M. SC. BIOINFORMATICS SEM.-II (C.B.C.S.) (2013 COURSE) / ADVANCED DIPLOMA IN BIOINFORMATICS SEM.-II (C.B.C.S.) (2013 COURSE) : WINTER - 2017
SUBJECT : PERL AND BIOPERL PROGRAMMING

Day	: **Thursday**	Time :	**10.00 AM TO 01.00 PM**
Date	: **09/11/2017**	**W-2017-1015** Max. Marks : **60**	

N. B. :

1) **Q. No. 1** and **Q. No.5** are **COMPULSORY**. Solve **ANY TWO** from the remaining questions from each section.
2) Figures to the right indicate **FULL** marks.
3) Answers to both the sections should be written in the **SEPARATE** answer book.

SECTION-I

Q.1   Answer **ANY FIVE** of the following questions   **(10)**

   a) What are range operators? How will you get size of an array?
   b) What does '$_' and '$!' mean?
   c) What's the difference between ($x++) and (+ +$x)?
   d) Name two reasons why subroutines are useful?
   e) What happens when you declare a 'my' local variable with the same name as a global variable?
   f) BUG BUSTER ; what's wrong with this program;

```
Print "enter the word foo :" ;
chomp ($input = <STDIN>);
If ($input = 'foo') {
        Print "thank you\n" ; }
Else {
    Print "that's not the word foo"\n; }
```

Q.2   Answer the following ;   **(10)**
   a) Write a program that accepts any number of lines of any kind of input, ending with a return or Enter. Count and return the number of lines that were entered.

   b) BUG BUSTER ;

```
While ( ) {
    Print "enter a name :" ;
    Chomp ($input = < STDIN>) ;
    If ($input ne") {
            $names + + ;
        }
    Else  {last;}
}
```

Q.3   Answer the following :   **(10)**

   a) Write a string that prompts you for a string and a character and then returns the number of times the character occurs in the string. Use index function.

   b) Write a script to mutate a DNA.

Q.4   Answer **Any ONE** of the following :   **(10)**

a)   The elements are copied over from right to left ;
$$(\$a , \$b) = (10, 20)$$
$a becomes 10, $b becomes 20. Investigate what happens when ;
i)   There are more elements on right than on left.
ii)   There are more elements on left than on right.
iii)   There is list on left but a single scalar on right.
iv)   There is a single scalar on left but a list on right.

b)   Write a subroutine that takes a string as an argument and returns the string in reverse order by words.

SECTION- II

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

a)   How do you sort a hash?
b)   What does the following function do?
i) split
ii) chop
c)   What are subroutines?
d)   How will you print all the values of a hash?
e)   What are qualifiers?
f)   BUG BUSTER ;

           Print 'Search for what?';
           Chomp ($pat = <STDIN>);
           While (< >) {
                While ($/pat/) {
                     $ count + + }

                                                     (10)

Q.6   Attempt **Any ONE** of the following :

a)   What is a POD file? Why use POD in your PERL script over some other format like HTML?
b)   What does the following hash functions do;
i)   reverse
ii)   sort
iii)   merge

Q.7   Answer the following :   **(10)**

a)   How will print the sequence of a FASTA file in a single line.
b)   Write a script to check whether the sequence is nucleotide of protein.

Q.8   Answer the following :   **(10)**

a)   What do each of the following pattern do;
i)   /ice\s*cream/
ii)   / \d\d\d/
iii)   /xy|yz+/
iv)   /[\d\s] {2,3}/

b)   Explain DBI module.

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