

**ANNA UNIVERSITY - 2006**  
**B.E/B.TECH II SEMESTER DEGREE EXAMINATION**  
**OBJECT ORIENTED PROGRAMMING**  
**(INFORMATION TECHNOLOGY)**

TIME-3HOUR  
MARK-100

**ANSWER ALL QUESTIONS**

**PART A (10 \* 2 = 20)**

1. How is data hiding implemented in C++?
2. Compare overloading and overriding of functions.
3. What are the functions of new and delete operators?
4. What is the need for friend functions?
5. Why do we need virtual functions?
6. How do you overload a postfix and a prefix increment operator?
7. When do we declare a const member function?
8. What are the properties of a static class member?
9. What does system.out represent in Java? How is it used?
10. What is an abstract method in Java?

**PART B (5 \* 16 = 80)**

11. What are the basic principles of Object Oriented Programming? Explain with examples, how they are implemented in C++?
12. (a) Create a class vector to represent an one dimensional vector with addition operator + to represent and a scalar product operator to represent . Use them in a main program.  
Or  
(b) Can the insertion operator << and the extraction operator >> be members of a class? Give examples to justify your answer.
13. (a) What are the different kinds of inheritance? Explain them with suitable examples.  
Or  
(b) Define a class Cartesian to represent a point in Cartesian co-ordinates and class polar to represent it in polar co-ordinates . Use constructor conversion and operator conversion functions in class Cartesian to convert object of one type into another. Use them in a main program.
14. (a) Write a java program to illustrate the difference between an instance variable and a class variable.  
Or  
(b) Write a Java program that creates a Date class and use it with appropriate members and methods.
15. (a) Write a java applet that asks the user to enter two floating point numbers, obtain the two numbers from the user and draws the sum and product of the two numbers.  
Or  
(b) Define a Java method to find the greatest among three numbers. Write a Java applet that obtains three numbers from the user and displays the largest using the method.