Quiz Questions

1. **What is the primary function of the network layer control plane?**
   * A) Data encryption
   * B) Packet forwarding
   * C) Routing and management
   * D) User authentication
   * **Answer: C**
2. **Which protocol is used for intra-ISP routing?**
   * A) BGP
   * B) OSPF
   * C) SNMP
   * D) ICMP
   * **Answer: B**
3. **What does SDN stand for?**
   * A) Software-Defined Networking
   * B) Secure Data Network
   * C) Simple Data Node
   * D) Standardized Digital Network
   * **Answer: A**
4. **Which algorithm is used in link-state routing protocols?**
   * A) Bellman-Ford
   * B) Dijkstra's algorithm
   * C) Floyd-Warshall
   * D) Kruskal's algorithm
   * **Answer: B**
5. **What is the main purpose of the Internet Control Message Protocol (ICMP)?**
   * A) File transfer
   * B) Error reporting and diagnostics
   * C) Data encryption
   * D) User authentication
   * **Answer: B**
6. **Which protocol is considered the de facto inter-domain routing protocol?**
   * A) RIP
   * B) EIGRP
   * C) OSPF
   * D) BGP
   * **Answer: D**
7. **In SDN, what role does the remote controller play?**
   * A) Encrypts data packets
   * B) Computes and installs forwarding tables in routers
   * C) Manages user authentication
   * D) Monitors network security threats
   * **Answer: B**
8. **What is a key characteristic of distance vector routing algorithms?**
   * A) Centralized control
   * B) Iterative computation and information exchange with neighbors
   * C) Real-time encryption of data packets
   * D) Use of hierarchical topology maps
   * **Answer: B**
9. **Which protocol uses link-state advertisements to share routing information?**
   * A) SNMP
   * B) OSPF
   * C) ICMP
   * D) NETCONF/YANG
   * **Answer: B**
10. **What is a major challenge associated with traditional routing?**
    * A) Lack of scalability
    * B) High cost of implementation
    * C) Incompatibility with wireless networks
    * D) Limited encryption capabilities
    * **Answer: A**
11. **Which protocol allows for configuration management in network devices using a data modeling language?**
    * A) SNMP
    * B) NETCONF/YANG
    * C) ICMP
    * D) OSPF
    * **Answer: B**
12. **What does SNMP stand for?**
    * A) Simple Network Management Protocol
    * B) Secure Network Management Process
    * C) Standard Network Monitoring Protocol
    * D) Simple Node Management Protocol
    * **Answer: A**
13. **What type of message does ICMP use to indicate that a destination host is unreachable?**
    * A) Type 0, Code 0
    * B) Type 3, Code 1
    * C) Type 8, Code 0
    * D) Type 11, Code 0
    * **Answer: B**
14. **Which component in SDN architecture is responsible for maintaining network state information?**
    * A) Data Plane Switches
    * B) SDN Controller (Network OS)
    * C) Network-Control Applications
    * D) User Interface Module
    * **Answer: B**
15. **In OSPF, what is the purpose of area border routers?**
    * A) To encrypt data packets between areas
    * B) To summarize distances to destinations within their area and advertise them to the backbone
    * C) To manage user access control lists
    * D) To provide direct communication between different ASes
    * **Answer: B**
16. **What problem can occur in distance vector algorithms due to incorrect path cost advertisements?**
    * A) Link-state flooding
    * B) Count-to-infinity problem
    * C) Packet duplication
    * D) Data encryption failure
    * **Answer: B**
17. **Which protocol uses a "path vector" approach for routing decisions?**
    * A) RIP
    * B) EIGRP
    * C) OSPF
    * D) BGP
    * **Answer: D**
18. **What does the acronym AS stand for in networking contexts?**
    * A) Application Server
    * B) Autonomous System
    * C) Access Switch
    * D) Active Service
    * **Answer: B**
19. **In SDN, what is the purpose of the northbound API?**  
    – A). To manage data encryption keys.

– B). To allow communication between network-control applications and the SDN controller.

– C). To control physical hardware devices.

– D). To monitor user activities on the network.

Answer: B

20.\*\* Which of these protocols is primarily used for network management and monitoring tasks?  
A). ICMP.  
B). NETCONF/YANG.  
C). SNMP.  
D). OSPF.  
–\*\* Answer\*\* :C

21\*\* What is a key benefit of logically centralized control planes in SDN?  
A). Enhanced security through distributed algorithms.  
B). Easier network management and greater flexibility of traffic flows.  
C). Reduced need for physical hardware components.  
D). Improved user authentication processes.  
–\*\* Answer\*\* :B

22\*\* What type of routing does the Border Gateway Protocol (BGP ) facilitate?  
A). Intra-domain routing.  
B). Inter-domain routing.  
C). Multicast routing.  
D). Wireless mesh routing.  
–\*\* Answer\*\* :B

23\*\* Which statement best describes "hot potato" routing?  
A). Routing based on shortest physical distance between nodes.  
B). Choosing a local gateway with least intra-domain cost without considering inter-domain cost.  
C). Prioritizing encrypted traffic over unencrypted traffic.  
D). Using redundant paths to ensure data delivery.  
–\*\* Answer\*\* :B

24\*\* In SDN , what does OpenFlow provide?  
A). Encryption standards for secure data transmission.  
B). An API for table-based switch control and generalized forwarding actions.  
C). User interface design guidelines for network applications.  
D). Protocols for wireless communication between devices.  
–\*\* Answer\*\* :B

25\*\* What is one advantage of using NETCONF/YANG over SNMP?  
A). Simpler syntax for configuration commands.  
B). Ability to perform atomic-commit actions over multiple devices.  
C). Faster data transmission rates across networks.  
D). More comprehensive error reporting capabilities.  
–\*\* Answer\*\* :B

26\*\* Which protocol uses "link-state advertisements" to share information about network topology?  
A ). RIP .  
B ). OSPF .  
C ). EIGRP .  
D ). ICMP .  
–\*\* Answer\*\* :B

27\*\* What is a primary goal of network management as described in the document?  
A ). To ensure maximum security across all devices .  
B ). To deploy , integrate , and coordinate hardware , software , and human elements effectively .  
C ). To minimize costs associated with hardware upgrades .  
D ). To standardize user interfaces across different platforms .  
–\*\* Answer\*\* :B

28\*\* Which type of message does ICMP use to report that a packet's TTL has expired?  
A ). Type 3 , Code 1 .  
B ). Type 11 , Code 0 .  
C ). Type 8 , Code 0 .  
D ). Type 0 , Code 0 .  
–\*\* Answer\*\* :B

29\*\* What is one challenge associated with distance vector algorithms?  
A ). High computational complexity compared to link-state algorithms .  
B ). Inability to handle multicast traffic efficiently .  
C ). Susceptibility to routing loops due to incorrect path cost advertisements .  
D ). Requirement for centralized control systems .  
–\*\* Answer\*\* :C

30\*\* Which component in SDN architecture acts as the "brains" implementing control functions ?  
A ) . Data-plane switches .  
B ) . Network-control applications .  
C ) . Southbound API .  
D ) . OpenFlow protocol .  
– \* \* Answer \* \* :B

31\* \* What does SNMP 's "GetRequest" message do ?  
A ) . Sets a new value in MIB .  
B ) . Retrieves specific data from managed device 's MIB .  
C ) . Notifies manager about exceptional events .  
D ) . Closes active sessions with managed devices .  
– \* \* Answer \* \* :B