30 Lecture - CS410

Important Subjective

Question 1:

Explain the concept of Software Defined Networking (SDN) and how it revolutionizes network management.

Answer:

Software Defined Networking (SDN) separates the control plane from the data plane, allowing centralized management and dynamic allocation of network resources. It simplifies network configuration, enhances scalability, and enables rapid adaptation to changing demands.

Question 2:

What is network virtualization, and how does it benefit organizations in terms of resource management?

Answer:

Network virtualization creates multiple virtual networks on a single physical network infrastructure. It enhances resource utilization by enabling isolation, efficient sharing, and dynamic allocation of network resources for different applications or users.

Question 3:

Describe the concept of containerization and its advantages in application deployment.

Answer:

Containerization encapsulates an application and its dependencies into a single package, ensuring consistency across different environments. It offers efficient resource utilization, rapid deployment, and scalability, making it ideal for microservices architecture.

Question 4:

How does Software Defined Wide Area Network (SD-WAN) improve network connectivity and performance?

SD-WAN intelligently routes traffic over multiple network paths, enhancing performance, and reliability. It dynamically adapts to network conditions, optimizing application delivery and user experience.

Question 5:

Explain the role of AI-driven networking in network optimization and management.

AI-driven networking employs artificial intelligence and machine learning algorithms to automate network management tasks, predict network issues, optimize resource allocation, and enhance overall network performance.

Question 6:

What is the significance of REST API in network programming, and how does it facilitate communication between different systems?

REST API provides a standardized and flexible way for applications to communicate over HTTP. It enables interoperability between different systems by defining a set of rules for creating, retrieving, updating, or deleting resources.

Question 7:

Discuss the benefits of using Docker in containerized application deployment.

Docker simplifies application deployment by packaging the application and its dependencies into containers. It ensures consistency, portability, and efficient resource utilization, making it easier to manage and scale applications.

Question 8:

How does network orchestration contribute to efficient resource utilization and automation?

Answer:

Network orchestration automates the deployment, configuration, and management of network resources and services. It ensures efficient resource allocation, reduces manual intervention, and speeds up the provisioning process.

Question 9:

Explain the concept of AI-driven network analytics and its role in proactive network management.

Answer:

AI-driven network analytics involves using AI algorithms to analyze network data and predict potential issues. It enables proactive network management by identifying patterns, anomalies, and potential bottlenecks, allowing timely interventions to ensure optimal performance.

Question 10:

Discuss the advantages of using Network Function Virtualization (NFV) in modern network architectures.

Answer:

Network Function Virtualization (NFV) abstracts network functions from hardware, enabling them to run as software instances. This enhances flexibility, scalability, and cost-efficiency by allowing network services to be deployed and managed dynamically without the need for dedicated hardware.