Ministry of Higher Education and Scientific Research
University El-Wancharissi - Tissemsilt
Faculty of Sciences and Technology
Department of Mathematics and Computer Sciences

Exam: Advanced Web Programming

Domain / Field / Specialty :	Math & Info / Computer Science / ISIL
Academic Year:	2014/2025
Semester / Session:	S05/NS
Date:	05/01/2025
Duration:	01 h 30

Questions:

1) What is the purpose of AJAX in web development?
2) What is the primary characteristic that distinguishes Web 3.0 from Web 2.0?
   a) Centralized control by major corporations
   b) Focus on artificial intelligence and machine learning
   c) Decentralization and user ownership of data
   d) Static websites with limited user interaction
3) What does AJAX stand for in web development?
   a) Asynchronous JavaScript and XML
   b) Asynchronous JavaScript and XHR
   c) Asynchronous JSON and XML
   d) Advanced JavaScript and XML
4) What is the output of the following JavaScript code?

```
let x = 10;
let y = '10';
console.log(x == y);
console.log(x === y);
```

   A) true true
   B) false false
   C) true false
   D) false true

5) How does blockchain ensure data integrity?
   a) By using encryption to protect data
   b) By storing data in a single location
   c) By requiring centralized oversight of data

d) By using hashing and linking blocks together

Exercise 02:

create a single JavaScript function that calculates the sum, average, and multiplication of three numbers. The function should return an object containing all three results. Use arrow function for a concise and clean implementation

Exercise 03:

Create a simple web page that displays a static list of persons (name, firstName, age) in a table. The data is provided as an array of objects in JavaScript. Use jQuery to dynamically generate the table rows based on the data and display it in the browser.

Correction

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Exam Correction: Advanced Web Programming

Questions: (05 M)

1) What is the purpose of AJAX in web development? (01 M)
create more interactive and responsive web applications by allowing data to be fetched or sent to the server without requiring a full page reload.

2) What is the primary characteristic that distinguishes Web 3.0 from Web 2.0? (01 M)
   e) Centralized control by major corporations
   f) Focus on artificial intelligence and machine learning
   g) Decentralization and user ownership of data
   h) Static websites with limited user interaction

3) What does AJAX stand for in web development? (01 M)
   e) Asynchronous JavaScript and XML
   f) Asynchronous JavaScript and XHR
   g) Asynchronous JSON and XML
   h) Advanced JavaScript and XML

4) What is the output of the following JavaScript code? (01 M)

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5) How does blockchain ensure data integrity? (01 M)
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Exercise 02: (05 M)

```
const calculateOperations = (a, b, c) => ({
    sum: a + b + c,                    (04 M)
    average: (a + b + c) / 3,
    multiplication: a * b * c
});

// Example usage (01 M)
const result = calculateOperations(2, 3, 4);
console.log(result);
```

Exercise 03:

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0" />
    <title>Person List</title>
    <script src="https://code.jquery.com/jquery-3.6.0.min.js"></script>
  </head>
  <body>
    <h1>Person List</h1>
    <table id="personTable" border="1">
      <thead>
        <tr>
          <th>Name</th>
          <th>First Name</th>
          <th>Age</th>
        </tr>
      </thead>
      <tbody>
        <!-- Rows will be dynamically generated here -->
      </tbody>
    </table>
```

2

3

```
<script>
  // Sample data
  const persons = [
    { name: "Smith", firstName: "John", age: 30 },
    { name: "Doe", firstName: "Jane", age: 25 },
    { name: "Brown", firstName: "Charlie", age: 35 },
  ];

  $(document).ready(() => {
    const tableBody = $("#personTable tbody");

    // Generate rows dynamically using map
    const rows = persons.map(
      (person) => `
          <tr>
            <td>${person.name}</td>
            <td>${person.firstName}</td>
            <td>${person.age}</td>
          </tr>
        `
    );

    // Append all rows at once
    tableBody.append(rows);
  });
</script>
</body>
</html>
```

1.5

1 M

1M

1M

1.5