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## Seventh Semester B.E. Degree Examination, December 2010

### JAVA and J2EE

Time: 3 hrs.

Max. Marks:100

**Note: Answer any FIVE full questions, selecting at least TWO questions from each part.**

#### PART – A

1.
  - a. Briefly explain any six key considerations used for designing JAVA language. (06 Marks)
  - b. Discuss three OOP principles. (06 Marks)
  - c. How “compile once and run anywhere” is implemented in JAVA language? (04 Marks)
  - d. List down various operators available in JAVA language. (04 Marks)
  
2.
  - a. Differentiate C++ language and JAVA language with respect to inheritance, and also mention the use of super and this in JAVA inheritance. (06 Marks)
  - b. Discuss the following :
    - i) Inner classes
    - ii) Overriding and overloading. (04 Marks)
  - c. Briefly explain the role of interfaces while implementing multiple inheritance in JAVA. (04 Marks)
  - d. Write a JAVA applet which continuously plays an audio clip named “anthem.wav” loaded from applets parent directory. Provide the necessary HTML file to run this applet. (06 Marks)
  
3.
  - a. What are threads? Provide any two typical applications where multithreaded programming is used. (04 Marks)
  - b. Provide JAVA syntax for the following with examples:
    - i) Making classes threadable
    - ii) Extending threads
    - iii) Synchronization
    - iv) Catching interrupt. (04 Marks)
  - c. Write a JAVA program, which creates two threads, one thread displays “VTU – Belgaum” for every 100 seconds, and another thread displays “Karnataka” for every 50 seconds, continuously. (06 Marks)
  - d. Define the delegation event model. Briefly explain the role of :
    - i) Event classes
    - ii) Event listener interfaces
    - iii) Source of events
    - iv) Adapter clauses. (06 Marks)
  
4.
  - a. What are swings? Provide any two typical applications of swings. (04 Marks)
  - b. Explain various components of the swing package. (06 Marks)
  - c. Write a JAVA swing applet, which accepts a text from a J text field, and displays the same text with selected font size and font color using J label. (06 Marks)
  - d. Write the purpose of the following swing components :
    - i) JLabel
    - ii) JTabbedPane
    - iii) JScrollPane
    - iv) JComboBox (04 Marks)

#### PART – B

5.
  - a. Explain the working of JDBC. (02 Marks)
  - b. What are database drivers? Mention different types of drivers used in JDBC. (04 Marks)

- 5 c. Provide various classes, interfaces and exceptions available under JAVA sql package, along with their purpose. (08 Marks)
- d. Give the JAVA syntax for the following :
- i) Connecting to a database using JDBC/ODBC bridge, which has url = "jdbc : odbc : SDB", Username = "scott" and password = "tiger".
  - ii) Running a query "select emp-age from emp" over that connected database.
  - iii) Counting number of employees, with the condition emp – age > 50. (06 Marks)
- 6 a. What are servlets? Briefly explain the application of servlets in web programming. (04 Marks)
- b. Explain the life cycle of a servlet. (04 Marks)
- c. Write a JAVA servlets which reads two parameters from the webpage, say, value 1 and value 2, which are of type integers, and finds the sum of the two values, and return back the result as a webpage. (06 Marks)
- d. Provide JAVA syntax for the following :
- i) Handling HTTP requests and responses
  - ii) Using cookies
  - iii) Session tracking. (06 Marks)
- 7 a. Mention the purpose of use of JSP and JAVA RMI. (04 Marks)
- b. Explain any four JSP tags. (04 Marks)
- c. Briefly explain the working of JAVA RMI programs, by mentioning its steps. (06 Marks)
- d. What are the differences between server side and client side JAVA RMI? (06 Marks)
- 8 a. Briefly explain various enterprise-level requirements which are addressed using enterprise JAVA beans technology. (06 Marks)
- b. Explain the differences between session beans and entity beans. (06 Marks)
- c. Mention the applications of a JAR file and deployments descriptors. (04 Marks)
- d. Provide a JAVA bean class to store customer information, which includes fields like address, name and credit card details. Also include methods to retrieve values from the class about the above mentioned fields. (04 Marks)

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