Name:_____ Class:_____ Date:_____

Chapter 02 Technology Infrastructure: The Internet and the World Wide Web

1. Networks of computers and the Internet that connects them to each other form the basic technological structure that underlies virtually all electronic commerce.

a. True

b. False

ANSWER: True

2. The USENET was the earliest of the networks that eventually combined to become what we now call the Internet.

a. True

b. False

ANSWER: False

3. E-mail was born in 1972 when a researcher wrote a program that could send and receive messages over the Defense Department network.

a. True

b. False

ANSWER: True

4. The first e-mail mailing lists appeared on military and education research networks.

a. True

b. False

ANSWER: True

5. A network of computers that are located in the same building is called a wide area network.

a. True

b. False

ANSWER: False

6. The Internet provides a high degree of security in its basic structure.

a. True

b. False

ANSWER: False

7. An intranet extends beyond the organization that created it.

a. True

b. False

ANSWER: False

8. The word "virtual," used as part of virtual private networks means that the network connection is permanent.

a. True

b. False

ANSWER: False

9. Virtual private network software must be installed on the computers at both ends of a transmission.
   a. True
   b. False

ANSWER: True

10. Extranets were used to save money and increase efficiency by replacing traditional communication tools such as fax, telephone, and overnight express document carriers.
   a. True
   b. False

ANSWER: True

11. Public networks, private networks, and VPNs are independent of organizational boundaries.
   a. True
   b. False

ANSWER: True

12. IP addresses appear as five decimal numbers separated by periods.
   a. True
   b. False

ANSWER: False

13. Simple Mail Transfer Protocol (SMTP) is a common protocol used for sending and retrieving e-mail.
   a. True
   b. False

ANSWER: True

14. The Post Office Protocol (POP) provides support for Multipurpose Internet Mail Extensions (MIME).
   a. True
   b. False

ANSWER: True

15. Post Office Protocol (POP) allows the user to view only the header and the e-mail sender's name before deciding to download the entire message.
   a. True
   b. False

ANSWER: False

16. At a technological level, the Web is nothing more than software that runs on computers that are connected to the Internet.
   a. True
   b. False

ANSWER: True

17. An HTML document is similar to a word-processing document in that it specifies how a particular text element will appear.

a. True

b. False

ANSWER: False

18. The leftmost part of a domain name is called a top-level domain (TLD).

a. True

b. False

ANSWER: False

19. The Internet Corporation for Assigned Names and Numbers (ICANN) has the responsibility of managing domain names and coordinating them with the IP address registrars.

a. True

b. False

ANSWER: True

20. The most important parts of a Web page are the graphics, photographs, and small programs that run in the Web browser.

a. True

b. False

ANSWER: False

21. A hierarchical hyperlink structure resembles conventional paper documents in that the reader begins on the first page and clicks the Next button to move to the next page in a serial fashion.

a. True

b. False

ANSWER: False

22. The term "cascading" is used in cascading style sheets because designers can apply many style sheets to the same Web page, one on top of the other.

a. True

b. False

ANSWER: True

23. Data-type definitions (DTD's) are a form of common standard for XML tags.

a. True

b. False

ANSWER: True

24. The higher the bandwidth, the faster the transmission of data through a communication medium.

a. True

b. False

ANSWER: True

25. One broadband option is a higher grade of telephone service using a DSL modem
    a. True
    b. False
ANSWER: False

26. In 2014 the number of mobile phones was greater than the planet's population
    a. True
    b. False
ANSWER: True

27. The Semantic Web project envisions words on Web pages being tagged with their meanings.
    a. True
    b. False
ANSWER: True

28. The combination of telephone lines and the closed switches that connect them to each other is called a _____.
    a. LAN b. WAN
    c. circuit d. pathway
ANSWER: c

29. The computers that decide how best to forward each packet from one network to another are called _____.
    a. switches b. bridges
    c. routers d. repeaters
ANSWER: c

30. Files and e-mail messages sent over the Internet are broken down into small pieces called _____.
    a. messages b. switches
    c. circuits d. packets
ANSWER: d

31. The programs on gateway computers that determine the best path on which to send each packet contain rules called _____.
    a. program profilers b. empirical algorithms
    c. software profilers d. routing algorithms
ANSWER: d

32. A _____ is a permanent telephone connection between two points.
    a. dedicated line b. party line
    c. leased line d. local line
ANSWER: c

33. _____ is a connection that uses public networks and their protocols to send data using a technology called IP tunneling.

a. A personal area network b. The Internet

c. A virtual private network d. The World Wide Web

ANSWER: c

34. _____ creates a private passageway through the public Internet that provides secure transmission from one computer to another.

a. IP tunneling b. Circuit switching

c. Encapsulation d. Subnetting

ANSWER: a

35. A _____ is a collection of rules for formatting, ordering, and error checking data sent across a network.

a. style sheet b. semantic

c. protocol d. packet

ANSWER: c

36. _____ determine how a sending device indicates that it has finished sending a message and how the receiving device indicates that it has received the message.

a. Routers b. Semantics

c. Protocols d. Switches

ANSWER: c

37. The 32-bit number used to identify computers connected to the Internet is known as the _____.

a. IP address b. NSAP address

c. MAC address d. OUI address

ANSWER: a

38. In subnetting, a computer called a _____ device converts private IP addresses into normal IP addresses when it forwards packets from those computers to the Internet.

a. Network Address Translation (NAT) b. Network Interface Controller (NIC)

c. Generic Routing Encapsulation (GRE) d. Data Circuit-Terminating (DCE)

ANSWER: a

39. IPv6 uses a _____ number for addresses.

a. 32-bit b. 56-bit

c. 128-bit d. 48-bit

ANSWER: c

40. _____ specifies the format of a mail message and describes how mail is to be administered on the e-mail server and transmitted on the Internet.

a. Multipurpose Internet Mail Extensions (MIME) b. Simple Mail Transfer Protocol (SMTP)

c. Interactive Mail Access Protocol (IMAP) d. Post Office Protocol (POP)

ANSWER: b

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41. _____ is a set of rules for handling binary files, such as word-processing documents, spreadsheets, photos, or sound clips that are attached to e-mail messages.

a. SMTP b. TCP/IP
c. MIME d. POP

ANSWER: c

42. The combination of a protocol name and a domain name is called a(n) _____.

a. Uniform Resource Locator (URL) b. Internationalized Resource Identifier (IRI)
c. Extensible Resource Descriptor Sequence (XRDS) d. Extensible Resource Identifier (XRI)

ANSWER: a

43. The purpose of a(n) _____ is to respond to requests for Web pages from Web clients.

a. DNS server b. e-mail server
c. Web server d. database server

ANSWER: c

44. _____ lets users create and manipulate e-mail folders and individual e-mail messages while the messages are still on the e-mail server.

a. POP b. SMTP
c. IMAP d. MIME

ANSWER: c

45. A newer e-mail protocol that performs the same basic functions as POP, but includes additional features, is known as _____.

a. IMAP b. SMTP
c. POP3 d. TCP

ANSWER: a

46. HTML was developed by _____.

a. Robert Kahn b. Vinton Cerf
c. Ted Nelson d. Tim Berners-Lee

ANSWER: d

47. _____ was the first Web browser that became widely available for personal computers.

a. Mosaic b. Netscape
c. Internet Explorer d. CompuServe

ANSWER: a

48. _____ are sets of words that are assigned to specific IP addresses.

a. Domain names b. URLs
c. Octets d. Headers

ANSWER: a

49. The early versions of _____ let Web page designers create text-based electronic documents with headings, title bar titles, bullets, lines, and ordered lists.

a. HTTP b. HTML

c. SGML d. XML

ANSWER: b

50. The _____ in an HTML document are interpreted by the web browser and used by it to format the display of enclosed text.

a. tags b. links

c. markups d. style sheet

ANSWER: a

51. A _____ structure resembles an inverted tree in which the root is at the top and the branches are below it.

a. parabolic hyperlink b. hierarchical hyperlink

c. rooted hyperlink d. linear hyperlink

ANSWER: b

52. A(n) _____ has a hypertext reference (HREF) property, which specifies the remote or local document's address.

a. closing tag b. paragraph tag

c. opening tag d. bold tag

ANSWER: c

53. In HTML, hyperlinks are created using the HTML _____ tag.

a. head b. anchor

c. title d. opening

ANSWER: b

54. A device that transmits network packets between Wi-Fi equipped computers and other devices within range is a _____

a. wireless access point b. piconet

c. hot spot d. blue tooth

ANSWER: a

55. A(n) _____ is any technology that allows people to connect computers to each other.

ANSWER: computer network

56. A computer network which uses a specific set of rules and connects networks all over the world to each other is called the _____.

ANSWER: Internet

57. _____ is a subset of the computers on the Internet that are connected to one another in a specific way that makes them and their contents easily accessible to each other.

ANSWER: World Wide Web (WWW)
WWW
World Wide Web

58. A(n) _____ is an e-mail address that forwards any message it receives to any user who has subscribed to the list.
ANSWER: mailing list

59. In 1979, a group of students and programmers at Duke University and the University of North Carolina started _____, which allows anyone who connects to the network to read and post articles on a variety of subjects.
ANSWER: Usenet
User's News Network
User's News Network (Usenet)

60. Usenet survives on the Internet today, with more than 1000 different topic areas that are called _____.
ANSWER: newsgroups

61. Internet _____ are computers that are directly connected to the Internet.
ANSWER: hosts

62. Companies known as _____ sell Internet access rights directly to larger customers and indirectly to smaller firms and individuals through other companies, called ISPs.
ANSWER: network access providers

63. The subset of the Internet that includes computers and sensors connected to each other for communication and automatic transaction processing is called the _____.
ANSWER: Internet of Things

64. A(n) _____ is used when the Internet extends beyond the boundaries of an organization and includes networks of other organizations.
ANSWER: extranet

65. The _____ controls the disassembly of a message or a file into packets before it is transmitted over the Internet, and it controls the reassembly of those packets into their original formats when they reach their destinations.
ANSWER: Transmission Control Protocol
TCP
Transmission Control Protocol (TCP)

66. The _____ in TCP/IP specifies the addressing details for each packet, labeling each with the packet's origination and destination addresses.
ANSWER: Internet Protocol
IP
Internet Protocol (IP)

67. The set of rules for delivering Web page files over the Internet is in a protocol called the _____.
ANSWER: Hypertext Transfer Protocol (HTTP)

68. A(n) _____ is a computer that stores files written in HTML.
ANSWER: hypertext server

69. The _____ can be difficult or impossible to research because available data that is never requested remains hidden.
ANSWER: deep web

70. A(n) _____ is a language that can be used to define other languages.
ANSWER: metalanguage

71. HTML, XML, and XHTML have descended from the original _____ specification.
ANSWER: Standard Generalized Markup Language (SGML)
Standard Generalized Markup Language
SGML

72. In HTML, the text elements that are related to each another are called _____ elements.
ANSWER: hypertext

73. A(n) _____ hyperlink structure resembles conventional paper documents in that the reader begins on the first page and clicks a Next button to move to the next page in a serial fashion.
ANSWER: linear

74. A(n) _____ is a set of instructions that gives Web developers more control over the format of displayed pages.
ANSWER: style sheet

75. _____ uses paired start and stop tags in much the same way as database software defines a record structure.
ANSWER: XML
Extensible Markup Language (XML)
Extensible Markup Language

76. _____ tags convey the meaning (the semantics) of the information included within them.
ANSWER: Extensible Markup Language (XML)
Extensible Markup Language
XML

77. _____ is the amount of data that can travel through a communication medium per unit of time.
ANSWER: Bandwidth

78. _____ is a measure of the amount of information that can travel from a user to the Internet in a given amount of time.
ANSWER: Upstream bandwidth
Upload bandwidth

79. A group of network research scientists from nearly 200 universities and a number of major corporations joined together in 1996 to recapture the original enthusiasm of the ARPANET and created an advanced research network called _____.
ANSWER: Internet2

80. A(n) _____ is a set of standards that defines, in detail, the relationships among resource description framework (RDF) standards and specific extensible markup language (XML) tags within a particular knowledge domain.
ANSWER: ontology

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81. Describe the process of routing packets in a network.

ANSWER: As an individual packet travels from one network to another, the computers through which the packet travels determine the most efficient route for getting the packet to its destination. The most efficient route changes from second to second, depending on how much traffic each computer on the Internet is handling at each moment. The computers that decide how to best forward each packet are called routing computers, router computers, routers, gateway computers (because they act as the gateway from a LAN or WAN to the Internet), border routers, or edge routers (because they are located at the border between the organization and the Internet or at the edge of the organization.) The programs on the routers that determine the best path on which to send each packet contain rules called routing algorithms. The programs apply these algorithms to information they have stored in routing tables or configuration tables. This information includes lists of connections that lead to particular groups of other routers, rules that specify which connection to use first, and rules for handling instances of heavy packet traffic and network congestion.

82. What is the difference between a public network and a private network?

ANSWER: A public network is any computer network or telecommunications network that is available to the public. The Internet is one example of a public network. Public networks such as the Internet do not provide much security as part of their basic structures.

A private network is a leased-line connection between two companies that physically connects their computers and/or networks to one another. A leased line is a permanent telephone connection between two points. Unlike the telephone circuit connection you create when you dial a telephone number, a leased line is always active. The advantage of a leased line is security. Only the two parties that lease the line to create the private network have access to the connection.

83. Identify the four key rules for message handling.

ANSWER: The open architecture philosophy developed for the evolving ARPANET, which later became the core of the Internet, included the use of a common protocol for all computers connected to the Internet and four key rules for message handling:

1) Independent networks should not require any internal changes to be connected to the network.
2) Packets that do not arrive at their destinations must be retransmitted from their source network.
3) Router computers act as receive-and-forward devices; they do not retain information about the packets that they handle.
4) No global control exists over the network.

84. Describe the two main protocols used by the Internet.

ANSWER: The Internet uses two main protocols: the Transmission Control Protocol (TCP) and the Internet Protocol (IP). The TCP controls the disassembly of a message or a file into packets before it is transmitted over the Internet, and it controls the reassembly of those packets into their original formats when they reach their destinations. The IP specifies the addressing details for each packet, labeling each with the packet's origination and destination addresses.

85. What are the advantages of Bluetooth technology?

ANSWER: One major advantage of Bluetooth technology is that it consumes very little power, which is an important consideration for many devices. Another advantage is that Bluetooth devices can discover each other and exchange information automatically. For example, a person using a laptop computer in a temporary office can print to a local Bluetooth-enabled printer without logging in to the network or installing software on either device. The printer and laptop computer electronically recognize each other as Bluetooth devices and can immediately begin exchanging information.