Tolentino, Shawn Nicholas F.   **BSIT-2107**

QUIZ – Modules 12, 13, and 14

📘 MODULE 12 – IPv6 Addressing (10 Multiple Choice)

1. How many bits does an IPv6 address contain?

a. 32

b. 64

c. 128

d. 256

2. Which prefix is used for Link-Local addresses?

a. ff00::/8

b. 2000::/3

c. fe80::/10

d. fc00::/7

3. What is the correct compressed form of:
2001:0db8:0000:0000:0000:abcd:0000:0100

a. 2001:db8::abcd:0:100

b. 2001:db8:0:0:abcd::100

c. 2001:db8::abcd::100

d. 2001::abcd:100

4. How many times may :: appear in one IPv6 address?

a. Unlimited times

b. Twice

c. Once

d. Only if the address is all zeros

5. Which type of IPv6 address is similar to private IPv4 ranges?

a. GUA

b. ULA

c. Anycast

d. LLA

6. What is the typical subnet size for IPv6 LANs?

a. /16

b. /48

c. /64

d. /128

7. Which method uses the router advertisement to generate an IPv6 address automatically?

a. Stateful DHCPv6

b. SLAAC

c. NAT64

d. Manual EUI-64

8. Which of the following IPv6 multicast addresses is for all-nodes?

a. ff02::2

b. ff02::1

c. ff00::1

d. fe80::1

9. What is the first step in generating an EUI-64 Interface ID?

a. Insert FFFE in the center of the MAC

b. Flip the seventh bit

c. Convert MAC to binary

d. Split the MAC into two 24-bit halves

10. Which transition method allows a device to run IPv4 and IPv6 simultaneously?

a. Tunneling

b. NAT64

c. Dual Stack

d. Proxy ARP

📙 MODULE 13 – ICMP / ICMPv6 (10 Multiple Choice)

11. Which ICMP messages are used by ping?

a. Timestamp / Address Mask Response

b. Echo Request / Echo Reply

c. Time Exceeded / Redirect

d. Port Unreachable / Host Unreachable

12. ICMP is primarily used for:

a. Delivering application data

b. Forwarding e-commerce traffic

c. Error reporting & diagnostics

d. Encrypting network traffic

13. Time Exceeded occurs when:

a. Source port is invalid

b. Hop limit or TTL reaches zero

c. DNS fails

d. Connection timeout happens

14. In IPv6, Neighbor Discovery replaces which IPv4 protocol?

a. DHCP

b. ARP

c. DNS

d. NAT

15. Router Advertisement messages are used for:

a. Checking duplicate addresses

b. Advertising prefix, DNS info, and gateway

c. Testing round-trip delay

d. Tracing the network path

16. Which ICMPv6 message is used for Duplicate Address Detection (DAD)?

a. NS (Neighbor Solicitation)

b. RA

c. Redirect

d. Time Exceeded

17. When a UDP port is closed at the destination, what ICMP message is returned?

a. Port Unreachable

b. Host Unreachable

c. Echo Reply

d. TTL Expired

18. What is the purpose of ICMP Redirect messages?

a. Provide faster routing path

b. Reassign IP addresses

c. Configure DNS servers

d. Stop packet forwarding

19. Which command uses ICMP Time Exceeded to determine the path to a destination?

a. nslookup

b. tracert / traceroute

c. ipconfig

d. arp -a

20. A ping test shows "Request timed out." What is the *least* likely reason?

a. Host is offline

b. ICMP is blocked by firewall

c. Default gateway unreachable

d. Wrong subnet mask **in TCP**

📗 MODULE 14 – Transport Layer (10 Questions: 5 MC + 5 Short Answer)

Multiple Choice (5)

21. Which protocol is reliable and connection-oriented?

a. UDP

b. TCP

c. ARP

d. ICMP

22. Which protocol is best for real-time voice or gaming?

a. TCP

b. UDP

c. FTP

d. SMTP

23. What is the correct order in the TCP 3-way handshake?

a. FIN → ACK → FIN

b. SYN → SYN-ACK → ACK

c. ACK → SYN-ACK → SYN

d. SYN → ACK → SYN-ACK

24. What is a socket?

a. A type of router

b. A combination of IP address + port number

c. A default gateway identifier

d. A DNS alias

25. Which port is used by HTTPS?

a. 80

b. 23

c. 53

d. 443

Short Answer (5)

26. What does segmentation mean in TCP/UDP?
→ Segmentation is done when we need to transfer large data into networks, we use segments in TCP or datagrams in UDP. After segmentation, data will be reassembled for the end users and will be sorted with the help of tracking.

27. Give one reason why TCP is considered reliable.
→ TCP uses retransmission to guarantee that the data will be delivered to its destination. When a sender transmits data, the receiver must acknowledge receipt. If the acknowledgment isn't received within a certain time, TCP automatically retransmits the data.

28. Give one example of an application that uses UDP.

→ Messenger (audio calls)

29. What is the purpose of flow control in TCP?

→ Flow control is used to prevent the sender from overwhelming the receiver, TCP advertises the window size of the receiver which is the limit of receiving messages. The sender then adjusts the transmission rate accordingly.

30. What type of port number range is 49152–65535?
→ Dynamic or Ephemeral port range