SHAHEED BHAGAT SINGH STATE TECHNICAL CAMPUS, FEROZEPUR

ROLL NO : | | | | | | | | | | | | |

Total number of pages:[ ]

Total number of questions:07

B.C.A(3rd sem.)

DATA STRUCTURE

Subject Code :BCAP1-312

Paper ID :

1 May 2018

Time allowed: 3 Hrs

Max Marks:60

Important Instructions:

- **Section A is compulsory**
- **Attempt any five questions out of six questions from section B**
- **Assume any missing data**
- **Additional instructions, if any**

PART A (2×10)

Q. 1. Answer in brief:

(a) What do you mean by Data Structure?

(b) What is the difference between linear and non linear data structure?

(c) What is time and space complexity?

(d) What is the difference between stack and queue?

(e) Write the syntax of node for priority queue?

(f) What is recursion?

(g) What are the advantages of circular queue over simple queue?

(h) What is post fix notation?

(i) What are maximum numbers of nodes in binary tree with depth n?

(j) What is sparse matrix ?

PART B (8×5)

Q. 2. Explain the various operations possible on singly linked list?

Or

Write a program to create a linked list? (CO1)

Q. 3. Write the algorithms for insertion and deletion in queue?

Or

Explain Stack with help of a program? (CO2)

Q. 4. Write an algorithm to perform various non recursive tree traversal methods. ?

Or

Explain Binary tree With Example? (CO3)

Q. 5. Write a program in C++ to sort a list of n numbers using selection sort?

Or

Write a Program in c++ for quick sort? (CO5)

Q.6. Write the algorithm for binary search?
Or
Write the algorithm for linear search? (CO5)

Q.7. Translate the following infix notation into postfix expression using stack

A+(B*C-D)+E*F

Or

A*C-(E+F)/D (CO4)