Set No. 1

II B.Tech I Semester Regular Examinations, November 2007
OOP THROUGH JAVA
(Common to Mechanical Engineering, Mechatronics, Metallurgy &
Material Technology, Production Engineering and Automobile Engineering)
Time: 3 hours   Max Marks: 80
Answer any FIVE Questions
All Questions carry equal marks
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1. Write a program that will compute the following series:

    (a) $1/1 + {}^{1}\!/_{2} + 1/3 + \ldots + 1/n$

    (b) $1/1 + {}^{1}\!/_{2} + {}^{1}\!/_{2}^{2} + \ldots + 1/2^{n}$.   [8+8]

2. (a) What is class? How does it accomplish data hiding?

    (b) How do classes help us to organize our programs?

    (c) Compare and contrast overloading and overriding methods.   [4+4+8]

3. What is Inheritance? Discuss the differences in inheritances in C++ and java. [16]

4. Write a program to create a class with a non default constructor and no default constructor. Create a second class that has a method which returns a reference to the first class. Create the object to return by making an anonymous inner class that inherits from the first class.   [16]

5. (a) In Java, why finally keyword is necessary in exception handling.

    (b) Explain finally block in exception handling with the help of an example.[4+12]

6. What are the components and other graphical user interface elements that can act as source of events? What are the events that can be generated by the above elements? Explain.   [16]

7. (a) How will you create a menu in java?

    (b) Write a frame application that has an edit menu, which consists of cut, copy and paste and performs the same functions when selected. Create a text box to operate on.   [8+8]

8. (a) Explain the related objects provided in java.util package.

    (b) Use socket programming to design a client/server application that takes the password as input and checks whether it is correct. The program should print the appropriate message.   [8+8]

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1. (a) List at least five major C++ features that were intentionally removed from java.

   (b) What is World Wide Web? What is contribution of java to the World Wide Web?

   (c) How java is associated with the Internet?   [6+6+4]

2. (a) What is the difference between equality of objects and 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 ex by using the formula:
   $e^x = 1 + x/1! + x^2/2! + x^3/3! + \ldots\ldots$ [4+4+8]

3. (a) Define Absract class? Explain with a suitable example.

   (b) Write a sample program to demonstrate the order of initialization of the base classes and derived classes. Now add member objects to both the base and derived classes, and show the order in which their initialization occurs during construction.   [8+8]

4. Create an interface with at least one method, and implement that interface by defining an inner class within a method, which returns a reference to your interface.
                                                                         [16]

5. (a) What is the use of five keywords of Java related to exception handling i.e., try, catch, throw, throws, and finally.

   (b) Write an example Java program using all the five key words mentioned above, and explain how the program works.   [10+6]

6. Write a stand-alone AWT based application which creates a frame window that responds to mouse clicks and key strokes.   [16]

7. What are various JFC containers? List them according to their functionality. Explain each of them with examples.   [16]

8. (a) What are sockets? Explain the classes in java with regard to sockets.

   (b) What do you mean by URL? How to create an URL?   [8+8]

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1. (a) What Kind things can become objects in OOP?

   (b) List few areas of application of OOP technology.

   (c) write a program to convert the given temperature in Fahrenheit to Celsius using the following conversion formula C = (F - 32)/1.8
   And display the values in a tabular form.   [4+4+8]

2. (a) What is class? How does it accomplish data hiding?

   (b) How do classes help us to organize our programs?

   (c) Compare and contrast overloading and overriding methods.   [4+4+8]

3. Create a 3-level inheritance hierarchy. Each class in the hierarchy should have a finalize( ) method, and it should properly call the base-class version of finalize( ). Demonstrate that your hierarchy works properly.   [16]

4. Write a sample program to illustrate packages.   [16]

5. Explain how multithreading is supported in java using the thread class and the Runnable interface.   [16]

6. (a) Why do you use frames?

   (b) Explain the syntax and functionality of different methods related to Frames.
   [4+12]

7. Explain various text components in JFC with examples.   [16]

8. Write short notes on:

   (a) Protocols

   (b) Sockets

   (c) Client/Server

   (d) DNS.   [4+4+4+4]

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$\boxed{\textbf{Set No. 4}}$

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1. (a) Briefly describe the history of java
   (b) Can a java run on any machine? What is needed to run java on a computer?
   (c) Write a program in order to find out what the following statement will do.
       for(; ;) { do some thing} .   [6+4+6]

2. (a) What is the difference between equality of objects and 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 ex by using the formula:
       $e^x = 1 + x/1! + x^2/2! + x^3/3! + \ldots\ldots$ [4+4+8]

3. (a) Define Absract class? Explain with a suitable example.
   (b) Write a sample program to demonstrate the order of initialization of the base classes and derived classes. Now add member objects to both the base and derived classes, and show the order in which their initialization occurs during construction.   [8+8]

4. (a) What is a package? How do we design a package?
   (b) How do we add a class or interface to a package?   [8+8]

5. (a) In Java, why finally keyword is necessary in exception handling.
   (b) Explain finally block in exception handling with the help of an example.[4+12]

6. With the help of an example program explain how you handle all mouse related events.   [16]

7. (a) Explain menu class and menu actions.
   (b) Is it possible to create nested menus and submenus? If so, how?   [8+8]

8. What is StringTokenizer class? What is its use? Write a program to display the course name, course fee & duration of course using StringTokenizer class.[4+4+8]

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