



ENGINEERING & MANAGEMENT EXAMINATIONS, JUNE - 2008
SYSTEM SOFTWARE AND ADMINISTRATION
SEMESTER - 6

Time : 3 Hours]

[Full Marks : 70

GROUP - A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for the following : 10 × 1 = 10

i) The Assembler directive used to assigning the literal is

- a) ORIGIN
- b) EQU
- c) LORG
- d) DC.

ii) Which loader permits a program to be executed in different parts of the memory ?

- a) Relocating Loader
- b) Absolute Loader
- c) Direct Linking Loader
- d) None of these.

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

- a) Super block
- b) Root
- c) i-node table
- d) Partition.

iv) What is the term for making a connection between a file system and the system which the file system will be made available to ?

- a) Mount
- b) Partition
- c) Format
- d) fdisk.

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v) What type of backup copies the bits from the disk without using the file system ?

- a) Image
- b) File system-full
- c) Dump
- d) File archive.

vi) Which command is used to retrieve files backed up with UNIX's primary backup copy ?

- a) Dump
- b) dd
- c) Restore
- d) Tar.

vii) Which command provides information regarding the present status of network connections, routing information and other important network-related data ?

- a) ifconfig
- b) arp
- c) netstat
- d) ping.

viii) What does this output from the ping command tell you about the status of the system pinged ?

4 packets transmitted, 4 packets received, 0% packet loss

- a) The system is reachable
- b) The system is not available
- c) The system is taking too long to respond to ping requests
- d) No information can be determined from this output.

ix) 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.

x) What is the command to configure a secondary NIS server if the secondary server is named 'backup' and the master server is 'master' ?

- a) #ypinit-c master
- b) #ypinit-c backup
- c) #ypinit-c
- d) None of these.

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GROUP - B

(Short Answer Type Questions)

Answer any *three* of the following.

3 × 5 = 15

2. List the important table and data structure of a 2-pass Assembler. 5
3. How will you see the current run level of your system ? State the different run levels available. How is 'init' related to run level ? 2 + 1 + 2
4. What is the working principle of DNS server ? 5
5. What is the I-node ? What is shadow password ? What is s subnet-mask or net-mark ? 1 + 2 + 2
6. What is daemon ? Write down two daemons and its utility. What is the Macro processor ? Why do we use this ? 1 + 1 + 1 + 2

GROUP - C

(Long Answer Type Questions)

Answer any *three* questions.

3 × 15 = 45

7.
 - a) What is the function of a Loader ? 3
 - b) What are static and dynamic relocations ? 3
 - c) What is the difference between a phase and a pass ? 3
 - d) What is conceptual difference between a Linker and a Loader ? 3
 - e) How do you distinguish between Static Library, Shared Library and Dynamic Library ? 3
8.
 - a) What do you mean by firewalling ? Classify firewalls. State, which type is effective on a particular situation. Explain in brief the details of command *ipfwadm*. 8
 - b) What is the difference between antivirus and firewall ? 2
 - c) How many run levels are there in Linux ? Describe their function. 2
 - d) How do you distinguish between SNAT and DNAT ? 3

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9. a) What are the steps to configure one Ethernet interface and check the configuration ? Explain with suitable example. 2
- b) Consider a network with Class B IP address 172.16.0.0. You have to create 64 subnets in this network. What will be the subnet mask ? 2
- c) Explain the structures and uses of */etc/hosts* and */etc/networks* files ? 4
- d) We have two networks — CSE (172.16.1.0/24) and ECE (172.16.2.0/24). They are linked through a gateway host, Kanad. Kanad also has a connection to Internet. Write down the steps for configuring the gateway, Kanad first and then steps for routing through the gateway by hosts of two given networks. 7
10. a) What is 'Eavesdropping' ? How do you protect against this type of attack ? 1 + 2
- b) What is firewall ? 1
- c) Explain and configure the firewall using *ipfwadm* as follows :
 Machine will connect the network, the Internet and the users of that network to be able to access web servers on the Internet, but no other traffic will be allowed to pass. Additionally, users will be able to log into FTP servers on the Internet to read and write files but people on the Internet will not be able to log into our FTP server. 6
- d) What is the use of IP Accounting facility ? Write the general syntax for *ipfwadm*, *ipchains*, *iptables* commands for IP Accounting. How do accounting rules differ from firewalling rules for all the three schemes ? 1 + 2 + 2
11. a) What are the advantages of using NIS ? What are the differences between DNS and NIS approaches ? 2 + 2
- b) What are the different NIS maps and explain their uses. Give the names of two tools for checking NIS configuration. 3 + 1
- c) What are the different features offered by NFS ? 2
- d) Write the command to mount/abc directory from host 'H1' to/xyz on host H2. What are the differences between hard-mount and soft-mount of a volume ? 1 + 4

END

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