Competency Requirements—2007

Certified Web Specialist - CWS

Certified Web Specialists are expected to obtain knowledge of customer inabilities and lack of experience to solve problems related to the operation, maintenance and upgrading of World Wide Web home pages. Once the CWS has acquired these skills, abilities and knowledge, he or she will be able to head off potential service related occurrences that prevent smooth and efficient usage of the home page service. He or she will have customer service skills that allow working relationships with users that efficiently convey discriptions of difficulties, problems initiated by the user or needs of the person or company.

1.0 Internet Infrastructure

1.1 Describe the Internet architecture
1.2 List 20 common terms used specifically with Internet system
1.3 Explain the standards used in Internet communications
1.4 Detail the history of the ARPANET
1.5 List the protocols which were designed for the early phase of the ARPANET
1.6 Identify the organization that provides overall technical management of internet
1.7 Describe how Internet technical standards are developed and implemented
1.8 Define ITU and explain the responsibilities it has relative to the management of internet policies

2.0 Internet Technical Terms and Standards

2.1 Explain the purpose of the URL
2.2 Define Gopher server
2.3 Describe the purpose of the Domain Naming System (DNS)
2.4 Explain the functional purpose of a “cookie”
2.5 Explain the purpose of ASCII alphabet and structure
2.6 Describe the World Wide Web (WWW)

3.0 Internet Protocols

3.1 Contrast the difference between “connectionless” and “connection oriented” protocols

3.2 List the services performed by the following network protocols;

3.2.1. Transport Controle Protocal (TCP)
3.2.2. Internet Protocol (IP)
3.2.3. Address Resolution Protocol (ARP)
3.2.4. Reverse Address Resolution Protocol (RARP)
3.2.5. Sequenced Packet Exchange (SPX)
3.2.6. Internet Packet Exchange (IPX)
3.2.7. Datagram Delivery Protocol (DDP)
3.2.8. Point-to-point Protocol (PPP)
3.2.9. Simple Network Management Protocol (SNMP)
3.2.10. Simple Mail Transfer Protocol (SMTP)
3.2.11. NetBIOS Extended User Interface (NetBEUI)
3.2.12. Hypertext Transfer Protocol (HTTP)
3.2.13. User Datagram Protocol (UDP)
3.2.14. File Transfer Protocol (FTP)
3.2.15. NetWare Link (NWLink)
3.2.16. Routing Information Protocol (RIP)
3.2.17. Serial Line Interface Protocol (SLIP)
3.2.18. TELNET

4.0 Network Fundamentals

4.1 Network Devices

4.1.1. Describe the function of a router
4.1.2. Describe the function of a bridge
4.1.3. Describe the function of a repeater
4.1.4. List the seven layers of the OSI model
4.1.5. Describe the layer which is performed by a router, bridge or repeater
4.1.6. Explain the purpose of a CSU/DSU
4.1.7. Within the network architecture describe where the CSU/DSU is normally installed
4.1.8. List the speeds available for standard transmission with dial up analog modems

4.2 Computer Network Terminology

4.2.1. Explain the technical definition of bandwidth
4.2.2. Discuss "bandwidth penalty" associated with different types of Web Page file structure
4.2.3. List the features of "Fast and Gigabite EtherNet"
4.2.4. List the primary advantages of fiber optics cable compared with copper and coax
4.2.5. List the basic types of network media
4.2.6. Describe the purpose and scope of specification IEEE 802.3

4.3 Network Transmission Services

4.3.1 Describe a T1 circuit
4.3.2 Define the transmission bit rate for a T1 link

4.4 Network Security

4.4.1. Describe the features and objectives of a firewall system
4.4.2. Describe the purpose of a Secure Sockets Layer module within the Netscape browser
4.4.3. Define the term virus
4.4.4. Explain how computer can be infected with a Virus
4.4.5. Compare the security features of a Client/Server or a Peer-to-peer network

5.0 Network Operating Systems

5.1 General Terminology

5.1.1. Describe the difference between a Network operating system, computer programming language, browser, applications program and an editor.
5.1.2. List examples of each of the items in 5.1.1

5.2 UNIX and Microsoft Operating System

5.2.1. Discuss the reasons for the popularity of UNIX as a Web server operating system on the internet
5.2.2. Explain the primary differences between Windows 3.1 and Windows 95
5.2.3. Describe the basic services that were made available in Windows 3.11
5.2.4. List a reason for choosing one Web site operating system over another
5.2.5. Describe the NotePad utility
5.2.6. Describe how the NotePad utility develops Web Pages
5.2.7. Compare the security features of popular network operating systems

6.0 Web Browsers

6.1 General Terminology

6.1.1. Describe the functions of a browser
6.1.2. List the steps you would take to view a Web page using Netscape or Internet Explorer

6.1.3. List the steps you would take to view the source code of an HTML
6.1.4. Explain what a HYPERTEXT document is
6.1.5. Describe “Secure Sockets Layer” (by Netscape)
6.1.6. Describe the types of images two different browsers can recognize

7.0 HTML Basics

7.1 HTML Tags

7.1.1 Describe and demonstrate usage of:

7.1.1.1 Head
7.1.1.2 Title
7.1.1.3 Body
7.1.1.4 Headings (How many permitted)
7.1.1.5 Paragraphs
7.1.1.6 Lists
7.1.1.7 Performatted Text
7.1.1.8 Extended quotations
7.1.1.9 Line breaks
7.1.1.10 Bulleted lists
7.1.1.11 Addresses
7.1.1.12 Horizontal lines

7.2 Terms and Definitions associated with HTML

7.2.1.1 WWW World Wide Web
7.2.1.2 Web World Wide Web
7.2.1.3 SGML Standard Generalized Markup Language
7.2.1.4 DTD Document Type Definition
7.2.1.5 HTML Hypertext Markup Language
7.2.1.6 CGI Common Gateway
7.2.1.7 PERL Practical Extraction Reporting Language (programming language)
7.2.1.8 VLINK Method a browser uses to keep track of where you have been
7.2.1.9 JavaScript Object-oriented language by NetScape

7.3 Miscellaneous Terms and Definitions

7.3.1 Explain the difference between internal and external links
7.3.2 Describe “Radio Buttons”
7.3.3 List an example of how radio buttons are used on a Web page
7.3.4 Describe how anchors are used on Web page
7.3.5 List the functions you can implement with an image map
7.3.6 Describe the use of special characters such as the Ampersand (&) and Greater-than/less-than (<>)
7.3.7 Define the term “Homepage”
7.3.8 Name the correct number of characters in the ASCII alphabet
7.3.9 Espress the number of bits used to define a JPEG color format

8.0 Understanding and Using the TCP/IP Protocol Suite

8.1 General Terms and Functions

8.1.1 Describe the address field for IP diagrams
8.1.2 Define the authority for IP network addresses management
8.1.3 Explain the authority that handles network addresses and local host addresses
8.1.4 Explain the purpose of the time to live message field in an IP datagram
8.1.5 Explain why every Web site must have a unique IP address
8.1.6 Describe the function Domain naming system (DNS)
8.1.7 Identify a legal IP address

8.1.8 Identify an Illegal IP address
8.1.9 Explain the proper use and function of various TCP/IP diagnostic tools and commands
8.1.10 Define the term "Datagrams and show their relationship to the IP protocol
8.1.11 Define the term "connectionless" service with respect to the IP protocol
8.1.12 Describe the role of routing information protocol (RIP) and overall purpose in the TCP/IP suite of protocol
8.1.13 Define SMTP (Simple Mail Transfer Protocol) and explain its purpose
8.1.14 Explain the function of SNMP, (Simple Network Management Protocol)
8.1.15 Explain the reasons for establishing a new version of TCP/IP (TCP/Ipv6)
8.1.16 Explain the difference in the address field for TCP/IP version 4 and TCP/IP version 6
8.1.17 Describe how the TCP/IP protocol suites translates between logical and physical addresses

9.0 World Class Service

9.1 Explain what "Commit to Quality" means
9.2 Describe what is meant by "Focusing on the customer's service problem"
9.3 Describe the benefits of getting the customer involved in resolving problem
9.4 Explain the benefits of the Web specialist constantly improving his/her abilities with networks as well as with customers
9.5 Explain the "Integrity" as it relates to the work of a Web specialist

10.0 **Objectives of Service**

10.1 Explain how the business or owner of the web page is benefited by the following services of the web specialist:
10.1.1 Education
10.1.2 Information
10.1.3 Relating
10.1.4 Delivering
10.1.5 Supporting
10.2 Describe the benefits to the web specialist in keeping up to date-understand maximum information about the operation, functions, hardware and software products and services offered
10.3 Describe how the web specialist can put himself in the shoes of the customer-be available and make proper contacts and know why customers call his/her firm.
10.4 List 5 words or phrases that "turn customers off"

11.0 Telephone

11.1 Discuss the telephone system and how it is used with the Internet system CWS
11.2 Describe the theory and usage of telephone communications.
11.3 List common problems associated with computers, networks and telco long and local distance hardware commonly affecting Internet service

12.0 Troubleshooting

12.1 Utilize diagnostic tools to trace Internet packet
12.2 Explain how transmission capacities commonly cause conflicts in Web operations

13.0 Computers

13.1 List 5 problems which may appear to be Web site defects but actually computer hardware problems
13.2 List 5 problems which may appear to be Web site defects but which are actually computer software problems
13.3 List 5 problems which may appear to be Web site defects but which are actually local area network problems

14.0 Safety

14.1 List 5 ways a Web specialist might compromise the security of a business operation by not practicing good Internet security procedures

14.2 List 5 ways the Web specialist can avoid accidental damage to LAN and WAN files and documents

15.0 Graphics

15.1 List the perceived advantages of popular graphics software

15.2 List 5 commercial graphics programs and describe the advantages in using color, graphics, tabs and links which to enhance the design and ease of use in web page design and operation

16.0 Customer Service Relationships

16.1 Compare the relationships between marketing, sales and customer service departments of a company

16.2 List various methods which businesses use to attract and retain business

16.3 Discuses how a viable sales department operates and its relationship to marketing and customer service and thus how the web page is utilized within the business plan

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Study Materials Suggestions:

A Beginners Guide to html FROM THE ncsa (Published on the Internet by the NCSA via the University of Illinois, 1-16-98)
Web Publishing with HTML 3.0, 2nd Ed. Laura Lemay; H. W. Sams Co, Indpls, IN

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