(2½ Hours) [Total Marks: 75]

N.B. 1) All questions are compulsory.
2) Figures to the right indicate marks.
3) Illustrations, in-depth answers and diagrams will be appreciated.
4) Mixing of sub-questions is not allowed.

Q. 1 Attempt All (Each of 5Marks) (15)

(a) Multiple Choice Questions:

(i) _____ component of Swing can be used to display unselectable text and images
(A) JTextArea (B) JTextfield
(C) JLabel (D) JList

(ii) Name the exception that is raised if JDBC driver fails to load.
(A) BatchUpdateException (B) SQLException
(C) SQLWarning (D) ClassNotFoundException

(iii) GenericServlet class is defined in _____ package.
(A) javax.servlet (B) java.servlet
(C) javax.servlet.http (D) java.servlet.http

(iv) "out" is implicit object of which class?
(A) PrintWriter (B) SessionWriter
(C) ServletWriter (D) JspWriter

(v) Which of the following is not true about Java beans?
(A) implements java.io.Serializable interface
(B) extends java.io.Serializable class
(C) Provides no argument constructor
(D) provides setter and getter methods for its properties

(b) Fill in the blanks:
(java.sql, service(), JList, <jsp:include>, JSON, JComboBox, java.util, init(), <jsp:forward>, MVC)
(i) _____ component of Swing allows to choose one of the several choices.
(ii) _____ package is required to use JDBC API.
(iii) _____ method in a servlet is called to process client's request.
(iv) _____ action element is used to include a file in JSP.
(v) _____ format is primarily used for serializing and transmitting structured data over network connection.

(c) Answer in 1 – 2 sentences
(i) What is the purpose of JList component?
(ii) What is the purpose of ResultSet interface in JDBC?
(iii) What is a Web Container?
(iv) What is JSP scriplet tag used for?

(v)   Describe the significance of struts.xml file.

Q. 2   Attempt the following (Any THREE)   **(15)**
(a)   Explain how to create and use JButton component in Swing.
(b)   Explain the JFrame class.
(c)   Write steps for JDBC connectivity.
(d)   What is PreparedStatement? How to create and use it in JDBC.
(e)   Write a swing program to create a combo box and a label. The combo box contains list of states of India. When a state is selected, its capital is displayed in a label.
(f)   Write a JDBC program to accept employee id from the user, find the employee in the table and display employee's name. (Assume Employee table exists with fields: empid, name, salary)

Q. 3   Attempt the following (Any THREE)   **(15)**
(a)   What is the purpose of HttpSession interface? Explain various methods of this interface.
(b)   Write a note on ServletContext Interface.
(c)   Explain how JSP files are executed by web server?
(d)   State and explain scopes of JSP object.
(e)   Write a servlet program to accept name and age of a person from index.html and determine if the person is eligible to vote or not.
(f)   Write a JSP program to accept student roll no and average marks from index.html, if the average marks are more than 40.0, then display "PASS", else display "FAIL", along with the roll no.

Q. 4   Attempt the following (Any THREE)   **(15)**
(a)   Explain the role of Action class in struts 2.
(b)   Write a short note on OGNL.
(c)   Compare and contrast JSON and XML.
(d)   Write the features of struts 2 framework.
(e)   Illustrate with an example, how to create and use a java bean.
(f)   Give example and illustrate how to use JSON schema.

Q. 5   Attempt the following (Any THREE)   **(15)**
(a)   Explain how to create and use JPasswordField component.
(b)   Explain the following methods:
       (i)   setAutoCommit()   (ii)   rollback()
(c)   Explain various methods used for reading form data in a servlet.
(d)   Explain how to use include directive in JSP.
(e)   Write a note on MVC Architecture.

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