

**University: Rajasthan Technical University**  
**Course: B.Tech Computer science & engineering**  
**Subject: Object Oriented Programming**  
**Exam Year: February 2010**  
**Year or Semester: Second year/ Third Semester**  
**Paper Code: 3E2074**

### **Unit-I**

**1. Explain structure as a user defined data type in C with the help of suitable example. [Marks 16]**

**OR**

**1. a) Explain following with their syntax :**

**i) pointer to structure**

**ii) parsing structure to function**

**iii) array of structure. [Marks 4+4+4]**

**b) What is the difference between structured programming and object oriented programming? [Marks 4]**

### **Unit-II**

**2. a) What is constructor? How many types of constructors are in C++? Describe with the help of a suitable example. [Marks 10]**

**OR**

**2. a) What is friend function? Write a program to swap private data of two classes. [Marks 8]**

**b) Differentiate followings:**

**i) Objects and classes**

**ii) Data abstraction and encapsulation**

**iii) Inline function and macro**

**iv) Constructor and destructor [Marks 2\*4=8]**

**Unit-III**

**3. What is operator overloading? How many arguments are required to overload unary and binary operators, respectively? Define a class string, use overloaded == operator to compare two strings. [Marks 2+2+12=16]**

**OR**

**3. a) What is type conversion in C++? How it is achieved in user defined data types? [Marks 8]**

**b) What is function overloading? Explain with the help of a suitable example. [Marks 8]**

**Unit-IV**

**4. What is inheritance? What are the various forms of inheritance? Explain each with the**

help of examples. [Marks 16]

OR

4. What is polymorphism? How is it achieved at compile time and runtime? Explain both with the help of example. [Marks 16]

Unit-V

5. What is generic programming? How is it implemented in C++? Write a program to implement sorting using templates. [Marks 16]

OR

5. Write short notes on : (any two)

a) Exception handling

b) Virtual Base Class

c) Multiple inheritance. [Marks 2\*8=16]