Code : 303301

BCA 3rd Semester Exam., 2018

OBJECT-ORIENTED PROGRAMMING USING C++

Time : 3 hours *Full Marks* : 60

Instructions :

(i) The marks are indicated in the right-hand margin.

*(ii) There are **SEVEN** questions in this paper.*

*(iii) Attempt **FIVE** questions in all.*

*(iv) Question Nos. **1** and **2** are compulsory.*

1. Choose the correct option of the following (any *six*) : 2×6=12

(a) Adding a derived class to a base class requires fundamental changes to the base class.

(i) True

(ii) False

(b) To expose a data member to the program, you must declare the data member in the ____ section of the class.

(i) common

(ii) exposed

(iii) public

(iv) unrestricted

(v) user

(c) Hiding the complexity is known as

(i) abstraction

(ii) encapsulation

(iii) data hiding

(iv) composition

(d) Which of the following is a mechanism by which object acquires the properties of another object?

(i) Encapsulation

(ii) Abstraction

(iii) Inheritance

(iv) Polymorphism

(e) If I want to have common functions in a class and want to defer implementations of some other functions to derived classes, then we need to use

(i) an interface

(ii) an abstract class

(iii) a friend class

(iv) a static class

(f) Can main( ) function be made private?

(i) Yes, always

(ii) Yes, if program doesn't contain any classes

(iii) No, because main function is user defined

(iv) No, never

(g) cout stands for

(i) class output

(ii) character output

(iii) console output

(iv) call output

(h) Which of the following cannot be declared static?

(i) Class

(ii) Object

(iii) Functions

(iv) Both (i) and (ii)

(i) The generic type in a template function

(i) must be T

(ii) can be T

(iii) cannot be T for functions you create, but may be for C++'s built-in functions

(iv) cannot be T

(j) A function that is called automatically each time an object is destroyed is a

(i) constructor

(ii) destructor

(iii) destroyer

(iv) terminator

2. Answer any *three* of the following questions:

(a) Define the characteristics of OOP.

(b) Write the syntax for declaration of overloading extraction and insertion operator with friend function.

(c) Explain the visibility of base class members for the access specifiers : private, protected and public while creating the derived class.

(d) How to create and destroy objects dynamically?

(e) Explain the relationship between base class and derived class.

3. Explain the differences between class and structure with example. 12

4. What is operator overloading? What are the restrictions on operator overloading? Write C++ program to overload addition (+) operator for adding two complex numbers. 12

5. List the characteristics of a constructor. Write a C++ program to display distance. Define a suitable parameterized constructor with default values for the class 'distance' with data members 'feet' and 'inches'. 12

6. What is abstract class? Explain the different types of inheritance in C++. 12

7. Define exception handling. Explain the use of try, catch and throw for exception handling in C++ with example. 12

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