

**II B.Tech I Semester(R05) Supplementary Examinations, May/June 2010**  
**OOPS THROUGH JAVA**  
**(Mechanical Engineering)**

Time: 3 hours

Max Marks: 80

**Answer any FIVE Questions**  
**All Questions carry equal marks**

\*\*\*\*\*

1. (a) How are constants and variables important in developing programs?  
(b) List the eight data types used in Java. Give examples.  
(c) What is scope of a variable?  
(d) What is type casting? Why is required in programming. [4+4+4+4]
2. (a) What is the difference between equality of objects and equality of references that refer to them?  
(b) What is the difference between a public member and a private member of a class?  
(c) write an application that computes the value of  $e^x$  by using the formula:  
$$e^x = 1 + x/1! + x^2/2! + x^3/3! + \dots$$
 [4+4+8]
3. Create an abstract class with no methods. Derive a class and add a method. Create a static method that takes a reference to the base class, downcasts it to the derived class, and calls the method. In `main()`, demonstrate that it works. Now put the abstract declaration for the method in the base class, thus eliminating the need for the downcast. [16]
4. Write a sample program to illustrate packages. [16]
5. Assume you are writing a program to calculate the Class (first class, second class, third class, and Distinction) of a student given his marks in say, 6 subjects. Create your own exceptions and handle them for the above problem. The calculation of Class is as per JNTU Rules. [16]
6. Explain in detail about the following event classes:  
(a) `ComponentEvent`  
(b) `ContainerEvent`  
(c) `FocusEvent`. [6+5+5]
7. What is JFC? Explain the differences between `JTextArea`, `JTextComponent`, `JTextField` with examples. [4+12]
8. (a) What is a port? What is the difference between port and socket?  
(b) Explain several methods provided by `URL`? [8+8]

\*\*\*\*\*