database.

(9) According to Human Genome Project how many function genes are present in human genome ?

(10) What is global alignment.

(11) Define data mining.

(12) Write purpose of gene mapping.

(13) Write full form of BLAST.

(14) What is ExPASy

(15) Define ORF.

(16) Give one example of primary DNA database.

(17) Write full form of NCBI.

(18) Which amino acid inhibit helix formation in secondary structure.

(19) Write use of Clustal W.

(20) What is dendrogram.

2 (A) Answer any **three** out of six : **6**

(1) Explain advantage of Real time PCR.

(2) Differentiate Microsatellite and Minisatellite.

(3) Write about pyrosequencing.

(4) What is PubMed.

(5) Write importance of primary structure of protein.

(6) Show the importance of hydrophobic interaction in protein structure.

(B) Answer any **three** out of six : **9**

(1) Briefly write on probes.

(2) Write the procedure of DNA footprinting.

(3) Describe applications of Bioinformatics in modern Biology.

(4) Show the future prospects of Human Genome Project.

(5) Give an account on Protein Sequence Databases.

(6) Briefly write about Ramachandran plot.

(C) Answer any **two** out of five : **10**

(1) Discuss two major method for DNA sequencing.

(2) Give the detail account of Chromosomal Walking and Jumping.

(3) What is Biological Databases? Discuss about and nature and importance of Biological Databases in Biological discovery.

(4) Illustrate about Homology and similarity search tool in detail.

(5) Give the detail of secondary structure of protein.

3 (A) Answer any **three** out of six : **6**

(1) Write major steps in DNA amplification.

(2) Briefly write about RFLP.

(3) What are the application of Bioinformatics in Drug designing.

(4) What is Uniport.

(5) Give the importance of Homology search in Bioinformatics.

(6) Write difference between Comparative and Functional Genomics.

(B) Answer any **three** out of six : **9**

(1) Discuss any one Blotting technique with procedure.

(2) Describe the difference between Radioactive and Non-radioactive probes.

(3) Give an account on primer designing.

(4) Illustrate the history of Human Genome Project.

(5) Briefly write on bibliographic database.

(6) Explain the primary protein structure databases.

(C) Answer any **two** out of five : **10**

(1) Explain artificial synthesis of DNA.

(2) Give the detail of Restriction mapping.

(3) Discuss the principle and application of Microarray.

(4) Describe nucleic acid sequence database in detail.

(5) Explain about phylogenetic analysis.
