

(DBI 01)

PG DIPLOMA EXAMINATION, DECEMBER - 2015

BIO-INFORMATICS

Paper - I : Principles of Cell and Molecular Biology and Bioinformatics

Time : 3 Hours

Maximum Marks : 70

Answer any five questions from the following

All questions carry equal marks

- 1) Describe the Structure and functions of Endoplasmic Reticulum.
- 2) Write about Mitochondria structure and its functions.
- 3) Explain Mitotic cell division.
- 4) Write about Genome organization.
- 5) Give an account on DNA as genetic material.
- 6) Explain the Gene discovery.
- 7) What is meant by Replication? Explain different types of replication mechanisms.
- 8) Describe the mechanism of Transcription in bacteria.
- 9) Discuss scope of Bioinformatics.
- 10) Describe challenges in information processing.



(DBI 02)

P.G. DIPLOMA EXAMINATION, DECEMBER - 2015

BIOINFORMATICS

Paper - II : Numerical Methods, Optimization Techniques and Computer
Programming

Time : 3 Hours

Maximum Marks : 70

Answer any five questions from the following

All questions carry equal marks

- 1) Give an account on Physical and Biological models of computers.
- 2) Explain Parallel and sequential computing.
- 3) Write about system software.
- 4) Discuss the different types of operating system in detail.
- 5) Describe briefly about numerical methods of Computer programming.
- 6) Give an account on optimization techniques in computer programming.
- 7) Explain randomized minimization techniques.
- 8) Give an account on Fast Fourier Transform (FFT).
- 9) Explain the Programming with HTML.
- 10) Discuss the designing of Web pages.



(DBI 03)

PG DIPLOMA EXAMINATION, DECEMBER - 2015

BIOINFORMATICS

**Paper - III : Database Management and Biological Data Banks-Molecular
Designing**

Time : 3 Hours

Maximum Marks : 70

Answer any five questions from the following

All questions carry equal marks

- 1) What is meant by Bioinformatics? Discuss various types of tools used in bioinformatics.
- 2) Describe the biological databases.
- 3) Write about KEGG database.
- 4) Write about Structural and Genomic data banks.
- 5) Explain NCBI data model in detail.
- 6) Explain DDBJ data model in detail.
- 7) Discuss the secondary and tertiary structure of proteins.
- 8) Describe the tertiary structure of DNA.
- 9) Give an account on molecular modeling and its applications.
- 10) Write about Structure prediction of Biopolymers.



(DBI 04)

PG DIPLOMA EXAMINATION, DECEMBER - 2015

BIO-INFORMATICS

Paper - IV : Genomic and Proteomics and Sequencing Analysis

Time : 3 Hours

Maximum Marks : 70

Answer any five questions from the following

All questions carry equal marks

- 1) Write about Crossing Over.
- 2) Discuss the structure and function of organellar genomes.
- 3) Write about the regulatory stages of Gene expression.
- 4) Write about Microarrays?
- 5) Explain the Protein trafficking mechanism?
- 6) Define Proteins. Explain Ramachandran Plot.
- 7) Define Sequence alignment. Discuss the pair wise and multiple sequence alignment methods.
- 8) Describe Drug delivery mechanism.
- 9) Describe briefly about PCR and its applications.
- 10) What are the different types of Cell culture techniques? Explain in detail.

