C 11817 (Pages 2) Name

Reg. No.....

SECOND SEMESTER B.C.A. DEGREE EXAMINATION, APRIL/MAY 2013

(CCSS)

CA2 B02—PROGRAMMING IN C++ AND DATA STRUCTURES

Time : Three Hours Maximum : 30 Weightage

Answer all *twelve* questions

1 _____ is an example of logical operators.

2 A _____ is a way of grouping objects having similar characteristics.

3 The variable which can store the address of a pointer variable itself is called a _____

4 The _____ operator is used to resolve issues with reference to scope of local and global variables.

5 A constructor which initializes an object with another object is called a _____

6 Say True *or* False Abstract class can be instantiated.

7 The term-exception is used to represent a _____ error.

8 Array is a _____ data structure.

9 Double ended queue is called a _____

10 The postfix equivalent of a * b c * (d – e) is _____

11 _____ is an example of nonlinear data structure.

12 Maximum number of nodes in a binary tree of height h is _____

(12 x $^1/_4$ = 3 weightage)

II. Answer all *nine* questions :

13 Differentiate between procedure oriented and object oriented programs.

14 What is the purpose of destructors ?

15 State any *one* advantage each of function overloading and operator overloading.

16 List advantages of templates.

17 What is containership ?

18 Define Array.

19 How do you declare a three dimensional array in C++ ?

Turn over

20 Define tree and binary tree.

21 State the advantages of linked stack over array based stack.

(9 x 1 = 9 weigh

III. Answer any *five* questions :

22 With suitable example, explain the terms "encapsulation" and "abstraction".

23 Write a function to convert a binary number to decimal. Write appropriate main functi

24 Write a program for overloading ++ : to find the sum of the digits of an integer.

25 With a suitable examples, explain multiple inheritance and multilevel inheritance.

26 Write and explain quick sort algorithm.

27 Write functions required to implement an array based stack. Write a non-recursive fun for finding factorial of a given integer without using any loop constructs *(hint* use stack structure).

28 Write and explain function to insert a new node into a Binary Search Tree.

(5 x 2 = 10 weightag

IV. Answer any *two* questions :

29 (a) With suitable examples, explain different types of constructors.

(b) Write note on argument passing mechanism in C++.

30 (a) Write notes on exception handling.

(b) Write a complete C++ program with necessary functions for the evaluation o pus' **expressions.**

31 (a) Write a function to delete i node from a doubly linked list.

(b) Write necessary functions and declarations to implement a Queue using linked list.

(2 x 4 = 8 weight.