

Roll No. \_\_\_\_\_

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**SVIS- 315 A-17**  
**B.Sc. VIth Semester Degree Examination**  
**Computer Science**  
**(Data Structure Using C++)**  
**Paper : CS - 601**

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Time : 3 Hours

Maximum Marks : 80

**SECTION - A**

- I. Answer ALL the following questions. (15 × 1 = 15)**
- 1) What is a linear array?
  - 2) Why do we need linked list?
  - 3) List the different types of queue.
  - 4) What is full binary tree?
  - 5) FIFO stands for.
  - 6) What do you mean by searching?
  - 7) When do you get Queue - empty message?
  - 8) Distinguish between a single - linked list and double linked list.
  - 9) What are the operations of sets?
  - 10) Mention different types of Band matrices?
  - 11) What is quick sort?
  - 12) Define null pointer.
  - 13) Why do you need a double ended queue?
  - 14) What is a primitive data structure? Give example.
  - 15) What is POP?



## SECTION - B

II Answer Any FIVE questions.

(5 × 5 = 25)

- 16) Write an algorithm to delete a node from a single linked list at the front and end.
- 17) Convert the following arithmetic expression into postfix notation  
 $(A+B) \wedge C - (D * E) / F$ .
- 18) What is Queue? Explain types of queues.
- 19) Explain different operations on stack.
- 20) Write a note on binary search tree.
- 21) Explain any two types of uniform hash functions.
- 22) Explain with example memory representation of Upper-Triangular matrix.

## SECTION-C

III Answer any FOUR questions.

(4 × 10 = 40)

- 23) What are the different operations can perform on linear arrays?
- 24) Explain with algorithm different types of inserting a node in a single linked list.
- 25) Explain with algorithm for ENQUEUE and DEQUEUE.
- 26) Write a C++ program to sort the numbers using merge sort.
- 27) What is traversal of a binary tree? Explain the following with figure
  - i) In - order
  - ii) Pre-order traversal of a binary tree
- 28) Write an algorithm Fibonacci Search.

