RW-6394 **505101**

M.Phil DEGREE EXAMINATION, DECEMBER 2010

Bioinformatics

RESEARCH METHODOLOGY

(CBCS–2008 onwards)

Time : 3 Hours Maximum : 75 Marks

Answer **all** the questions.

(5 × 15 = 75)

1. (a) Discuss about the various Biodiversity resources like databases, metadatabases and virtual libraries.

(*Or*)

(b) Discuss the role of Biotechnology and its applications in Biodiversity.

2. (a) (i) Explain the various forms of IPR. (6)

(ii) Discuss the role of Global organisations and Treaties on IPR.

(9)

(*Or*)

(b) Discuss the issues of IPR and patents with reference to genes and organisms.

3. (a) Give an account on methods and their tools in molecular drug designing.

(*Or*)

(b) Discuss in detail about the following tools used for phylogenetic analysis :—

(i) PAUP.

(ii) Phylip

(iii) Tree View

4. (a) Explain in detail about the multi-enzyme complexes and structure of enzyme substrate complexes.

(*Or*)

(b) Describe the binding energies of proteins and the experimental measurements of incremental energies.

5. (a) Write an essay on Genetic diseases and Genomics.

(*Or*)

(b) Explain the various genome databases and the various tools with them.

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RW-6395 **505102**

M.Phil. DEGREE EXAMINATION, DECEMBER 2010

Bioinformatics

ADVANCES IN BIOINFORMATICS

(CBCS—2008 onwards)

Time : 3 Hours Maximum : 75 Marks

Answer **all** questions. (5 × 15 = 75)

1. (a) Explain in depth about bonded and non-bonded interactions in a protein.

(*Or*)

(b) Explain phase space, Ensemble and its application in Molecular Dynamics.

2. (a) Structure based drug design, explain it with a flow chart.

(*Or*)

(b) What are the various descriptors in QSAR and explain them.

3. (a) What is Genomic mapping ? What is the relationship between Mapping and Sequencing ?

(*Or*)

(b) Explain Genome projects and its achievements.

4. (a) What are the applications of protein-protein interaction networks ?

(*Or*)

(b) What are the available interaction databases ? Explain them.

5. (a) Explain Transcriptomics, Metablomics and its applications.

(*Or*)

(b) Explain different types of Microarrays.

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RW-6396 **505103**

M.Phil. DEGREE EXAMINATION, DECEMBER 2010

Bioinformatics

GENOMICS, PROTEOMICS AND PHARMACO GENOMICS

(CBCS–2008 onwards)

Time : 3 Hours Maximum : 75 Marks

(5 × 15 = 75)

Answer **all** questions.

Each question carries 15 marks.

1. (a) How Comparative genomics is used to unravel evolutionary hierarchy ?

(*Or*)

(b) "Metablomics can be studied by Comparative genomics"—Explain.

2. (a) Write an elaborate note on protein microarrays and its uses.

(*Or*)

(b) How MALDI-TOF is used in proteomics ?

3. (a) Write a note on protein structure prediction.

(*Or*)

(b) Give an account of MMDB and SARF databases.

4. (a) Describe the methods for computing genomic variations and genotyping.

(*Or*)

(b) Write a note on Genomic Variations and Personalized medicine.

5. (a) How individual genomes influence drug metabolism in humans ?

(*Or*)

(b) Describe personalized anticoagulant therapy.

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