ADVANCED JAVA & WEB TECHNOLOGY
(INFO 3101)

Time Allotted : 3 hrs   **Full Marks : 70**

Figures out of the right margin indicate full marks.

Candidates are required to answer Group A and
<u>any 5 (five)</u> from Group B to E, taking <u>at least one</u> from each group.

Candidates are required to give answer in their own words as far as practicable.

Group – A
(Multiple Choice Type Questions)

1. Choose the correct alternative for the following: **10 × 1 = 10**

   (i)   The portion after the words WWW identify a _____
          (a) client   (b) Web server
          (c) database server   (d) application server.

   (ii)   _____ tag can be used to create hyper links
          (a) Anchor   (b) Arrow   (c) Link   (d) Pointer.

   (iii) JavaScript is contained inside the tags
          (a) ...   (b) <script>...</script>
          (c) <head>...</head>   (d) <body>...</body>.

   (iv)   A JSP page is composed of _____
          (a) directives   (b) scripting elements   (c) actions   (d) templates.

   (v)   _____ is the pipe between a Servlet and the RDBMS.
          (a) Response   (b) Object   (c) Page   (d) Connection object

   (vi)   The following snippet of code <%= new java.util.Date ( ) %> is ___
          (a) comment   (b) expression   (c) variable   (d) condition.

   (vii) The ____ object is used to reed read the values of the HTML form in a JSP, received
          as a part of the HTTP request sent by the client to the server.
          (a) Page   (b) Request   (c) Response   (d) PageContext.

   (viii) An element can be defined in a DTD by using the _____ keyword.
          (a) TAG   (b) NEW   (c) DATA   (d) ELEMENT

   (ix)   In the _____ approach, elements in an XML document are accessed in a sequential
          manner.
          (a) SAX   (b) DOM   (c) JAXP   (d) complex.

   (x)   Choices in DTD can be specified by using the _____ symbol.
          (a) | (Answer)   (b) OR   (c) || (d) ALTERNATIVE.

Group- B

2. (a) Describe the request and response format of the HTTP protocol.
                                                    [(CO1)(Remember/LOCQ)]
    (b) Create a HTML table with three columns and four rows.   [(CO1)(Analyze/IOCQ)]
    (c) Describe the HTML anchor tag and frameset tag with example.
                                                    [(CO1)(Remember/LOCQ)]
                                                    4 + 4 + 4 = 12

3. (a) Define inline and external CSS with example.   [(CO1)(Remember/LOCQ)]
    (b) Write a CSS rule that changes the color of all elements containing attribute lass="greenMove" to green and all heading elements a font size =36pt. Use internal style sheet.   [(CO1)(Analyze/IOCQ)]
    (c) Explain the two ways to create a frame using Java Swing with example.
                                                    [(CO1)(Analyze/IOCQ)]
                                                    4 + 4 + 4 = 12

Group - C

4. (a) Describe JavaScript Object and Array with example.   [(CO1)(Remember/LOCQ)]
    (b) Create a telephone directory using JavaScript such that the telephone number will be displayed in a text box whenever you will select a name from the list box.
                                                    [(CO1)(Evaluate/HOCQ)]
    (c) Using JavaScript extract the current date and display the day of the week as "Today Is SUNDAY!!!".   [(CO1)(Evaluate/HOCQ)]
                                                    4 + 4 + 4 = 12

5. (a) Describe step-by-step flow of execution of a Servlet in the Servlet Environment with diagram.   [(CO2)(Understand/LOCQ)]
    (b) Write a Servlet for the currency convertion (Dollar to Rupees).
                                                    [(CO2)(Evaluate/HOCQ)]
    (c) Write a Servlet to do session management with HttpSession class.
                                                    [(CO2)(Evaluate/HOCQ)]
                                                    4 + 4 + 4 = 12

Group - D

6. (a) Describe the implicit JSP objects with example.   [(CO3)(Remember/LOCQ)]
    (b) Explain JSP Standard Template Library (JSTL) with example.   [(CO3)(Analyze/IOCQ)]
    (c) Write a JSP to do Miles to Kilometers conversion.   [(CO3)(Evaluate/HOCQ)]
                                                    5 + 3 + 4 = 12

7. (a) Explain the steps in a JDBC-based Application with sample Java code.
                                                    [(CO4)(Remember/LOCQ)]
    (b) Write a JSP code to show the example of JDBC executeUpdate () statement.
                                                    [(CO4)(Evaluate/HOCQ)]
                                                    6 + 6 = 12

Group - E

8. (a) Compare Java Bean and Enterprise Java Bean. State when to use EJB.
   [(CO5)(Remember/LOCQ)]
   (b) Describe the Stateless and Stateful Session Beans in brief. Explain how Entity Beans different from Session Beans. [(CO5)(Understand/LOCQ)]
   (3 + 3) + (3 + 3) = 12

9. (a) Create an XML document template to describe the result of three students in an examination. The description should include the student's roll number, name, three subject names and marks, total marks, percentage, and result.
   [(CO6)(Analyse/IOCQ)]
   (b) Describe declaration of attribute in a DTD with example. [(CO6)(Understand/LOCQ)]
   (c) Describe concept of XML parsing with diagram. [(CO6)(Analyse/IOCQ)]
   4 + 4 + 4 = 12

Cognition Level	LOCQ	IOCQ	HOCQ
Percentage distribution	12.5%	75%	12.5%

Course Outcome (CO):

After the completion of the course students will be able to
1. Design web pages using HTML, Java Script and CSS.
2. Distinguish between Servlet and CGI technology.
3. Explain the relationship between JSP and Servlet.
4. Implement server side program using servlet and JSP to a DBMS and perform insert, update and delete operations on DBMS table.
5. Analyze J2EE architecture.
6. Describe EJB, RMI and XML and relate them with J2EE.

*LOCQ: Lower Order Cognitive Question; IOCQ: Intermediate Order Cognitive Question; HOCQ: Higher Order Cognitive Question