

- N. B.: (1) Question **No. 1** is **compulsory**.
(2) Attempt **any four** from Question Nos. **2 to 7**.
(3) **Make** suitable **assumptions** wherever necessary and **state** the **assumptions** made.
(4) **Answers** to the **same question** must be written **together**.
(5) **Numbers** to the **right indicate marks**.
(6) **Draw** neat **labeled diagrams** wherever **necessary**.

1. a) Why is JPanel used in Swings? State and explain constructors used for creating JPanel. 5
b) Explain Life Cycle of Servlet. 5
c) Explain in detail Introspection feature of Java Beans. 5
d) Explain DriverManager Class and its methods. 5
2. a) Write a program to create Color Bean. It appears as either a rectangle or ellipse that is filled with a color. Color is chosen at random when the Bean begins execution. Each time mouse is clicked on Bean, another random color is chosen. 8
b) Explain in detail JRadioButton covering following: 6
Purpose, Constructors, Methods, Events
c) State and explain the characteristics of servlets. 6
3. a) What is JScrollPane? How to include it in a page? Explain Various constructors. Write a program that will use JScrollPane to display 400 buttons. 8
b) Write a servlet that accepts empcode, name, and dept sent from a HTML document (emp.html) and display them on screen. Also give the code for emp.html document. 6
c) What are JSP Implicit Objects? State and explain the various Implicit Objects available in JSP. 6
4. a) Explain in detail ResultSet and ResultSetMetaData class. 8
b) Write a SERVLET that accepts BookId, BookName, Author and Publisher from a HTML document (book.html) and display them on screen. Also give the code for book.html 6
c) Explain JCheckBoxes with its constructors. Give example 6
5. a) Write a note on "Handling Cookies in Servlet" covering following topics: 8
i. Definition of Cookie. ii. Benefits of Cookies.
iii. Methods of Cookies (Any Three).
b) Write a JDBC program that inserts values in database using prepared statement through keyboard input. [TABLE NAME: Department. FIELDS: DeptNo, Name, Location] 6
c) Explain bound property of Java Beans with example 6
6. a) What is a JAR file? What are the options available with JAR files? Explain the role of manifest file. 8
b) Explain any three Layout Managers with example. 6
c) Explain constrained property of Bean giving example. 6
7. a) State and explain any four interfaces and any four classes available in Java Beans API. 8
b) Write JSP program that will compute all multiple of 3- numbers between 1 and 100. 6
c) Why are JDBC drivers needed? Explain different types of JDBC Drivers. 6