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PB-003-1016043

Seat No. _____

B. Sc. (Sem. VI) (CBCS) (W.E.F. 2016) Examination

March / April - 2020

Biotechnology : BT - 603

(Advance Molecular Technique & Bio-Informatics)

(New Course)

Faculty Code : 003

Subject Code : 1016043

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

1 (a) Answer all : **1×4**

(i) Write source of Taq polymerase.

(ii) Give the importance ddNTP in DNA sequencing.

(iii) Define blotting.

(iv) Optimum length of primer in PCR..... Base.

(b) Answer any **one** out of two : **1×2**

(i) What are the advantage of Real-Time PCR.

(ii) How length of primer affect DNA amplification.

(c) Answer any **one** out of two : **1×3**

(i) Briefly write on Next generation sequencing.

(ii) Discuss the steps and application of southern blotting.

(d) Answer any **one** out of two : **1×5**

(i) Discuss various type and application of PCR.

(ii) Explain the method of DNA sequencing.

2 (a) Answer all : **1×4**

(i) Give an example of codominant marker.

(ii) Which disease is targeted first for gene therapy.

(iii) Give application of DNA footprinting.

(iv) Write need of mapping.

(b) Answer any **one** out of two : **1×2**

(i) Differentiate Micro satellite and Mini satellite.

(ii) Write application of gene therapy.

(c) Answer any **one** out of two : **1×3**

(i) Write notes on RFLP.

(ii) Give the method of DNA footprinting.

(d) Answer any **one** out of two : **1×5**

(i) Define gene therapy. Discuss in-vivo and ex-vivo gene therapy in detail.

(ii) Discuss chromosomal walking and jumping in detail.

3 (a) Answer all : **1×4**

(i) The genome consists of exons by per cent.....

(ii) Define databases.

(iii) Give one example of Bioinformatics resource.

(iv) What is ENTREZ ?

(b) Answer any **one** out of two : **1×2**

(i) Briefly classify Biological database.

(ii) Differentiate exon and intron.

(c) Answer any **one** out of two : **1×3**

(i) Write major feature of Human Genome Project.

(ii) Enlist the application of Bioinformatics.

(d) Answer any **one** out of two : **1×5**

(i) Describe any five Bioinformatics resources in detail.

(ii) Give the nature and importance of Biological database.

4 (a) Answer all : **1×4**

(i) Define primary database.

(ii) Give an example of nucleic acid sequence database.

(iii) What is PubMed ?

(iv) Write the major force responsible for tertiary structure of protein.

(b) Answer any **one** out of two : **1×2**

(i) Write briefly on GeneBank.

(ii) Differentiate motif and domain in protein.

(c) Answer any **one** out of two : **1×3**

(i) Discuss about any one database deals with three dimensional Biomolecular structure.

(ii) Write about SGOP.

(d) Answer any **one** out of two : **1×5**

(i) Differentiate primary and secondary database along with its source.

(ii) Give the detail account of Protein databases.

5 (a) Answer all : **1×4**

(i) Give the one name of program used for multiple sequence alignment.

(ii) What is dendrogram ?

(iii) What is c-DNA ?

(iv) Define comparative genomics.

(b) Answer any **one** out of two : **1×2**

(i) What is local alignment and global alignment ?

(ii) Briefly write about phylogenetic tree.

(c) Answer any **one** out of two : **1×3**

(i) Briefly write on primer designing.

(ii) Write about computer aided drug discovery.

(d) Answer any **one** out of two : **1×5**

(i) Explain about any two similarity search tool.

(ii) Give the procedure and application of DNA Microarray.
