

Name :

Roll No. :

Invigilator's Signature :

CS/B.TECH (CSE)/SEM-6/CS-604/2010

2010

SYSTEM SOFTWARE & ADMINISTRATION

Time Allotted : 3 Hours

Full Marks : 70

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

GROUP - A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for the following :

10 × 1 = 10

i) Which of the following is 'START' ?

- a) Machine-op
- b) Pseudo-op
- c) Can be either of above two
- d) None of these.

ii) Link editor is an instance of

- a) an editor
- b) an assembler
- c) a binder
- d) none of these.

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- iii) Execute permission on a file is required to
- a) launch that file as a program
 - b) create a directory with a matching name
 - c) allow other users to read the file
 - d) use the insmod command to add the file as a module.
- iv) The Shadow Password system enhances security by
- a) checking that new passwords entered for users are not easily guessed
 - b) hiding encrypted passwords in a file that only root can read
 - c) validating member of the group as they log in
 - d) none of these.
- v) Based on the following line from a user's crontab file, when will the Brekeleylives program be run ?
- 0 1 2 3 * Brekeleylives :
- a) At 1 : 23 A.M. everyday
 - b) At 1 : 00 A.M. on March 2
 - c) At 1 : 00 A.M. on February 3
 - d) At 2 : 00 A.M. on March 2.

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vi) When you run the umask command, you see the following result : 0000. The next time you create a file, what will be the permissions ?

- a) drwxrwxrwx
- b)
- c) -rwxr-xr-x
- d) -rw-rw-rw-

vii) When LINUX boots, what configuration file does LINUX use to see what NFS shares to mount ?

- a) /etc/exports
- b) /etc/nfs.conf
- c) /etc/fstab
- d) /nfs/conf.

viii) Which of the following commands check the setup of the database on your DNS server ?

- a) dnscheck
- b) BIND
- c) dig
- d) resolve.

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ix) Consider the following command :

```
# iptables - A INPUT -s 192.168.77.77 - j REJECT
```

What effect will this have when the client with an IP of 192.168.77.77 tries to connect to your system ?

- a) No effect at all.
 - b) Access will be denied, and the client computer won't get any message on what happened.
 - c) Access will be denied, and the client application will get a message that the target destination is unreachable
 - d) You will receive a notification message on the system console.
- x) To see the partition table, which of these commands is used
- a) fsck
 - b) fdisk-l
 - c) du
 - d) none of these.

GROUP - B

(Short Answer Type Questions)

Answer any *three* of the following. $3 \times 5 = 15$

2. How forward reference is tackled by one pass and two pass assemblers ?
3. List the different runlevels. How do they differ ? List some standard shutdown techniques.

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4. What do you mean by Network Address translation ?
5. What is the difference between sharing information through NIS and through NFS ? Differentiate between NIS and NIS +.
6. Distinguish between Disk Inode and Incore Inode.

GROUP - C

(Long Answer Type Questions)

Answer any *three* of the following. $3 \times 15 = 45$

7.
 - a) What is firewall ?
 - b) What is IP spoofing ?
 - c) How is it resolve using firewall ?
 - d) Explain in detail of 'ipfwadm' command.
 - e) What is the difference between antivirus and firewall ?
 - f) How many run levels are there in Linux ? Describe their functions. How do you know the current run level ? $2 + 2 + 3 + 3 + 2 + 3$
8.
 - a) Explain working principle of macro processor.
 - b) Compare compiler — and — go loader with absolute loader.
 - c) Discuss the working principle of relocation linker.
 - d) Why is relocation needed ? $5 + 5 + 4 + 1$

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9. a) What are the advantages and disadvantages of NIS server ?
- b) What are the packages needed to install NIS server and client ?
- c) Explain in detail of 'netstat' command.
- d) Configure the NFS server with the following requirements :

Machine 192.168.1.20 is able to mount/home/test directory of the server (192.168.1.10) in read-only mode. Machine 192.168.1.21 is able to mount /home/test directory of the server (192.168.1.10) in read/write mode. The range of machines (192.168.1.64 - 192.168.1.128) is able to mount/home directory in read/write mode.

3 + 4 + 3 + 5

10. a) Configure the firewall using *iptables* as follows :

Machine will receive all incoming *icmp* packets (only echo-request) from any source. It will reject all outgoing TCP connections to 2 particular destination. It will only receive ftp connection from a specific machine. Show the final configuration of each available chain.

- b) What is the use of IP Accounting facility ? Write the general syntax for *ipfwadm*, *ipchains* and *iptables* commands for IP Accounting.
- 6 + (3 + 6)

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11. a) What is the role of an assembler ? Give the step of general design procedure of assembler. 2 + 3
- b) What is the working principle of FTP ? 5
- c) Answer the following : 5 × 1
- i) What is daemon ?
 - ii) What happen if we write init 0 in the prompt and press enter ?
 - iii) What is an I-node ?
 - iv) What is the port of FTP ?
 - v) What is port of HTTP ?
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