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B.Sc. IV Semester (New) Degree Examination, May/June 2016
COMPUTER SCIENCE
Data Structures Using 'C'

Time : 3 Hours Max. Marks : 80

SECTION – A

I. Answer to **any ten** of the following : **(10×2=20)**

1) Depict the classification of data structures.
2) Differentiate malloc ( ) and calloc ( ).
3) Mention any two applications of stack.
4) Write an algorithm for PUSH operation of stack.
5) Convert Infix to Postfix expression :
   ((A + B) * ((C/D)) – (E ^ (F * G)))
6) What is Queue ? Mention strategy of queue.
7) List the operations performed on queue.
8) Mention advantages and disadvantage of linked list.
9) Mention the types of searching.
10) Define sorting ? List any two types of sorting.
11) Define : Inorder Traversal of a Tree.
12) What is the difference between tree and binary tree.

SECTION – B

II. Answer **any six** of the following : **(6×5=30)**

13) Explain the operations performed on data structures.
14) Write a 'C' program to reverse the elements in an array.
15) Write a recursive and iterative algorithm for finding factorial of a number.

16) Explain deque in brief.

17) How do you delete an element from the rear end of deque.

18) List the different types of linked list and give the structural definition.

19) Explain the array representation of a tree.

20) Write an algorithm for binary search.

SECTION – C

III. Answer **any three** of the following : **(3×10=30)**

21) Explain priority queue and write an algorithm to insert an element.

22) Write a note on linked list.

23) Write a program to illustrate quick sort.

24) Explain different searching techniques.

25) Explain binary tree and its traversal methods.