Total No. of Questions : 8] *[Total No. of Printed Pages : 2*

Roll No .....

CS-113/IT-111-CBCS

B.E. I & II Semester

Examination, June 2020

Choice Based Credit System (CBCS)

Data Structure - I

Time : Three Hours

Maximum Marks: 60

Note: i) Attempt any five question.

ii) All questions carry equal marks.

1. a) What is the time complexity of quick sort in different cases?

   b) Why do we analyze the algorithm, explain in brief.

2. What is Binary Search Tree? Construct the Binary search tree :

   50, 72, 96, 107, 26, 12, 11, 92, 10, 25, 51, 16, 17, 95

3. a) Write down the equivalent infix expression for the following postfix expression.

   A B C - / A D E ⁎ ⁎ –

   b) Explain priority queue and circular queue.

4. a) Write an algorithm for PUSH and POP of stack?

   b) What is objective of implementing a queue in circular fashion?

5. a) Discuss various data types with suitable example.

   b) What is Recursion? Write various application of Recursion.

6. Write short notes on :
   a) Time complexity
   b) Stack
   c) Linear search

OR

What is Graph and its operation? Explain DFS and BFS?

7. What do you mean by Sorting? Discuss any one sorting methods.

OR

Explain the concept of LIFO and FIFO. Where these are used?

8. Write a short note (any two) :
   a) Heap sort
   b) Time and space complexity
   c) Adjacency matrix

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