Master of Science – I (Bioinformatics) Examination: Oct / Nov 2016
Semester – I (New CBCS)

SLR No.	Day & Date	Time	Subject Name	Paper No.	Seat No.
SLR–SR – 63	Wednesday 16/11/2016	10.30 AM to 01.00 PM	Basic Bioinformatics	HCT 1.1	

Instructions:
1) **Section- I, Question 1 is compulsory.**
2) **Attempt any four questions from Section-II.**
3) **Figures to the right indicate full marks.**
4) **Answer to the Section-I and Section-II are to be written in same answer Booklet only.**

Total Marks:70

Section-I

Q.1 Rewrite the following sentences by selecting correct answers from given alternative. **07**

1) The word size in FASTA for the protein is _____
   a) 2 b) 11
   c) 3 d) 7

2) INSD stands for _____
   a) Indian Nucleotide System Data
   b) International Nucleotide Sequence Database
   c) International Nucleotide Standard Database
   d) None f these

3) E-mail stands for _____
   a) Extra mail b) Electronic mail
   c) Ethernet mail d)

4) EMBL database is maintained by _____
   a) SIB b) Gen Bank
   c) EBI d) NCBI

5) ASN stands for _____
   a) Abstract Syntax Notation b) Able Syntax Notation
   c) Able String Notation d) Alignment Syntax Notation

6) Rasmol stands for _____
   a) Ric Molecular Viewer b) Rage Molecular Viewer
   c) Ras Molecular Viewer d) Random Molecular Viewer

7) _____is the organismal, tissue, or cell level measurements of molecular dynamic changes over time.
   a) Interactomics b) Fluxomics
   c) Metabolomics d) Biomics

B) Definitions: **07**

1) Genomics
2) BlastP
3) SRS
4) HMM
5) Gene array
6) Ktup
7) BankIT

Section-II

Answer any four of the following:

Q.2 Explain Systems Biology and describe the techniques associated disciplines with systems biology. **14**

Q.3 What is 'Bioinformatics'? Describe in detail Internet and Bioinformatics. **14**

Q.4 Explain the brief description of various file formats for bimolecular sequences like Genbank, GCG, FASTA, IG and plain format. **14**

Q.5 **Answers any two from the following:** **14**

a) Explain protein primary sequence database in details.
b) Explain BLAST tool in detail.
c) Explain the Neural network in Bioinformatics.

Q.6 **Write short notes on any two:** **14**

a) Data Mining
b) DDBJ
c) ClustalX and Treeview

Master of Science – I (Bioinformatics) Examination: Oct /Nov 2016
Semester – I (New CBCS)

SLR No.	Day & Date	Time	Subject Name	Paper No.	Seat No.
SLR – SR 64	Friday 18/11/2016	10:30 AM to 01:00 PM	Cell Biology and Genetics	HCT 1.2	

Instructions:
1) **Part I, Question 1 is compulsory.**
2) **Attempt any four questions from Part II.**
3) **Part I and Part II should be written in same answer book.**
4) **Figures to the right indicate full marks.**

Total Marks: 70

PART I

Q.1 A) Rewrite the following sentences by selecting correct answers from given alternative. **07**

1) _____is not the stop codon.
   a) GUG b) UAG
   c) UGG d) UAA

2) Ribose sugar is found in _____
   a) DNA b) RNA
   c) Protein d) None of these

3) Chromatin is composed of _____
   a) Nucleic acids only b) Nucleic acids and proteins
   c) Proteins only d) None of these

4) _____RNA carries anticodon.
   a) rRNA b) mRNA
   c) tRNA d) hnRNA

5) The most abundant molecule in cell membrane is _____
   a) RNA b) Protein
   c) Lipid d) Carbohydrate

6) Cell death occurs in _____ phase of cell cycle.
   a) S b) G1
   c) G0 d) G2

7) _____is one of the primary messenger.
   a) hormone b) CDK
   c) cAMP d) G protein

B) Definitions: **07**

1) Law of segregation
2) Genomics
3) Okazaki fragments
4) Spliceosome
5) Semipermeability
6) CDK
7) Acetylcholine

PART II

Answer any four of the following:

Q.2 Define Nucleosome. Explain the organization of eukaryotic genome. **14**

Q.3 Explain in detail enzymes of DNA replication. **14**

Q.4 Write the differences between prokaryotic and eukaryotic cells. **14**

Q.5 Answers any two from the following: **14**

a) Explain the process of transcription in prokaryotic.
b) Write a note on types of mutation.
c) Add a note on cell organelles.

Q.6 Write short notes on any two: **14**

a) Extra chromosomal inheritance
b) Composition of cell membrane
c) Cell-cell interaction

Master of Science – I (Bioinformatics) Examination: Oct/Nov 2016
Semester – I (New CBCS)

SLR No.	Day & Date	Time	Subject Name	Paper No.	Seat No.
SLR – SR – 65	Monday 21/11/2016	10.30 AM to 01.00 PM	Introduction to HTML & Biostatistics	HCT 1.3	

Instructions:
1) **Part I, Question 1 is compulsory.**
2) **Attempt any four questions from Part II.**
3) **Part I and Part II should be written in same answer book.**
4) **Figures to the right indicate full marks.**
5) **Draw neat and labeled diagram.**

Total Marks: 70

PART I

Q.1 Rewrite the following sentences by selecting correct answers from given alternative. **07**

1) _____ is the correct HTML tag for adding a background color.
   a) <body color="yellow"> b) <body bgcolor="yellow">
   c) <background>yellow</background>
   d) <body background="yellow">

2) The full form of HTTP is _____
   a) Hyper text transfer protocol b) Hyper text transfer package
   c) Hyphenation text test program d) None of these

3) .com domain represents _____
   a) Education domain b) Commercial domain
   c) Network d) None of these

4) <P> tag represents _____
   a) start a new paragraph b) break the line
   c) end the current paragraph d) none of the above

5) Internet Explorer is _____
   a) An Icon b) A File Manager
   c) A Browser d) The Internet

6) It is necessary to find cumulative frequencies in order to draw _____
   a) A histogram b) A frequency polygon
   An ogive curve c) A column chart

7) Mean of a set of values is based on _____
   a) all values b) fifty percent values
   c) First and last value d) max and min values

B) Definitions: **07**

1) Internet
2) Website
3) Frame tag
4) Table tag
5) Scatter diagram
6) Mean deviation
7) Independent events

PART II
Answer any four of the following.

Q.2 Design a college website by using frameset. **14**

Q.3 Explain forms in HTML. **14**

Q.4 Calculate the mean deviation from the mean and its coefficient for the following data. **14**

Class	0-4	4-8	8-12	12-16	16-20
Frequency	4	6	8	5	2

Q.5 Answers any two from the following: **14**

a) Explain basic tags with attributes & example.
b) Explain Image & Picture tag with example.
c) Construct histogram for the following data.

Profit per shop	0-100	100-200	200-300	300-400	400-500	500-600
No of shops	12	18	27	20	17	6

Q.6 Write short notes on any two: **14**

a) Frameset with example
b) Chi-square test
c) Applications of HTML

Master of Science – I (Bioinformatics) Examination: Oct / Nov 2016
Semester – I (New CBCS)

SLR No.	Day & Date	Time	Subject Name	Paper No.	Seat No.
SLR – SR - 66	Wednesday 23/11/2016	10.30 AM to 01.00 PM	Introduction to Programming Languages and Programming through C & C++	SCT 1.1	

Instructions:
1) **Part Iis compulsory.**
2) **Attempt any four questions from Part II.**
3) **Part I and Part II should be written in same answer book.**
4) **Figures to the right indicate full marks.**
5) **Draw neat and labeled diagram.**

Total Marks: 70

PART I

Q.1 Rewrite the following sentences by selecting correct answers from given alternative. **07**

1) _____is valid C expression.
   a) int my_num = 100,000;
   b) int my_num = 10000;
   c) int my num = 1000;
   d) int $my_num = 10000,

2) The output of the code below is _____

```
#include <stdio.h>
void main()
{
  int x = 5;
  if (x < 1)
     printf("hello");
  if (x = = 5)
     printf("hi");
  else
     printf("no");
}
```

   a) hi
   b) hello
   c) no
   d) None of these

3) The _____is the output of this C code

```
#include <stdio.h>
void main()
{
   int i = 2;
   do
   {
      printf("Hi");
   } while (i < 2)
 }
```

   a) Compile time error
   b) Hi Hi
   c) Hi
   d) Varies

4) _____is the output of the following code

```
#include<stdio.h>
main()
{
   const int a = 5;
   a++;
   printf("%d", a);
 }
```

a) - 5
b) - 6
c) – Runtime error
d) – compile error

5) _____is the range of int data type short in C

a) -128 to 127
b) -32768 to 32767
c) -2147483648 to 2147483647
d) None of the mentioned

6) _____is the keyword used to make a class.

a) class
b) struct
c) int
d) None of the mentioned

7) OOPs stand for _____

a) Oracle Oriented Programming
b) Object Oriented Programming
c) Operand Oriented Programming
d) None of these

B) Definitions: **07**

1) Program
2) Variable
3) Array
4) String
5) Structure
6) Constructor
7) Overloading

PART II

Answer any four of the following.

Q.2 Explain different data types used in C language with example. **14**

Q.3 Define function. What is mean by call by reference & cell by value with example? **14**

Q.4 Explain in detail Class, Objects & Methods with an example program in C++. **14**

Q.5 **Answers any two from the following:** **14**

a) Decision Making Statements with example in C.
b) Explain Arrays in C programming in detail.
c) Explain in detail Polymorphism.

Q.6 **Write short notes on any two:** **14**

a) Write a short note on Pointers with example.
b) Explain in detail Overloading.
c) What is Inheritance? Explain the types of Inheritance.

Master of Science – I (Bioinformatics) Examination: Oct / Nov 2016
Semester – I (New CBCS)

SLR No.	Day & Date	Time	Subject Name	Paper No.	Seat No.
SLR – SR - 67	Wednesday 23/11/2016	10.30 AM to 01.00 PM	Plant Breeding and Tissue Culture	SCT 1.2	

Instructions:
1) **Part I is compulsory.**
2) **Attempt any four questions from Part II.**
3) **Part I and Part II should be written in same answer book.**
4) **Figures to the right indicate full marks.**
5) **Draw neat and labeled diagram.**

Total Marks: 70

PART I

Q.1 Rewrite the following sentences by selecting correct answers from given alternative. **07**

1) A plant breeder wants to develop a disease resistance variety, what he should do first_____.
   a) mutation b) selection
   c) hybridization d) production of crop

2) Hybrids which are superior over parents are called _____
   a) inbreeding b) dominant
   c) recessive d) heterosis

3) Major food crops have originated mainly from _____
   a) ocean b) mountain
   c) desert d) plain

4) Transfer of pollens from anthers to stigma within the same flower is called ___
   a) autogamy b) allogamy
   c) herkogamy d) dichogamy

5) The amount of radiation require to kill _____of the exposed individual is termed as lethal dose.
   a) 25% b) 50%
   c) 75% d) 100%

6) Most widely used chemical for protoplast fusion is_____
   a) mannitol b) sorbitol
   c) mannol d) polyethylene glycol

7) Explant is disinfected through _____
   a) autoclaving b) UV – irradiation
   c) surface sterilization d) dry heat

B) Definitions: **07**

1) Mutuation breeding
2) Plant breeding
3) Anther culture
4) Bioreactor
5) Immobilization
6) Biotic
7) Edible oil

PART II

Answer any four of the following.

Q.2 Explain in detail about genetic resources of plant. **14**

Q.3 Discuss of genetic basis and breeding for resistance to diseases and insect pests. **14**

Q.4 Briefly explain about somatic hybridization. **14**

Q.5 **Answers any two from the following:** **14**

a) Note on Microprogation
b) Note on Immobilization of plant cell
c) Note on biosafety of transgenic plant.

Q.6 **Write short notes on any two:** **14**

a) Explain about plant breeding for stress resistance
b) Discuss the organogenesis
c) Describe the transgenic crops for resistance against biotic.

Master of Science – II (Bioinformatics) Examination:
Oct / Nov 2016 Semester – III (New CBCS)

SLR No.	Day & Date	Time	Subject Name	Paper No.	Seat No.
SLR – SR – 80	Wednesday 16/11/2016	2:30 P.M to 5:00 P.M	Biological Database Management System	IX	

Instructions:
1) **Section I is compulsory.**
2) **Attempt any four questions from section II.**
3) **All questions carry equal marks.**
4) **Figures to the right indicate full marks.**
5) **Draw neat and labeled diagrams.**

Total Marks: 70

Section I

Q.1 A) Complete the sentences by selecting correct answers from given alternatives: **07**

1) For each attribute of a relation, there is a set of permitted values, called the _____ of that attribute.
   a) Domain b) Relation
   c) Set d) Schema
2) Relational model was invented by _____
   a) Chris Date b) Hugh Darwen
   c) E. F. Codd d) Bill Gates
3) _____statements makes 'permanent' all changes performed in the current transaction.
   a) Rollback b) Truncate
   c) Commit d) None of these
4) DML is provided for _____
   a) Description of logical structure of database.
   b) Manipulation & processing of database.
   c) Addition of new structures in the database system.
   d) Definition of physical structure of database system.
5) _____ combines the data manipulating power of SQL with the data processing power of Procedural Languages.
   a) PL/SQL b) SQL
   c) Advanced SQL d) PQL
6) A _____is a query that retrieves rows from more than one table or view.
   a) Start b) End
   c) Join d) All of the mentioned
7) _____product is returned in a join query have no join condition.
   a) Equijoins b) Cartesian
   c) Both d) None of the mentioned

B) Definitions: **07**

1) Table
2) Foreign Key
3) Data Independence
4) Cardinality
5) Procedure
6) Rollback
7) View

PART II

Answer any four of the following:

Q.2 Explain limitations of traditional file processing systems & advantages of DBMS. **14**

Q.3 Explain components of DBMS. **14**

Q.4 Explain Data mining with types of Data mining techniques and different types of application. **14**

Q.5 **Answers any two from the following:** **14**

a) Users of DBMS
b) ER Symbols
c) Normalization

Q.6 **Write short notes on any two:** **14**

a) DML Commands
b) Join Operations
c) What is PL/SQL. Features of PL/SQL.

Master of Science – II (Bioinformatics)
Examination: Oct / Nov 2016 Semester – III (New CBCS)

SLR No.	Day & Date	Time	Subject Name	Paper No.	Seat No.
SLR – SR – 81	Friday 18/11/2016	02:30 P.M to 05:00 P.M	Advanced Biophysical Techniques	X	

Instructions:
1) **Section-I, Question 1 is compulsory.**
2) **Attempt any four questions from Section-II.**
3) **Answer to the Section-I and Section-II are to be written in same answer Booklet only.**
4) **Figures to the right indicate full marks.**

Total Marks: 70

Section-I

Q.1 A Rewrite the following sentences by selecting correct answers from given alternatives. **07**

1) Metals are usually _____
   a) Electron donar
   b) Electron acceptor
   c) Both a and b
   d) None

2) The type of IR which deals with vibrational energy is _____
   a) Near IR
   b) Mid-IR
   c) Far IR
   d) All

3) The wavelength UV light is _____
   a) 200-780 nm
   b) 2-180 nm
   c) 200-400 nm
   d) None

4) In X-ray crystallography, molecules are in _____state.
   a) Solid
   b) Liquid
   c) Gaseous
   d) All

5) _____ particles are used in SEM.
   a) Electrons
   b) Protons
   c) Neutrons
   d) All

6) Population inversion is associated with _____
   a) Spectroscopy
   b) Laser
   c) Crystallography
   d) ORD

7) The compound microscope was invented by _____
   a) Antony Van Leeuwenhoek's
   b) Louis Pasteur
   c) Hans Janssen
   d) None

B) Definitions: **07**

1) Atomic orbit
2) Electromagnetic spectrum
3) Cuvette
4) Circular polarized light
5) MALDI
6) Bragg's Law
7) TEM

Section-II

Answer any four of the following:

Q.2 Define chemical bond. Explain different types of bonds. **14**

Q.3 Write a note on theory and instrumentation of UV spectroscopy. **14**

Q.4 Add a note on instrumentation and applications of IR spectroscopy. **14**

Q.5 **Answers any two from the following:** **14**

a) Explain the principle of NMR.
b) Add a note on applications of CD and ORD.
c) Explain the types of ionization for mass spectroscopy.

Q.6 **Write short notes on any two of the following:** **14**

a) Principle of X-ray crystallography
b) LASER
c) Confocal microscopy

Master of Science – II(Bioinformatics)
Examination: Oct/Nov 2016 Semester – III (New CBCS)

SLR No.	Day & Date	Time	Subject Name	Paper No.	Seat No.
SLR – SR– 82	Monday 21/11/2016	02:30 P.M to 05:00 P.M	Computational Structure Biology and Drug Designing	XI	

Instructions:
1) **Part I, Question 1 is compulsory.**
2) **Attempt any four questions from Part II.**
3) **Attempt to the Part I and Part II are to be written in same answer book.**
4) **Figures to the right indicate full marks.**

Total Marks: 70

PART I

Q.1 Rewrite the following sentences by selecting correct answers from given alternative. **07**

1) Homology modeling is also called as _____ modeling.
   a) Comparative b) Secondary
   c) Primary d) Domain

2) Proteomics is the study of _____
   a) Set of proteins in a specific region of the cell
   b) Set of proteins
   c) Entire set of expressed proteins in a cell
   d) None of these

3) Model can be evaluating by _____
   a) Procheck b) ANOLEA
   c) WHAT IF d) All of these

4) Protein-Protein interaction prediction databases are _____
   a) DIP b) MINT
   c) STRING d) All of these

5) _____ is the method used to design the drug using the knowledge of 3D structure of protein.
   a) Ligand based drug design b) Structure based drug design
   c) Both a and b d) None of these

6) _____is visualization tool which does not recognize PDB format.
   a) Cn3D b) RasMol
   c) RasTop d) PyMol

7) Molecular chemical structures can be designed using _____tools.
   a) ACD Lab b) Chem sketch
   c) KEGG draw d) All of these

B) Definitions: **07**

1) Prodrug
2) RCSB PDB
3) CYP450
4) SCOP
5) HTS
6) Domain
7) Lectin

PART II

Answer any four of the following:

Q.2 What is yeast two hybrid system? Explain the mechanism of yeast two hybrid systems for predicting Protein-Protein interaction. **14**

Q.3 Explain the Homology modeling with its steps in details and Give a detail account on different programmes for the homology modeling. **14**

Q.4 Explain the 3D structure prediction and explain fold recognition and threading method in details. **14**

Q.5 **Answers any two from the following:** **14**

a) Write a note on combinatorial chemistry.
b) What is structural bioinformatics? Explain the RCSB PDB and mm CIF file format in details.
c) Explain in detail the different phases of clinical trials.

Q.6 **Write short notes on any two:** **14**

a) CATH and SCOP
b) PubChem
c) Protein-carbohydrate interaction

Master of Science – II (Bioinformatics)
Examination: Oct / Nov 2016 Semester – III (New CBCS)

SLR No.	Day & Date	Time	Subject Name	Paper No.	Seat No.
SLR – SR – 83	Wednesday 23/11/2016	02:30 P.M To 05:00 P.M	Research Methodology and IPR in Bioinformatics	XII	

Instructions:
1) **Part I, Question 1 is compulsory.**
2) **Attempt any four questions from Part II.**
3) **Part I and Part II should be written in same answer book.**
4) **Figures to the right indicate full marks.**

Total Marks: 70

PART I

Q.1 Rewrite the following sentences by selecting correct answers from given alternative. **07**

1) _____of the following is a major method of data collection.
   a) Questionnaires b) Secondary data
   c) Interviews d) All of these

2) It is in this section that you fully interpret & evaluate your results _____
   a) Introduction b) Method
   c) Results d) Discussion

3) A literature review requires _____
   a) Planning b) Clear writing
   c) Good writing d) All of these

4) When citation includes more than _____ authors, only the surname of the author is cited followed by et al.
   a) 2 b) 4
   c) 5 d) 6

5) The term 'Intellectual Property Rights' covers _____
   a) Copyrights b) Patent
   c) Trade dress d) All of the above

6) World Intellectual Property Organization was established in _____
   a) 14 March, 1959 b) 14 July, 1967
   c) 14 August, 1965 d) 14 October, 1960

7) _____is a preferred sampling method for the population with finite size.
   a) Area sampling b) Cluster sampling
   c) Purposive sampling d) Systematic sampling

B) Definitions: **07**

1) Scientific journal
2) Research report
3) ANOVA
4) Hypothesis
5) Trade secrets
6) Impact factor
7) Fundamental research

PART II

Answer any four of the following:

Q.2 Explain in detail the title and abstract guidelines for preparation manuscript. **14**

Q.3 What is sampling? Explain in detail types of sampling. **14**

Q.4 What is research methodology? Explain in detail steps in research. **14**

Q.5 **Answers any two from the following:** **14**

a) Write a note on patenting of biological materials.
b) Write a note computer and internet application in research.
c) Write a note on Review of Literature.

Q.6 **Write short notes on any two:** **14**

a) Intellectual property
b) Sampling and non sampling error
c) Plant variety protection in India

Master of Science – II (Bioinformatics)
Examination: Oct / Nov 2016 Semester – III (New CBCS)

SLR No.	Day & Date	Time	Subject Name	Paper No.	Seat No.
SLR – SR – 84	Wednesday 23/11/2016	02:30 P.M To 05:00 P.M	Advanced In Pharmaceutics	XII	

Instructions:
1) **Part I, Question 1 is compulsory.**
2) **Attempt any four questions from Part II.**
3) **Part I and Part II should be written in same answer book.**
4) **Figures to the right indicate full marks.**

Total Marks: 70

PART I

Q.1 Rewrite the following sentences by selecting correct answers from given alternative. **07**

1) Two solution are said to be isotonic if they exert same _____
   a) Viscosity
   b) Surface tension
   c) Osmotic Pressure
   d) None of the above

2) Buffer index can be defined as the ratio of the increment of strong base/acid to the _____
   a) Change in pH
   b) Change in Viscosity
   c) Change in osmotic pressure
   d) None of these

3) Toxicity is measured on the basis of _____ properties.
   a) Pharmacological
   b) Pharmaceutical
   c) Rheological
   d) Colligative

4) Dissolution is affected by _____
   a) Surface area
   b) Viscosity
   c) Temperature
   d) All of these

5) Electro dialysis is a method for the purpose of _____
   a) Purification
   b) Identification
   c) Preparation
   d) Stabilization

6) The temperature at which the solubility of the surfactant is equal to CMC is ___
   a) Boiling point
   b) Melting point
   c) Kraft point
   d) None of these

7) Finely divide powder have _____ wettability.
   a) Average
   b) Good
   c) Poor
   d) Moderate

B) Definitions: **07**

1) Sedimentation
2) USP
3) Carriers
4) Co-solvent
5) Surfactant
6) Antibacterial activity
7) Emulsion

PART II

Answer any four of the following:

Q.2 Explain in details about hydrotrophy in pharmaceuticals. **14**

Q.3 Describe the methods f polymerization and its characterization. **14**

Q.4 Discuss about the stability studies of the drug. **14**

Q.5 **Answers any two from the following:** **14**

a) Characteristics of granules and compacts
b) Factors affecting dissolution rate
c) Solid dispersion

Q.6 **Write short notes on any two:** **14**

a) Biodegradable polymer
b) Cyclodextrin
c) Kinetics of the drug

Master of Science – II (Bioinformatics) Examination: Oct/ Nov 2016
Semester – IV (CGPA)

SLR No.	Day & Date	Time	Subject Name	Paper No.	Seat No.
SLR – SR 89	Thursday 17/11/2016	02:30 PM to 05:00 PM	Biological Simulation and Modeling	I	

Instructions:
1) **Part I, Question 1 is compulsory.**
2) **Attempt any four questions from Part II.**
3) **Part I and Part II should be written in same answer book.**
4) **Figures to the right indicate full marks.**

Total Marks:70

PART I

Q.1 A) Rewrite the following sentences by selecting correct answers from given alternative. **07**

1) x=4.5 y=2 print x//y? What will be the output?
   a) 2.0 b) 10.0
   c) 5.0 d) 1.0

2) The _____ function creates a Python file object.
   a) Fopen() b) open()
   c) fileopen() d) None of these

3) Python is _____ type of language.
   a) dynamic b) semi-dynamic
   c) static d) None of these

4) X=true y=false z=false if x or y and z: print “yes” else: print “no”?
   a) Yes b) no
   c) compilation error d) None of these

5) Simulation is mimicking of _____
   a) Virtual event b) Real event
   c) both a & b d) None

6) Simulation finds its application in _____
   a) Physics b) Chemistry
   c) Biology d) All

7) Energy is a parameter of _____
   a) MD b) MC
   c) both a & b d) None

B) Definitions: **07**

1) Static
2) Classes
3) Object
4) Event
5) Population model
6) Energy minimization
7) Auto Dock

PART II

Answer any four of the following:

Q.2 Add a note on biological models of simulation. **14**

Q.3 Explain working with files in python. **14**

Q.4 Write a note on molecular mechanics with reference to bio-molecules. **14**

Q.5 Explain string functions in python with example. **14**

Q.6 **Answers any two from the following:** **14**

a) Add a note on full geometry optimization.
b) Explain python editor in details.
c) Explain iterators in python with example.

Q.7 **Write short notes on any two:** **14**

a) Examples of molecular dynamics
b) Functions in python
c) Input and Output