

H 1326

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2006.

Sixth Semester

Industrial Biotechnology

IB 047 — GENOMICS AND PROTEOMICS

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define functional genomics.
2. Short gun method – briefly explain.
3. Mention atleast five eukaryotic genomes which have been completely sequenced.
4. Why glycoproteins are of interest in proteomics?
5. Gene knock out – briefly explain.
6. Directed evolution (or) molecular evolution – define.
7. Multiple sequence alignment and its use in biology.
8. What are sequence cleaning and sequence clustering.
9. Explain molecular phylogeny.
10. BLAST, SWISS PROT – Explain.

PART B — (5 × 16 = 80 marks)

11. (i) Explain the outline of human genome project. (8)
(ii) Explain in detail about the roles of genomics in understanding genetic makeup of humans.

12. (a) Elaborate genomic array approaches for gene expression studies.

Or

(b) Elaborate two non-array based genomic methods for mRNA quantitation.

13. (a) Applications of genomics in drug discovery – Expound.

Or

(b) Critically analyse the importance of Pharmacogenomics in the Pharma industry.

14. (a) What is gene therapy? How genomic and proteomic approaches will be helpful?

Or

(b) Give a detailed account of applications of genomic and proteomics in gene knockouts.

15. (a) "Proteomic high through put screening is useful in drug discovery" Justify with examples.

Or

(b) Phage antibodies as tools for proteomics – Explain in detail.
