 BCA(II) — COM / II / 9 / X / H

2010

Time : 3 hours

Full Marks : 80

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Answer from both the Groups as directed.

Group – A

(Objective Type Questions)

Answer **all** questions.

1. Choose the correct answer of the following : 2×10 = 20

   (a) In overloading, an operator we can use :

   (i) To create a new operator

   (ii) To overload the conditional operator, a ternary operator

(iii) Only to overload unary operator

(iv) To overload the unary as well as binary operator

(b) Inheritance is a way to :

(i) Create general classes from more specific classess

(ii) Create specific classes from more general classess

(iii) Improve data hiding and encapsulation

(iv) None of the above

(c) An exception is caused by :

(i) A hardware problem

(ii) A problem in the operating system

(iii) A run-time error

(iv) A syntax error

(d) Which of the following operator can't be overloaded ?

(i) new

(ii) delete

(iii) +

(iv) ? :

(e) Operator overloading is called :

(i) Runtime polymorphism

(ii) Compile time polymorphism

(iii) Complex overloading

(iv) Abstract overloading

(f) A process of a class can contain object of another class is called :

(i) Nesting

(ii) Friend

(iii) Data Abstraction

(iv) Encapsulation

(g) Which of the following loop cause the execution of the code at least once ?

(i) While

(ii) Do .... While

(iii) While .... DO

(iv) For

(h) Which of the following way are legal to access a class data member using this pointer ?

(i) this.x

(ii) *this.x

(iii) *(this.x)

(iv) (*this).x

(i) If a subclass contains a method with the same name and arguments as in the base class, it is :

(i) Overloading

(ii) Overriding

(iii) Polymorphism

(iv) Error

(j) ios represents :

(i) A class member function

(ii) A constant object

(iii) A stream

(iv) A base class

Group – B

(Long-answer Type Questions)

Answer any **four** questions :

2. (a) What is a class template ? List the merits and demerits of using a template in 'C++'. 8

(b) When is it necessary to use member-wise initialization list (also known as header initialization list) in 'C++' ? 7

3. (a) Explain the concept of operator overloading ? Illustrate with suitable examples. What are the operators that cannot be overloaded ? 8

(b) What is a copy constructor ? What are the advantages of a copy constructor ? Give examples. 7

4. (a) Differentiate between early binding and late binding. 8

(b) Write 'C++' class for the following : 7

To represent two-dimensional point (x, y), class should contain all different constructors and methods to print point (x, y) format and also to add two points by adding x and y values.

5. (a) Write a program to concatenate two strings using operator overloading. 8

(b) Write a function using reference variable as arguments to swap the values of a pair of integers. 7

6. (a) Explain operator overloading with examples. 8

(b) What is inline function ? How does it differ from ordinary function ? Explain the merits and demerits of it. 7

7. (a) Explain polymorphism and data hiding in 'C++' with suitable examples. 8

(b) What happens if we don't use virtual function in inheritance ? Explain importance of virtual function with this reference. 7

8. (a) Write a program to demonstrate the catching of all exceptions. What happens when a raised exception is not caught by catch-block(in the absence of catching all exceptions block) ? 8

(b) What is a class template ? Write a template-based complete program for adding two objects of the vector class. Use dynamic data members instead of array for storing vector elements. 7

9. (a) Justify the use of constructors and destructors in 'C++'. 8

(b) Write down all the rules with respect to virtual functions. 7

10. (a) Write short note on Static Variables and Static Functions. 8

(b) What is object-oriented programming ? How is it different from procedure-oriented programming ? 7