


National University of Computer and Emerging Sciences, Lahore Campus

	Course Name:	Web Engineering	Course Code:	SE3003
	Program:	BS (Software Engineering)	Semester:	Spring 2025
	Section:	BSE-6A	Total Marks:	20
	Date:		Weight:	
	Exam Type:	Quiz 2	Roll No:	
Student Name:				

(i). What will be the output of the following JavaScript code?

```
console.log(17 === '17');
```

```
console.log(17 == '17');
```

- a) true, false
- c) false, false
- b) true, true
- d) false, true

(ii) What is the main difference between map() and forEach() in JavaScript?

- a) map() modifies the original array, whereas forEach() does not.
- b) map() creates a new array with modified values, while forEach() performs an action but returns undefined.
- c) forEach() can return values, while map() cannot.
- d) Both are identical in functionality.

(iii) What will the following jQuery code do?

```
$('#div').on('click', function() {
    $(this).fadeOut().fadeIn();
});
```

- a) It hides the div permanently.
- b) It toggles visibility every time the div is clicked.
- c) It causes an error.
- d) It makes the div disappear and reappear.

(iv) Which of the following describes the 'this' keyword inside an arrow function?

- a) It refers to the global object (window in browsers).
- b) It refers to the object that called the function.
- c) It refers to the object where the function is defined, not where it is called.
- d) this does not exist inside an arrow function.

(v) Consider the array arr = [5, 10, 15]. Which of the following assigns 10 to the variable

num using destructuring?

- a) `let num = arr[1];`
- b) `let [, num] = arr;`
- c) `let [, num] = arr;`
- d) `let [num] = arr[1];`

Q2: Consider the array [3,6,4,10,7]. Write a function `transformArray(arr)` which does the following: If the array element is odd, multiply it by 2 and if it is even divide by 2 and add 1. The output of this should be [6,4,3,6,14]. The function returns an array containing only even elements. Final Output: [6,4,6,14]. You must only use JavaScript array methods for this. (5)

```
function transformArray(arr)
{ return arr .map(num => num % 2 === 0 ? num / 2 + 1 : num * 2) .filter(num => num % 2
=== 0); }
```


Q3: Write JavaScript code that adds an event listener to a button with `id="btn"`. When clicked, it changes the text of a paragraph (`id="message"`) to 'This is a paragraph!' and changes its text color to red. (5)

```
document.getElementById("btn").addEventListener("click", function() {
let message = document.getElementById("message");
message.textContent = "This is a paragraph!";
message.style.color = "red"; });
```

Q4: Write jQuery code to hide all paragraphs when a button with id "hideBtn" is clicked. (5)

```
$("#hideBtn").click(function() { $("p").hide(); });
```

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(i) What is the difference between `slice()` and `splice()` in JavaScript?

a) `slice()` does not modify the original array, whereas `splice()` does.

b) `slice()` modifies the original array, whereas `splice()` does not.

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c) `slice()` removes elements from the array, whereas `splice()` adds new elements.

d) Both methods perform the same function.

(ii) Consider the array `arr = [1, 2, 3, 4, 5]`. Which of the following correctly destructures only the first two elements and assigns them to `a` and `b`?

a) `let a, b = arr;`

b) `let [a, b] = arr;`

c) `let [a, b, ...rest] = arr;`

d) `let a = arr[0], b = arr[1];`

(iii) What does `$(“ul li:first”)` do?

a) Selects all `li` elements inside each `ul`, excluding the first one.

b) Selects the last `li` element inside all `ul` elements.

c) Selects the first `li` element inside each `ul` element.

d) Selects all `li` elements inside the first `ul`.

(iv) Which of the following is the correct way to define a function using an arrow function in JavaScript?

a) `function() => {}`

b) `() => function {}`

c) `() => {}`

d) `function () {}`

(v) Which of the following comparisons will return false?

a) `5===5'`

b) `false===0`

c) `5=='5'`

d) `0==false`

Q2: Consider the array arr=[2,4,5,8,9]. Write a function transformArray(arr) which returns the sum of the odd numbers. Final Output:14. You must only use JavaScript array methods for this.(5)

```
function transformArray(arr) {  
  return arr.filter(num => num % 2 !== 0).reduce((sum, num) => sum + num, 0)  
}
```


Q3: Write JavaScript code that selects the second <div> in the document and deletes its first <p> node.

```
let secondDiv = document.querySelectorAll("div")[1]  
let firstP = secondDiv.querySelector("p");  
if (firstP) { secondDiv.removeChild(firstP)}
```

Q4: Write jQuery code to create an event listener that sets the background color of a <div> to blue when the mouse moves over a button with id “btn1”. (5)

```
$(document).ready(function() {  
  $("#btn1").mouseover(function() {  
    $("div").css("background-color", "blue");  
  });  
});
```

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Q1: MCQs (5)

(i). What is the primary difference between == and === in JavaScript?

- a) == checks both type and value, while === only checks value.
- b) == checks only the type, while === checks both type and value.
- c) == checks only the value, while === checks both type and value.**
- d) == and === work in the same way, checking both type and value.

(ii). What is the output of the code:

```
let arr = [1, 2, 3];
let newArr = [...arr];
newArr[0] = 5;
console.log(newArr);
```

- a) [5, 2, 3]**
- b) [1, 2, 3]
- c) [5, 1, 2, 3]
- d) undefined

(iii) What does \$("ul li:last") do?

- a) Selects the first li element inside each ul element.
- b) Selects the last li element inside each ul element.**
- c) Selects all li elements inside the first ul element.
- d) Selects all ul elements that are the last child.

(iv) Which of the following methods can be used to remove a child element from a parent in JavaScript?

- a) parentNode.removeChild(childNode)**
- b) parentNode.deleteChild(childNode)
- c) parentNode.removeElement(childNode)
- d) parentNode.remove(childNode)

(v) What does the innerHTML property do in JavaScript?

- a) It sets or returns the text content of an element.
- b) It sets or returns the HTML content (including tags) of an element.**
- c) It adds a new element to the DOM.
- d) It sets or returns the text content and hidden text of an element.

Q2: Consider the array **arr=[1,3,6,7,8,10]**. Write a function **transformArray(arr)** which returns the product of the even numbers.**Output: 240**. You must **only** use JavaScript array methods for this.(5)

```
function transformArray(arr)
{
return arr .filter(num => num % 2 === 0).reduce((product, num) => product * num, 1)
}
```

Q3: Write JavaScript code that selects the third <div> in the document, creates a <p> node (child of div) and adds text to it ("This is a paragraph").(5)

```
let div = document.querySelectorAll("div")[2]
let p = document.createElement("p")
p.textContent = "This is a paragraph"
div.appendChild(p)
```

Q4: Write jQuery code to create an event listener that sets the background color of a <p> to red when the mouse moves over it. Set the background color to white when the mouse moves out of <p>. (5)

```
$("p").hover(
function() { $(this).css("background-color", "red"); },
function() { $(this).css("background-color", "white"); });
```