(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 duty of linux system administrator in monitoring and tuning Performance of a system.

b. Explain with the help of an example,
   i) How pipe can be used to add functionality to a command.
   ii) How the result of a command can be sent to a file.

c. What is a linux distribution? State in brief the Linux support offered by Red Hat.

d. With the help of an example, explain how backup can be scheduled and automated using cron.

e. State the features of the two types of links. Show how a deleted file can be restored using a link.

f. Discuss how yum overcomes the limitations of a tar ball and rpm.

2. Attempt *any three* of the following: 15

a. What is the difference between a partition and a logical volume? Highlight in brief the features of the different types of partitions.

b. Discuss the steps to create an encrypted volume.

c. Briefly explain the ifcfg configuration file variables.

d. With the help of an example, explain how to setup SSH port forwarding.

e. Explain the purpose and contents of the following files:
   i. /etc/group
   ii. /etc/shadow

f. State the commands to do the following. Give an example for each.
   i. Display ownership of file or directory
   ii. Change group ownership
   iii. Change user ownership
   iv. Set file permissions for user, group, and others using absolute mode
   v. Set file permissions for user, group, and others using relative mode

3. Attempt *any three* of the following: 15

a. What are tables, chains and rules in a firewall?

b. Enlist the steps to setup iptables logging.

c. State the reasons for which public/private keys are typically used. With the help of an example explain how public/private keys are used to encrypt traffic that is sent to a server.

d. What is GPG signing? State the commands to sign a file using GNU Privacy Guard.

e. Discuss the configuration of NFS server and client.

f. Discuss the generic Samba parameters in the global section of the samba configuration file.

[*Contd...*

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4.	**Attempt *any three* of the following:**	**15**
a	Write the steps to setup a secondary DNS server.	
b	Explain in brief the most relevant parameters from the dhcpd.conf file.	
c	Briefly discuss the three components play a role in the process of Internet mail.	
d	Name and explain the parameters that should be configured for a mail server handling messages from the Internet.	
e	List and explain the various performance parameters for Apache modes.	
f	Explain the steps to setup a Protected Web Server.	
5.	**Attempt *any three* of the following:**	**15**
a.	What is a shell script? State the elements of a good shell script.	
b.	Demonstrate the use of pattern matching operators in a shell script.	
c.	Explain the steps to create an iSCSI target configuration.	
d.	Discuss the steps to troubleshoot a nonoperational cluster.	
e.	Explain the steps to perform a Virtual Machine Network Installation Using a Kickstart File.	
f.	List the steps to configure TFTP server for PXE boot.	

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