Kvon tech

<u>WEB DEVELOPMENT EXAMINATION</u>

Instructions This exam is of **30 marks** and consists of 15 questions, out of which **7 are objective-type questions** and **8 are subjective questions**. The total duration of the exam is **2 hours**. Write your answers clearly in the provided space. The use of calculators or electronic devices is prohibited. Maintain silence and avoid any form of communication during the exam. Any malpractice or rule violation will result in disqualification. **Good Luck!**

1. In JavaScript, what does the following code do?
   const [a, ...rest] = [1, 2, 3, 4];
   console.log(rest);
   a) Logs [1]
   b) Logs [2, 3, 4]
   c) Logs 1
   d) Throws an error

2. What is the purpose of the <template> element in HTML?
   a) To style reusable components
   b) To store reusable fragments of HTML without rendering them on the page
   c) To define a script template for JavaScript
   d) To create dynamic tables

3. How do you debounce a function in JavaScript?
   a) By using setTimeout inside the function
   b) By using a for loop to delay execution
   c) By wrapping the function in a closure with a timer
   d) By calling the function twice

4. What will the following code log to the console?
   console.log(typeof NaN);
   a) number
   b) NaN
   c) undefined
   d) object

5. What does event.preventDefault() do in JavaScript?
   a) Prevents the default styling of elements
   b) Stops the browser from performing the default action of an event
   c) Removes event listeners
   d) Blocks an event from being triggered

6. What will console.log(2 + "2"); output?
   a) 22
   b) `4'
   c) 4
   d) 2"2"

7. In Bootstrap, how do you center a row of elements horizontally?
   a) justify-content-around
   b) align-items-center
   c) justify-content-center
   d) center-horizontal

8. What does the aria-labelledby attribute do in Bootstrap components like modals?

9. What is the difference between var, let and const? Explain the concept of closures with an example.

10. Create a CSS animation where a button scales and changes color when hovered over. Include a smooth transition and create a script to dynamically add rows to an HTML table when the button is clicked.

11. Compare and contrast the advantages of CSS Grid and Flexbox for layout design. Write the CSS to create a card with a "flip" animation that shows additional details on the back when hovered.

12. Write a script to toggle a dark mode theme on a website. Use JavaScript to update the CSS dynamically.

13. Build a contact form using HTML with fields for name, email, and message. Use CSS to style the form, highlighting fields with errors in red. Add JavaScript to validate the fields in real time and display error messages under invalid fields.

14. What is the difference between null, undefined, and NaN in JavaScript? Explain the difference between == and === operators.

15. What are promises in JavaScript, and how do they differ from callbacks? Explain the purpose of async and await in JavaScript.