(DBI 01)

P.G. DIPLOMA EXAMINATION,
DECEMBER 2019.

First Year

Bio-Informatics

PRINCIPLES OF CELL AND MOLECULAR BIOLOGY AND BIOINFORMATIC

Time : Three hours Maximum : 70 marks

Answer any FIVE questions.

All questions carry equal marks.

1. Describe the structure and functions of Chloroplast.

2. Describe the structure and functions of Nucleus.

3. Explain the genome structure and its organisation.

4. Explain the cell division mitosis and its importance.

5. Describe the DNA as genetic material.

6. Explain the gene discovery and genetic code.

7. Describe mechanisms of DNA repairs.

8. Write an account on transcription. Translocation and replication.

9. Explain the scope of bioinfomatics in molecular biology.

10. Describe the challenges in information processing and drug discovery.

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(DBI 02)

P.G. DIPLOMA EXAMINATION,
DECEMBER 2019.

Bio-Informatics

NUMERICAL METHODS, OPTIMIZATION TECH. AND COMPUTER PRO.

Time : Three hours Maximum : 70 marks

Answer any FIVE questions.

All questions carry equal marks.

1. Enumerate the parallel versus sequential computing.

2. Explain the inherent parallelisms is physical and biological phenomenon.

3. Explain the development of generation of computers and system software.

4. Explain the operation systems, internal and external coordinate system.

5. Describe the errors involved in the construction of mathematical models for the real physical processes.

6. Describe the methods of optimization and their significance in biology.

7. Describe the minimisation and maximisation of functions.

8. Write an account on Fast Fourier Transform of discretely sampled data and its importance.

9. Write an account on programming with HTML.

10. Explain the designing of Web pages and their use in molecular biology.

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(DBI 03)

P.G. DIPLOMA EXAMINATION,
DECEMBER 2019.

First Year

Bio-Informatics

DATABASE MANA. AND BIOLOGICAL DATA BANKS MOLE. DESI

Time : Three hours Maximum : 70 marks

Answer any FIVE questions.

All questions carry equal marks.

1. Write an account on searching biological databases.

2. Explain the information processing challenges.

3. Explain the Genome Data banks and their significance.

4. Describe the metabolic mirobial data banks.

5. Describe the NCBI data model with examples.

6. Describe the PDB Data model with examples.

7. Describe the secondary and tertiary structure of proteins.

8. Write an account on RNA primary and secondary structure.

9. Explain phylogenetic analysis and optimisation.

10. Explain the molecular modelling and simulation studies.

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(DBI04)

P.G. DIPLOMA EXAMINATION,
DECEMBER 2019.

First Year

Bio-Informatics

GENOMIC AND PROTEOMICS AND SEQUENCING ANALYSIS

Time : Three hours Maximum : 70 marks

Answer any FIVE questions.

All questions carry equal marks.

1. Describe the organisation of Eukaryotic and viral genomes.

2. Describe the Linkage and crossing over.

3. Explain the regulation of gene expression

4. Write an account on the nature of genetic code.

5. Describe Ramachandran plot and its importance.

6. Describe post transcriptional modifications.

7. Describe the principle, methodology and applications of PCR.

8. Describe cell culture techniques and also bioethics.

9. Write an account on drug delivery and design.

10. Describe the basics of genetic engineering and its applications.

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