Network Interview Questions

Basic Level Questions

1. What is a computer network?
2. Explain the difference between **IPv4** and **IPv6** in terms of address length.
3. What is the **OSI model**, and why is it important?
4. Name the seven layers of the OSI model.
5. What is the function of the **Physical Layer**?
6. Which layer of the OSI model handles logical addressing and routing?
7. What is the primary purpose of a **VPC** (Virtual Private Cloud)?
8. Differentiate between a **public subnet** and a **private subnet**.
9. What is a **route table** in a network?
10. What's the difference between a **TCP** and a **UDP** protocol?
11. Give an example of a protocol that uses TCP.
12. Give an example of a protocol that uses UDP.
13. What is a **port**?
14. What does **NACL** (Network Access Control List) stand for?
15. What is the purpose of a **Security Group (SG)**?
16. What is a **firewall**?
17. How is an **IP address** different from a **MAC address**?
18. What is a **subnet mask**?
19. What is the role of **DNS** (Domain Name System)?
20. What is **DHCP**?
21. What is an **Internet Gateway**?
22. How does an **SMTP** server work?
23. What is **FTP** (File Transfer Protocol)?
24. What are **HTTP** and **HTTPS**?
25. What is the purpose of **ping** command?
26. What is the difference between a **router** and a **switch**?
27. What does **VoIP** stand for?
28. What is a **network topology**?
29. What is **network latency**?
30. What is the difference between an **intranet** and an **internet**?

Intermediate Level Questions

31. Explain the **TCP three-way handshake**.
32. Why is UDP used for video streaming and online gaming?
33. Describe how a **NAT Gateway** allows instances in a private subnet to access the internet.
34. How do **NACLs** and **Security Groups** work together to secure a subnet?
35. Which is **stateful**, a NACL or a Security Group? Explain the difference.
36. What is a **CIDR block**, and how is it used in IP addressing?
37. Explain how a packet travels from a source to a destination across a network.
38. What is the function of the **Transport Layer** and what does it handle?
39. Describe the role of the **Network Layer**.

40. How does **DNS resolution** happen step-by-step?
41. What is **VPC Peering**, and when would you use it?
42. How does a **router** make a routing decision?
43. What is the purpose of a **private route table**?
44. Explain the concept of **subnetting** a network.
45. What is the difference between **static** and **dynamic** IP addresses?
46. What is **ARP** (Address Resolution Protocol)?
47. How would you troubleshoot a connectivity issue between two servers in different subnets?
48. What is a **DMZ** (Demilitarized Zone)?
49. How do you secure a web server in a public subnet?
50. What are the advantages of using **IPv6** over IPv4?
51. What is the purpose of **SNMP** (Simple Network Management Protocol)?
52. What is a **DHCP lease**?
53. Explain the difference between **Unicast**, **Multicast**, and **Broadcast** traffic.
54. What is **SSH** (Secure Shell) and which port does it use?
55. What is **VPN** (Virtual Private Network)?
56. What is the purpose of a **proxy server**?
57. What is **ICMP** (Internet Control Message Protocol)?
58. What is a **VLAN** (Virtual Local Area Network)?
59. What is a **load balancer**, and why is it used?
60. Explain the concept of **network virtualization**.
61. What is a **static route**?
62. How does **TCP congestion control** work?
63. What are **well-known ports**? Give an example.
64. What is a **firewall rule**?
65. What is **NAT** (Network Address Translation)?
66. What is a **route table entry**?
67. What is a **protocol data unit (PDU)**?
68. Explain the concept of **Network Segmentation**.
69. What is **packet filtering**?
70. What are the common causes of **network jitter**?
71. Explain the difference between a **hub** and a **switch**.
72. What is the purpose of a **MAC address table** on a switch?
73. How does **traceroute** work?
74. What is **NetFlow**?
75. What is a **metric** in routing?

Advanced Level Questions

76. Describe a full network design for a multi-tier application including a web server, application server, and database server across public and private subnets.
77. Explain how **BGP** (Border Gateway Protocol) works and its purpose.
78. What is **OSPF** (Open Shortest Path First)? What are its advantages over other routing protocols?
79. What is a **Spanning Tree Protocol (STP)**, and why is it necessary?
80. How would you troubleshoot a **high packet loss** issue on a network?
81. Explain the difference between **Policy-based routing** and **destination-based routing**.
82. Describe the concept of **Zero Trust** in network security.
83. What is **GRE** (Generic Routing Encapsulation) tunneling?

84. How does **IPsec** (Internet Protocol Security) secure network traffic?
85. What is **SD-WAN** (Software-Defined Wide Area Network)?
86. What is **QoS** (Quality of Service)?
87. What is the difference between a **Proxy Server** and a **NAT Gateway**?
88. Explain the concept of **Network Function Virtualization (NFV)**.
89. How do you secure a network against **DDoS attacks**?
90. What is a **Transit Gateway**, and what problem does it solve in a VPC environment?
91. What is **MPLS** (Multi-Protocol Label Switching)?
92. How would you design a highly available network architecture?
93. Explain the concept of **Network Automation**.
94. What is a **Reverse Proxy**?
95. Describe the key differences between **on-premises** and **cloud networking**.
96. What are the benefits of **network telemetry**?
97. How does a **Service Mesh** work in a microservices architecture?
98. What is **network compliance**?
99. What are the challenges in implementing a **multi-region network**?
100. How does **IP masquerading** work?