Q.16 Define the terms

    a. siblings   b. dqueue

    c. queue   d. searching

    e. linked list   5

Q.17 Explain the binary search technique with example. 5

Q.18 Write a short note on DFS graph traversal algorithm. 5

SECTION-C

Note: Long answer type questions. Attempt any one question out of two questions. (10x1=10)

Q.19 a. Write the differences between binary tree and binary search tree. 4

    b. List various sorting techniques. Which sorting method is fastest among all? 2+1

    c. What is searching? Write the need for searching. 1+2

Q.20 Define Data Structure. What are the various operations that can be performed on a data Structure. Explain in brief. 2+8

**DVOC (Software Development)
(Level 5) II Semester/Trade
Subject : Data Structure**

Time : 2 Hrs.   M.M. : 50

SECTION-A

Note: Very short answer questions. Attempt all ten questions. (10x1=10)

Q.1 What does PDLC stand for?

    a) Project Design and Lifecycle cycle

    b) Program development and logic construction

    c) Project Development life cycle

    d) Product design and logical Configuration

Q.2 The operation represented by a parallelogram in flowchart is

    a) Input/Output   b) Assignment

    c) Comparison   d) Conditions

Q.3 Which of the following data structures can be used to implement stack?

    a) Array   b) Tree

    c) Graph   d) None of the above

Q.4 Postfix form of following expression D+ (E * F) is

a) EF * D+   b) DEF + *

c) DEF + *   d) EFD * +

Q.5 What is the other name for a postfix expression?

a) Normal polish Notation

b) Reverse polish Notation

c) Warsaw notation

d) Infix notation

Q.6 Essential condition which is checked before deletion in a linked queue is?

a) Underflow   b) Overflow

c) Front value   d) End value

Q.7 The number of edges from the node to the deepest leaf is called_____of the tree.

a) Height   b) Depth

c) Length   d) Width

Q.8 Which of the following traversing algorithm is not used to traverse in a tree?

a) Post order   b) Pre order

c) In order   d) Randomized

Q.9 Linear search is also called

a) Random search   b) Sequential search

c) Perfect search   d) None of the above

Q.10 Which of the following statements for a simple graph is correct?

a) Every path is a trail

b) Every trail is a path

c) Every trail is a path as well as every path is a trail

d) None of the mentioned

SECTION-B

Note: Short answer type questions. Attempt any six questions out of Eight questions.   (6x5=30)

Q.11 Give the steps involved in the program development life cycle. Explain in brief.   5

Q.12 a. Give algorithm to delete an element from the circular queue.   3

b. Give to applications of a queue   2

Q.13 a. Define linked list. Give the advantage of double linked list over singly linked list.   1+2

b. What is the purpose of dummy header.

Q.14 Explain about various representations of a binary tree.   2

Q.15 Convert the infix expression (a+b)*((b-d)/e*f) into postfix expression using stack   5