Seat No :_____

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SARDAR PATEL UNIVERSITY
B.C.A. III SEMESTER (CBCS) EXAMINATION
Thursday, 21 November-2019
2.00 P.M to 5.00 P.M
US03CBCA25: Data Structures-I

Total Marks : 70

Q-1. Multiple Choice Questions.   [10]

1. _____ is the basic fact or entity that is utilized in calculation.

   a).Data   b).Fact
   c). Information   d). All of these

2. Index of an array is always an _____ value.

   a).String   b). Float
   c). Integer   d). Stack

3. _____ Array is also known as matrix.

   a).One Dimensional   b). Two Dimensional
   c). Both   d).None of these

4. A stack is ____ type of data structure.
   a). Linear   b). Non-Linear
   c). Both (A) and (B)   d). None of the Above

5. A data structure in which insertion and deletion of an elements occurs at only one end is known as _____.
   a). Queue   b). Tree
   c).Graph   d). Stack

6. A Queue is logically a _____ type of list.

   a).First-in First-out   b). First-in Last-out
   c). Last-in First-out   d). Last-in Last-out

7. An operation that is used to insert an element on a stack is known as _____.
   a). Push   b). Pop

   c). Peep   d). Change

8. Whenever an element is inserted in the Queue _____.
   a).FRONT incremented by 1   b). FRONT decremented by 1
   c). REAR incremented by 1   d). REAR decremented by 1

9. The collection of files is known as _____.

   a).Data file   b). Database
   c). File   d). None of these

10. A _____ is a collection of information items about a particular entity.

    a).Record   b). Entity
    c). Database   d). None of these

Q-2. Short Questions. (Any Ten)   [20]

1 List out application of Data Structure.

2 Define Array with suitable example.

3 What is the upper bound and lower bound of an array?

4 List operations carried out on a Stack. Define ANY ONE of them.

5 List types of notation.

6 Give postfix form for A * B + C

7 Define queue. List the types of Queues.

8 What are Deques? Explain.

9 What are Ascending Priority Queues? Explain.

10 Define following Terms: I). File II). Multigraph

11 Explain Serial processing in brief.

12 Write down the syntax and purpose of open statement for update mode.

Q-3. [A] Explain in brief Classification of Data Structure   [5]

       [B] Explain 1-D array with declaration and initialization.   [5]

OR

Q-3. [A] List out operations used on Data Structure. Explain any three.   [5]

       [B] Explain 2-D array with declaration and initialization.   [5]

Q-4. [A] Write an algorithm to INSERT (PUSH) an element into a Stack.   [5]

       [B] Define stack. And also explain notations in detail.   [5]

OR

Q-4. [A] Write an algorithm to DELETE (POP) an element from a Stack.   [5]

       [B] Explain recursion in detail with example.   [5]

Q-5. [A] Explain the Simple Queues with an example and its limitations.   [5]

       [B] Write an algorithm to Insert an element in a Simple queue.   [5]

OR

Q-5. [A] Explain the Circular Queues with an example.   [5]

       [B] Write an algorithm to Insert an element in a Circular queue.   [5]

Q-6. [A] Explain in detail the structure of Sequential File.   [10]

OR

Q-6. [A] Write a detail note on processing of sequential file.   [10]

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