(DBI 01)

P.G. DIPLOMA EXAMINATION, DECEMBER 2008.

Bioinformatics

Paper I — PRINCIPLES OF CELL AND MOLECULAR BIOLOGY AND BIOINFORMATICS

Time : Three hours **Maximum : 100 marks**

Answer any FIVE questions.

All questions carry equal marks.

1. Discuss the scope and importance two Bioinformtics.

2. What is Central Dogma two molecular biology?

3. What is Transcription? Explain post transcriptional modification in Eukaryotes?

4. Explain briefly about cell cycle and regulation.

5. Illustrate the structure and function of plasma method.

6. Discuss the structure and function of chloroplast and Mitochondria.

7. Write an essay on Genetic Code.

8. Explain the role of Bioinformatics in Drug discovery and development.

9. Explain various steps involved in meiotic cell division.

10. Write an essay on DNA damage and its repair mechanisms.

wk 7

(DBI 02)

P.G. DIPLOMA EXAMINATION, DECEMBER 2008.

Bioinformatics

Paper II — NUMERICAL METHODS, OPTIMIZATION TECHNIQUES AND COMPUTER PROGRAMMING

Time : Three hours **Maximum : 100 marks**

Answer any FIVE questions.

All questions carry equal marks.

1. Explain inherent parallelism in biological phenomenon and their models.

2. Explain system software.

3. Describe generation of computers.

4. What are errors involved in the construction of mathematical model for the real physical processes.

5. Briefly explain various techniques of optimization.

6. Explain C-programming language.

7. What is minimization and maximization of functions?

8. Explain various elements of sites? How are sites related?

9. Describe programming with DHTML.

10. Describe FFT applications in bioinformatics.

(DBI 03)

P.G. DIPLOMA EXAMINATION, DECEMBER 2008.

Bioinformatics

Paper III — DATABASE MANAGEMENT AND BIOLOGICAL DATA BANKS MOLECULAR DESIGNING

Time : Three hours **Maximum : 100 marks**

Answer any FIVE questions.

All questions carry equal marks.

1. Briefly explain information processing challenges.

2. Describe searching of biological databases.

3. Describe genomic databanks.

4. Write an structural data banks?

5. What is NCBI?

6. Describe various features of gene bank data model.

7. Explain primary and secondary structure of proteins.

8. Describe the structure of DNA.

9. Describe molecular modelling and simulation studies.

10. What is phylogenetic analysis?

(DBI 04)

P.G. DIPLOMA EXAMINATION, DECEMBER 2008.

Bioinformatics

Paper IV — GENOMIC AND PROTEOMICS AND SEQUENCING ANALYSIS

Time : Three hours **Maximum : 100 marks**

Answer any FIVE questions.

All questions carry equal marks.

1. Explain in detail organisation of RNA viruses.

2. Explain structural and functional organisation of mitochondrial genome.

3. Describe human genome project.

4. Describe micro arrays and its applications.

5. Explain Ramchandran plot and its utility in predicting structure of biomolecules.

6. Write an account of post translational modifications of proteins.

7. Explain the predictive methods of DNA sequences.

8. Write an account on PCR and its application.

9. Describe Bioethics related to GMO's.

10. Explain drug design and drug delivery.

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