M. Sc. Bioinformatics Sem.-II (C.B.C.S.) (2013 Course) / Advanced Diploma in Bioinformatics Sem.-II (C.B.C.S.) (2013 Course) :
SUMMER - 2019
SUBJECT: PERL & BIOPERL PROGRAMMING

Day: Monday

Date: 15-04-2019　　　　S-2019-1468

Time: 02.00 PM TO 05.00 PM

Max. Marks: 60

N.B.:

1) **Q. No. 1** and **Q. No. 5** are **COMPULSORY**. Out of the remaining attempt **TWO** questions from each section.
2) Answers to two section should be written in SAME answer books.
3) Figures to the **RIGHT** indicate full marks.
4) Draw neat labelled diagrams **WHEREVER** necessary.

SECTION-I

Q.1 Answer any **FIVE** of the following: **(10)**

a) Which statement best describes PERL;
- i) PERL is a small power full and tightly defined language with a min. of constructs to learn and use.
- ii) PERL is a large, powerful, flexible language with lot of different ways of doing things.

b) What are the three parts of a 'for' loop?

c) How will you convert an array into string?

d) In PERL, what does 'grep' and 'glob' function used for?

e) BUG BUSTER:
What's wrong with this program;
```
While ( $i < $max ) {
        $vals [ $i] = 0;
}
```

f) Explain Hashes.

Q.2 What are subroutines and its applications? **(10)**

OR

What does the following file test do:
i) –e　　　　ii) –s　　　iii) –z　　　iv) -d

Q.3 Explain datatypes of PERL. **(10)**

OR

Write a script that prompts user for 2 numbers and then creates an array of numbers between lower and higher bound.

Q.4 Write a subroutine that takes a string as an arrangement and returns the string **(10)** in reverse order of words.

OR

When you assign to a list, the elements are copied over from right to left.
($a, $b) = (10, 20).
$a becomes 10 and $b becomes 20. Investigate what happens when;
- o There are more elements on right than on left.
- o There are more elements on left than on right.
- o There is a list on left but a single scalar on right.
- o There is a single scalar on left but a list on right.

SECTION-II

Q.5   Answer any **FIVE** of the following: **(10)**

a)   Explain the differences between the Keys, values and each function.

b)   What is the difference between a single quoted and double quoted string? Explain it with example.

c)   What are word boundaries?

d)   Difference between array and hash?

e)   Explain the role of following functions:

i) Scalar   ii) join

f)   BUG BUSTER;

```
% hash = {     Key => [ 1. 10]
               Key 2 => [ 100. 110]
       };
$ ref = \% hash;
foreach ( keys % ref) }
       Print    " $ $ref { $_ } \ n "; }
```

Q.6   Explain the role of following regular expression and modifiers.   **(10)**

a)   =~s   b)   =~t   c) /i   d) /g   e) /x

OR

What is object oriented programming? Explain method, classes and objects in PERL.

Q.7   Write a script to replace the header of FASTA file.   **(10)**

OR

Write a short note on DBI module.

Q.8   What do each of these variables refer to?   **(10)**

a) $foo   b)   @foo

c)   %foo   d) $foo{'Key'}

OR

Write patterns to match the following:

a)   First word in a sentence

b)   Percentage symbol (%)

c)   Any number

*   *   *   *