N–11651

Register No. | | | | | | | | |

BE Degree Examination November 2015

Third Semester

Computer Science and Engineering

14CST32 – OBJECT ORIENTED PROGRAMMING USING C++

(Regulations 2014)

Common to BTech Information Technology

Time: Three hours Maximum: 100 marks

Answer all Questions

Part – A (10 × 2 = 20 marks)

1. What will be the value of the variable a printed after the following code is executed?

   a = 25 ; cout<<a--;cout<<++a;

2. List any four new operators added by C++ which aid OOP.
3. Distinguish between private and a public members of a class.
4. List some of the special properties of a constructor function.
5. Can a friend function be used to overload the assignment operator = ? Why?
6. Identify the use of scope resolution operator.
7. Distinguish between pure virtual and virtual function.
8. Give an example for the usage of "this" pointer.
9. List the advantages of streams.
10. Specify the use of templates in C++.

Part – B (5 × 13 = 65 marks)

11. a. i) Highlight the major elements of C++. (6)

    ii) Write a program in C++ for a multiplication table using i) if statement ii) for statement. (7)

(OR)

    b. i) Illustrate with suitable example for 1) Recursive function ii) Inline function. (6)

    ii) Summarize on storage classes used in C++. (7)

12. a. i) Demonstrate the use of Overloaded constructor and Default constructor. (7)

    ii) Illustrate how object can be returned from functions. (6)

(OR)

    b. Create a class called time that has separate data member for hours, minutes and seconds. One constructor should initialize it to fixed values. Another member function should display it in the 10:30:20 format. Another member function should add two objects of time which is passed as arguments. (13)

13. a. Demonstrate the use of binary operator overloading with an example. (13)

(OR)

b. i) Write an example program that demonstrate the use of drived class constructor. (7)

ii) Compare function overloading and function overriding. Give an example for each. (6)

14. a. i) Illustrate how pointer can point to objects. Give an example. (7)

ii) Elaborate on memory management operators. (6)

(OR)

b. Illustrate how a normal function and a virtual function can be accessed with pointers. (13)

15. a. Draw the stream class hierarchy and explain with an example. (13)

(OR)

b. Explain about function template and design a function template for adding two numbers of any data type. (13)

Part – C ($1 \times 15 = 15$ marks)

16. a. Create a class for savings Bank account with necessary members such s account number, name, type of account, Balance amount etc. Write the member functions for the following operations: (15)

i) To assign initial values

ii) To deposit an amount

iii) To withdraw an amount

iv) To display balance amount.

(OR)

b. Design a class and develop a program for student database using multilevel inheritance. The member functions should (15)

i) Add the details of students such as rollno, name, branch and year

ii) Add mark details

iii) Modify the student details

iv) Display the result of students.