(2½ Hours)

[Total Marks: 75]

N. B.: (1) **All** questions are **compulsory**.
(2) Make **suitable assumptions** wherever necessary and **state the assumptions** made.
(3) Answers to the **same question** must be **written together**.
(4) Numbers to the **right** indicate **marks**.
(5) Draw **neat labeled diagrams** wherever **necessary**.
(6) Use of **Non-programmable** calculators is **allowed**.

1. **Attempt *any three* of the following:**
a. Explain piping and Redirecting with proper example. Write a command to print first three lines of the file.
b. What are the different duties of Linux System Administrator?
c. Explain find command with following options: -name, -user,-exec,-type
d. What are different commands for Process Management?
e. Explain the concept of hardlink and symbolic link. Write a command to create hard link and symbolic link.
f. Write a note on RPM and YUM in Linux.

2. **Attempt *any three* of the following:** 15
a. What are different kinds of partitions available in Linux?
b. What are different File Systems available on RHEL?
c. Write a short note on runlevels and services in Linux.
d. What are different steps to enable SSH server on RHEL?
e. Explain the function of passwd command with its options.
f. What are the commands used for managing group membership? Write a command for creating two groups and change current group assignment to other existing user.

3. **Attempt *any three* of the following:** 15
a. What are firewalls? How it protects the server?
b. What are tables, chains, and rules? List common elements of rule.
c. Write a short note on Certificate Authority.
d. What are different steps to encrypt and decrypt files?
e. What is NFS? What are advantages and disadvantages of NFS?
f. What are steps for setting up samba file server?

4. **Attempt *any three* of the following:** 15
   a. Write a short note on DNS and its hierarchy.
   b. What are different parameter used for dhcp.conf command?
   c. Discuss MTA and MDA in detail.
   d. Explain following parameter for secure internet configuration:
      myhostname, mydomain , myorigin , inet_interfaces , mynetwork.
   e. Write down the steps to configure Apache for basic website services.
   f. Write a short note on virtual host.

[TURN OVER]

5.   **Attempt _any three_ of the following:**   **15**
a.   What are different elements of a shell script?
b.   Write a script that create directory with a name Mumbai, sets $user and $group as the owner of directory and change permission mode to 770.
c.   Write a short note on high-availability cluster requirement.
d.   What are the different steps to create bond device.
e.   Write a short note on TFTP server package.
f.   Write a short note on kick-start file.

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