24597

Velammal College of Engineering and Technology
Viraganoor, Madurai – 625 009
(Autonomous)

B.E./B.Tech   End Semester Examinations April 2025

Fourth Semester   Regulation 2021
Time : 3 Hours   Max. Marks 100

21CS209 - Internet Programming
(Common to Computer Science and Engineering & Information Technology)

Answer ALL Questions
PART-A (10 x 2 = 20 Marks)

1.   Differentiate between semantic and non-semantic elements in HTML with examples.

2.   Justify the use of CSS flexbox over traditional layout techniques in responsive design.

3.   Predict the output of a JavaScript function that contains nested conditional statements.

4.   What is the role of addClass() and toggleClass() in jQuery?

5.   Identify the roles of HttpServletRequest and HttpServletResponse objects in servlets.

6.   Recall any two advantages of using JSP over Servlets in dynamic web development.

7.   Apply the concept of PHP superglobals to access form data submitted via POST.

8.   Write a simple example of an AJAX call that sends data to a PHP file named "update.php".

9.   Judge the effectiveness of XML Schema over DTD in validating complex data models.

10.   How is WSDL different from XML Schema in the context of web development?

Part – B (4 x 16 = 64 Marks)

11. a) Compare and contrast HTML5 semantic tags with traditional layout -based HTML. Analyze how semantic tags impact accessibility tools and SEO rankings.

OR

b) A company is building a multi -device web interface. Justify the use of CSS Grid and Flexbox for layout design and illustrate how media queries enable adaptive designs with appropriate examples.

12. a) **Develop** a web application with the functionality of jQuery's hide(), show(), fade(), and slide() effects and how they can be used to visual effects to a webpage?

OR

b) Consider a single -page application where data needs to be loaded dynamically. Analyze how jQuery simplifies AJAX calls and compare it with native JavaScript in terms of efficiency and readability.

13. a) Design a system where a university uses JSP and Servlets to allow students to submit project reports online. Describe how MVC architecture is used in such an application and evaluate the role of JSP and Servlet in each layer.

OR

b) Critically analyze the session management techniques in JSP and Servlets with respect to security, scalability, and performance. Discuss scenarios where each is most suitable (cookies, URL rewriting, hidden fields, session objects).

14. a) You are hired to secure a PHP -based admin portal. Identify and implement at least four techniques to protect against common vulnerabilities like XSS, CSRF, and SQL Injection. Discuss the impact of each on user data safety.

OR

b) A real estate company wants to implement a live property search using AJAX. (i)Explain the complete AJAX communication cycle with example. (ii) Write both frontend (JS) and backend (PHP) code snippets to support the use -case.

Part – C (1 x 16 = 16 Marks)

15. a) XML is widely used for data exchange and configuration purposes across various industries, including e-commerce. For e-commerce applications, it is essential to define the structure and validation rules for order data. One common way to ensure that the XML data adheres to a specific structure is by using XML Schema (XSD). An XML Schema allows you to define the structure, content, and data types of the XML elements, making it more robust and flexible compared to older methods like DTD (Document Type Definition).

Task: In this case study, you are required to:

Develop an XML Schema for an e -commerce order system and validate it with a sample XML document. Also, Explain the advantages of schema over DTD.

OR

b) A government API is being exposed using SOAP. Evaluate the structure and constraints of WSDL and how it enables interoperability in distributed applications. Compare SOAP with REST in terms of use - case, verbosity, and error handling