

**B.Sc. IV Semester Degree Examination, May - 2018****COMPUTER SCIENCE****Data Structure Using "C"****Paper - BSC 404 CS****(New)**

Time : 3 Hours

Maximum Marks : 80

Instructions to Candidates:All the parts are **compulsory**.**Part - A****I. Answer to any TEN of the following :****(10×2=20)**

1. What is a data structure?
2. Define stack. Why stack is called a LIFO Data structure.
3. Define recursion Mention a type of recursion.
4. How is the queue different from the stack?
5. Mention any two disadvantages of linked list.
6. Define a circular doubly linked list with fig.
7. Define linked stack. Mention any two advantages.
8. Define tree.
9. Define Bubble sort.
10. State any two application of stack.
11. Define sorting. What is the main objectives behind in keeping a list of data store.
12. Write a algorithm in C for postorder traversal.

[P.T.O]

**Part - B****II.** Answer any **SIX** of the following :**(6×5=30)**

1. Write a algorithm for PUSH and Pop - Operation.
2. Write a difference between Prefix and Postfix expressions.
3. Explain circular queue.
4. Write a difference between the iteration and recursion.
5. What is binary tree? Mention the properties of a binary tree.
6. Write a C program to Compute GCD of two numbers using recursion.
7. Write a difference between prefix and postfix expression.
8. Explain the basic terminology of tree.

Part - C**III.** Answer any **THREE** of the following :**(3×10=30)**

1. Explain circular queue.
 2. Write a C - program to demonstrate linear search method.
 3. Explain different searching techniques.
 4. Write a C- program to create a binary tree and then search for an item in the tree.
 5. Explain the various operations that can be performed on a double linked list with diagram.
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