

**B.Tech-3rd(CSE/IT)**  
**Object Oriented Programming**

*Full Marks : 50*

*Time :  $2\frac{1}{2}$  hours*

**Answer all questions**

*The figures in the right-hand margin indicate marks*

**Symbols carry usual meaning**

1. Answer *all* questions : 2 × 5

(a) What is an access specifier ? What is the significance of OOPS ?

(b) What is reference variable ? What does a reference variable holds ?

(c) What is the use of static members function in a class ?

(d) What is virtual function and its usage in C++ programming ?

( Turn Over )

(e) How to catch all the exception using single catch block explain with example ?

2. (a) Explain the features of object-oriented programming with suitable examples. 4

(b) Write a program to enter positive and negative numbers. Enter at least 10 numbers. Count the positive and negative numbers using classes and objects. 4

*Or*

(a) What is polymorphism ? Briefly explain the different types of polymorphism with suitable examples. 4

(b) Define inline function. Write a program to calculate the power of a given number. Create a user-defined function power () using inline. 4

3. (a) What is copy constructor ? Write a program to initialize the object from user

input using a constructor. Create another object by passing the first object to another constructor and increment the value by 7 and then carry out copy constructor. Display contents of all the objects.

4

- (b) Write a program to count the numbers between 1 and 100, which are not divisible by 3 and 4 using class and object.

4

*Or*

- (a) What is constructor ? Write a program to declare a class with three data members. Declare overloaded constructors with no arguments, one argument, two arguments, and three arguments. Pass values in the object declaration statement. Create four objects and pass values in such a way that the entire four constructors are

executed one by one. Write appropriate messages in constructor and destructor so that the execution of program can be understood.

4

(b) What is an object ? Write a program to declare a class with two integers. Read values using a member function. Pass the object to a member function and display the difference between the input numbers.

4

4. (a) What is multiple inheritance ? Write a program to pass value from last derived class constructor to all the parent class constructor in multiple inheritance.

4

(b) What is type conversion in object-oriented programming ? Write a program to convert hour class to minute class using class to class conversion ?

4



*Or*

(a) What is inheritance ? Explain different types of inheritance with suitable examples. 4

(b) What is function overloading ? Write a program to evaluate the expression "obj1 = 3\*obj2 + obj3" using function overloading. 4

5. (a) What is abstract class if it cannot be instantiated ? Write program to illustrate the use of abstract class with suitable example. 4

(b) What is multipath inheritance ? Write a program to implement multipath inheritance and provide appropriate solutions to overcome problem arise during multipath inheritance. 4

*Or*

- (a) Write a program to implement function overriding and invoke member functions of base and derived class using pointer of base class. 4
- (b) Write a program to declare virtual functions and execute the same function defined in the base and derived class in multilevel inheritance. 4
6. (a) Explain exception handling mechanism in OOP. How to handle multiple exceptions using a single catch block ? 4
- (b) What is template class ? Write a program to implement function overloading using template to multiple int and float data from user input. 4

*Or*

- (a) How to implement multiple catch statements for a single try block ? Write

( 7 )

a program to generate an exception if an entered number is not a prime number. 4

(b) What is template function ? Write a program to show values of different data types using parameterized constructor using template. 4

---