Paper / Subject Code: 53705 / Linux System Administration

(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:**   15
a. Explain the duties of Linux system administrator in creating and managing users.
b. Write a short note on bash.
c. Discuss the difference between piping and redirection with the help of an example.
d. With the help of an example, write the steps to mount a device in Linux.
e. List the differences between hard and symbolic links.
f. Explain the steps to create and manage your own repository in yum.

2. **Attempt** *any three* **of the following:**   15
a. Explain the different kinds of partitions in linux and their characteristics.
b. Discuss the steps to create a swap file.
c. What are runlevels in Linux? Explain the commands used to manage services.
d. Discuss the steps to configure key based SSH authentication.
e. Elaborate what basic permissions are and how they are applied to files and directories in linux.
f. Explain the user information configuration file.

3. **Attempt** *any three* **of the following:**   15
a. State the steps to setup a firewall that allows SSH packets.
b. What are modules in a firewall? Explain the limit module.
c. Explain how to create and manage certificates with openssl.
d. List the steps to encrypt, share and decrypt files using GPG.
e. With the help of an example, explain exporting and mounting of NFS share.
f. Discuss the steps to setup a Samba server.

4. **Attempt** *any three* **of the following:**   15
A Write a short note on cache-only nameserver.
B Explain the DHCP server configuration.
C Discuss the role of MUA, MTA, and MDA in the email process.
D Explain the various parameters for secure internet configuration of Postfix server.
E State the steps to setup virtual hosts in Apache.
F Explain how the DirectoryIndex, Options, AllowOverride, and Order directives in Apache.

5. **Attempt** *any three* **of the following:**   15
a. Discuss the various ways in which a shell script can be executed.
b. Write a shell script to add ten users, remove their passwords and add them to the group students. Use for loop.
c. Explain the steps to setup a quorum disk.
d. Discuss the steps to setup fencing.
e. Explain the steps to perform an automated installation using a kickstart file.
f. List the steps to configure DHCP for PXE boot.

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