R A N - 0 9 4 6

RAN-0946

S. Y. B. Sc. (Computer Science) Examination

March / April - 2019

Data Structure Using C++ (Course No-401) new

Time: 2 Hours] **[Total Marks: 50**

સૂચના : / Instructions

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. (Computer Science)**

Name of the Subject :

☛ **Data Structure Using C++ (Course No-401) new**

Subject Code No.: **0 9 4 6**

Seat No.:

Student's Signature

Q1. Answer in short **(10)**

(a) What do you mean by data structure? List applications of data structure in Computer Science.

(b) What is circular link list? How it is different than singly link list.

(c) What is queue data structure? List its applications

(d) What is recursion? Internally which data structure is used in recursion to handle function calls?

(e) What do you mean by FIFO? List real world examples of FIFO.

Q2. (a) What is Queue data structure? Explain algorithm to insert and delete element from circular queue. **(06)**

(b) Discuss steps to convert infix expression to postfix expression **(04)**

OR

(a) Discuss Binary Search Algorithm in detail. **(06)**

(b) Discuss storage representation in two dimensional arrays. **(04)**

(c) Explain algorithm to find element in circular link list. **(04)**

Q3. (a) Discuss insertion sort algorithm in detail. **(06)**

(b) What is doubly link list? Compare it with singly link list. **(04)**

OR

(a) Write algorithm to create ordered singly link list. **(06)**

(b) Convert following infix expression to postfix expression **(04)**

(i) a + b / c * (d + e) (ii) (m + n) *((o – p) ^ q)

(c) Discuss advantages of Link List over Array **(04)**

Q4. Answer the following (Any three) **(12)**

(a) Discuss algorithm to push and pop element in stack.

(b) Discuss applications of queue data structure.

(c) Give classification of data structure.

(d) Discuss dequeue data structure. List its types

(e) What is link list? List different types of link list.

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