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# Daffodil International University

**Department of Computer Science and Engineering**
**Faculty of Science & Information Technology**
**Final Examination, Spring-2024**
**Course Code: CSE414, Course Title: Web Engineering**
**Level: 4 Term: 1 Batch: 58**
**Time: 2 Hour** **Marks: 40**

## Answer ALL Questions

***[The figures in the right margin indicate the full marks and corresponding course outcomes. All portions of each question must be answered sequentially.]***

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| 1. | a) | **Suppose**, You are developing a web application for a small bookstore. The application allows users to browse books, add them to their cart, and make purchases. The back-end of the application is built using PHP, and it interacts with a MySQL database to manage book inventory, user accounts, and transactions.<br>While implementing the checkout functionality of your web application, you encounter a situation where the connection to the database fails during the payment process. Explain how you would handle this error gracefully using PHP's error handling mechanisms. Provide a code example demonstrating the situation. | 7 | *CO3* |
| | b) | **Explain** what SQL injection is and how it can be prevented in PHP applications. Provide at least three strategies or best practices developers can employ to mitigate the risk of SQL injection attacks in their PHP code. Additionally, give a code example demonstrating the correct usage of prepared statements to prevent SQL injection vulnerabilities in a simple PHP application. | 8 | |
| 2. | a) | **Utilize** the JavaScript code to add behavior to create page that has a user interface for entering grades on assignments. Which is the number guessing game assigned .When the page loads, your code should randomly choose a number from 1-100 inclusive. When the user types a number into the number text field and then clicks the make guess button, the game will compare the user's guess to your randomly chosen number, and report whether it was "Too high!", "Too low!", or correct. The information will be shown as text in the result span.<br>(Note: You can redesign the interface also! For design you can use html, css etc.) | 10 | *CO4* |
| 3. | a) | **Suppose** you are designing a web application for an e-commerce platform that allows users to browse products, add them to their cart, and checkout. Discuss the architectural decisions you would make using the MVC (Model-View-Controller) pattern to ensure scalability, maintainability, and extensibility of the application. | 5 | *CO2* |
| 4. | | Suppose, You've been appointed as the project manager for a software development project. The project involves developing a | | |

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| | | new online gaming platform for a client within a specified timeline and budget. The client's expectations are high, and they require the software to be delivered on time, within budget, and meeting their specified requirements. | | |
| | *a)* | Draw from your experience or hypothetical scenarios to illustrate your insights in the scenario of project planning, risk management, people management, teamwork, and communication, adaptability and flexibility and What is your role as a project manager given this particular project to effectively manage cost related optimization in a beneficial way? | **10** | **CO2** |

***Best Wishes!*** ☺