(i) **Printed Pages : 2** Roll No. ....

(ii) Questions : 9 **Sub. Code :** | 1 | 7 | 3 | 9 | 2 |

Exam. Code : | 0 | 0 | 0 | 4 |

B.A./B.Sc. (General) 4ᵗʰ Semester

(2055)

COMPUTER SCIENCE

Paper–CS08– Data Structures

Time Allowed : Three Hours] [Maximum Marks : 30

Note :— Attempt **FIVE** questions in all, selecting **ONE** question from each Section. Last question is compulsory to attempt.

SECTION–A

1. Explain the Linear types of Data Structures. Explain with suitable examples. 6

2. Define Stack. Write and explain algorithms for its operations and explain applications of stack also. 6

SECTION–B

3. WAP in C language to insert an element at location specified by the user in singly linked list. 6

4. Explain circular queue. Write the algorithm for enqueue operation on it and explain also. 6

SECTION–C

5. Write 3 properties of a Binary Search Tree (BST). Draw a BST and explain searching operation on it with suitable example. 6

6. Differentiate between DFS and BFS traversing techniques on Graphs. Write algorithm for DFS and explain also. 6

SECTION–D

7. Write algorithm for insertion sort technique and explain it with suitable example. 6

8. Differentiate between Linear Search and Binary Search. Write and explain complexity of Binary Search algorithm 6

(Compulsory Question)

9. Write short notes on :

   (a) Applications of Queue

   (b) Deque

   (c) Memory representation of graph

   (d) Array and its types

   (e) Postfix notation

   (f) Doubly Linked List. 1×6