

Chapter 01 Introduction to JavaScript

True / False

1. Although JavaScript is considered a programming language, it is also a critical part of web page design and authoring.

a. True

b. False

ANSWER: True

2. Like HTML, XHTML is not case sensitive.

a. True

b. False

ANSWER: False

3. You can place script elements in either the document head or in the document body.

a. True

b. False

ANSWER: True

4. JavaScript code is always stored in an external file separate from the HTML or XHTML code for a web document.

a. True

b. False

ANSWER: False

5. Elements that do not require a closing tag are called empty elements.

a. True

b. False

ANSWER: True

Multiple Choice

6. ___ can turn static documents into applications such as games or calculators.

a. HTML

b. XHTML

c. JavaScript

d. Cascading Style Sheets

ANSWER: c

7. ___ was established in 1994 at MIT to oversee the development of web technology standards.

a. The University of Illinois

b. The W3C

- c. Microsoft
- d. Netscape

ANSWER: b

8. An HTML document is a text document that contains codes called ____.

- a. elements
- b. tags
- c. styles
- d. rules

ANSWER: b

9. In the client/server system, one of the primary roles of the client, or front end, is to ____.

- a. carry out complex data processing
- b. provide for data storage
- c. send email
- d. present an interface to the user

ANSWER: d

10. A system consisting of a client and a server is known as a ____ system.

- a. traditional
- b. three-tier
- c. monolithic
- d. two-tier

ANSWER: d

11. On client/server systems, heavy processing, such as calculations, usually takes place on the ____.

- a. client
- b. server
- c. middle-ware
- d. browser

ANSWER: b

12. A three-tier, or multitier, client/server system consists of three distinct pieces: These are ____.

- a. the client tier, the processing tier, and the data storage tier
- b. the client tier, the design tier, and the processing tier
- c. the storage tier, the distributing tier, and the processing tier
- d. the email tier, the messaging tier, and the data storage tier

ANSWER: a

13. Some of the more popular server-side scripting languages include ____.

- a. C, C++, and CGI
- b. JScript, Livescript, and ECMAScript

- c. PHP, ASP.NET, and Python
- d. VBS and JScript

ANSWER: c

14. ____ refers to programming using a scripting language that is executed from a web server.

- a. Host-side scripting
- b. Client-side scripting
- c. Servlet-side scripting
- d. Server-side scripting

ANSWER: d

When a client requests a server-side script, a client will never see the server-side script, only the ____ that the web server software returns from the script.

15. When a client requests a server-side script, a client will never see the server-side script, only th...

- a. email sent
- b. program executing
- c. HTML
- d. raw data requested

ANSWER: c

16. An object is ____ that can be treated as an individual unit or component.

- a. state and contents
- b. file and data
- c. formatting and color
- d. programming code and data

ANSWER: d

17. The procedures associated with an object are called ____.

- a. methods
- b. processes
- c. attributes
- d. functions

ANSWER: a

18. ____ are lines of code that are not processed by browsers, which you use to add notes about your code.

- a. methods
- b. comments
- c. variables
- d. properties

ANSWER: b

19. A(n) ____ comment occupies only a single line or part of a line.

- a. variable
- b. element
- c. line
- d. block

ANSWER: c

20. A(n) ____ comment hides multiple lines of code.

- a. variable
- b. element
- c. line
- d. block

ANSWER: d

21. Which keyword do you use to create a variable?

- a. for
- b. value
- c. assign
- d. var

ANSWER: d

22. Variables and literals contained in an expression are known as ____.

- a. operators
- b. operands
- c. events
- d. properties

ANSWER: b

23. Symbols such as + and * used in expressions to manipulate operands are known as ____.

- a. operators
- b. variables
- c. events
- d. properties

ANSWER: a

24. Which method do you use to reference an element on a web page in a script?

- a. write()
- b. alert()
- c. onclick()
- d. getElementById()

ANSWER: d

25. Which method displays a dialog box with an OK button?

- a. write()
- b. alert()
- c. onclick()
- d. getElementById()

ANSWER: b

26. Special words that are part of the JavaScript language syntax and that can't be used as variable names are known as ____.

- a. identifiers
- b. reserved words
- c. operands
- d. operators

ANSWER: b

Completion

27. A document on the web is called a web page and is identified by a unique address called the _____.

ANSWER: Uniform Resource Locator

28. When you assign a value to a variable, you use an equal sign, which is also called a(n) _____ operator.

ANSWER: assignment

29. When an event occurs, your script executes any code that responds to that specific event on that specific element. This code is known as the _____.

ANSWER: event handler

30. JavaScript source files that store especially useful generic scripts used on many different website are known as _____.

ANSWER: libraries

31. A(n) _____ is a specific circumstance that is monitored by JavaScript and that your script can respond to in some way.

ANSWER: event

Matching

Identify the letter of the choice that best matches the phrase or definition.

- a. expression

- b. URL
 - c. W3C
 - d. variable
 - e. web server
 - f. HTML
 - g. validation
 - h. block comment
 - i. statement
32. An organization overseeing web technology standards
ANSWER: c

33. A value, variable, or combination that can be evaluated by a JavaScript interpreter to produce a result
ANSWER: a

34. A computer that delivers web pages
ANSWER: e

35. A value a program stores in computer memory
ANSWER: d

36. Commonly referred to as a web address
ANSWER: b

37. A markup language for creating the web pages that appear on the World Wide Web
ANSWER: f

38. An individual line of code
ANSWER: i

39. Multiple lines of code that are not processed
ANSWER: h

40. The process of verifying that your document is well-formed and checking that the elements in your document are correctly written according to the element definitions in a specific DTD
ANSWER: g

Subjective Short Answer

41. What is client-side scripting, and how is it related to the JavaScript language?

ANSWER: JavaScript is a client-side scripting language that allows web page authors to develop interactive web pages and sites. Client-side scripting refers to a scripting language that runs on a local browser (on the client tier) instead of on a web server (on the processing tier). Originally designed for use in Navigator web browsers, JavaScript is now also used in all major web browsers, including Internet Explorer, Firefox, Chrome, Safari, and Opera.

42. Under what circumstances would you use server-side scripting?

ANSWER: If you want to access a database on a web server, you must use a server-side script. A general rule of thumb is to allow the client to handle the user interface processing and light processing, such as data validation, but have the web server perform intensive calculations and data storage.

43. What are the components that make up a JavaScript object?

ANSWER: An object is programming code and data that can be treated as an individual unit or component. Individual statements used in a computer program are often grouped into logical units called procedures, which are used to perform specific tasks. For example, a procedure may contain a group of statements that calculate the sales tax based on sales total. The procedures associated with an object are called methods. A property is a piece of data, such as a color or a name, that is associated with an object.

44. Discuss case sensitivity in JavaScript.

ANSWER: Like XHTML, JavaScript is case sensitive, and within JavaScript code, object names must always be all lowercase. This can be a source of some confusion, because in written explanations about JavaScript, the names of objects are usually referred to with an initial capital letter. For example, throughout this book, the Document object is referred to with an uppercase D. However, you must use a lowercase d when referring to the Document object in a script. The statement `Document.write("Plant choices");` causes an error message because the JavaScript interpreter cannot recognize an object named Document with an uppercase D.

45. Describe how events are useful in JavaScript code.

ANSWER: One of the primary ways in which JavaScript is executed on a web page is through events. An event is a specific circumstance (such as an action performed by a user or an action performed by the browser) that is monitored by JavaScript and that your script can respond to in some way. You can use JavaScript events to allow users to interact with your web pages.

46. Describe why it's important to validate web documents, and how to do it.

ANSWER: To ensure that a web page is well formed and that its elements are valid, you need to use a validating parser. A validating parser is a program that checks whether a web page is well formed and whether the document conforms to a specific DTD. The term validation refers to the process of verifying that your document is well formed and checking that the elements in your document are correctly written according to the element definitions in a specific DTD. If you do not validate a document and it contains

errors, most web browsers will probably treat it as an HTML document, ignore the errors, and render the page anyway. Various web development tools, including Dreamweaver, offer validation capabilities. In addition, several validating services can be found online. One of the best available is W3C Markup Validation Service, a free service that validates HTML as well as other markup languages. The W3C Markup Validation Service is located at <http://validator.w3.org/>. The service allows you to validate a web page by entering its URL, by uploading a document from your computer, or by copying and pasting code.

47. Where does a script element usually go in an HTML document, and why?

ANSWER: You can place script elements in either the document head or the document body, or in both. However, in general, script elements are usually placed at the end of the body section, just before the closing tag. The elements in an HTML document are rendered in the order in which they occur in the document, and each script is processed when the HTML element that contains it is parsed by a browser. When processing a script in the head section or in the middle of HTML content, most browsers do not continue rendering the web page until the script is loaded and executed. If a script is very large or complex, this could cause the page to be displayed with only some of its content and formatting until the script finishes loading. If you instead place your script elements just before the end of the body section, you allow browsers to render all the simple HTML content immediately on the user's screen, and then load and process any JavaScript that works with that content. This ensures that users can see and interact with the entire web page as quickly as possible.

48. Explain what a library is and what it is used for, and name one commonly used library.

ANSWER: In addition to storing scripts for multiple pages in the same website, sometimes JavaScript source files store especially useful generic scripts used on many different websites. These files, known as libraries, are often developed by a single programmer or a team of programmers and distributed online. Many libraries are developed to solve a problem on one website and turn out to be useful for other sites as well. Programmers often make libraries available for free reuse. A handful of libraries are commonly used to perform a variety of functions on large, complex websites. For instance, Node.js and Backbone.js contain tools for creating and managing large web applications. Another library, Modernizr, is widely used to enable web authors to deliver a consistent design and functionality across different browsers, browser versions, and platforms.

49. What does each of the following statements do?
`document.write("Plant choices");`
`window.alert("Plant choices");`

ANSWER: The statement `document.write("Plant choices");` writes the text "Plant choices" (without quotes) to the browser window for the current web document. The statement `window.alert("Plant choices");` displays a dialog box containing the text "Plant choices" (without quotes).

50. What does the following code do?
`var fname = document.getElementById("firstName");`

ANSWER: The code `var fname = document.getElementById("firstName");` finds the

element in the current document with the id value of firstName and assigns a reference to that element to the variable name fname.