



SM – 428

II Semester B.A./B.Sc. Examination, May/June 2018
(CBCS) (F + R) (2014-15 and Onwards)
COMPUTER SCIENCE – II
Data Structures



Time : 3 Hours

Max. Marks : 70

Instruction : Answer *all* the Sections.

SECTION – A

Answer **any ten** questions. **Each** question carries **two** marks.

(10×2=20)

1. What is non-linear data structure ? Give an example.
2. Define complexity of algorithms.
3. Write an algorithm to traverse linear arrays.
4. What is garbage collection ?
5. Define Queue.
6. Compare linear search and Binary search methods.
7. Write the difference between Stack and Queue.
8. Define complete Graph.
9. What are the applications of Trees ?
10. Define walk and Trail in a graph.
11. Define circular Queue.
12. Define :
 - a) Degree of a Tree
 - b) Binary Tree.

P.T.O.



SECTION – B

Answer any 5 questions. Each question carries 10 marks.

(5×10=50)

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|---|---|
| 13. a) Explain various types of data structures. | 6 |
| b) Briefly explain any four string handling functions. | 4 |
| 14. a) Write an algorithm for Binary Search Techniques. | 5 |
| b) Write an algorithm to delete an element from the array. | 5 |
| 15. a) Write a C program to Implement bubble sort. | 6 |
| b) Mention various Applications of the stack. | 4 |
| 16. a) Explain various types of linked lists. | 5 |
| b) Write a C program for tower of Hanoi problem. | 5 |
| 17. a) Explain various types of Queues. | 5 |
| b) Evaluate the following post fix expression :
40 35 * -1 +. | 5 |
| 18. a) Write an algorithm to insert an element into a circular queue. | 5 |
| b) What is deque ? Explain the types of deque. | 5 |
| 19. a) Explain Depth first search Graph traversals. | 5 |
| b) Explain sequential representation of graph in memory. | 5 |
| 20. a) Briefly explain various tree traversal methods with suitable examples. | 6 |
| b) Construct a binary tree given their pre order and in order traversals.
Pre order : F A E K C D H G B
In order : E A C K F H D B G. | 4 |
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