C 24744

Name..

Reg. No...................................

SECOND SEMESTER B.C.A. DEGREE EXAMINATION, MAY 2017

(CUCBCSS—UG)

Core Course

BCA 2B 02—OBJECT ORIENTED PROGRAMMING WITH C++

Time : Three Hours

Maximum : 80 Marks

Part A

Answer all questions.

Each question carries 1 mark.

1. The property of OOPS which binds data and member functions together is popularly known as ————————.

2. The ———————— qualifier can be used along with an integer variable when we want to manipulate both positive and negative numbers.

3. The header file ———————— needs to be included in a program when we want to use the built in character handling functions like isalpha(), toupper()...

4. The ———————— operator in C++ can be used as an alternative to if statements.

5. The concept of ———————— is useful when we want to manipulate multiple occurrence of the same class type using a single name.

6. The manipulator which helps in fixing the number of digits appearing after the decimal point when dealing with floating point numbers is ————————.

7. The member function of a class which nullifies the effect of a constructor in the class is known as ————————.

. The class which works purely as a base class for inheritance and not used for creating objects is called ————————.

———————— is an example for runtime polymorphism

In ———————— inheritance, a derived class can act as the base class for further inheritance

(10 × 1 = 10 marks)

Part B

Answer all the questions.

Each question carries 2 marks.

11. What do you mean by polymorphism ? What are the different types of polymorphism ?

12. Explain the cascading of I/O operations in C++.

13. Explain dynamic initialization of objects.

14. Explain the need and concept of friend functions.

15. Explain different methods of inputting single character data from the standard input device.

(5 × 2 = 10 marks)

Part C

Answer any five questions.

Each question carries 4 marks.

16. What are nested loops ? explain with example, the use of break and continue statements in loops.

17. Explain the need and use of constructors and destructors ? what are their important properties.

18. Explain different techniques of passing objects to user defined functions. Give e.g.

19. Write a C++ program to add two complex numbers of the form $x + iy$ using the concept of operator overloading using friend functions.

20. Explain the concept and use of virtual functions in inheritance. Write a C++ program which uses virtual functions and explain its working.

21. Write short note on :

    (a) Virtual base class.

    (b) Constructors in derived classes.

22. Explain the concept of inline functions write a C++ program to find the factorial of a given intege using inline function. Then differentiate its working with ordinary functions.

23. Explain the concept and importance of class templates. What is the need for overloading templa functions.

Part D

Answer any **five** *questions.*
Each question carries 8 marks.

24. Compare and contradict the programming approaches, procedure oriented and object oriented, citing the advantages and disadvantages of both.

25. Explain the concept of classes and objects. Write detailed note on class declaration and instantiation and different methods used for it

26. What is operator overloading ? Explain important rules and ways of implementing it.

27. What is inheritance ? Explain different methods of inheritance and visibility modes of data.

28. What is the importance of virtual functions ? What the important properties ? Explain how it can be used to implement runtime polymorphism.

29. Explain I/O stream classes for console oriented I/O operations. Explain the working of formatted I/O operations and important built in manipulators.

30. Explain the stream classes for file oriented I/O operations in C++. Compare the working of sequential and random access files. Explain how errors are handled during file operations.

31. Write short note on :

    (a) C++ tokens, identifiers and keywords.

    (b) Memory management operators new() and delete().

    (c) This pointer and pointers to derived objects.

    (d) File pointer manipulators in C++.

(5 × 8 = 40 marks)