N.B   1) All questions are compulsory.
       2) Figures to write 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 5 marks)   (15)
(a)   Multiple choice Questions:
       i) Which method can set or change the text in a Label?
       a. setText()   b. getText()
       c.Add()   d. None the above

       ii) These objects hold data retrieved from a database after you execute an SQL query using
       Statement objects.
       a.CallableStatement   b.DBMS
       c.Statement   d.ResultSet

       iii)Which methods are used to bind the objects on HttpSession instance and get the objects?
       a. setAttribute   b. getAttribute
       c. Both A & B   d. None of the above

       iv) Which tag should be used to pass information from JSP to included JSP?
       a) Using <%jsp:page> tag   b) Using <%jsp:param> tag
       c) Using <%jsp:import> tag   d) Using <%jsp:useBean> tag

       v) Abbreviate the term POJO?
       a) Plain Old Java Object   b) Performance Old Java Object
       c) Performance Optimize Java Object   d) None of the above

(b)   Fill in the blanks:
       (setText() ,public void rollback() ,.jsn,Singleton Session Bean,public void commit(),ErrorPage,
       .json,getText(),IsErrorPage,Stateful Session Bean)
       i) -------------- method drops all changes made since the previous commit/rollback.
       ii) -------------- method can set or change the text in a Label?
       iii) -------------attribute specifies a JSP page that should process any exceptions thrown but not
       caught in the current page.
       iv) -------------is the file extension of JSON.
       v) -------------- maintain their state between client invocations but are not required to maintain
       their state across server crashes or shutdowns.

(c) **Answer in 1-2 sentence.**
  i) List any two constructor of JTextField().
  ii) List the types of Drivers in JDBC.
  iii) What are the life cycle methods of JSP?
  iv) List the JSP Directives.
  v) Abbreviate the term OGNL .

(15)

Q.2 **Attempt the following (Any Three)**
(a) Write the difference between AWT and Swing.
(b) Explain how to create and use JButton component in swing.
(c) Write short note on JTable.
(d) Explain JDBC Architecture.
(e) Explain the statement class.
(f) Write a JDBC program to accept customer details from user and save in database.(Assume Customer table exists with fields : Customerid,Name,Address,ContactNo)

(15)

Q.3 **Attempt the following (Any Three)**
(a) Explain the JSP Life Cycle.
(b) Write a short note on ServletContext Interface.
(c) Write short note on JSP Scripting elements.
(d) Explain JSP Page Directive.
(e) Write a servlet program to perform Subtraction of two Numbers.
(f) Write a JSP program to find cube of given Number.

(15)

Q.4 **Attempt the following (Any Three)**
(a) Explain interceptors in struts.
(b) What is OGNL? Explain the execution flow of OGNL
(c) Compare between JSON and XML.
(d) What are JavaBeans? Explain the components of JavaBeans.
(e) Illustrate with an example, how to create and use a java bean.
(f) Explain how to use JSON Schema.

(15)

Q.5 **Attempt the following (Any Three)**
(a) Write a note on MVC Architecture.
(b) Write short note on ResultSet.
(c) Explain Session Tracking Mechanisms in servlet.
(d) Explain Servlet life cycle.
(e) Explain how to create and use JList component in swing.