Implementing IP addressing and network infrastructure services

1. What is the primary purpose of DHCP in a network?

  - A) To assign IP addresses dynamically to devices

  - B) To provide secure access to the network

  - C) To route traffic between different networks

  - D) To monitor network performance

  - Answer: A

2. Which protocol is commonly used to assign IP addresses dynamically in a network?

  - A) TCP

  - B) UDP

  - C) DHCP

  - D) HTTP

  - Answer: C

3. What is the purpose of a subnet mask in IP addressing?

  - A) To identify the network portion of an IP address

- B) To identify the host portion of an IP address

  - C) To determine the default gateway

  - D) To encrypt data transmitted over the network

  - Answer: A

4. Which of the following is a private IP address range according to RFC 1918?

  - A) 172.16.0.0 - 172.31.255.255

  - B) 192.168.0.0 - 192.168.255.255

  - C) 10.0.0.0 - 10.255.255.255

  - D) All of the above

  - Answer: D

5. What is the purpose of a default gateway in a network?

  - A) To connect two different networks

  - B) To provide a backup path in case of network failure

  - C) To identify the network portion of an IP address

  - D) To forward packets to other networks

  - Answer: D

6. Which of the following services is used to resolve hostnames to IP addresses?

   - A) DNS

   - B) DHCP

   - C) NAT

   - D) ARP

   - Answer: A

7. What is the purpose of NAT (Network Address Translation) in a network?

   - A) To provide secure access to the network

   - B) To translate private IP addresses to public IP addresses

   - C) To assign IP addresses dynamically to devices

   - D) To route traffic between different networks

   - Answer: B

8. Which of the following is a valid IPv6 address format?

   - A) 192.168.1.1

- B) 2001:0db8:85a3:0000:0000:8a2e:0370:7334

   - C) 255.255.255.0

   - D) ::1

   - Answer: B

9. What is the purpose of ICMP in IP networking?

   - A) To encrypt data transmitted over the network

   - B) To manage IP address assignments

   - C) To diagnose network connectivity issues

   - D) To provide secure access to the network

   - Answer: C

10. Which of the following is true about a static IP address?

   - A) It is assigned dynamically by a DHCP server

   - B) It does not change over time

   - C) It is used for temporary network connections

   - D) It is less secure than a dynamic IP address

   - Answer: B

11. Which protocol is used to automatically assign IP addresses to network devices?

   - A) DNS

   - B) DHCP

   - C) NAT

   - D) FTP

   - Answer: B

12. What is the purpose of a DNS server in a network?

   - A) To assign IP addresses to devices

   - B) To translate hostnames to IP addresses

   - C) To provide secure access to the network

   - D) To route traffic between different networks

   - Answer: B

13. What is the purpose of the ARP protocol?

   - A) To resolve IP addresses to MAC addresses

   - B) To assign IP addresses dynamically

   - C) To encrypt data transmitted over the network

   - D) To manage network traffic

- Answer: A

14. Which of the following is a valid IPv4 address?

   - A) 2001:0db8:85a3:0000:0000:8a2e:0370:7334

   - B) 192.168.1.1

   - C) ::1

   - D) 255.255.255.0

   - Answer: B

15. What is the purpose of a subnet in a network?

   - A) To connect two different networks

   - B) To divide a large network into smaller, manageable segments

   - C) To translate private IP addresses to public IP addresses

   - D) To assign IP addresses dynamically to devices

   - Answer: B

16. Which of the following is a valid IPv6 address?

   - A) 192.168.1.1

   - B) 2001:0db8:85a3:0000:0000:8a2e:0370:7334

- C) 255.255.255.0

- D) ::1

- Answer: B

17. What is the purpose of a DHCP relay agent?

- A) To assign IP addresses to devices

- B) To forward DHCP messages between clients and servers on different subnets

- C) To provide secure access to the network

- D) To translate private IP addresses to public IP addresses

- Answer: B

18. Which of the following is a valid IPv4 address?

- A) 2001:0db8:85a3:0000:0000:8a2e:0370:7334

- B) 192.168.1.1

- C) ::1

- D) 255.255.255.0

- Answer: B

19. What is the purpose of a DNS server in a network?

- A) To assign IP addresses to devices

    - B) To translate hostnames to IP addresses

    - C) To provide secure access to the network

    - D) To route traffic between different networks

    - Answer: B

20. Which of the following is a valid IPv6 address?

    - A) 192.168.1.1

    - B) 2001:0db8:85a3:0000:0000:8a2e:0370:7334

    - C) 255.255.255.0

    - D) ::1

    - Answer: B

21. What is the purpose of a subnet mask in IP addressing?

    - A) To identify the network portion of an IP address

    - B) To identify the host portion of an IP address

    - C) To determine the default gateway

    - D) To encrypt data transmitted over the network

    - Answer: A

22. Which of the following is a private IP address range according to RFC 1918?

   - A) 172.16.0.