JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
T-1 EXAMINATION, Feb 2019
B. Tech. (Bioinformatics) IV Semester

COURSE CODE : 15B11BI421
COURSE NAME: Programming Languages for Bioinformatics

MAX MARKS : 15
MAX. TIME: 1 Hr.

Note: All questions are compulsory. Attempt all questions of a particular section at one place. Answer each question to the point.

1. Write the types of following perl variables. **(2 marks) (CO1)**
   a. `$var`
   b. `%new`
   c. `@foo`
   d. `$bar{$glycine}`

2. What do the following functions do? Write their syntax with the help of an example. **(4 marks) (CO3)**
   a. pop
   b. shift
   c. unshift
   d. push

3. Write a perl program that prints the mean of a given set of numbers. **(2 marks) (CO1, CO3)**

4. You have a string variable `$dna = "ATGCGTTTGC" ;`   Answer the following **(2 marks)(CO3)**
   a. `substr($dna,3,3) = "TTT";` What will be the value of `$dna` ?
   b. `$var = substr( length($dna) , 0 , 1 ) ;` Give the value of `$var`.

5. Write the value of `$rolls` after the following loop is over **(1 mark) (CO1, CO3)**
   ```
   while ( $rolls <= 5 ) {
       # $rolls++ ;
       $rolls+=2;
   }
   ```

6. You have a hash variable %hash in your program. The keys in this hash may have same or different values. Write a short perl snippet to calculate the number of unique values. **(2 marks) (CO1, CO3)**

7. What will be the output of following lines **(1 mark) (CO1)**
   ```
   @list = ("Hermione" , "is" , "a" , "smart" , "witch !" );
   unshift @list, "Ron" ;
   $list[$#list] = "wizard" ;
   @list2 = @list[ 0, 2 .. 3, 5] ;
   print "@list2" , "\n" ;
   ```

8. What is `$_` Briefly explain. **(1 mark) (CO1)**