

**B. E. Third Semester (Computer Technology)/SoE–2014–15
Examination**

Course Code : CT 1221/CT 221

**Course Name : Object Oriented
Programming**

Time : 3 Hours]

[Max. Marks : 60

Instructions to Candidates :—

- (1) All questions are compulsory.
- (2) All questions carry marks as indicated.
- (3) Assume suitable data wherever necessary.

1. (A) Solve any One :

- (1) Discuss all the features of OOP using suitable example. 7
- (2) What is Object of a Class ? Using suitable program segment to demonstrate two ways of declaring an Object. 7

(B) Solve any One :

- (1) Compare object oriented programming with procedure oriented programming. 3
- (2) Write a program to show how data members of a class are accessed by using member functions of same class. 3

2. (A) Solve any One :

- (1) Write a class Matrix to hold integer matrix of size 3 × 3. Overload * to find the product of two matrices and return the result. 7
- (2) Write a friend function to add to distinct time entered by user in hrs and mins format. Display the total time. 7

- (B) Solve any **One** :
- (1) Write a program to demonstrate parameterized and copy constructor. 3
 - (2) Write a program in C++ to overload area () to find area of circle and triangle. 3
3. (A) Solve any **One** :
- (1) Create an abstract class Bank to hold amount and number of days. Derive class SBI from Bank. Calculate simple interest at rate of 7.5%. 7
 - (2) Using suitable example, demonstrate the situation where use of virtual function is required in C++. 7
- (B) Solve any **One** :
- (1) Write a C++ program to implement Hybrid inheritance. 3
 - (2) State difference between Abstract class and interface. Write a sample program in Java to show implementation of interface. 3
4. (A) Solve any **One** :
- (1) Write a program to copy contents of a file named DEMO. TXT into another file whose name is given by user as command line argument. 7
 - (2) Write a program to read the contents of file NUMBER.TXT. Store all even numbers in EVEN.TXT and odd numbers in ODD.TXT. Finally, display contents of all three files. 7
- (B) Solve any **One** :
- (1) Discuss the stream class hierarchy in detail. 3
 - (2) Write a template function to add two numbers to two different data types. 3

5. (A) Solve any **One** :
- (1) Give the best situations for the use of sequence containers and associative containers. 7
 - (2) Write a program to demonstrate how we can handle divide by zero error using concept of rethrowing. 7
- (B) Solve any **One** :
- (1) Using a sample program demonstrate how we can write multiple catch blocks for a single throw statement. 3
 - (2) Demonstrate how exceptions can be handled in C++. 3
6. (A) Solve any **One** :
- (1) Give the significance of a data flow diagram. Draw a DFD for the library student relationship. 7
 - (2) Consider a scenario of building an application for placing an order for a product online. Perform all the steps of object oriented analysis. 7
- (B) Solve any **One** :
- (1) Discuss prototyping model of object oriented design in brief. 3
 - (2) Discuss waterfall model of software development in brief. 3