Professional Course Examination, November/December 2019

(3rd Semester)

BACHELOR OF COMPUTER APPLICATIONS

Course : BCA–304

(Object-oriented Programming in C++)

Full Marks : 75

Time : 3 hours

(PART : A—OBJECTIVE)

(*Marks* : 25)

The figures in the margin indicate full marks for the questions

SECTION—A

(*Marks* : 15)

Tick (✓) the correct answer in the brackets provided : 1×10=10

1. C++ was developed by

(a) Blaise Pascal ( ) *(b)* Dennis Ritchie ( )

(c) Bjarne Stroustrup ( ) *(d)* James Gosling ( )

2. The size of int data type is _____ byte(s).

(a) 1 ( ) *(b)* 2 ( )

(c) 4 ( ) *(d)* 8 ( )

3. Which of the following is the default return value of functions in C++?

(a) int ( )

(b) char ( )

(c) void ( )

(d) There is no default return value ( )

4. Which of the following is a valid class declaration?

(a) class A {} ( ) (b) void class B {} ( )

(c) public class C {} ( ) (d) class D {}; ( )

5. What is the role of a constructor in classes?

(a) To modify the data whenever required ( )

(b) To destroy an object ( )

(c) To initialize the data members of an object when it is created ( )

(d) To call private functions from the outer world ( )

6. Operator which is overloaded, is

(a) conditional operator (?:) ( )

(b) + operator ( )

(c) scope resolution operator (::) ( )

(d) conditional operator (sizeof) ( )

7. Which of the following cannot be inherited by derived class?

(a) Public data members ( )

(b) Public member functions ( )

(c) Protected data members ( )

(d) Private data members ( )

8. Virtual functions in C++ tell the compiler to perform _____ on such functions.

(a) static binding ( ) (b) late binding ( )

(c) compile time binding ( ) (d) no binding ( )

9. What is an exception in C++ program?

(a) A problem that arises during the execution of a program ( )

(b) A problem that arises during compilation ( )

(c) A problem also known as the syntax error ( )

(d) A problem also known as the semantic error ( )

10. Which of the following is the correct way to declare a template?

(a) template{} ( ) (b) template( ) ( )

(c) template<> ( ) (d) template[ ] ( )

Indicate whether the following statements are *True (T)* or *False (F)* by putting a Tick (✓) mark in the brackets provided : 1×5=5

1. Void pointer is same as NULL pointer.

   (T / F)

2. Subclass may also be called derived class.

   (T / F)

3. It is possible to define constructors with default arguments.

   (T / F)

4. Data members and member function in a class are public by default.

   (T / F)

5. Template function can be overloaded.

   (T / F)

SECTION—B

(*Marks* : 10)

Answer the following questions : 2×5=10

1. What is a token?
2. What is an argument of a function?
3. What is destructor?
4. Define derived class.
5. What is generic class?

(PART : B—DESCRIPTIVE)

(*Marks* : 50)

The figures in the margin indicate full marks for the questions

1. *(a)* Give a comparison between procedural and object-oriented programming. 4

   (b) Define classes and objects. What is operator overloading? 4+2=6

   OR

   (c) Explain the concepts of inheritance and encapsulation in OOP. 5

   (d) What are the control statements in C++? Explain in brief. 1+4=5

2. *(a)* What is function? How do you pass arguments and return a value? 2+4=6

(b) What is friend function? Why do we need a friend function? 2+2=4

OR

(c) Explain the concept of array of object. 4

(d) What is inline function? Give program example of inline function. 2+4=6

3. *(a)* What is parameterized constructor? How do you pass initial values in parameterized constructor? 2+3=5

(b) What is copy constructor? Write a program to explain copy constructor. 2+3=5

OR

(c) Explain the concepts of overloading unary operators and overloading binary operators. 6

(d) Explain the concept of conversion between basic and class type. 4

4. *(a)* What is polymorphism? 2

(b) Differentiate between multilevel inheritance and multiple inheritance giving suitable example. 8

OR

(c) What is a pointer? Write simple program to demonstrate pointer. 1+3=4

(d) What is a virtual function? Write a program to demonstrate virtual function. 2+4=6

5. *(a)* What are stream classes in C++? 5

(b) Write a program to open, write and close a file in C++. 5

OR

(c) What is a template? Write a program to show the use of function template. 2+3=5

(d) Write a suitable program to demonstrate exception handling. 5

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