



RAN - 2003000204020081

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**S. Y. B. Sc. (Sem. - IV) Examination April - 2023**

**CS-401 : Data Structure Using C++**

**Time: 2 Hours ]**

**[ Total Marks: 50**

**સૂચના : / Instructions**

(1)

નીચે દર્શાવેલ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.  
**Fill up strictly the details of signs on your answer book**

Name of the Examination:

**S. Y. B. Sc. (Sem. - IV)**

Name of the Subject :

**CS-401 : Data Structure Using C++**

Subject Code No.: **2003000204020081**

Seat No.:

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Student's Signature

**Set - 3**

**Q. 1. Answer the following: (Any Seven)**

**14**

1. Differentiate between linear and non-linear data structure.
2. What will be the position of front and rear if circular queue is full?
3. What is self-referential structure?
4. What do you mean by the term "time complexity" give an example?
5. Define stack. List out its 4 applications.
6. Which data structure allows us to add and delete at both ends explain?
7. Convert postfix to infix:  $AB+C*DE^F/-G+*H+I-$
8. What is the condition for overflow and underflow in circular queue?

**Q. 2. Answer the following: (Any Two)**

**12**

1. Explain the need of data structure along with its clarification.
2. Write an algorithm to convert infix expression into postfix expression.
3. Explain Stack data structure with its operation.

**Q. 3. Answer the following: (Any Two) 12**

1. How queue is applied in Round Robin algorithm explain.
2. What is sorting? Explain selection sort.
3. Explain various operation in doubly linked list.

**Q. 4. Write Short Note on the following: (Any Three) 12**

1. Insertion sort or quick sort.
  2. Array and its storage representation.
  3. Binary Search or linear search.
  4. Applications of Queue.
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