BACHELOROFCOMPUTER APPLICATIONS (BCA)

(Revised Syllabus)

BCA(Revised Syllabus)/ASSIGN/SEMESTER-V

ASSIGNMENTS

(July-2025 & January-2026 sessions)

(BCS-051,BCS-052,BCS-053,BCS-054,BCS-055

BCSL-056, BCSL-057, BCSL-058)

SCHOOLOFCOMPUTERANDINFORMATIONSCIENCES
INDIRA GANDHI NATIONAL OPEN UNIVERSITY
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Important Notes

1. Submit your assignments to the Coordinator of your Study Centre on or before the due date.
2. Assignment submission before due dates is compulsory to become eligible for appearing in corresponding Term End Examinations. For further details, please refer to BCA Programme Guide.
3. To become eligible for appearing the Term End Practical Examination for the lab courses, it is essential to fulfill the minimum attendance requirements as well as submission of assignments (on or before the due date). For further details, please refer to the BCA Programme Guide.

Course Code	**:**	**BCS-053**
Course Title	**:**	**Web Programming**
Assignment Number	**:**	**BCA(V)053/Assignment/2025-26**
Maximum Marks	**:**	**100**
Last Date of Submission	**:**	**31st October,2025(For July, Session)**
		30th April, 2026(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 the 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: Content Networks, Social Media and Web Services. How are these technologies useful to you? **(6 Marks)**

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

- The Name of the candidate
- Mother's Name
- Subject (Choose only one Subject from a drop-down list containing CS-01, CS-02, CS-03 and CS-04)
- Fee of the subject
- Have you registered for a subject earlier? (Yes/No)
- Your Educational Background (to be entered in text area)
- A SUBMIT button

(ii) Create an external CSS file for this form. This CSS file should select the font size of 16-point italics for all the labels; font colour should be Blue for the headings and dark green for the normal text. The background colour of the form should be light yellow.

(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 the viva.

c) Using tables, create a webpage displaying the list of items in a departmental store. This webpage should display the item code, item name, unit price, and date of expiry of the item. Create a second page containing the ordered item by a customer, showing the item code, item name, unit price and ordered quantity. 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 14-point Bold, and all other content should be in 12-point Times Roman font.

(ii) The table heading should be in a different shade. The data rows of the table should have alternate light yellow and light green colour shades. The background of the table should be light blue.

(iii) The font of the ordered list should be "Arial" and the font size should be 12 points. The background colour of the list should be light blue.

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

You must submit the HTML and CSS code and the screenshots of the pages in a browser window.

(6 Marks)

d) A University maintains the list of Books in its library using XML. Every Book is allotted a unique book code, which should be used as an attribute in the XML document. In addition, the following information is stored about the Books: Title of the book, Author(s) (minimum 1 and maximum 3), year of publication, and publisher. Create an XML document containing information about five Books. Also, create the DTD to verify the XML document created by you.

(8 Marks)

e) Write JavaScript code that displays the text "The Power of JavaScript is Dynamism". When you bring the mouse pointer over this text on the screen, it changes to “This is a Demonstration of Dynamism”. You may use event handling to perform the action as stated above. Make suitable assumptions, if any. Submit the code. You should demonstrate this code at the time of the viva.

(6 Marks)

f) Explain the WAP protocol stack. Also, explain the following WML elements with the help of an example of each:

- WML tables
- WML Images
- WML <anchor> 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) Features of dynamic web pages

(ii) MVC Architecture

(iii) Tools for client-side scripting

(iv) HTTP methods

(v) Web Containers

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

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

(ii) Write a JSP scriptlet to display a list of the first 8 double-digit positive even numbers.

(iii) <jsp:useBean> and <jsp:plugin> action elements of JSP

(iv) *out* and *exception* implicit objects in JSP

(v) Steps of JSP page processing

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 simple web page that accepts user input for two variables, namely alpha and beta. After the successful input to these variables, the JSP program should display the values entered for the alpha and beta variables, along with the result of their multiplication.

(ii) Create a web page that takes input in two fields, namely the student ID and the Programme of the student. In case the data is correctly entered in both fields, two cookies, one for the student ID and the second for the Programme of the student, are created.

d) Create a database for the Student Examination System consisting of the following two tables:

Student (StudentID, Name, ProgrammeCode, DateOfEnrolment)

FeePaid (StudentID, Semester, dateofPayment, AmountPaid)

Develop and deploy a web-based "Student Examination System" using JSP, having 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 tables. The system should also display the StudentID, Name, dateofPayment and Amount paid for all the students.

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.