

**SECOND SEMESTER B.C.A. DEGREE [SUPPLEMENTARY/IMPROVEMENT]  
EXAMINATION, APRIL/MAY 2015**

(UG—CCSS)

Core Course

**CA 2B 02—PROGRAMMING IN C++ AND DATA STRUCTURES**

Time : Three Hours

Maximum : 30 Weightage

**I. Answer all *twelve* questions :**

- 1 The data members in a class of a C++ program are by default \_\_\_\_\_
- 2 \_\_\_\_\_ operator is used to find the memory size of a variable in bytes.
- 3 \_\_\_\_\_ is an example of derived data type in C++.
- 4 \_\_\_\_\_ operator is used to dynamically allocate the memory in C++.
- 5 The constructor that accepts no parameters is called the \_\_\_\_\_ constructor.
- 6 An exception is thrown by using the \_\_\_\_\_ keyword from inside the try block.
- 7 \_\_\_\_\_ is a member function having the same name as that of the class.
- 8 \_\_\_\_\_ elements should be sorted before performing \_\_\_\_\_ search.  
\_\_\_\_\_ is a FIFO structure.
- 10 The prefix form of  $(A+B)*(C-D)$  is \_\_\_\_\_
- 11 Linked list is a \_\_\_\_\_ data structure.
- 12 The number of nodes in a tree is called \_\_\_\_\_

(12 x ¼ = 3 weightage)

**II. Answer all *nine* questions :**

- 13 Write a short note on enumeration.
- 14 Explain logical operators with example
- 15 Write short note on inline functions.
- 16 Explain the importance of new and delete operators in memory management.
- 17 Write a short note on nested class.
- 18 What is meant by virtual base class.
- 19 Write any four applications of stack.
- 20 Explain the role of head node in linked list.
- 21 Write \_\_\_\_\_ procedure to delete a child of a binary tree.

(9 x 1 = 9 weightage)

Turn over

**III. Answer any *five* questions :**

- 22 Explain features of OOPS concept.**
- 23 Compare call by reference and return by reference.**
- 24 Define constructor ? List the characteristics of constructors.**
- 25 What are virtual functions ? Explain the importance of virtual functions with the help of an example.**
- 26 Explain multilevel inheritance with an example.**
- 27 Write C++ program to implement stack operations.**
- 28 Write a non recursive procedure to perform IN ORDER traversal of binary trees.**

(5 x 2 = 10 weightage)

**IV. Answer any *two* questions :**

- 29 (a) What is operator overloading ? Write a program to compare two strings using overloaded == operator.**
  - (b) What is polymorphism ? Explain different type of polymorphisms.**
- 30 (a) Explain exception handling mechanism supported by C++.**
  - (b) Explain how templates support generic programming, write suitable example.**
- 31 (a) Write the procedure for bubble sort.**
  - (b) Explain the working of binary search algorithm.**

(2 x 4 = 8 weightage)