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SRINIX COLLEGE OF ENGINEERING

3rd INTERNAL EXAMINATION-2021-22

Subject-DS

Semester-3RD

Branch-CSE

Full Mark-100

Time-2.30Hrs

ANSWER ALL THE QUESTIONS (PART-A)

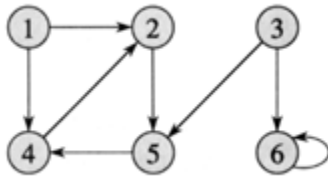
[2X10=20]

1. The following operations are performed on an empty stack PUSH(1),PUSH(2), POP(),PUSH(3)PUSH(4) , POP(),PUSH(7),PUSH(8) ,PUSH(),POP(),POP(). Write the sequence of Popped item.
2. How many various types are de-queues present in DS?
3. Define post-order traversal.
4. What are the main operations of data structure?
5. What is the infix form of the following prefix: $- a b + c d$
6. How to implement linked list using stack?
7. What is non-linear data structure?
8. What do you mean by spanning tree?
9. What do you mean by isolated vertex?
10. What do you mean by path in Graph?

ANSWER ALL THE QUESTIONS (PART-B)

[6X8=48]

1. Construct an AVL tree with followings:JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DEC
2. Construct B-Tree of order 3using: 12,71,33,45,62,15,91, 39, 77,9,82
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- 4.



Consider this directed graph above represent it's a) An adjacency list representation and b)The adjacency matrix representation.

5. Compare : i) BFS vs. DFS iii) Linear search vs. Binary search
6. Write down the algorithm for sorting elements using insertion sort.
7. Write down the algorithm to insert and delete an element in circular queue
8. Write a short note on Threaded Binary Tree.

ANSWER ALL THE QUESTIONS (PART-C)

[16X2=32]

1. Classify data structure and explain its each part with example and suitable figure.
2. a) What is Binary tree? Write an algorithm to construct a Binary search tree.
b) Write an algorithm for pre-order traversal of a tree.