

I. **Bridging and Switching**

- A. Frame relay
- B. Catalyst configuration: VLANs, VTP, STP, MSTP, RSTP, Trunk, Etherchannel, management, features, advanced configuration, Layer 3
- C. Tunneling

II. **IP IGP Routing**

- A. OSPF
- B. EIGRP
- C. RIPv2
- D. IPv6: Addressing, RIPv2, OSPFv3
- E. GRE
- F. ODR
- G. Filtering, redistribution, summarization and other advanced features

III. **BGP**

- A. IBGP
- B. EBGP
- C. Filtering, redistribution, summarization, synchronization, attributes and other advanced features

IV. **IP and IOS Features**

- A. IP addressing
- B. DHCP
- C. HSRP
- D. IP services
- E. IOS user interfaces
- F. System management
- G. NAT
- H. NTP
- I. SNMP
- J. RMON
- K. Accounting
- L. SLA

V. **IP Multicast**

- A. PIM-SM, bi-directional PIM
- B. MSDP

- C. Multicast tools, source specific multicast
- D. DVMRP
- E. Anycast

VI. **QoS**

- A. Quality of service solutions
- B. Classification
- C. Congestion management, congestion avoidance
- D. Policing and shaping
- E. Signaling
- F. Link efficiency mechanisms
- G. Modular QoS command line

VII. **Security**

- A. AAA
- B. Security server protocols
- C. Traffic filtering and firewalls
- D. Access lists
- E. Routing protocols security, catalyst security
- F. CBAC
- G. Other security features