

The Islamia University of Bahawalpur

## Faculty of Engineering

# Sample Question Paper

Bsc Computer Systems Engineering	Time Allowed: _____
Course: Data Structures and Algorithms	Instructor: _____
Note: Attempt all questions.	

Q. No.	Questions
1	<p>(a) Implement C++ Program for performing following operations on Array : Insertion, Display.</p> <p>(b) Convert the following infix expression to its prefix form using stack <math>A + B - C * D / E + F</math>. Show diagrammatically each step of conversion.</p>
2	<p>(a) Construct the binary search tree using following elements: 35,15,40,7,10,100,28,82,53,25,3. Show diagrammatically each step of construction of BST.</p> <p>(b) Create a Singly Linked List using data fields 10, 20, 30, 40, 50 and show procedure step-by-step with the help of diagram from start to end.</p>

3

(a) Show the effect of INSERT and DELETE operations on to the Linear queue of size

10. The Linear queue sequentially contains 10, 20, 30, 40, and 50 where 10 is at front of the queue. Show diagrammatically the effect of -

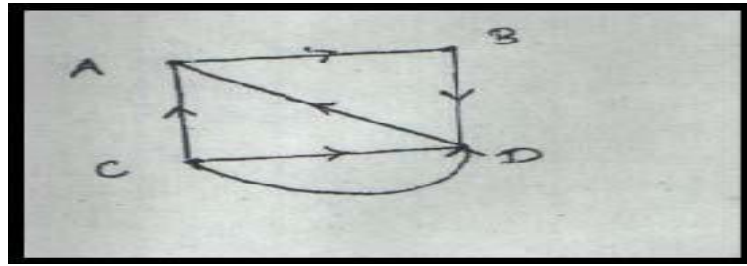
1. INSERT (12)

2. INSERT (34)

3. DELETE

4. INSERT (56)

(b) For the following directed graph :



i) Give adjacency matrix representation.

ii) Give adjacency list representation.

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