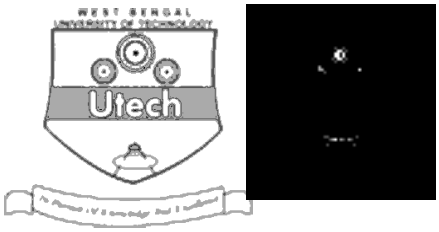
# SYSTEM SOFTWARE & ADMINISTRATION ( SEMESTER - 6 )

## CS/B.TECH (CSE)/SEM-6/CS-604/09



**1.** .....
*Signature of Invigilator*

**2.** .....
*Signature of the Officer-in-Charge*

***Reg. No.***

***Roll No. of the Candidate***

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## CS/B.TECH (CSE)/SEM-6/CS-604/09

### ENGINEERING & MANAGEMENT EXAMINATIONS, JUNE – 2009

## SYSTEM SOFTWARE & ADMINISTRATION ( SEMESTER - 6 )

Time : 3 Hours ] [ Full Marks : 70

***INSTRUCTIONS TO THE CANDIDATES :***

1. This Booklet is a Question-cum-Answer Booklet. The Booklet consists of **32 pages**. The questions of this concerned subject commence from Page No. 3.
2. a) In **Group – A**, Questions are of Multiple Choice type. You have to write the correct choice in the box provided **against each question.**
   b) For **Groups – B** & **C** you have to answer the questions in the space provided marked 'Answer Sheet'. Questions of **Group – B** are Short answer type. Questions of **Group – C** are Long answer type. Write on both sides of the paper.
3. **Fill in your Roll No. in the box** provided as in your Admit Card before answering the questions.
4. Read the instructions given inside carefully before answering.
5. You should not forget to write the corresponding question numbers while answering.
6. Do not write your name or put any special mark in the booklet that may disclose your identity, which will render you liable to disqualification. Any candidate found copying will be subject to Disciplinary Action under the relevant rules.
7. **Use of Mobile Phone and Programmable Calculator is totally prohibited in the examination hall.**
8. You should return the booklet to the invigilator at the end of the examination and should not take any page of this booklet with you outside the examination hall, **which will lead to disqualification**.
9. Rough work, if necessary is to be done in this booklet only and cross it through.

**No additional sheets are to be used and no loose paper will be provided**

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**FOR OFFICE USE / EVALUATION ONLY**

Marks Obtained

| | Group – A | | | | | | | | | | Group – B | | | Group – C | | | ***Total Marks*** | ***Examiner's Signature*** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ***Question Number*** | | | | | | | | | | | | | | | | | | |
| ***Marks Obtained*** | | | | | | | | | | | | | | | | | | |

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**Head-Examiner/Co-Ordinator/Scrutineer**

**6781 (11/06)**

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**ENGINEERING & MANAGEMENT EXAMINATIONS, JUNE – 2009**

# SYSTEM SOFTWARE & ADMINISTRATION

**SEMESTER – 6**

Time : 3 Hours ] [ Full Marks : 70

## GROUP – A

**( Multiple Choice Type Questions )**

1. Choose the correct alternatives for any *ten* of the following : $10 \times 1 = 10$

i) Which of the following is a journaling file system ?

a) ext2 b) vfat

c) minix d) ext3.

ii) What is the difference between the DROP and REJECT targets in iptables ?

a) REJECT will send an error packet back to the source system, whereas DROP will not

b) DROP will send an error packet back to the source system, whereas REJECT will not

c) They are equivalent

d) DROP is invalid, DENY must be used.

iii) Which of the following files specifies information on what is NFS shared from your system ?

a) /etc/exports b) /etc/dfs/dfstab

c) /etc/fstab d) /etc/sharetab.

iv) In Red Hat Linux, what is the standard init process used ?

a) SysV init

b) BSD init

c) SRV init

d) SysIV init

e) OS2 init.

v) What utility in /sbin provides a simple command-line tool for maintaining the /etc/rc.d/init.d directory hierarchy ?

a) chkconfig

b) ckconf

c) chkconf

d) checkconfig

e) checkcf.

vi) Runlevel 4 stands for

a) Reboot b) Shutdown

c) Multi-user mode d) None of these.

vii) What is the command to configure a NIS client named barney if the master NIS server is named fred ?

a) #ypinit –c fred b) #ypinit –c barney

c) #ypinit –m barney d) #ypinit –c.

viii) LILO is basically used for

a) loading b) linking

c) executing d) termination.

ix) The command that is used to know the MAC address of other computer is

a) passwd b) user add

c) arp –d d) arp –a.

x) What keeps track of all the files within the file system ?

a) super block b) root

c) I-node table d) partition table.

xi) Which of the following is true for IP Masquerade ?

a) Top fin used for TCP session timeout

b) TCP timeout after FIN

c) TCP time out before FIN

d) None of these.

xii) Back patching is the technique that is used

a) to generate tokens

b) in IP Masquerade

c) to solve problem of forward referencing

d) in NFS.

## GROUP – B

### ( Short Answer Type Questions )

Answer any *three* of the following questions. 3 × 5 = 15

2. a) Describe in detail about /proc file system.

b) What are different daemons used in NFS service ? 4 + 1

3. a) What is the concept of swap space and virtual memory ? How do they differ from each other ?

b) Describe the format used in /etc/passwd and /etc/shadow file.

c) How to mount the CD-ROM drive using mount command ? 2 + 2 + 1

4. a) What is I-node ?

b) How does ext2 file system differ from FAT-32 file system ?

c) Change the permission of the file "abc.txt" such that the file is accessed by owner in write mode and the group users can access the file in read only mode and others will not be able to access the file in any form. 1 + 2 + 2

5. a) What is IP Masquerade ?

b) How is NAT ( Network Address Translation ) used by Network users to use it effectively such that administrators can manage ?

c) How can you change the run level of the system without restarting the system ? 2 + 2 + 1

6. What is the working principle of DNS server ?

## GROUP – C

### ( Long Answer Type Questions )

Answer any *three* of the following questions. 3 × 15 = 45

7. a) Describe the duties of a system administrator.

   b) Explain various utilities of *Ping* command.

   c) What are ip tables ?

   Configure a firewall using ip tables with following specifications :

   i) No outgoing TCP connection is allowed

   ii) HTTP connection is allowed to particular machine.

   iii) It should reject all FTP request. 3 + 3 + 9

8. a) How is Assembly level language program become useful ?

   b) What are the basic Assembler functions ?

   c) Discuss 2-pass algorithm of Assembler. Explain with the aid of a neat flow chart and algorithm.

   d) What do you mean by program relocation ?

   e) What is the difference between a literal and an immediate operand.

   3 + 2 + 5 + 3 + 2

9. a) What is 'Eavesdropping' ? How do we protect against this type of attack ?

   b) What is a firewall ?

   c) What command is used to configure a firewall ?

d) Configure a firewall for the following system :

"Machine will connect the network, the Internet and the users will be able to access website but no other traffic will be allowed to pass. Additionally users will be able to log on to FTP servers on the Internet to read out and write files but people on the Internet will not be able to log on to FTP servers.

e) Explain in brief if we have a network with class B IP of 192.72.0.0 and we want to create 32 subnets what will be the subnet mask.

f) Explain about /etc/shadow file. 3 + 2 + 1 + 5 + 3 + 1

10. a) What is the use of each of the following files ?

i) /etc/shadow

ii) /etc/grub.conf

iii) /etc/inittab

iv) /etc/fstab

b) Why is /proc file system called virtual system ?

c) What is umask ? How can a file permission be defined by using it ?

d) What do you mean by disk inode and incore inode ? ( 4 × 2 ) + 3 + 2 + 2

11. a) What are swap space and virtual memory ? How do they differ from each other ? How to increase the swap space in your system ? Give an example

b) What is IP filtering ? Describe with proper diagram how IP filtering can be implemented in kernel for different types of traffics.

c) What is the difference between antivirus and firewall ?

d) What is the difference between scheduling processes using batch and at command ? ( 1 + 1 + 3 ) + 5 + 3 + 2

12. a) State the importance between 'Soft mount' and 'Hard mount' at NFS volume mounting options.

b) What is IP accounting ? How does it help the administrator to analyze the security threats of a network ?

c) How network address translator helps the network users to use it efficiently and administrator to manage it ?

d) Why NFS is not secure ? Describe the security threat using NFS only. How the problem can be solved inside a network ? 3 + 4 + 4 + 4

13. Write short notes on any *three* of the following : 3 × 5

a) NAT

b) NIS

c) POT & MOT

d) ipfwadm

e) System backup and recovery.

END