M.Sc. Examination, 2018

Semester – IV

Biotechnology

Core Course-XVI

(Genomics & Proteomics, Bioinformatics)

Time: 3 Hours **Full Marks: 40**

Questions are of value as indicated in the margin.

Answer ***any four*** questions

1. (a) What are hybridization based molecular markers and PCR based molecular markers?
   (b) Describe AFLP mentioning its merits and demerits. 2+2+6=10
2. Discuss briefly about different gel-based and non-gel based proteomic techniques. 5+5=10
3. (a) Discuss about the important parameters of primer designing.
   (b) Name a free software that can be used for primer designing.
   (c) Describe Needleman-Wunsch algorithm. 4+1+5=10
4. (a) What is homology modeling?
   (b) Write the different steps of homology modeling including the assumptions.
   (c) Describe Dot Matrix Analysis. 2+4+4=10
5. (a) Describe DNA barcoding. What are its merits and demerits?
   (b) Describe briefly a next generation sequencing technique. (4+1)+5=10
6. (a) What is functional genomics?
   (b) Briefly write about the features of human genome sequencing project and its final outcome.
   (c) Describe briefly one important biomedical application of the SNP concept.
   (d) Give one example to explain the most important advantage of NGS technique.
   (e) Enumerate some of the applications of NGS technique. 2+2+2+2+2=10
7. Write short notes on ***any four*** questions: 2.5×4=10
   (a) RFLP
   (b) BLAST
   (c) Pyrosequencing
   (d) PAM matrix
   (e) MSAP
   (f) cDNA microarray

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