

**B.SC DEGREE (CBCSS) EXAMINATION, APRIL 2015
SECOND SEMESTER-COMPUTER APPLICATIONS
CA2DS-DATA STRUCTURE****Time: 3 hours****Maximum:80 Marks****Part A(Short Answer questions)
Answer all questions .(Each question carries 1mark)**

1. In stack, at which position deletion is done ?
2. Which is efficient search method?
3. What is meant by run time
4. Why are arrays needed?
5. What are different types of queue
6. Relation between array name and pointer
7. Give an example for doubly linked list
8. What are different type of linked lists
9. How many ways we can implement stack and queue
10. What is meant by best case time complexity

(10 * 1 = 10 marks)

**Part B(Brief Answer Questions)
Answer any 8 Questions (Each carries 2 mark)**

11. What are the Characteristics of an algorithm
12. What are the subscripts of 2X3 array
13. What is priority queue?
14. What is meant by overflow in stack
15. What is a Dequeue
16. Define circular linked list
17. What is meant by binary search tree
18. Give an example for hashing function
19. What are different traversing Methods
20. Define full Binary Tree with example.
21. What are the different ways we can implement a binary tree
22. What is meant by collision in hashing

(8*2=16 marks)

**Part C(Descriptive Short Answer questions)
Answer any 6 Questions(Each Question Carries 4 Marks)**

23. How do we measure the efficiency of an Algorithm
24. What is recursion? Explain tower of Hanoi problem
25. Write an algorithm to traverse in a circular queue
26. Differentiate between array and stack
27. What are the advantages of a circular queue over linear queue
28. Create binary search tree for the following data
20,30,15,12,8,25,22,10,35
29. Perform bubble sort for the following list of elements
3,7,9,8,2,5,1
30. What is meant by garbage Collection

31. What are different file attributes, Write two or three sentences about it

(6*4 = 24 marks)

Part D(LongEssay)

Answer any 2 Questions(Each Question carries 15 Marks)

32. Define hashing and different hashing function with example

33. Write an algorithm to perform insertion sort and perform sorting with $A = \{30, 52, 29, 87, 63, 27, 18, 54\}$

34. Write the steps needed to convert infix expression to postfix expressions and perform the conversion with the Example $A - (B / C + (D \% E * F) / G) * H$

35. Explain about different file organization

(15*2=30 marks)