



SE – 208

**II Semester B.A./B.Sc. Examination, September 2020
(CBCS) (Fresh + Repeaters) (2014-15 and Onwards)
(Semester Scheme)
COMPUTER SCIENCE (Paper – II)
Data Structures**

Time : 3 Hours

Max. Marks : 70

Instruction : Answer all Sections.

SECTION – A

Answer **any 10**. Each question carries **two** marks.

(10×2=20)

1. What is the space complexity ?
2. Define abstract data type and give example.
3. Mention any four string operation.
4. What is the difference between searching and sorting ?
5. Mention any two applications of stack.
6. Define queue.
7. What is graph ?
8. What is binary tree ?
9. Mention an advantage of array.
10. Convert the given in-fix expression $(A + B)/(A - B)$ to post-fix expression.
11. What is overflow and underflow condition in stack ?
12. What are the application of graph ?

SECTION – B

Answer **any 5**. Each question carries **10** marks.

(5×10=50)

13. a) Define Algorithm. Write an algorithm to find a substring to a given string. **5**
- b) Explain the various operations performed on data structures. **5**

P.T.O.



14. a) Write a C program to implement selection sort. 5
b) Write an algorithm for Binary Search. 5
15. a) Write a note on linked list. 5
b) Write an algorithm to delete a node from the end of the list. 5
16. a) Define stack. List the operations performed on stack. 5
b) Write a C program to implement the stack operation. 5
17. a) What is dequeue ? Explain with suitable example. 10
b) Write a algorithm to insert an element into queue. 10
18. a) List the difference between array and linked list. 10
b) Write a C program to insert an element into an array. 10
19. a) Define the following : 10
i) Complete binary tree.
ii) Tree.
iii) Mention any three applications of tree.
b) Explain binary tree traversal with example.
20. a) Define the following : 10
1) Graph
2) Weighted Graph
3) Directed Graph
4) Degree of Graph
5) Null Graph
b) Write a note on BFS algorithm.

BMSCW LIBRARY