F5 Load Balancer

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Section 1: OSI

Explain, compare, and contrast the OSI layers

Describe the function of each OSI layer
Differentiate between the OSI layers
Describe the purpose of the various address types at different OSI layers

Explain protocols and technologies specific to the data link layer

Explain the purpose of a switch's forwarding database
Explain the purpose and functionality of ARP
Explain the purpose and functionality of MAC addresses
Explain the purpose and functionality of a broadcast domain
Explain the purpose and functionality of VLANs
Explain the purpose and functionality of link aggregation

Explain protocols and apply technologies specific to the network layer

Explain the purpose and functionality of IP addressing and subnetting
Given an IP address and net mask, determine the network IP & the broadcast IP
Given a routing table and a destination IP address, identify which routing table entry the destination IP address will match
Explain the purpose and functionality of Routing protocols
Explain the purpose of fragmentation
Given a fragment, identify what information is needed for reassembly
Explain the purpose of TTL functionality
Given a packet traversing a topology, document the source/destination IP address/MAC address changes at each hop

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Explain the features and functionality of protocols and technologies specific to the transport layer

Compare/Contrast purpose and functionality of MTU and MSS
Explain the purpose and functionality of TCP
Explain the purpose and functionality of UDP
Explain the purpose and functionality of ports in general
Explain how retransmissions occur
Explain the purpose and process of a reset
Describe various TCP options
Describe a TCP checksum error
Describe how TCP addresses error correction
Describe how the flow control process occurs

Explain the features and functionality of protocols and technologies specific to the application layer

Explain the purpose and functionality of HTTP
Differentiate between HTTP versions
Interpret HTTP status codes
Determine an HTTP request method for a given use case
Explain the purpose and functionality of HTTP keepalives, HTTP headers, DNS, SIP, FTP
Differentiate between passive and active FTP
Explain the purpose and functionality of SMTP
Explain the purpose and functionality of a cookie
Given a situation in which a client connects to a remote host, explain how the name resolution process occurs
Explain the purpose and functionality of a URL

Section 2: F5 Solutions and Technology

Articulate the role of F5 products

Explain the purpose, use, and benefits of APM, LTM, ASM, GTM

Explain the purpose, use, and advantages of iRules

Explain the purpose of iRules
Explain the advantages of iRules
Given a list of situations, determine which would be appropriate for the use of iRules

Explain the purpose, use, and advantages of iApps

Explain the purpose of iApps
Explain the advantages of iApps
Given a list of situations, determine which would be appropriate for the use of iApps

Explain the purpose of and use cases for full proxy and packet forwarding/packet based architecture

Describe a full proxy architecture
Describe a packet forwarding/packet based architecture
Given a list of situations, determine which is appropriate for a full proxy architecture
Given a list of situations, determine which is appropriate for a packet based architecture

Explain the advantages and configurations of high availability (HA)

Explain active/active
Explain active/standby
Explain the benefits of deploying BIG-IP devices in a redundant configuration

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Describe the purpose and advantages of authentication

Explain the purpose of authentication
Explain the advantages of single sign on
Explain the concepts of multifactor authentication
Describe the role authentication plays in AAA

Describe the purpose, advantages, and use cases of IPsec and SSL VPN

Explain the purpose, advantages, and challenges associated with IPsec
Explain the purpose, advantages, and challenges associated with SSL VPN
Given a list of environments/situations, determine which is appropriate for an IPsec solution
Given a list of environments/situations, determine which is appropriate for an SSL VPN solution