

2.4 JavaScript and page interaction

Name: _____ Class: _____ Date: _____ **Total: 12 marks****KEY WORDS** JavaScript JavaScript • DOM 文档对象模型 • event 事件 • function 函数

Objective

Use JavaScript events and the DOM to add small, reliable web interactions.

You must be able to:

- explain the DOM and an event
- select an element after the page is loaded
- keep basic page functions usable without JavaScript

1 Worked examples

■ Respond to a click

`document.querySelector('#menu')` finds the menu in the **DOM** 文档对象模型. A click is an **event** 事件. An event listener runs a function when that click happens.

Make the menu a working list in HTML first. JavaScript may then hide or show it. If the script fails, visitors still have a usable menu.

2 Practice

2.1 Define the DOM. [1]**2.2** State one example of a browser event. [1]**2.3** Explain why a script that runs before the HTML is parsed may fail. [2]

3 Exam-style questions

3.1 Explain how a click listener can make a menu button show or hide a panel. [4]**3.2** Explain why client-side form validation is useful but cannot protect a system by itself. [4]

Solutions

2.1

- The loaded web page represented as a tree of objects that code can read and change.

2.2

- Click, submit, key press, or scroll.

2.3

- The elements may not exist in the DOM yet.
- The selector finds nothing, so later code cannot change the element.

3.1

- Select the button and panel from the DOM.
- Add a listener for the button's click event.
- The listener runs a function that changes the panel's hidden state.
- The browser waits for the event; the code does not need a loop.

3.2

- It gives immediate feedback to a user before submission.
- A visitor can bypass or change browser-side code.
- Therefore it cannot be trusted for security.
- The server must validate the same rules again.