JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- February 2018

B.Tech 2nd Semester

COURSE CODE: 14B21CI211   MAX. MARKS:15

COURSE NAME: Basic Data Structures

COURSE CREDITS: 4   MAX. TIME: One Hr

Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.

1. Write a program to find sum of all digits using recursion.   (3.0)

2. Write a program to display the largest of three numbers using pointers.   (2.0)

3. Write a program to calculate the standard deviation of an array of numbers.   (3.0)

4. What do you understand by dynamic memory location? State five differences between an array and a linked list.   (2.0)

5. How can the efficiency of an algorithm be analyzed? What do you understand by algorithmic complexity.   (3.0)

6. What is the output of the following code: (1.0 mark each)

   (i)   int main()
   ```
   {
     int var = 789;
     int *ptr2;
     int **ptr1;
     ptr2 = &var;
     ptr1 = &ptr2;
     printf("Value of var = %d\n", var );
     printf("Value of var using single pointer = %d\n", *ptr2 );
     printf("Value of var using double pointer = %d\n", **ptr1);
     return 0;}
   ```

   (ii)   void main()
   ```
   { int *ptr = &Var;
     printf("Value of Var = %d\n", *ptr);
     printf("Address of Var = %p\n", ptr);
     *ptr = 20;
     printf("After doing *ptr = 20, *ptr is %d\n", *ptr);}
   ```