COURSE CODE : 15B11BI421

MAX MARKS : 25

COURSE NAME: Programming Languages for Bioinformatics

MAX. TIME: 1.5 Hrs.

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

1. Answer the following questions -   (COI)
   a) What will be the value of $var after these two statements .   (1 mark)

      ```
      $var="hello";
      $var="world";
      ```

   b) What is a file handle used for? Write a syntax each for opening, writing and appending to a file.   (2 marks)

   c) What will be the output of following perl syntax.   (2 marks)

      ```
      printf "%6.2f" , 360 ;
      printf "The world is \"%12s\" \n" , "beautiful" ;
      ```

   d) What does the following statement do   (1 mark)

      ```
      $var = $#array ;
      ```

   e) What does <=> operator do?   (1 mark)

   f) Write the syntax and use of chomp.   (1 mark)

   g) $data=<STDIN> ; What does this syntax do?   (1 mark)

2. %hash = (G => "GLY" , A => "ALA", C => "CYS", D => "ASP");
   Answer the following questions for above expression.   (COII) (1 X 4 = 4 marks)
   a) Write the syntax to obtain and print all the keys from %hash
   b) Write the syntax for printing value of key "A"
   c) Adding a new key "E" with a value of "GLU"
   d) Changing the value of key "C" to "CYSTEINE"

3. What is a perl module? Write a perl module "MODULE.pm" containing a subroutine "MEAN" to find the mean of a given set of numbers. Write syntax of calling this subroutine from a program.
                                                                   (COIII) (4 marks)

4. What is bioperl? List the advantages of using it over perl. Which modules could be used for reading and writing files in fasta format? Write example code for file format conversion using bioperl.
                                                                   (COIII) (4 marks)

5. What is pattern matching using regular expression? Give any four examples of regular expressions with syntax and explanation.   (COI, II) (4 marks)