Adavnced Java.

(2½ hours)

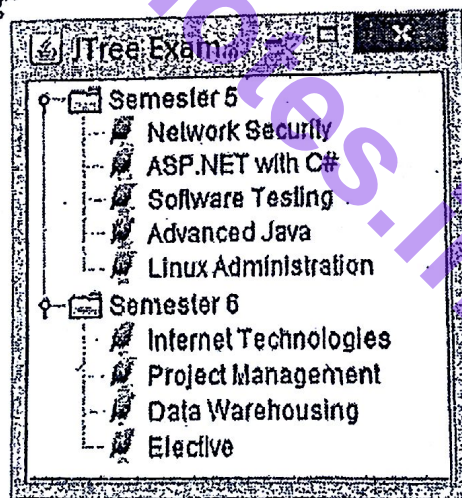[Total Marks: 75

N. B.: (1) **All** questions are <u>compulsory</u>.
　　 (2) Make <u>suitable assumptions</u> wherever necessary and <u>state the assumptions</u> made.
　　 (3) Answers to the <u>same question</u> must be <u>written together</u>.
　　 (4) Numbers to the <u>right</u> indicate <u>marks</u>.
　　 (5) Draw <u>neat labeled diagrams</u> wherever <u>necessary</u>.
　　 (6) Use of <u>Non-programmable</u> calculators is <u>allowed</u>.

1. Attempt *any two* of the following:　　　　　　　　　　　　　　　　　10
   a. Explain the java delegation event model. What are the two steps in using the java delegation event model?
   b. Explain adapter classes and inner classes.
   c. Explain the following methods when working with frame windows:
      i. setSize　　ii. getSize　　iii. setVisible　　iv. setTitle　　v. windowClosing
   d. What are the different LayoutManager classes in Java? Explain CardLayout with example.

2. Attempt *any two* of the following:　　　　　　　　　　　　　　　　　10
   a. Explain Root Pane, Glass Pane, Layered Pane, Content Pane and Desktop Pane.
   b. Distinguish between abstract window toolkit and java foundation classes.
   c. Explain JPopupMenu class with example.
   d. Write a program using JTree to generate the following hierarchical structure. Assume the image file is "leaf.jpg"

3. Attempt *any two* of the following:　　　　　　　　　　　　　　　　　10
   a. What are servlets? What are the advantages of servlets over CGI?
   b. What is RequestDispatcher? What are its two methods? Using RequestDispatcher wite the code for the following:
      index.html file with two text boxes to enter username and password and a login button. Login.java servlet class to process the response. If the password is "servlet" it should forward the request to WelcomeServlet.java which displays "Welcome <Username>". If the password is not "servlet", Login.java should display "Sorry Username or password error!!!" web.xml, the deployment descriptor file that contains the information about the servlet.
   c. Explain GenericServlet with its constructors and methods.
   d. Write a servlet application to find the sum of digits of the number entered by the user through the HTML form.

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4. **Attempt _any two_ of the following:** 10
   a. What is JDBC driver? Explain the types of JDBC drivers.
   b. Explain the JDBC architecture.
   c. What are the advantages and disadvantages of java server pages?
   d. Write a JSP application that computes the cubes of the numbers from 1 to 10.

5. **Attempt _any two_ of the following:** 10
   a. Explain the model-view-controller architecture.
   b. Explain in detail the phases of JSF lifecycle.
   c. Enumerate the benefits of enterprise beans.
   d. Write a session bean code specification that calculates simple interest. Assume the principal, term and rate of interest is entered by the user and the input is passed through a servlet.

6. **Attempt _any two_ of the following:** 10
   a. Explain the architecture of hibernate framework in detail.
   b. Explain structure of hibernate.cfg.xml file.
   c. What is Value Stack in struts? State and explain the Execution Flow of Value Stack.
   d. Explain interceptors in struts.

7. **Attempt _any three_ of the following:** 15
   a. What is CheckboxGroup? Explain with example.
   b. Explain JScrollPane and JScrollBar with example.
   c. Explain the lifecycle of servlet.
   d. Write a JDBC program that inserts values in database. [TABLE NAME: Employee. FIELDS: Empid, Name, Dept, Designation]
   e. What are the different types of enterprise beans? Explain.
   f. What is OGNL? Explain the execution flow of OGNL.