

2012

M.Sc. (Bio-Informatics) Third Semester
MBIN-8013: Programming Language in Bio-Informatics – II

Time allowed: 3 Hours

Max. Marks: 60

NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting atleast one question from each Unit.

X-X-X

1. Attempt the following:-

- Differentiate between lists, arrays, and hashes.
- What would be the output of the following perl code:
\$str = "Bioinformatics"; \$var = substr(\$str, 2, -3); print \$var;
- Write a note on regular expression?
- Give the differences between HTML and XML.
- Write a Bioperl program to read a protein sequence from a file.
- What is XML tag? Give an example.
- Discuss the steps required to link a stylesheet with an XML document.
- Explain XML tree? Give an example.

(8x1.5)

UNIT-I

- What type of loop would you use for each situation?
 - Printing an unknown number of sequences in a FASTA library.
 - Incrementing each value of an array.
 - Incrementing a counter.
 - Listing all the values in an array.
 - What is variable scope? Why is it important for subroutines?
 - Write a Perl program which allows the user to enter a string and to test whether it is a RNA or not.
 - Write a Perl program to find the dinucleotide composition of a given DNA sequence.
- Write a Bio-Perl program to find the complement and reverse complement of the sequence "TTGCTCGT".
 - Explain the data types in PERL?
 - Discuss the methods of file handling in PERL.

(02+02+03+05)

(05+04+03)

UNIT-II

- What are Namespaces? Why is it useful? Explain with an example.
 - Discuss the structure of XML document.
 - Explain the difference between a well-formed and a valid XML documents.
- Explain DTD in XML?
 - Differentiate between the XML and SGML.
 - How root elements are placed in a XML document? Explain with an example.

(04+04+04)

(04+04+04)

UNIT-III

- Create the XML file that contains the following information about standard IUB/IUPAC amino acid codes. Write the CSS script to display this XML file.
Amino acid: Alanine, One-letter code: A, Three-letter code: Ala
Amino acid: Cysteine, One-letter code: C, Three-letter code: Cys
 - Discuss in detail the major features of XML.
- What is XML parser? Explain its working. Name various types of available parsers.
 - Write a Perl script for parsing XML file.

(06+06)

(06+06)

X-X-X