? EASY (10 Questions)

Q1. What does VLSM stand for?

A. Variable Logical Subnet Mask
B. Virtual Length Subnet Mask
C. Variable Length Subnet Mask
D. Verified Length Subnet Mask

Q2. VLSM is primarily used to:

A. Increase bandwidth
B. Reduce routing tables
C. Use IP address space efficiently
D. Replace routing protocols

Q3. Which routing protocols support VLSM?

A. RIP v1 only
B. Classful protocols
C. Classless protocols
D. Static routing only

Q4. VLSM allows:

A. Same subnet size everywhere
B. Different subnet sizes in one network
C. No subnetting
D. Only Class A subnetting

Q5. Which protocol does NOT support VLSM?

A. RIP v1
B. RIP v2
C. OSPF
D. EIGRP

Q6. VLSM is an extension of which concept?

A. NAT
B. FLSM
C. VLAN
D. CIDR

Q7. Which address is assigned first in VLSM design?

A. Smallest subnet
B. Largest subnet
C. Random subnet
D. Broadcast subnet

Q8. VLSM operates at which OSI layer?

A. Data Link
B. Network
C. Transport
D. Application

Q9. Which notation is commonly used with VLSM?

A. Binary notation
B. Classful notation
C. CIDR notation
D. Hexadecimal notation

Q10. VLSM is useful mainly in:

A. Small LANs only
B. WAN and enterprise networks
C. Single-host networks
D. Wireless networks only

□ MEDIUM (15 Questions)

Q11. Which routing protocol requires VLSM support to function correctly?

A. RIP v1
B. IGRP
C. OSPF
D. RIPv1 with static routes

Q12. What is the first step in VLSM subnet design?

A. Assign smallest subnet
B. Sort host requirements
C. Choose routing protocol
D. Calculate broadcast addresses

Q13. Given a subnet requiring 100 hosts, which prefix is suitable?

A. /26
B. /25
C. /24
D. /27

Q14. Which of the following is a key advantage of VLSM?

A. Reduced collisions
B. Efficient IP utilization
C. Faster switching
D. Reduced latency

Q15. Which protocol advertises subnet mask information?

A. RIP v1
B. ARP
C. RIP v2
D. ICMP

Q16. Which subnet mask supports 14 usable hosts?

A. /27
B. /28
C. /29
D. /30

Q17. In VLSM, why are larger subnets allocated first?

A. For security
B. To avoid address fragmentation
C. To increase broadcast traffic
D. To simplify routing tables

Q18. Which CIDR prefix provides 62 usable hosts?

A. /24
B. /25
C. /26
D. /27

Q19. Which of the following networks best demonstrates VLSM?

A. Equal-sized subnets
B. Different host requirements per subnet
C. Single subnet network
D. Broadcast-only network

Q20. Which protocol field carries subnet mask information?

A. TTL
B. Version
C. Routing update
D. Network address

Q21. VLSM requires routers to support:

A. Static routes only
B. Classless routing
C. Token passing
D. Bridging

Q22. What happens if VLSM is used with a classful protocol?

A. Improved efficiency
B. Routing failure
C. Automatic conversion
D. Faster convergence

Q23. Which address marks the end of a VLSM subnet?

A. Network address
B. First host
C. Last host
D. Broadcast address

Q24. Which scenario benefits most from VLSM?

A. Flat networks
B. Hierarchical networks
C. Small home networks
D. Single VLAN networks

Q25. Which routing update behavior is essential for VLSM?

A. Periodic broadcast without mask
B. Mask-aware updates
C. Static updates
D. ARP resolution

🟥 HARD (15 Questions)

Q26. Given 192.168.1.0/24, allocate subnets for 100, 50, and 25 hosts. Which subnet should be allocated first?

A. 25-host subnet
B. 50-host subnet
C. 100-host subnet
D. Any order is valid

Q27. Which prefix is required for a subnet needing at least 30 hosts?

A. /26
B. /27
C. /28
D. /29

Q28. In VLSM, incorrect subnet ordering can cause:

A. Routing loops
B. Address overlap
C. Increased bandwidth
D. MAC conflicts

Q29. Which routing protocol supports both CIDR and VLSM?

A. RIP v1
B. IGRP
C. EIGRP
D. RARP

Q30. What is the smallest subnet that can be created using VLSM?

A. /28
B. /29

C. /30
D. /31

Q31. Which of the following is NOT a requirement for VLSM?

A. Classless routing
B. Subnet mask propagation
C. Hierarchical addressing
D. Fixed subnet sizes

Q32. In a VLSM design, what ensures no overlap between subnets?

A. Routing metrics
B. Proper block size calculation
C. MAC addressing
D. VLAN IDs

Q33. Which CIDR block gives exactly 2 usable host addresses?

A. /29
B. /30
C. /31
D. /32

Q34. Why is RIP v1 unsuitable for VLSM?

A. Slow convergence
B. Hop count limit
C. No subnet mask in updates
D. No authentication

Q35. In VLSM, which subnet type is typically used for point-to-point links?

A. /24
B. /27
C. /30
D. /26

Q36. What is the major risk of poor VLSM planning?

A. Broadcast storms
B. IP address exhaustion
C. Address overlap
D. VLAN hopping

Q37. Which calculation is critical in VLSM design?

A. CRC calculation
B. Block size calculation
C. RTT calculation
D. TTL decrement

Q38. Which network layer protocol ensures VLSM routing correctness?

A. ARP
B. ICMP
C. Classless routing protocols
D. Ethernet

Q39. In enterprise networks, VLSM is commonly combined with:

A. Static routing only
B. CIDR summarization
C. Token Ring
D. Hub-based networks

Q40. Which statement best summarizes VLSM?

A. Fixed-size subnetting
B. Equal host distribution
C. Flexible, efficient subnet allocation
D. Replacement for CIDR