

Reg. No. :

D 2514

Q.P. Code : [D 07 PBI 01]

(For the candidates admitted from 2007 onwards)

M.Sc. DEGREE EXAMINATION, JUNE 2008.

First Year

Bio Informatics

FUNDAMENTALS OF BIOLOGICAL SYSTEMS

Time : Three hours

Maximum : 100 marks

Answer any FIVE questions.

All questions carry equal marks.

(5 × 20 = 100)

1. Depict the ultra structure of mitochondria and explain electron transport system and its energetics.
2. Broadly describe the differences and similarities between plant and animal cells.
3. What are monosaccharides and explain elaborately the structure of glucose?
4. Discuss in length the structure and functions of ribonucleic acid.

5. Write in detail the pathways in dark reaction of photosynthesis.
 6. Define enzymes. Discuss the kinetic relationships with substrate.
 7. Give an elaborate account on the events of M phase and its significance.
 8. How is gene expression regulated in prokaryotes?
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Reg. No. :

D 2638

Q.P. Code : [D 07 PBI 02]

(For the candidates admitted from 2007 onwards)

M.Sc. DEGREE EXAMINATION, JUNE 2008.

Second Semester

Bioinformatics

**COMPUTATIONAL METHODS FOR SEQUENCE
ANALYSIS**

Time : Three hours

Maximum : 100 marks

Answer any FIVE questions.

(5 × 20 = 100)

1. List out the criteria based on which the biological databases are classified. Give examples.
2. Comment on Needleman and Wunsch algorithm and proceed to differentiate it from Smith-Waterman algorithm.
3. What do you understand by multiple sequence alignment? Discuss the computational complexities in it and the merits of data bases derived from it.

4. Which methods would you use to validate the results of clustering? Mention its advantages over other methods.
 5. Explain briefly the analytical approach and predatory modes of regulatory regions in prokaryotic cells.
 6. Elucidate the applications of studying genomic sequence and gene finding techniques employed in its assay process.
 7. State the conceptual patterns in secondary prediction methods for an advanced molecular understanding.
 8. Discuss the component structure of probabilistic models and its utilities to bioinformatics.
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Reg. No. :

D 2784

Q.P. Code : [D 07 PBI 03]

(For the candidates admitted from 2007 onwards)

M.Sc. DEGREE EXAMINATION, JUNE 2008.

First Year

Bio informatics

PROGRAMMING IN C AND PERL

Time : Three hours

Maximum : 100 marks

Answer any FIVE questions.

(5 × 20 = 100 marks)

1. Explain briefly about the C operators.
2. Discuss the following with example.
 - (a) The SWITCH statement.
 - (b) Nested If-else statement.
3. Explain the pointers and functions with suitable example.
4. Discuss about the arrays within structures with suitable example.

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5. Explain about the Regular expressions in PERL.
 6. Discuss the following with example
 - (a) While statement.
 - (b) For-loop statement.
 - (c) IF and If-else statement.
 7. Explain about the pointers and arrays with suitable example.
 8.
 - (a) Write a C program to calculate and print the fibonacci numbers.
 - (b) Write a C program to find the sum of digits.
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Reg. No. :

D 2515

Q.P. Code : [D 07 PBI 04]

(For the candidates admitted from 2007 onwards)

M.Sc. DEGREE EXAMINATION, JUNE 2008.

First Year

Bioinformatics

MOLECULAR INTERACTIONS

Time : Three hours

Maximum : 100 marks

Answer any FIVE questions.

All questions carry equal marks.

(5 × 20 = 100)

1. (a) Compare VBT and MOT.
(b) Compare σ bonds and π bonds.
2. Explain the principles and applications of VSEPR theory.
3. Narrate the significance of non-bonded interactions in biomolecules.

4. Classify the various molecular interaction and explain them with suitable examples.
 5. NMR is a powerful tool for elucidating the structure of macro molecule.
 6. Discuss the principles and instrumentation of Infrared spectroscopy and mention its applications.
 7. Compare electrovalent and covalent compounds.
 8. Explain the phenomenon of resonance. Correlate the resonance and stability of molecules.
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