Code No: 133AG **R16**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B.Tech II Year I Semester Examinations, November/December - 2018
DATA STURCTURES THROUGH C++
(Common to CSE, IT)

Time: 3 Hours **Max. Marks: 75**

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 25 marks. Answer all questions in Part A.
Part B consists of 5 Units. Answer any one full question from each unit.
Each question carries 10 marks and may have a, b, c as sub questions.

PART- A

(25 Marks)

1.a)	What are the input and output statements in C++?	[2]
b)	What is destructor? Explain.	[3]
c)	Discuss about two dimensional arrays.	[2]
d)	What is stack? What are the operations performed on stack?	[3]
e)	Define a max heap.	[2]
f)	What are the properties of binary tree?	[3]
g)	What is rehashing technique?	[2]
h)	Compare linear search and binary search.	[3]
i)	What is undirected graph? Give its properties.	[2]
j)	What are the applications of graphs?	[3]

PART-B

(50 Marks)

2.a) What is an exception? Discuss about throwing an exception and handling an exception.
b) Explain about call by reference technique. [5+5]

OR

3.a) Explain new and delete operators with an example programs.
b) What is polymorphism? Explain. [5+5]

4.a) Discuss about linked implementation of queue ADT.
b) How to evaluate postfix expression? Explain. [5+5]

OR

5. Define and explain about circular queue and its operations with an examples. [10]

6.a) Explain the linked representation of a threaded binary tree.
b) Differentiate between full binary tree and complete binary tree. [5+5]

OR

7.a) Define tree. Explain all terms associated with trees.
b) What are various operations that can be performed on a binary tree? Explain. [5+5]

8.a) Discuss the concept of quick sort with an example.
b) Explain the concept of merge sort in detail. [5+5]

OR

9.a) What is searching? Discuss various types of searching technique.
b) Explain the concept hash table with an example. [5+5]

10.a) Explain in detail about balanced binary trees.
b) Explain in brief about AVL trees. [5+5]

OR

11.a) Discuss in detail about red-black trees.
b) Compare various search trees. [5+5]

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