Câu hỏi Chương 5

5.1 In OSI model, addressing and routing functions of the system are provided by _____
A. Application layer
B. Transport layer
C. Network layer
D. Session layer

5.2 How many usable IP addresses are available on the 192.168.1.0/25 network?
A. 156
B. 126
C. 128
D. 62

5.3 What is the size of an IPv4 address?
A. 128 bit
B. 64 bit
C. 32 bit
D. 16 bit

5.4 A _____ is a device that forwards packets between networks by processing the routing information included in the packet.
A. Bridge
B. Firewall
C. Router
D. Hub

5.5 Which routing protocol is used by routers between the different autonomous systems?
A. RIP
B. IGRP
C. OSPF
D. BGP

5.6 Suppose that the IP address and Subnet mask of a computer is 10.0.0.192/24. What is its network address and broadcast address?
A. 10.0.0.0 & 10.0.0.255
B. 10.0.0.255 & 10.255.0.255
C. 10.0.0.224 & 10.255.255.0
D. 10.0.0.0 & 10.255.255.255

5.7 How many IP addresses can be assigned to hosts in a C class network segment with a subnet mask of 255.255.255.192?
A. 62
B. 30

C. 14
D. 254

5.8 Datagram routing is done at which layer of OSI model?
A. Network layer
B. Physical layer
C. Application layer
D. Transport layer

5.9 Which statement accurately describes a characteristic of IPv4?
A. All IPv4 header has fewer fields than an IPv6 header has
B. All IPv4 addresses are assignable to hosts
C. IPv4 has 32-bit address space
D. IPv4 natively supports IPsec

5.10 The TTL field has value 12. How many maximum routers can process this datagram?
A. 10
B. 11
C. 12
D. 15

5.11 What was the reason for the creation and implementation of IPv6?
A. to make reading a 32-bit address easier
B. to provide more address space in the Internet Names Registry
C. to relieve IPv4 address depletion
D. to allow NAT support for private addressing

5.12 What is its corresponding binary format of IP address 192.168.1.3?
A. 11000000. 10101000. 00000001. 00000011
B. 11000000. 10101000. 10000001. 10000110
C. 10000011. 10101000. 00000001. 00000011
D. 11000000. 10101010. 00000001. 10000011

5.13 Which of the following IP addresses are the private IP addresses?
A. 11.11.11.1; 173.16.0.1; 193.168.1.2
B. 10.10.10.1; 172.16.0.1; 192.168.1.2
C. 12.12.12.1; 174.16.0.1; 194.168.1.2
D. 133.13.13.1; 175.16.0.1; 195.168.1.2

5.14 The network layer packets do not contain which of the following information?
A. The IP address of the sending computer
B. The MAC address of the sending computer
C. The IP address of the receiving computer
D. IP packet size

5.15 Which subnet mask would be used if exactly 4 host bits are available?
A. 255.255.255.248
B. 255.255.255.240
C. 255.255.255.224
D.255.255.255.128

5.16 Which service(s) does the Network layer provide?
A. None of the mentioned
B. Error control service
C. Flow control service
D. File transfer service

5.17 What are the following planes organized for the network layer of the computer network?
A. Physical plane – Data link plane
B. MAC plane – Data link plane
C. Control plane – Data plane
D. Data link plane – Transport plane

5.18 Which of the following is the implementation of distance vector approach in the IP routing protocol?
A. OSPF
B. RIP
C. BGP
D. None of the mentioned

5.19 What will happen if the default gateway address is incorrectly configured on a host?
A. The host cannot communicate with hosts in other networks.
B. The host cannot communicate with other hosts in the local network.
C. A ping from the host to 127.0.0.1 would not be successful.
D. The switch will not forward packets initiated by the host.

5.20 Suppose that the IP address and the Subnet mask of a computer is 172.16.14.250/24. What are its network address and broadcast address?
A. 172.16.14.250 & 172.16.14.0
B. 172.16.14.0 & 172.16.14.255
C. 172.16.14.250 & 255.255.255.0
D. 172.16.14.250 & 172.16.14.255

5.21 What routing algorithm is required to broadcast information to all other routers?
A. Link sate
B. Distance vector
C. BGP
D. IGMP

5.22 What is the main function of the Network Layer?
A. Manage data transmission over the physical layer
B. Establish and maintain connections between devices
C. Provide a uniform addressing scheme for data transmission
D. Ensure reliable end-to-end delivery of data

5.23 Which of the following is a type of addressing used in the Network Layer?
A. Physical Address
B. Port Address
C. MAC Address
D. IP Address

5.24 Which of the following is a characteristic of the IPv6 protocol?
A. Uses 32-bit addresses
B. Provides less security compared to IPv4
C. Supports only unicast transmission
D. Uses 128-bit addresses

5.25 Which of the following is NOT a feature of the Network Layer?
A. Connection-oriented service
B. Best-effort service
C. Quality of Service (QoS) support
D. Flow control

5.26 What is the maximum number of unique IPv4 addresses?
A. 128
B. 256
C. 2^32
D. 2^64

5.27 Correct explanation for IPv4 datagram format?
A. Source IP address 32 bits
B. Source IP address 48 bits
C. IP Header size 16 bits
D. IP Header size 20 bits

5.28 An organization has a class B network and is divided into subnets for 64 departments. The subnet mask would be _____
A. 255.255.252.0
B. 255.255.128.0
C. 255.255.64.0
D. 255.255.0.0

5.29 What is the main function of network layer?
A. To provide error correction for data transmission.
B. To provide logical communication between application process.
C. To address and route packets across different networks.
D. To control data flow of the network service.

5.30 Which subnet would include the address 192.168.1.96 as a usable host address?
A. 192.168.1.32/27
B. 192.168.1.32/28
C. 192.168.1.64/29
D. 192.168.1.64/26

5.31 The network layer transmits _____ of data.
A. Bits
B. Frames
C. Packets
D. Bytes

5.32 How many usable IP addresses are available on the 192.168.1.0/27 network?
A. 256
B. 254
C. 62
D. 30

5.33 Given the network address 192.168.1.0 and the subnet mask 255.255.255.192. How many subnets are there?
A. 4
B. 254
C. 62
D. 30

5.34 What is the size of an IPv6 address?
A. 128 bit
B. 64 bit
C. 32 bit
D. 16 bit

5.35 Which routing protocol below is used to transmit between the autonomous systems?
A. RIP
B. IGRP
C. OSPF
D. BGP

5.36 Which IP address is reserved for loop-back (localhost)?

A. 224.x.x.x
B. 127.x.x.x
C. 0.0.0.0
D. 255.255.255.255

5.37 How many IP addresses can be assigned to hosts in a C class network segment with a subnet mask of 255.255.255.192?
A. 62
B. 30
C. 14
D. 254

5.38 In shortest path routing algorithm, the path length is measured by _____
A. Time delay
B. Number of hops
C. Size of the routers
D. Routing table

5.39 Distance vector routing algorithm is implemented in Internet as _____
A. OSPF
B. RIP
C. ARP
D. RARP

5.40 Link state routing algorithm is implemented in Internet as _____
A. OSPF
B. RIP
C. ARP
D. RARP

5.41 IPv4 addresses are _____ bits in binary notation.
A. 4
B. 16
C. 32
D. 48

5.42 IPv6 addresses are _____ hextets (sixteen-bit) in hexadecimal notation.
A. 6
B. 8
C. 16
D. 128

5.43 Suppose that the IP address of a LAN is 192.168.10.0/24. How many IP addresses are available to be assigned to hosts (or PCs) of that LAN?

A. 128
B. 254
C. 255
D. 256

5.44 What is its corresponding binary format of IP address 10.168.11.3?
A. 00001010. 10101000. 00001011. 00000011
B. 00001010. 10101000. 10001001. 10000110
C. 00001010. 10000000. 00001101. 00000011
D. 00000101. 10101010. 00000111. 10000001

5.45 Which value, that is contained in an IPv4 header field, is decremented (reduced) after passing each router?
A. Time-to-Live
B. Differentiated Services
C. Fragment Offset
D. Header Length

5.46 The Bellman-Ford routing algorithm is categorized as _____
A. A distance vector routing protocol
B. A hierarchical routing protocol
C. An inter-AS routing protocol
D. A link-state routing algorithm

5.47 Which of the following routing protocols uses relative distance vector as the metric?
A. BGP
B. RIP
C. OSPF
D. EIGRP

5.48 IP address reside at which layer of the OSI reference model?
A. Network layer
B. Transport layer
C. Physical layer
D. Data link layer

5.49 In classful addressing, an IP address 226.126.26.14 belongs to _____ class format.
A. Class A
B. Class B
C. Class C
D. Class D

5.50 What layer in the OSI model has an IP address?
A. Network

B. Internet
C. Application
D. Data link