

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.



SECTION - B

Answer any 5 questions. Each question carries 10 marks.

(5×10=50)

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. 6
 Pre order : F A E K C D H G B
 In order : E A C K F H D B G. 4