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Daffodil International University

Faculty of Science & Information Technology
Department of Software Engineering
Final Examination, Fall 2025
Course Code: SE235; Course Title: Desktop and Web Programming
Sections: PAS(C) MHN(A, B, F) AG(D, E) IJC(G, H) ZNM(I, J); Teachers: All
Time: 2:00 Hrs **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.]

1.	a)	Your development team has been assigned to redesign an outdated hospital appointment-management system using the .NET framework. The existing system suffers from poor separation of logic, making updates extremely risky and time-consuming. In this context, **illustrate** how the MVC (Model-View-Controller) design pattern works within the .NET framework, and describe the role and responsibilities of each component	[Marks-5]	CLO-2 *Level-3*

2.	a)	`<!DOCTYPE html>`
		`<html>`
		`<head>`
		`<title>Product Rating</title>`
		`</head>`
		`<body>`
		`<div class="item">`
		`<p>Laptop Pro X200</p>`
		`<button class="rate-btn">Rate Product</button>`
		`</div>`
		`<div class="item">`
		`<p>Noise Cancelling Headset</p>`
		`<button class="rate-btn">Rate Product</button>`
		`</div>`
		`<script>`
		`// TODO: Add JavaScript code here`
		`</script>`
		`</body>`
		`</html>`
		Develop a JavaScript function that attaches a click event listener to all <p> elements with the class text. When any paragraph is clicked:
		
		I. Change the font weight of the clicked paragraph to bold.
		II. Log the message "Paragraph clicked!" in the console.
			[Marks-5]	CLO-3 *Level-6*

	b)	You are given a base JavaScript object:
		`const userProfile = {`
		`userId: 101,`
		`username: "GuestUser",`
			[Marks-5]	

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preferences: [] [ ],
};

Reconstruct this module to create an array allUsers containing **3 user objects,** where each object must include:

- userId (unique number)
- username (any name)
- preferences (array of at least 2 items such as "darkMode", "compactView", etc.

3.	a)	<?php
		class Account {
		protected $balance;
		
		public function __construct($balance = 0) {
		$this->balance = $balance;
		}
		
		// TODO: Implement deposit()
		}
		class SavingsAccount extends Account {
		private $interestRate;
		
		public function __construct($balance, $rate) {
		parent::__construct($balance);
		$this->interestRate = $rate;
		}
		
		// TODO: Override a method to include interest in the final balance
		}
		
		?>
		Tasks:
		
		1. Implement **deposit(amount)** and **withdraw(amount)** inside Account.
		
		2. Override a method in SavingsAccount so that it calculates the final balance including interest.
		
		3. Create an object of SavingsAccount with a starting balance of **1000** and interest rate **0.05**, call deposit then print the final balance.
			[Marks-10]	**CLO-4**
				Level-6

	b)	<?php
		function countCharacter($str) {
		// TODO: Return Odd or Even depending on the number of character
		}
		
		$input = "DesktopAndWeb";
		echo countCharacterFrequency($input);
		?>
		
		Construct the solution so that the function returns an associative array indicating how many times each character appears in the string.
			[Marks-5]	

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Q4 | Below is a defective PHP + MySQL module for managing a **Movie Database**. It should allow an admin to **add** and **delete** movies, but contains logical issues and missing lines. | [Marks-10]

```
<?php
$connection = mysqli_connect("localhost", "root", "", "moviesdb");

// TODO: Missing validation & SQL handling

if(isset($_POST['add'])) {
   $title = $_POST['title'];
   $year = $_POST['year'];
   // INSERT query missing
}

if(isset($_POST['delete'])) {
   $movieId = $_POST['movieId'];
   // DELETE query missing
}
?>
<form method="POST">
 <h3>Add Movie</h3>
 <input type="text" name="title" placeholder="Title"><br>
 <input type="number" name="year" placeholder="Year"><br>
 <button name="add">Add Movie</button>

 <h3>Delete Movie</h3>
 <input type="number" name="movieId" placeholder="Movie ID"><br>
 <button name="delete">Delete Movie</button>
</form>
```

Construct a correct and complete PHP application that:

1. Performs INSERT and DELETE operations.
2. Validates that fields are not empty.
3. Displays meaningful success/error messages.
4. Uses proper MySQL query execution.