



MF-3733

Second Year B. C. A. (Sem. III) (CBCS) Examination
October/November – 2013
Paper - 304 : Data Structures

Time : Hours]

[Total Marks : 70

Instructions :

(1)

नीचे दशविक निशानीवाणी विगतो उत्तरवही पर अवश्य बभवी.
Fillup strictly the details of signs on your answer book.

Name of the Examination :
S. Y. B. C. A. (Sem. 3) (CBCS)

Name of the Subject :
Paper - 304 : Data Structures

Subject Code No. 3 7 3 3 Section No. (1, 2,.....): NIL

Seat No. : [] [] [] [] [] [] [] [] [] []

Student's Signature

(2) Marks are indicated to the right side of each question.

1 Answer Following: (Any Seven) [14]

- (a) Define priority queue.
- (b) What will be the position of front and rear if circular queue is empty?
- (c) What do you mean by left sub tree and right sub tree?
- (d) Let $A=78$. Address of variable A is 240. Pointer V pointing to variable A. Then what is the difference between $*V+1$ and $*(V+1)$?
- (e) Convert infix to postfix:- $Z + (Y * X - (W / V ^ U) * T) * S$
- (f) What is advantage of link list?
- (g) How to pass pointer to function. Explain with an example.
- (h) List out types of queues.

2 (A) What is Stack? List out operation of Stack? Write down an algorithm of operations on Stack.

OR

(A) What do you mean by non-linear programming? Discuss difference between non-linear programming and linear programming? [07]

(B) What is double ended queue? Explain difference between input restricted and output restricted Dqueue. [07]

3 (A) What is searching? Discuss difference between binary search and liner search. Discuss binary search algorithm for following example. [07]

Index	1	2	3	4	5	6	7	8	9	10	11	12	13
Element	11	22	30	33	40	44	55	60	66	77	80	88	99

Search out key = 40. Show all the steps of it

OR

(A) What is sorting? Compare various sorting methods with its advantages and disadvantages. According to you which is the best sorting technique and why?

(B) Explain the concept of link-list. How to create singly link-list and display its all nodes? Explain using appropriate example and figure.

[07]

- 4 (A) What is difference between doubly link-list and singly-link list. Write an algorithm to perform insert and deletion from particular position in singly link list.

OR

[07]

(A) What is recursion? Write a recursive function that generate first N fibonacci number. Discuss advantages and disadvantages of it.

(B) Briefly explain pointer. What is difference between static memory allocation and dynamic memory allocation?

[06]

- 5 Answer following (**Any Three**)

[15]

(A) Construct tree of following traversal sequence

Inorder :-HOMEISLZR

Preoder:-SOHEMILRZ

(B) Write down short note of 2-3 trees.

(C) Difference between Queue and Stack.

(D) Difference between Array of pointer and pointer of array