01682

DIPLOMA-VIEP-COMPUTER SCIENCE ENGINEERING - II (DCSVI)/ADVANCED LEVEL CERTIFICATE COURSE IN CSE (ACCSVI)

Term-End Examination

December, 2011

OICS-001 : DATA STRUCTURES AND FILES

Time : 2 hours *Maximum Marks : 70*

Note : *Question No. 1 is* ***compulsory.*** *Attempt* ***any four*** *questions from the remaining. All questions carry* ***equal*** *marks.*

1. (a) Heap sort can be used as a Priority Queue **2**

(i) True (ii) False

(b) What is the range of long used with integers in 'C' ? **2**

(i) 16 Bits (ii) 32 Bits

(iii) 8 Bits (iv) 48 Bits

(c) Functions are always internal. **2**

(i) True (ii) False

(d) Post-fix Representation of (A + B)*(C − D) **2**

(i) AB + CD − * (ii) AB − CD + *

(iii) AB * CD + − (iv) AB + − * CD

(e) Queue is called a FIFO list. 2

(i) True (ii) False

(f) Pointer used to signal the end of linked list called Null Pointer. 2

(i) True (ii) False

(g) The implicit array representation is also called sequential representation. 2

(i) True (ii) False

2. (a) Write the conversion function a to f which converts the string s to its double precision floating point equivalent ? 7

(b) Explain with the help of program the function of fgets and fputs. 7

3. (a) What is Binary search ? Write the algorithm for it and explain with suitable examples. 8

(b) What is minimum cost spanning tree ? Explain with an example. 6

4. (a) Write the algorithm which helps in evaluating the postfix expression. 8

(b) Show how a sequence of insertions and removals from a queue represented by a linear array can cause overflow to occur upon an attempt to insert an element into an empty queue. 6

5. (a) Write an algorithm to convert an infix string without parentheses into postfix string. **8**

(b) Explain the insertion sort and also find its complexity. **6**

6. Write the algorithm that finds the shortest path itself by maintaining an array precede such that precede [i] is the node that precedes node i on the shortest path found thus far. **14**

7. (a) Explain how Binary tree can be represented and different operations carried on them ? **10**

(b) What are the applications of Depth - First Traversal ? **4**

8. Write short note on : (***any four***) **3.5x4=14**

(a) Pointers in 'C'

(b) Merge Sort

(c) Stack in 'C'

(d) Hashed File Organisation.

(e) Circular Linked List.

(f) Minimum Spanning Tree.
