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Computer science department
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2nd year undergraduate (2025/2026)

Exam Duration: 120 minutes

Web Application Development Final Exam

Questions: *(6 Marks)*

1) How does client-server architecture work?
   The client sends a request for data or a service over the network. The server processes that request and sends the result back. **1pts**
2) Explain the principle of SOAP protocol?
   SOAP is a standard protocol that uses XML to exchange information between web services over a network. It follows strict rules to ensure that different applications can communicate efficiently regardless of their operating system. **1pts**
3) Answer with True or False. **4pts (0,5 x 8)**
   a) All HTML tags require a closing tag (False)
   b) HTML used to define structure, rather than visual styling (True)
   c) CSS stand for Cascading Style Sheets (True)
   d) An ID selector in CSS start with a hashtag (True)
   e) JavaScript and Java are entirely different programming languages (True)
   f) PHP is a "client-side" language (False)
   g) Web browsers can read PHP code directly without a server. (False)
   h) XML tags are pre-defined just like HTML tags. (False)

Exercise 1: *(8 Marks)*

Part 1 : Write the HTML code that generates the following web page:

3.5 pts

```
<!DOCTYPE html>
<html>
<body>
<h1>Part1 Exercise 1 FINAL EXAM :</h1>
<table border="1" >

<tr><th colspan="3">Travel Plan</th></tr>

<tr><th> Continent : </th><th> Countries : </th><th> Activities : </th></tr>

<tr><td>Europe</td> <td>Italy</td> <td><ol><li>Visit monuments</li><li>Try local food</li></ol></td></tr>

<tr><td rowspan="2">Africa</td><td>Algeria</td><td><ol><li>Visit desert</li><li>Discover
culture</li></ol></td> </tr>

<tr><td>Egypt</td><td><ul><li>Visit historical sites</li></ul></td></tr>

</table>

<p>Visit the LINK:  <a href="https://www.LINK.com" target="_blank">Go to Link</a></p>

</body>
</html>
```

Part 2 :

1) Write the HTML code to create a web page that includes an input field for a number and a button labeled "Check".

```
<!DOCTYPE html>
<html>
<body>
<input type="number" id="userNumber" placeholder="Enter a number ">
<button type="button">Check</button>
</body>
 </html>
```

1 pts

2) Write a JavaScript function that is executed when the button is clicked and displays in output paragraph whether the entered number is even (زوجي) or odd (فردي).

```
<script>
function checkNumber() {
if (document.getElementById("numInput").value % 2 === 0)
{document.getElementById("result").innerHTML = "The number is even (زوجي)"; }
else { document.getElementById("result").innerHTML = "The number is odd (فردي)"; }
}
</script>
```

1.5 pts

3) Rewrite the complete HTML code with internal JS, and apply CSS styling to the result message based on the calculation:

```
<!DOCTYPE html>
<html>
<body>
  <input type="number" id="numInput" placeholder="Enter a number">
  <button onclick="checkNumber()">Check</button><br>
  <p id="result"></p>
  <script>
    function checkNumber() {
      if (document.getElementById("numInput").value % 2 === 0) {
        document.getElementById("result").innerHTML = "The number is even (زوجي)";
        document.getElementById("result").style.color = "#005500";
        document.getElementById("result").style.backgroundColor = "#90EE90";
      } else {
        document.getElementById("result").innerHTML = "The number is odd (فردي)";
        document.getElementById("result").style.color = "#000055";
        document.getElementById("result").style.backgroundColor = "#9090EE";
      }
    }
  </script>
</body>
</html>
```

2 pts

Exercise 2: *(6 Marks)*

3 pts (0.5 pts x 6)

```
<!DOCTYPE html>
<html>
<body>
  <form method="POST">
    <label for="temp">Current temperature (°C):</label><br><br>
    <input type="number" name="temp" id="temp" required>
    <button type="submit" name="submit">Analyze</button>
  </form>

  <?php
  if (isset($_POST['submit'])) {
    $t = floatval($_POST['temp']);
    if ($t < 15) {$message = "The temperature is cold.";}
        elseif ($t >= 15 && $t <= 28) {$message = "The temperature is ideal.";}
        else {$message = "The temperature is hot.";}
    echo $message; }
  ?>
</body>
</html>
```

SQL query to add a new temperature record into the Temperature table. **0.5 pts**

INSERT INTO Temperature (temp_value) VALUES (?);

Write the PHP code necessary to connect to weather_DB and execute the insertion.

2.5 pts

```
<?php

$conn = mysqli_connect("localhost", "root", "", "weather_DB");

$sql = "INSERT INTO Temperature(temp_value) VALUES (20)";

if(mysqli_query($conn, $sql)){
   echo "Data inserted successfully";
}
?>
```