

DECVI / ACECVI

Term-End Examination

June, 2012

OIEL-002 : DATA STRUCTURES

Time : 2 Hours

Maximum Marks : 70

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*Note : This question paper consist of 8 questions. Attempt any five questions. Question No. 1 is compulsory.*

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1. Choose the correct option 2
- (a) Array is a collection of :
    - (i) Similar data items
    - (ii) Different data items.
    - (iii) Both
    - (iv) None
  - (b) '\*' refers to : 2
    - (i) value at address operator
    - (ii) Address operator
    - (iii) Scope operator
    - (iv) None of above.
  - (c) Stack support the following one pattern : 2
    - (i) FIFO
    - (ii) LIFO
    - (iii) Both
    - (iv) None

- (d) A function which call itself, called : 2
- (i) User define function
  - (ii) Library function
  - (iii) Recursive function
  - (iv) None
- (e) Binary search applied on : 2
- (i) Unsorted data
  - (ii) Sorted data
  - (iii) Mixed
  - (iv) None
- (f) Flow chart is : 2
- (i) A program
  - (ii) A problem
  - (iii) Digrametic representation of Algorithm
  - (iv) None
- (g) Complexity of binary search is : 2
- (i)  $O(\log_e n)$
  - (ii)  $O(n)$
  - (iii)  $O(\log_2 n)$
  - (iv)  $O(\log_{10} n)$
2. (a) Write a C program to swap two number using function with the help of call by reference method. 7
- (b) Write a recursive function to genrate N Natural numbers. 7

3. (a) Write an algorithm to convert prefix expression to postfix expression. 7  
(b) Differentiate the binary and linear search. Explain with the help of example. 7
4. (a) Write a C program to create a stack. Also insert an element in that stack. 7  
(b) What is linklist ? Write a program to delete the first node of link list. 7
5. (a) Explain bubble sort with the help of an example. 7  
(b) Write an algorithm to create a doubly link list. 7
6. (a) What do you mean by collision in hashing ? How are they removed ? 7  
(b) How structure is different from union ? Explain with the help of example. 7
7. (a) Write a C program to calculate the multiplication of two matrix. 7  
(b) What is pointer ? Explain by giving a suitable example . Also write a program using function 7
8. Write short notes on (*Any four*) 3.5x4=14  
(i) Calloc, ()  
(ii) Malloc ()  
(iii) Union  
(iv) Structure  
(v) Graph  
(vi) Queue.
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