[S1]

Sardar Patel University
F.Y.B.Sc.(CA & IT) - 2nd Sem (Reg) External Examination-April-2022
US02CIIT51 || Advanced C Programming and Introduction to Data Structure

Date: 25/04/2022
Time: 12:00 noon to 02:00 pm.

Total Marks : [70]

Q.1 Answer the following questions.   [10]

1   int a, *p = &a; Which of the following statement will not add 1 to a variable?

   (a)*p++;   (b) *p=*p+1;   (c) (*p)++;   (d) a++;

2   Which of the following defines a pointer variable to an integer?

   (a) int &ptr;   (b) int *ptr;   (c) int &&ptr   (d) int **ptr;

3   Which of the following is not a C memory allocation function?

   (a) malloc()   (b) calloc()   (c) alloc()   (d) realloc()

4   _____ operator connects the structure name to its member.

   (a) underscore   (b) ?   (c) !   (d) dot

5   Which of the following share a similarity in syntax?

   (a) Union   (b) Structure (c) Arrays   (d) Both a &b

6   When fopen() is not able to open a file, it returns_____

   (a) EOF   (b) ONE   (c) NULL   (d) ZERO

7   The term "push" and "pop" is related to the _____.

   (a) Array   (b) stack   (c) queue   (d) all of above

8   When new data are to be inserted into a data structure, but there is no available space; this situation is usually called _____.

   (a) Overflow   (b underflow (c) housefull (d) none of these

9   Which of the following is TRUE for a Stack data structure?

   (a) Linear (b) Non-Premitive (c) both a & b (d) None

10 Which of the following is NOT the type of Linked list?

   (a) Two-way list (b) doubly link list (c) three –way list (d) circular link list

Q.2 Fill in the blanks and True/False.   [08]

1   _____operator is used with a pointer to access the value of the variable whose address is contained in the pointer

2   _____is datatype of file pointer

3   An operation that is used to insert an element on a stack is known as _____.

4   A data structure in which insertion and deletion of an elements occurs at both the end is known as _____.

5   *&ptr gives address of ptr. **(True/False)**

6   Structure is a derived data data type. **(True/False)**

7   A stack is non – linear type of data structure.**(True/False)**

8   A linked list in which last node pointing to the first node is known as circular linked list.**(True/False)**

CP. T. O.)

Q.3 Explain following in brief. (Attempt any Ten) [20]

1 List out benefits of pointers.
2 What is scale factor? Explain with example in brief.
3 List different pointer declaration style. Which one is preferable?
4 Differentiate: structure and union
5 List file modes available to manage the file in C.
6 Differentiate: printf and fprintf
7 Define primitive and non primitive data structure.
8 List out different applications of data Structure.
9 State various types of queue.
10 Define : Circular Queue
11 State various Applications of LinkedList.
12 Give representation of a Queue data structure.

Q.4 Explain the following in detail. (Attempt any Four) [32]

1 Explain pointer arithmetic with example.
2 Write a note on Dynamic memory allocation
3 What is structure? Explain its definition, declaration and assigning values to members of structure.
4 Explain fprintf(), fopen(), getc(), putw() function with syntax and example.
5 Write an algorithm to insert and peep operation of stack,
6 Write an algorithm to delete and change operation of stack,
7 Write an algorithm to insert an element into a simple queue and to delete an element from a simple queue
8 Write an algorithm to insert an element at the ending of a Singly linked list.

———— X ————