

Roll No. _____

PGIS-N 1043 B-16

M.Sc. Ist Semester Degree Examination

Computer Science

(Data Structure Using C++)

Paper : HCT-1.3

(New)

Time : 3 Hours

Maximum Marks : 80

Instructions to Candidates:

- i) Section A is compulsory
- ii) Answer any five questions from Section - B

Section - A

1. Answer the following questions (10×2=20)
- a) List basic concepts of object oriented programming.
 - b) Define class and object in C++.
 - c) Explain Dynamic binding in C++.
 - d) Write properties of friend functions.
 - e) Define data structure.
 - f) List the basic operations performed on linked list.
 - g) Write the differences between direct and indirect recursion.
 - h) State the different ways of representing expressions.
 - i) State the properties of binary tree.
 - j) Define Binary search tree.

Section - B

- 2. a) Bring out the difference between does and structure in C++. (6+6)
b) Explain constructor and destructor with suitable example.
- 3. a) With suitable example explain static and Runtime binding. (6+6)
b) Explain function overloading and overriding.
- 4. a) Describe pure virtual function.
b) Discuss briefly the various exception handing options. (6+6)

5. a) Explain stack overflow and underflow conditions with an example. (6+6)
b) With neat diagram explain basic operations performed on stack.
6. a) What is recursion? Explain recursive function for binary search. (6+6)
b) Write a program to insert an element into single linked list.
7. a) Briefly explain binary tree traversal. (6+6)
b) What is BST? Write the properties of BST.
8. Write short notes on any two of the following (2×6=12)
a) Insertion sort
b) DFS
c) Graph operations
d) Standard Template library.

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