647510 **0303212C1010** **Seat No :_____**

B.Sc.(IT) Semester - 2 (*CBCS*) Examination
March/April - 2023 (OLD COURSE)
DATA STRUCTURE USING C LANGUAGE (CORE)

Time: 2:30 Hours **Marks: 70**

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate marks.

Q.1(A) Answer the following questions. **(04)**

1. Which Symbol is use to declare pointer variable.
2. DMA stands for……..
3. What is structure?
4. What is Time Complexity?

Q.1(B) Answer the following questions. (Any One) **(02)**

1. What is Pointer? Explain with Benefit.
2. What is Array? List out types of array.

Q.1(C) Answer the following questions. (Any One) **(03)**

1. What is Union? Explain with Example.
2. Explain two dimensional array with example.

Q.1(D) Answer the following questions. (Any One) **(05)**

1. Different Between call by value and call by reference.
2. Explain storage classes in detail.

Q.2(A) Answer the following questions. **(04)**

1. BFS stands for……
2. DFS Stands for……
3. Quick sort is work base on which method?
4. List out types of Searching method.

Q.2(B) Answer the following questions. (Any One) **(02)**

1. What is sorting? List out all types of sort.
2. Explain Selection sort with algorithm.

Q.2(C) Answer the following questions. (Any One) **(03)**

1. Explain Shortest path problem.
2. Explain Minimal spanning tree.

Q.2(D) Answer the following questions. (Any One) **(05)**

1. Write a program for Bucket sort.
2. Write a Program for Binary Search.

Q.3(A) Answer the following questions. **(04)**

1. FIFO stands for……
2. LIFO stands for……
3. What is Empty Stack?
4. What is Overflow Stack?

Q.3(B) Answer the following questions. (Any One) **(02)**

1. What is Empty Queue and Full Queue?
2. List out all operation of stack.

Q.3(C) Answer the following questions. (Any One) **(03)**

1. Explain Priority of queue in detail.
2. Write prefix and postfix expressions on stack

Q.3(D) Answer the following questions. (Any One) (05)

1. Write a program for double Ended Queue.
2. Write a menu driven program to perform all operation for Dynamic stack.

Q.4(A) Answer the following questions. (04)

1. In a Doubly linked list how many link is provide.
2. In a linked list each node has ____ and ____.
3. Linked list is which type of data structure.
4. What is NULL?

Q.4(B) Answer the following questions. (Any One) (02)

1. What is linked list?
2. What is sorting in linked list?

Q.4(C) Answer the following questions. (Any One) (03)

1. What is Circular linked list?
2. Write a program for merging linked list.

Q.4(D) Answer the following questions. (Any One) (05)

1. Write a program for singly linked list for insert as a first and delete as a last operation.
2. Write application for linked list.

Q.5(A) Answer the following questions. (04)

1. BST stands for……
2. What is Binary Tree?
3. What is Root?
4. What is Forest?

Q.5(B) Answer the following questions. (Any One) (02)

1. What is Leaf Node?
2. What is depth of Tree?

Q.5(C) Answer the following questions. (Any One) (03)

1. Explain Height balance tree in detail.
2. Write an algorithm for Pre-order, post-order and in-order.

Q.5(D) Answer the following questions. (Any One) (05)

1. Explain Ancestor and descendant in detail.
2. Write a program for Binary tree.

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