

**II B.Tech II Semester Regular Examinations, Apr/May 2008**  
**OOP THROUGH JAVA**  
( Common to Electronics & Communication Engineering, Computer Science  
& Engineering, Information Technology, Computer Science & Systems  
Engineering, Electronics & Telematics and Electronics & Computer  
Engineering)

**Time: 3 hours**

**Max Marks: 80**

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

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1. (a) Describe the genesis of java. Also write brief overview of java  
(b) Write a program that will read an unspecified number of integers and will determine how many positive and negative values have been read. Your program ends when the input is 0. [8+8]
2. (a) What is a constructor? What are its special properties?  
(b) How do we invoke a constructor?  
(c) What are objects? How are they created from a class? [6+4+6]
3. (a) Explain about final classes, final methods and final variables?  
(b) Explain about the abstract class with example program? [8+8]
4. Prove that the fields in an interface are implicitly static and final. [16]
5. (a) Why thread is called light weight task and process heavy weight task.  
(b) What are the different things shared by different threads of a single process. What are the benefits of sharing?  
(c) Is multithreading suitable for all types of applications. If yes explain any such application. If no, explain any application for which multithreading is not desired. [4+4+8]
6. What are the methods supported by KeyListener interface and MouseListener interface. Explain each of them with examples. [8+8]
7. Explain the functionality of JComponent with example. Differentiate JComponent and JPanel. [8+8]
8. (a) What are accessor methods?  
(b) How will you create strings and stringbuffers? How will you modify them? [8+8]

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1. (a) Describe the genesis of java. Also write brief overview of java.  
(b) 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. [8+8]
2. (a) What is the purpose of using a method? How do you declare a method? How do you invoke a method?  
(b) What is method overloading? Can you define two methods that have same name but different parameter types? Can you define two methods in a class that have identical method names and parameter profile with different return value types or different modifier ? [8+8]
3. Add a new method in the base class of Shapes.java that prints a message, but don't override it in the derived classes. Explain what happens. Now override it in one of the derived classes but not the others, and Explain what happens. Finally, override it in all the derived classes, Explain in detail about each situation. [16]
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) Define multithreading. Give an example of an application that needs multithreading.  
(b) How multithreading in single processor system is different from multithreading in multiprocessor system. Explain. [6+10]
6. Write a java program which creates human face. [16]
7. What are various JFC containers? List them according to their functionality. Explain each of them with examples. [16]
8. (a) Discuss briefly about the following: TCP, UDP, URL  
(b) What is InetAddress? How to create an InetAddress? What is its use? [8+8]

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(b) 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. [8+8]
2. (a) What is an array? Why arrays are easier to use compared to a bunch of related variables?  
(b) Write a program for transposition of a matrix using arraycopy command. [6+10]
3. Create a base class with an abstract print() method that is overridden in a derived class. The overridden version of the method prints the value of an int variable defined in the derived class. At the point of definition of this variable, give it a nonzero value. In the base-class constructor, call this method. In main(), create an object of the derived type, and then call its print() method. Explain the results. [16]
4. Write a program create an interface U with three methods. Create a class A with a method that produces a reference to a U by building an anonymous inner class. Create a second class B that contains an array of U. B should have one method that accepts and stores a reference to a U in the array, a second method that sets a reference in the array (specified by the method argument) to null and a third method that moves through the array and calls the methods in U. In main(), create a group of A objects and a single B. Fill the B with U references produced by the A objects. Use the B to call back into all the A objects. Remove some of the U references from the B. [16]
5. (a) Explain throws statement in Java with the help of an example program.  
(b) What is the difference between throw and throws statement. [8+8]
6. (a) Write a java program which draws a dashed line and dotted line using applet.  
(b) Write a java program to draw a polygon of eight edges. [10+6]
7. (a) In what way JList differ from JComboBox?

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- (b) JList does not support scrolling. Why? How this can be remedied? Explain with an example. [6+10]
8. Define sockets. 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. [16]

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1. Write a program that will compute the following series:
  - (a)  $1/1 + 1/2 + 1/3 + \dots + 1/n$
  - (b)  $1/1 + 1/2 + 1/2^2 + \dots + 1/2^n$ . [8+8]
2. (a) What is a constructor? What are its special properties?  
(b) How do we invoke a constructor?  
(c) What are objects? How are they created from a class? [6+4+6]
3. Explain about Object class in detail. [16]
4. (a) What is interface? Write a program to demonstrate how interfaces can be extended.  
(b) What is package? How do you create a package? Explain about the access protection in packages? [8+8]
5. (a) Explain how threads with different priorities execute in environment which supports priorities and which doesn't support priorities.  
(b) what are the functions available in java related to priority. [10+6]
6. (a) Why do you use frames?  
(b) Explain the syntax and functionality of different methods related to Frames. [4+12]
7. Explain the steps involved in creating JCheckBox, JRadioButton, JButton, JLabel. [4+4+4+4]
8. Write a program to illustrate the usage of the following methods of StringBuffer class. Explain the output in each case. Delete(), setCharAt(), deleteCharAt(), append(), charAt(), getChars(). [16]

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