**Session 1: Linux Networking & System Administration**

**Configure Network Settings**

* **Q:** Explain the process of configuring a network interface in Linux.  
  **A:** Use tools like nmcli, nmtui, or edit configuration files like /etc/sysconfig/network-scripts/ifcfg-<interface> (RHEL-based) or /etc/network/interfaces (Debian-based). Restart the network service or use ip/ifconfig commands to apply changes.
* **Q:** How do you monitor network traffic in Linux?  
  **A:** Use tools like iftop, nload, iptraf, tcpdump, or wireshark.

**Configure NTP and Sync**

* **Q:** How do you troubleshoot network connectivity issues in Linux?  
  **A:** Use commands like ping, traceroute, netstat, ss, ip a, ip r, and check firewall rules and DNS resolution.
* **Q:** How would you diagnose and fix the time synchronization problem if a server's clock is consistently incorrect?  
  **A:** Check NTP service status (systemctl status ntpd or chronyd), verify NTP server configuration, sync manually using ntpdate, and ensure correct timezone settings.

**Identify Services and Manage Run Levels**

* **Q:** What tools are available for diagnosing DNS issues?  
  **A:** Use dig, nslookup, host, and check /etc/resolv.conf.
* **Q:** How do you optimize network performance in a Linux environment?  
  **A:** Tune TCP parameters (sysctl), use QoS tools, monitor with iftop, iperf, and optimize NIC settings.
* **Q:** How can you determine which process is consuming the most memory on a Linux system?  
  **A:** Use top, htop, ps aux --sort=-%mem, or smem.

**Session 2: Linux Security & System Tools**

**RHEL Security, Firewalls, SELinux**

* **Q:** What are some common network services and protocols used in Linux environments?  
  **A:** SSH, FTP, HTTP/HTTPS, NFS, SMB, SMTP, IMAP, POP3, DNS, DHCP.
* **Q:** What parameter can be set at boot time to enable/disable SELinux?  
  **A:** Modify /etc/selinux/config and set SELINUX=enabled or disabled.
* **Q:** How to display SELinux policies which are manually changed/modified?  
  **A:** Use audit2allow, semanage, and check audit logs (/var/log/audit/audit.log).
* **Q:** Would you replace iptables with firewalld on all your servers, if given a chance?  
  **A:** Firewalld offers dynamic rule management and zones, making it more flexible than iptables. However, choice depends on system requirements and admin preference.

**System Administration Tools**

* **Q:** Mention all the network configuration files you would check to configure your ethernet card.  
  **A:** /etc/sysconfig/network-scripts/ifcfg-<interface>, /etc/resolv.conf, /etc/hosts, /etc/hostname.
* **Q:** What is the command to check all the open ports of your machine?  
  **A:** netstat -tuln, ss -tuln, or nmap localhost.

**Session 3: Web, Mail, Remote Access & File Transfer**

**Browse the Web**

* **Q:** Which are the packages needed to configure Webserver in RHEL7?  
  **A:** httpd, mod\_ssl, php, mysql-server, firewalld.

**Email and Instant Messaging Clients**

* **Q:** Mention the Mail server related protocols needed to configure Mailserver.  
  **A:** SMTP, POP3, IMAP, and optionally MTA like Postfix or Sendmail.

**Access a Linux System Remotely**

* **Q:** What are different methods to access Linux server remotely?  
  **A:** SSH, VNC, RDP, Telnet, Web-based consoles.
* **Q:** How can you determine if a specific port is open and reachable on a remote Linux server?  
  **A:** Use telnet <host> <port>, nc -zv <host> <port>, or nmap.

**File Transfer Tools**

* **Q:** Write syntax to transfer files to remote machine using Rsync.  
  **A:** rsync -avz /path/to/file user@remote:/destination/path
* **Q:** What are different Methods used to transfer files in RHEL7?  
  **A:** scp, rsync, ftp, sftp, nfs, smbclient, curl, wget.

**Network Diagnostic Tools**

* **Q:** Find out where connection fails using different tools available in Linux.  
  **A:** Use ping, traceroute, mtr, netstat, ss, tcpdump, nmap.