

# *The University of Burdwan*

*B.Sc.(H) 3<sup>RD</sup> Semester Examination, 2020(CBCS)*

*Paper Name: Data Structure*

*Paper Code: CC-5*

*Subject: Computer Science*

**F.M:40**

**Time: 2 Hrs.**

**Answer any eight Questions.**

**5x8=40**

1. State the difference between arrays and linked lists. What are the objectives of studying data structures?

[2+ 3 = 5 ]

2. Convert the following infix expression into equivalent postfix expression using stack.

$( A + B ) * C - ( D - E ) / ( F + G )$

[ 5 ]

3. Write a program for selection sort and also calculate the time complexity for selection sort.

[ 5 ]

4. Given the preorder and inorder sequence and draw the resultant binary tree and write it's postorder sequence.

Pre-order : A B D G H E I C F J K

In-order : G D H B E I A C J F K

[ 5 ]

5. Why is queue data structure called FIFO ? What is dequeue ?

[2+ 3 = 5 ]

6. Define Recursion. Write a recursive function to reverse a string.

[ 2 +3 = 5 ]

7. What do you mean by internal sorting? Write a program to implement binary search algorithm

[ 2 + 3 = 5 ]

8. Write a program to create singly linked list and display it's elements.

[ 5 ]

9. Write a function to search a node in a binary search tree.

[ 5 ]

10. What are the applications where you will prefer hash tables to other data structures ? What do you mean by collision ?

[ 3+ 2 = 5 ]