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End Semester Examination, December 2024

All Program – 3rd Semester

WEB DEVELOPMENT WITH OPEN-SOURCE FRAMEWORKS (VAC172)

Time: 2.5 hrs.

Max Marks: **50**

Note: *All Questions are compulsory. Marks are indicated against each question.*

PART-A

Q.1 *Attempt any five questions:*

2x5

- (a) The tag used to create an unordered list in HTML is the <_____> tag. [CO-1] [L-1] **2**
(b) To change the font size of a text element in CSS, the property used is _____. [CO-1] [L-2] **2**
(c) In PHP, the _____ function is used to include another PHP file within the current file. [CO-1][L-1] **2**
(d) In JavaScript, the function _____() is used to display an alert message to the user. [CO-1] [L-1] **2**
(e) Which of the following methods is used to add an item to the end of an array in JavaScript? [CO-1] [L-2] **2**

A) push ()

C) shift ()

B) pop ()

D) unshift ()

- (f) The _____ property in CSS is used to change the background color of an element. [CO-1] [L-1] **2**
(g) Which of the following is the correct way to declare a constant in PHP? [CO-1] [L-1]

2

A) define ('PI', 3.14);

C) const ('PI', 3.14);

B) constant ('PI', 3.14);

D) set_constant ('PI', 3.14);

PART-B

Q.2 Create a simple webpage that allows users to input a number, and then displays whether the number is odd or even. Your solution should include: [CO-2] [L-2] **10**

- A form with an input field where users can enter a number.
 - A button that, when clicked, triggers a JavaScript function.
 - The JavaScript function should check if the entered number is odd or even.
 - The result should be displayed on the page, either stating "The number is odd" or "The number is even".
 - Handle cases where the user does not enter a valid number (e.g., if the input is empty or non-numeric).
- Provide both the HTML structure and JavaScript code. Explain each part of the code briefly.

OR

Create a simple PHP-based contact form that collects a user's name, email, and message. The form should validate the input to ensure the fields are not empty and the email is in the correct format. After submission, display a confirmation message with the user's submitted information. [CO-2] [L-2] **10**

The contact form should contain:

- An input field for the user's name (text).

- An input field for the user's email (email).
- A textarea for the user's message.
- A submit button to send the form data to a PHP script.

Q.3 Explain the role of CSS and JavaScript in web development and discuss how they work together to enhance the user experience. [CO-3] [L-4] **10**

OR

Explain the Client-Server Architecture in detail, including its components, types, communication process, and real-world applications. Discuss the advantages and disadvantages of this architecture and explain how it has evolved with the advent of modern technologies such as cloud computing and load balancing.

[CO-3] [L-4] **10**

Q.4 Explain the architecture, key features, and advantages of Node.js. How does it handle concurrent requests, and why is it suitable for building scalable and high-performance applications? Discuss its use cases, including real-world examples of applications built with Node.js. Additionally, highlight any challenges faced when using Node.js and how these can be mitigated. [CO-4] [L-3] **10**

OR

Discuss the concept of PHP as a server-side scripting language. Explain how PHP is used for web development, focusing on its role in handling user input, generating dynamic content, and interacting with databases.

[CO- 4] [L-3] **10**

Q.5 Write a JavaScript function to create a **to-do list**. The user should be able to add tasks, mark them as completed, and remove tasks. Use **DOM manipulation** techniques to dynamically update the HTML content. [CO-2] [L-3] **10**

OR

Explain the differences between HTML, CSS, JavaScript, and Node.js in web development. In your answer, discuss their roles, features, and use cases in the context of building a modern web application.

[CO-2] [L-3] **10**