Course Code	**:**	**BCS-053**
Course Title	**:**	**Web Programming**
Assignment Number	**:**	**BCA(V)053/Assignment/2024-25**
Maximum Marks	**:**	**100**
Last Date of Submission	**:**	**31st October,2024(For July, Session)** **30th April, 2025(For January, Session)**

This assignment has two questions of 80 marks. Answer all the questions. Rest 20 marks are for viva voce. You may use illustrations and diagrams to enhance explanations. Please go through the guidelines regarding assignments given in the Programme Guide for the format of presentation. Please give precise answers. The word limit for each part is 300 words.

Question 1: (Covers Block 1)

a) Explain the features of the following technologies – Blogging, Mashups and Rich Internet Applications. How are these technologies useful for you? **(6 Marks)**

b) (i) Create an online membership form for an Online Library using HTML. The form should ask for the following information: **(3 Marks)**

- The Name of the member
- Aadhar Number
- Type of Membership (Student/Faculty/Staff/Other to be chosen from a drop down list)
- Year of membership
- Were you a member earlier? Yes/No
- Description of services expected from the Library

(ii) Create an external CSS file for this form. This CSS file should select the font size of 14 point italics for all the labels; font colour should be red for the headings and dark blue for the normal text. The background colour of the form should be light green. **(2 Marks)**

(iii) Write JavaScript code to validate if any of the field of the form is not filled. **(3 Marks)**

Submit the HTML code, JavaScript code and screenshot of the form opened in a browser window. You must demonstrate the form and validations at the time of viva.

c) Using tables, create a webpage displaying the course list of the BCA programme. This webpage should display the semester wise list of courses with the headings - serial number, course code, course title, course credits, and course type (Theory, Practical or Project). Create a second page containing separate ordered lists of course titles of theory courses and practical courses. You should use tags, wherever needed; and create an internal CSS file, which formats the web pages as given below:

(i) The headings of the table must be in 12-point Bold and all other content should be in 11-point Arial font.

(ii) The table heading should be in different shade. The data rows of the table should have alternatively light pink and light blue colour. The background of the table should be light green.

(iii) The font of the ordered list should be "Times New Roman" with font size of 11 points. The background colour of list should be light yellow.

(iv) At the time of viva, you should demonstrate how changes in CSS can change the display.

(You must submit the HTML and CSS code and the screenshot of pages in a browser window.)

(6 Marks)

d) A University maintains the list of its students using XML. Every student is allotted a unique enrolment Number, which can be used as an attribute in the XML document. In addition, the following information is stored about the students – Name, Programme, Duration of Programme, List of courses enrolled (assume that student takes at least one and maximum of five courses in a programme). Create an XML document containing information of five Students of BCA programme. Also create the DTD to verify the XML document created by you. **(8 Marks)**

e) Write JavaScript code that displays the text "Welcome to JavaScript Event Demonstration". When you click on this text, then it changes to "We just demonstrated the click Event". You may use event handling to perform the action as stated above. Make suitable assumptions, if any. You should demonstrate this code at the time of viva. **(6 Marks)**

f) Explain the working of the WAP model. Also, list the benefits and limitations of WAP. Explain the following WML elements with the help of an example of each:

- Preformatted text in WML
- WML Navigational elements
- WML <select> element

(6 Marks)

Question 2: (Covers Block 2) **(10×4=40 Marks)**

a) Explain the following with the help of a diagram/example, if needed:

(i) Static web pages and Dynamic web pages

(ii) N-Tier Architecture

(iii) Tools for server side scripting

(iv) HTTP primitives

(v) Web Container

b) Explain with the help of an example/diagram or write code for the following using JSP:

(i) *include* and *taglib* directives of JSP

(ii) Write a JSP scriptlet to display a list of first 10 positive odd numbers.

(iii) <jsp:setProperty> and <jsp:getProperty > action elements of JSP

(iv) *session* and *application* implicit objects in JSP

(v) JSP Life cycle

c) Write JSP programs which can perform the following tasks (you may create a single or multiple webpages for these tasks):

(i) Write a JSP code to create a webpage that requires input of three variables x, y, and z; after successful input of values in the variables, the JSP program finds the smallest of these three variables.

The code then displays the smallest value along with a message.

(ii) Create a web page for issuing a Book of a library. The page takes input of three fields namely membershipID, bookID and date of return of the book. In case, the data is correctly entered in all the three fields - two cookies one for the membershipID and the second for the bookID are created.

d) Create a database for Book Sales System consisting of the following two tables:

Book (ISBNnumber, Title, FirstAuthor, YearOfPublication, CopiesAcquired)

Sales (ISBNnumber, PersonName, NumberofCopiesSold)

Develop and deploy a web based "Book Sales System" using JSP, a database backend and a web server (you may select DBMS and web server, as per your choice). Your system should use JDBC for input of information to both the tables. The system should output list of all the sales made for a Book whose ISBNnumber is given.

Submit the JSP program, screens and database of the system. You must demonstrate this system at the time of viva voce.

Make and state suitable assumptions, if any.