



Global Information Assurance Certification Paper

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SSH – 10 Questions

1. What are the advantages of SSH over telnet?
 - a. Encrypted communication.
 - b. Faster using compression.
 - c. Can be used to forward X11 over the established secure channel.
 - d. All of the above,

Correct answer is d.

Ref: Page 2

2. If you fail to connect to the remote SSH daemon what happens next?
 - a. Your TCP connection is dropped.
 - b. Your TCP connection hangs.
 - c. The remote SSH daemon can fall back to rsh.
 - d. The remote SSH daemon can fall back to telnet.

Correct answer is c.

Ref: Page 7

3. What is not one of the SSH authentication methods?
 - a. RSA-based user authentication.
 - b. Host-based trust files.
 - c. PAM (Pluggable Authentication Module)
 - d. Rhosts combined with RSA-based authentication.

Correct answer is c.

Ref: Pages 8, 9, 10

4. How do you forward X11 traffic via a SSH connection?
 - a. You configure SSH to redirect all traffic to port 6000 on your computer.
 - b. You configure SSH to redirect all traffic to port 6000 on your computer and place the appropriate statement in /etc/hosts.allow.
 - c. You telnet from the remote X11 server, to your computer on port 22.
 - d. You do nothing; SSH automatically sets up Xauthority data on the remote host.

Correct answer is: d.

Ref: Page 13

5. How do you configure SSHD to compile with TCP wrapper support?
 - a. ./configure --with-socks
 - b. ./configure --with-login
 - c. ./configure --with-libwrap
 - d. ./configure --with-rsh

Correct answer is c.

Ref: Page 27

6. What is the most efficient way to run the SSH daemon?
 - a. As a standalone daemon.
 - b. From /etc/inetd.conf
 - c. With the command line argument 'sshd --cache-file'.
 - d. With the command line arguments 'sshd --cache-file --quick-login'.

Correct answer is a.

Ref: Page 24

7. How do you launch SSHD with a 1024 bit server key?
- a. sshd -k 1024
 - b. sshd -p 1024
 - c. sshd -b 1024
 - d. sshd -h 1024

Correct answer is c.

Ref: Page 32

8. What is the purpose of the ~/.ssh/authorized_keys file ?
- a. Automatically redirects X11 over the secure channel.
 - b. Holds the public keys allowed to access a specified account.
 - c. Allows you to upload your public key to a known key server.
 - d. Holds the private keys allowed to access a specified account.

Correct answer is b.

Ref: Page 37

9. What is the purpose of configuring SSHD with the configure option '--with-libwrap' ?
- a. To compile SSHD against the default libraries.
 - b. To compile SSHD with library wrappers.
 - c. To enable SSHD to run from /etc/inetd.conf.
 - d. To compile with support for TCP_Wrappers.

Correct answer is d.

Ref: Page 27

10. What is the default level of compression with SSH?
- a. 5
 - b. 6
 - c. 4
 - d. 3

Correct answer is b.

Ref: Page 36

Linux Practicum - 25 Questions

1. When using Psionic Portentry what does the line `KILL_ROUTE="/sbin/ipchains -I input -s \$TARGET -j DENY -I" accomplish?
- a. Automatically drops the route of the offending host.
 - b. Automatically denies all traffic from the offending host.
 - c. Automatically denies all traffic from the offending host and emails root of the attack.
 - d. Automatically denies all traffic from the offending host and places a log entry in the appropriate log file.

Correct answer is d.

Ref: Page 110

2. What are the three basic targets when using IPCHAINS?
- a. ACCEPT, DENY/REJECT, FORWARD
 - b. ACCEPT, DENY/REJECT, MASQ/REDIRECT

- c. ACCEPT, DENY/REJECT, INPUT/OUTPUT
- d. ACCEPT, DENY/REJECT, LOG

Correct answer is b.

Ref: Page 91

3. Which is not one of the three basic chains ?
- a. input
 - b. output
 - c. masq
 - d. forward

Correct answer is c.

Ref: Page 91

4. On a default RedHat 6.x system, where does the kernel source reside?
- a. /usr/lib
 - b. /usr/local/src
 - c. /usr/src/linux
 - d. /usr/local/src/linux

Correct answer is c.

Ref: Page 43

5. If your kernel was too big after compiling, what command should you run to compress it?
- a. blilo
 - b. clilo
 - c. bzlilo
 - d. make bzlilo

Correct answer is d.

Ref: Page 47

6. If you want to limit your users to 3 simultaneous logins and a file size no larger than 20 megabytes, what file would you modify to accomplish this?
- a. /etc/security/login.conf
 - b. /etc/pam.d/limits.conf
 - c. /etc/security/limits.conf
 - d. /etc/security/access.conf

Correct answer is c.

Ref: Page 26

7. How would you translate all traffic originating from your internal class C network (192.168.1.0) to route over the Internet?
- a. ipchains -A forward -s 192.168.1.0/24 -d 0/0 -j MASQ
 - b. ipchains -A forward -s 0/0 -d 192.168.1.0/25 -j MASQ
 - c. ipchains -A masq -s 192.168.1.0/24 -d 0/0 -j MASQ
 - d. ipchains -A masq -s 0/0 -d 192.168.1.0/24 -j MASQ

Correct answer is a.

Ref: Page 97

8. How many run levels are present in RedHat linux?
- a. four

- b. five
- c. six
- d. eight

Correct answer c.

Ref: Page 17

9. If you were in 'single user mode', which run level would you be running in?
- a. five
 - b. six
 - c. three
 - d. one

Correct answer is d.

Ref: Page 17

10. What file would you configure to disable reboots via the Ctrl+Alt+Del key sequence?
- a. /etc/security/login
 - b. /etc/services
 - c. /etc/inted.conf
 - d. /etc/inittab

Correct answer is d.

Ref: Page 18

11. What file controls log rotation on a RedHat linux system?
- a. /etc/logrotated.conf
 - b. /etc/logrotate.conf
 - c. /etc/sysconfig.conf
 - d. /etc/logconfig.conf

Correct answer is b.

Ref: Page 31

12. What file controls the exact data to be logged?
- a. /etc/log.conf
 - b. /etc/messages.conf
 - c. /etc/syslog.conf
 - d. /etc/logrotate.d

Correct answer is c.

Ref: Page 33

13. What port does syslogd listen on to receive log messages from remote hosts?
- a. 543
 - b. 541
 - c. 514
 - d. 415

Correct answer is c.

Ref: Page 36

14. How would you configure syslogd to accept log messages from remote hosts?
- a. modify /etc/rc.d/init.d/syslog ; add daemon syslogd -r ; restart syslogd
 - b. modify /etc/rc.d/syslog ; add daemon syslogd -m ; restart syslogd
 - c. modify /etc/rc.d/init.d/syslog ; add daemon syslogd -r ; restart syslogd

- d. modify /etc/rc.d/rc.local ; add daemon syslogd -r ; restart syslogd

Correct answer is a.

Ref: Page 36

15. What file would you modify to send log messages to a remote host?

- a. /etc/rc.d/rc.log
- b. /etc/syslogd.conf
- c. /etc/messages.conf
- d. /etc/syslog.conf

Correct answer is d.

Ref: Page 41

16. What is the purpose of the program 'tcpdchk' ?

- a. To ensure your TCP/IP stack is running properly.
- b. To ensure packets are routing properly across your network.
- c. To check the syntax of /etc/inetd.conf /etc/hosts.allow /etc/hosts.deny
- d. To determine what ports are currently open on your machine.

Correct answer is c.

Ref: Page 68

17. How does RedHat linux implement NFS?

- a. Using module-space NFS.
- b. Using user-space NFS.
- c. Using kernel-space NFS.
- d. Using monolithic NFS.

Correct answer is c.

Ref: Page 75

18. What file would you modify to mount NFS at boot time?

- a. /etc/ mounts
- b. /etc/rc.d/rc.local
- c. /etc/imports
- d. /etc/fstab

Correct answer is d.

Ref: Page 77

19. What file would you modify to export NFS to specific hosts?

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

Correct answer is b.

Ref: Page 79

20. How would you enable SWAT to run on your RedHat machine?

- a. modify /etc/rc.d/rc.local ; uncomment the SWAT line at the bottom.
- b. modify /etc/sysconfig.conf ; uncomment the SWAT line at the bottom.
- c. modify /etc/inetd.conf
- d. modify /etc/swat.conf

Correct answer is c.

Ref: Page 84

21. How would you change the default policy to DENY for the chain "input" ?

- a. /sbin/ipchains -P input DENY
- b. /sbin/ipchains -F input DENY
- c. /sbin/ipchains -L input DENY
- d. /sbin/ipchains -X input DENY

Correct answer is a.

Ref: Page 92

22. How would you expire the current password every 90 days and give a 14 day warning for user netwrkr?

- a. passwd -M 90 -W 14 netwrkr
- b. chage -M 90 -W 14 netwrkr
- c. chage -L 90 -M 14 netwrkr
- d. passwd -W 90 -M 14 netwrkr

Correct answer is b.

Ref: Page 28

23. To require the root password for single user mode which file(s) would you modify?

- a. /etc/inittab
- b. /etc/fstab ; /etc/inittab
- c. /etc/inittab ; /etc/lilo.conf
- d. /etc/boot.conf ; /etc/inittab

Correct answer is c.

Ref: Page 18

24. When running Samba, what file(s) would you modify to limit access to specific hosts?

- a. /etc/smb.conf
- b. /etc/samba.conf ; /etc/hosts.default
- c. /etc/hosts.equiv ; /etc/smb.conf
- d. /etc/hosts ; /etc/smb.conf

Correct answer is a.

Ref: Page 85

25. How would you restart /etc/inetd.conf ?

- a. kill -9 inetd
- b. kill -1 inetd
- c. kill -SIGHUP inetd
- d. kill -HUP inetd

Correct answer is d.

Ref: Page 62

Network Time Protocol (NTP) - 10 Questions

1. Where is the default NTP configuration file located?

- a. /etc/ntpd.conmf
- b. /var/run/ntp.conf
- c. /etc/ntp.conf

d. /var/state/ntp/ntp.conf

Correct answer is c.

Ref: Page 27

2. If you are syncing against 2 Stratum 3 servers and 1 Stratum 2 server, what stratum number is your server ?
- a. 3
 - b. 2
 - c. 4
 - d. 5

Correct answer is a.

Ref: Page 11

3. What is the purpose of the drift file?
- a. To determine the drift from the stratum 1 to the stratum server.
 - b. To determine the drift from your machine to the server you are syncing against.
 - c. To keep the system clock accurate in the event of a network partition that causes the host to lose time synch information.
 - d. To determine the drift between two or more stratum servers.

Correct answer is c.

Ref: Page 12

4. Why would you sync against more than one stratum server?
- a. To get the most accurate time available.
 - b. To prevent someone from skewing your clocks by impersonating an external NTP server.
 - c. To keep your drift file up to date.
 - d. To allow machines to use the NTP proxy running on your machine.

Correct answer is b.

Ref: Page 13

5. What is the purpose of NTP?
- a. To prevent attackers from getting into your system.
 - b. To prevent hackers from running distributed denial of service attacks against your network.
 - c. To allow networks of machines to keep system clocks in synch.
 - d. To prevent a hacker from modifying the time in your log files.

Correct answer is c.

Ref: Page 4

6. Why is it important to not sync your network against a public stratum one server?
- a. Because there are fewer stratum one servers than stratum two servers.
 - b. Because the stratum two servers are as reliable as the stratum one server.
 - c. Because the stratum two server allows many thousands of machines to synch without overloading primary servers.
 - d. All of the above.

Correct answer is d.

Ref: Page 9

7. What is the benefit of configuring your NTP server to “broadcast” time info to local clients?
- a. The entire process is faster.
 - b. More machines can receive updates simultaneously.
 - c. Less network traffic generated.
 - d. None of the above.

Correct answer is d.

Ref: Page 22

8. Which program allows you to administer and interrogate running NTP servers for statistical information?
- a. xntpd
 - b. xntpdn
 - c. ntpd
 - d. ntpdc

Correct answer is b.

Ref: Page 25

9. What is the term to define a person who synchs against a public time server without first obtaining permission from the system administrator?
- a. NTP Looser.
 - b. Blacklisted.
 - c. Clock Sucker
 - d. Cheap

Correct answer is c.

Ref: Page 28

10. What is a *pseudo clock* ?
- a. Causes your server to synchronize to its own system clock.
 - b. A stratum 4 server.
 - c. A master/slave server within your organization.
 - d. None of the above.

Correct answer is a.

Ref: Page 19.

Unix Basics for Security Professionals – 25 Questions

1. What file(s) control crontab access ?
- a. hosts.allow
 - b. cron.allow
 - c. hosts.allow; hosts.deny
 - d. cron.allow ; cron.deny

Correct answer is d.

Ref: Page 119

2. What command would you execute to view the contents of your crontab file?
- a. crontab -e
 - b. crontab -f
 - c. crontab -r
 - d. crontab -l

Correct answer is d.

Ref: Page 118.

3. What port does sendmail run on?
- a. 21
 - b. 25
 - c. 23
 - d. 24

Correct answer is b.

Ref: Page 107

4. What is the purpose of ARP?
- a. Translate hostnames to IP addresses.
 - b. Translate hostnames to MAC addresses.
 - c. Translate IP addresses to MAC addresses.
 - d. Translate hostnames and MAC addresses to IP addresses.

Correct answer is c.

Ref: Page 101 & 102

5. When you run "netstat -in" what does the MTU define?
- a. The type of network you are running i.e. star, bus, token ring
 - b. The largest packet that may be transmitted on a given network.
 - c. The speed at which your network is routing packets.
 - d. The current SNMP statistics for a given interface.

Correct answer is b.

Ref: Page 86

6. What does is the purpose of the renice command?
- a. To allow normal users to request more CPU time.
 - b. To allow normal users to lower the nice value to speed up a given process.
 - c. To control how much CPU time a given process will receive.
 - d. To increase the I/O on your system.

Correct answer is c.

Ref: Page 82

7. If you wanted to see only the user names listed in your /etc/passwd file what command would you run?
- a. cat /etc/passwd | grep users
 - b. grep -f2 -d /etc/passwd
 - c. cat /etc/passwd | grep id
 - d. grep -f2 -d: /etc/passwd

Correct answer is d.

Ref: Page 60

8. Under Solaris what is the purpose of the /sbin directory?

- a. Contains system configuration files.
- b. Holds third party software.
- c. Contains programs critical for boot sequence.
- d. Contains files used to talk to system devices.

Correct answer is c.

Ref: Page 28

9. What is the longest directory pathname that can be specified in Solaris?

- a. 255
- b. 512
- c. 1024
- d. 1120

Correct answer is c.

Ref: Page 25

10. How many run levels are available in Solaris?

- a. 5
- b. 6
- c. 7
- d. 4

Correct answer is b.

Ref: Page 15

11. When run as the superuser what does the command "init 6" do?

- a. Shutdown the system.
- b. Send a 10 minute shutdown warning to all users.
- c. Reboot the system.
- d. Reboot the system with a 10 minute advance warning to all users logged in.

Correct answer is c.

Ref: Page 15

12. You run the command "ls -la" and see the file sans.html with the file permissions "-rwxr-sr-x"; What does the "s" signify?

- a. This is a "special" file that is used by apache web server.
- b. This is a "special" file that is used by apache web server for SSL connections.
- c. This file has the set group id bit set.
- d. This file has the set user id bit set.

Correct answer is c.

Ref: Page 36

13. What is the purpose of the "sticky bit" ?

- a. To allow root to modify that file as necessary.
- b. To allow department administrators to perform maintenance on a given directory.
- c. Specifies that only the owner may remove file(s).
- d. Specifies that only members of the group may remove file(s).

Correct answer is c.

Ref: Page 37

14. What is the octal notation for -rwxr-xr-x ?
- a. 0600
 - b. 0700
 - c. 1777
 - d. 755

Correct answer is d.

Ref: Page 38

15. What information is **not** stored in the inodes?
- a. Access and creation time.
 - b. Permissions and ownership.
 - c. File size and number of blocks used.
 - d. Pointer to the data blocks.

Correct answer is a.

Ref: Page 44 (Creation time is not stored in the inode information)

16. If you wanted to recursively copy an entire directory tree what command would you use?
- a. copy -r
 - b. copy -R
 - c. copy -d
 - d. copy -L

Correct answer is b.

Ref: Page 46

17. How would you create a symbolic link from the file sans to file org ?
- a. ln -s org sans
 - b. ln -S sans org
 - c. ln -s sans org
 - d. ln -S org sans

Correct answer is c.

Ref: Page 49

18. How would you terminate an out of control process to include leaving a core file for debugging?
- a. kill -9
 - b. kill -1
 - c. kill -3
 - d. kill -15

Correct answer is c.

Ref: Page 80

19. What does "pid" stand for ?
- a. Parent ID
 - b. Priority ID
 - c. Parent Process ID
 - d. Process ID

Correct answer is d.

Ref: Page 78

20. What is the purpose of the “at” command?
- a. To run scheduled jobs on a regular basis.
 - b. To run scheduled jobs more securely than crond
 - c. To run a job just once at some time in the future.
 - d. To replace the insecure crond shipped with Solaris.

Correct answer is c.

Ref: Page 120

21. At the end of a crontab entry you see “> /dev/null 2>&1”; what does the 2>&1 signify?
- a. Send all output to /dev/null
 - b. Send all normal output to /dev/null
 - c. Redirect the normal and error output to /dev/null
 - d. Redirect /dev/null output to tty1

Correct answer is c.

Ref: Page 116

22. When running the command “netstat -rn” what does the flag “U” designate?
- a. The route is actively being used or is up.
 - b. The route is slower than other available routes.
 - c. The route is experiencing receive errors.
 - d. The loopback adapter is incorrectly configured.

Correct answer is a.

Ref: Page 100

23. How would you display partition information for every available file system?
- a. du
 - b. cat /etc/fstab
 - c. df
 - d. df -m ntfs ufs ffs

Correct answer is c.

Ref: Page 43

24. What is the longest filename that can be created under Solaris?
- a. 1024
 - b. 1023
 - c. 255
 - d. 256

Correct answer is c.

Ref: Page 25

25. How would you turn off chargen services on your Solaris machine?
- a. edit /etc/rcX.d
 - b. edit /etc/services
 - c. edit /etc/inetd.conf ; kill -HUP inetd
 - d. edit /etc/inetd.conf

Correct answer is c.

Kerberos Basics – 10 Questions

1. What does Kerberos not provide?
 - a. Secure communications via Telnet.
 - b. Strong authentication under proper operation.
 - c. Ability to run in conjunction with other authentication schemes.
 - d. Secure authentication.

Correct answer is a.

Ref: Page 39

2. What is the KDC?
 - a. System where all authentication takes place.
 - b. Any entity that gets a service ticket for a Kerberized service.
 - c. Publically accessible database that holds all public Kerberos keys.
 - d. The client which obtains the secure key.

Correct answer is a.

Ref: Page 5

3. How would a user initially authenticate using Kerberos?
 - a. Login to the KDC.
 - b. Request a ticket via email.
 - c. Type kinit.
 - d. SSH in to the preauth server with the correct username / password.

Correct answer is c.

Ref: Page 18, 19

4. When a user is authenticated, what data is not contained within the ticket?
 - a. The users public key.
 - b. Session Key.
 - c. Server Principal.
 - d. Client Principal.

Correct answer is a.

Ref: Page 11,12,13

5. What is a known weakness in Kerberos?
 - a. The initial user authentication password is sent in clear text.
 - b. The users private key is sent in clear text.
 - c. The request for the ticket is sent in clear text.
 - d. The user must login to the Key Server.

Correct answer is c.

Ref: Page 18

6. What is an “application server”?
 - a. The primary Key Distribution Center.
 - b. The main Kerberos server.
 - c. Any Kerberized program that clients communicate with using Kerberos tickets.
 - d. Any entity that gets a service ticket for a Kerberized service.

Correct answer is c.

Ref: Page 5

7. What is a system requirement of Kerberos?
- a. NTP server.
 - b. DNS Server.
 - c. Authentication Server.
 - d. All of the above.

Correct answer is d.

Ref: Page 7

8. What is the default encryption scheme for Kerberos?
- a. Blowfish
 - b. Triple DES.
 - c. MD5
 - d. 56-bit DES.

Correct answer is d.

Ref: Page 9

9. How many tickets are generated to authenticate a user?
- a. One
 - b. Two
 - c. Three
 - d. Four

Correct answer is b.

Ref: Page 12

10. What is the second ticket encrypted with?
- a. The users public key.
 - b. The users principal key.
 - c. The key of the server principal.
 - d. The server principal's public key.

Correct answer is c.

Ref: Page 12

Common Issues and Vulnerabilities in Unix Security - 25 Questions

1. In your shadow file you see "root:\$1\$cmCn291b\$4Ei5EqDHLUGYB03/:11118:0:99999:-7:-1:-1:134540356". What is the salt that is being used to permute the encryption algorithm?
- a. \$4E
 - b. 11118
 - c. \$1
 - d. DHLUG

Correct answer is c.

Ref: Page 18

2. While viewing `/etc/profile` you see `"ulimit -c 0"`. What does this mean?
- a. The user may create files of unlimited size.
 - b. The administrator has eliminated core files.
 - c. The administrator is giving all users unlimited cpu time.
 - d. The administrator has removed the session time limit.

Correct answer is b.

Ref: Page 30

3. What are some of the common attacks against set-UID scripts?
- a. Environment attacks.
 - b. Race conditions.
 - c. Symlink tricks.
 - d. All of the above.

Correct answer is d.

Ref: Page 51

4. What is an alternative to set-UID scripts?
- a. Writing programs in perl and using `suidperl`.
 - b. Properly configure `/etc/security/limits.conf`
 - c. Properly configure `/etc/profile`.
 - d. Properly configure `/etc/security/access.conf`

Correct answer is a.

Ref: Page 58

5. What is the definition of "chroot"?
- a. Writing a set-UID program in a C or Perl wrapper.
 - b. Change your current login to that of the root user.
 - c. A Unix system call that allows a process to give up access to all but a small portion of the file system.
 - d. A Unix system call that moves all set-UID programs to a special file system that runs without root privileges.

Correct answer is c.

Ref: Page 59

6. How would an attacker hide his presence on your system?
- a. Replace `ps`.
 - b. Hide files in `/dev`
 - c. Replace `syslogd`.
 - d. All of the above.

Correct answer is d.

Ref: Page 78, 79

7. Why would someone put files in the `/dev` directory?
- a. To modify your device drivers.
 - b. To link binaries against older version of `libc`.
 - c. To have those files get lost in the noise from all the device files located within the directory.
 - d. To install a sniffer.

Correct answer is c.

Ref: Page 76

8. What octal notation should all .rhosts files on your system be?
- a. 0700
 - b. 0400
 - c. 0444
 - d. 0600

Correct answer is d.

Ref: Page 87

9. What is a more secure way to run X ?
- a. Disable the xhost command.
 - b. Use Kerberos authentication.
 - c. Tunnel your X session through SSH.
 - d. All of the above.

Correct answer is d.

Ref: Page 94

10. How can you implement cabling security within your network?
- a. Use coaxial cable.
 - b. Use two-layer pressurized conduit.
 - c. Install devices to detect voltage drops from sniffers being used.
 - d. Use thick steel conduit.

Correct answer is b.

Ref: Page 132

11. What are some common steps you can use to prevent session hijacking?
- a. Configure your firewall(s) to block spoofed packets at all ingress points.
 - b. Configure your firewall(s) to block source-routed packets at all ingress points.
 - c. Require all users to use some form of encrypted communication i.e. SSH, Secure Copy.
 - d. All of the above.

Correct answer is d.

Ref: Page 100

12. What are some of the common exploits against a machine running X windows?
- a. Buffer overflow attacks
 - b. Denial of service attacks
 - c. Session Hijacking
 - d. All of the above.

Correct answer is d.

Ref: Page 92

13. What are some of the common mistakes made when securing a computer space?
- a. Doors with exterior accessible hinges.
 - b. Drop down ceilings.
 - c. Both a & b.
 - d. None of the above.

Correct answer is c.

Ref: Page 128 & 129

14. How is dynamic memory implemented in a Unix process?
- a. Subroutine.
 - b. Frame.
 - c. Stack Frame.
 - d. Frame pointer.

Correct answer is c.

Ref: Page 37, 38, 39

15. How does a buffer overflow work?
- a. Attempts to write past the end of the allocated string buffer and clobber the return execution address.
 - b. Attempts to write past the end of the allocated string buffer and clobber the Stack Frame.
 - c. Attempts to overwrite the Stack Frame and write past the data for the main program.
 - d. Attempts to overwrite the subroutine buffer and write past the data for the Stack Frame.

Correct answer is a.

Ref: Page 39

16. What is the purpose of the /etc/shadow file?
- a. To allow users to view only their password.
 - b. To allow administrators the ability to force strong passwords.
 - c. To fool hackers with bogus passwords.
 - d. To allow only the root user the ability to view users encrypted passwords.

Correct answer is d.

Ref: Page 23

17. What are some of the RPC based program(s) that are commonly attacked/exploited?
- a. NIS
 - b. NFS
 - c. Both a & b.
 - d. Httpd

Correct answer is c.

Ref: Page 3

18. What program compares the cryptographic checksum of a binary against a known good database of checksum values?
- a. Shaft
 - b. Tripwire
 - c. Abacus Checksum
 - d. RPM

Correct answer is b.

Ref: Page 80

19. What happens if someone steals your .Xauthority file?
- a. Nothing, the file is encrypted.
 - b. They have access to your X display.
 - c. Nothing since the person doesn't know your password.

- d. Both a & c.

Correct answer is b.

Ref: Page 90

20. What are some of the drawbacks to using .Xauthority?
- a. Users end up reverting to using xhost.
 - b. Attackers can launch buffer overflow attacks against your X server.
 - c. Attackers can create symlinks to your .Xauthority file and hijack your X session.
 - d. Both b & c.

Correct answer is a.

Ref: Page 91

21. What is "expreserve" ?
- a. A utility which helps httpd serve commonly accessed web pages faster.
 - b. A utility which caches commonly used information for faster access.
 - c. A utility which is used by emacs to automatically recover your current buffer in the event the system crashes while a user is editing a file.
 - d. A utility which is used by vi to automatically recover vi buffers in the event the system crashed while the user is editing a file.

Correct answer is d.

Ref: Page 48

22. What are some daemon(s) that chroot naturally?
- a. Ftpd & named
 - b. Tftpd & httpd
 - c. Tftpd & sshd
 - d. Ftpd & sshd

Correct answer is a.

Ref: Page 62

23. What are some considerations you should make when running critical systems that depend on backup power?
- a. Ensure you schedule frequent tests of your backup system(s).
 - b. Ensure all critical systems are plugged into your backup power source(s).
 - c. Always get electrical work done by a reliable vendor.
 - d. All of the above.

Correct answer is d.

Ref: Page 133

24. What are some of the most common programs contained in a root kit?
- a. trojaned login & ftp
 - b. trojaned sshd
 - c. trojaned ping
 - d. Both a & b.

Correct answer is d.

Ref: Page 74

25. How can you prevent your users from reading and cracking your password file?
- a. Remove world readable permissions from /etc/passwd.
 - b. Install password shadowing.

- c. Remove world readable permissions from /etc.
- d. None of the above.

Correct answer is b.

Ref: Page 23.

One time passwords – 10 Questions

1. What are some of the problems with Unix passwords?
 - a. They are sent over the network in clear text.
 - b. They are limited to 9 characters.
 - c. Attackers can easily break encrypted string used on the Unix imposed 9 character limit.
 - d. Both b & c.

Correct answer is a.

Ref: Page 4

2. What are the different types of two-factor devices?
 - a. Challenge/Response & Synchronous.
 - b. Synchronous & Private Key.
 - c. Challenge/Response & Public Key.
 - d. Opie & PGP.

Correct answer is a.

Ref: Page 8

3. Where is a users private key stored in Public Key Authentication?
 - a. On the main key server.
 - b. On the OTP server.
 - c. On the main Kerberos server.
 - d. None of the above.

Correct answer is d.

Ref: Page 9

4. Where is the opieaccess file normally located?
 - a. /etc/
 - b. /usr/bin
 - c. /usr/local/bin
 - d. /opt/

Correct answer is a.

Ref: Page 18

5. Commercial OTP solutions generally use an open source, non-relational database back-end?
 - a. True
 - b. False

Correct answer is b.

Ref: Page 33

6. What are some of the common files which will be replaced when installing and using OPIE?
- a. login
 - b. ftp
 - c. su
 - d. All of the above.

Correct answer is d.

Ref: Page 18

7. What octal notation should be placed upon /etc/opiekeys ?
- a. 0444
 - b. 0400
 - c. 0600
 - d. 0100

Correct answer is b.

Ref: Page 21

8. What information is located in /etc/opiekeys ?
- a. All users public / private keys.
 - b. Encrypted OPIE secrets.
 - c. Both A & B.
 - d. None of the above.

Correct answer is b.

Ref: Page 21

9. What are some of the freely available OTP solutions?
- a. Security ID
 - b. Defender
 - c. OPIE & S/Key
 - d. SafeWord

Correct answer is c.

Ref: Page 11

10. What is some of the user resistance associate with using OTP?
- a. Too difficult for the average user to master.
 - b. Too many passwords to remember.
 - c. Lots of hand-holding required.
 - d. Both a & c.

Correct answer is d.

Ref: Page 13

Solaris Practicum – 25 Questions

1. What is a frequent problem associated with backing up data?
- a. Using the wrong type of backup media.
 - b. Failing to test the integrity of the backup.
 - c. Failing to backup critical file systems.
 - d. Backing up too often.

Correct answer is b.

Ref: Page 97

2. How would you prevent a user for logging in on a serial port?
- a. Edit the appropriate line in /etc/inetd.conf.
 - b. Edit the appropriate line in /etc/serial.conf
 - c. Edit the appropriate line in /etc/inittab.
 - d. Kill the serial daemon.

Correct answer is c.

Ref: Page 36

3. What file dictates the file systems that will be mounted at boot time?
- a. /etc/fstab
 - b. /etc/vfstab
 - c. /etc/mount.conf
 - d. None of the above.

Correct answer is b.

Ref: Page 43

4. What file can you edit to help prevent buffer overflow attacks?
- a. /etc/security/limits.conf
 - b. /etc/inetd.conf
 - c. /etc/system
 - d. /etc/limits.conf

Correct answer is c.

Ref: Page 85

5. What program would you use to gather data on system resource usage on an ongoing basis?
- a. ps
 - b. top
 - c. sar
 - d. vmstat

Correct answer is c.

Ref: 70

6. What program would you use to gather system resource usage in real time?
- a. sar
 - b. ps
 - c. top
 - d. vmstat

Correct answer is d.

Ref: Page 70

7. How would you enable process accounting?
- a. accton
 - b. pact
 - c. accton /var/adm/pacct
 - d. acct

Correct answer is c.

Ref: Page 75

8. How would you disable process accounting?
- a. acctoff
 - b. accton
 - c. sar
 - d. acctoff /var/adm/pacct

Correct answer is b.

Ref: Page 75

9. Why is running process accounting on a heavily loaded system unwise?
- a. Performance degradation.
 - b. Alerts hackers that you are watching the system.
 - c. Can cause processes to stop running.
 - d. Both b & c.

Correct answer is a.

Ref: Page 76

10. By default sshd is configured with TCP wrapper support.
- a. True
 - b. False

Correct answer is b.

Ref: Page 53

11. What is the benefit of mounting the root filesystem read only and nosuid?
- a. Prevents attackers from running buffer overflows.
 - b. Easier than placing daemons in a chrooted environment.
 - c. Both a & b.
 - d. None of the above.

Correct answer is d.

Ref: Page 45

12. How should you remotely login to perform administrative tasks requiring root access?
- a. SSH in as root and perform the work necessary.
 - b. SSH into your normal account and su to root.
 - c. Telnet into your normal account and su to root.
 - d. Either b or c.

Correct answer is b.

Ref: Page 62

13. What is the purpose of the /etc/ftpusers file?
- a. To allow certain users ftp access.
 - b. To list users not allowed ftp access.
 - c. To log the activities of certain users logging in and transferring files.
 - d. Both a & b.

Correct answer is b.

Ref: Page 64

14. Where would you set the default UMASK and PATH for your users?
- a. /etc/default/login

- b. /etc/profile
- c. /etc/skel
- d. Both a & b.

Correct answer is d.

Ref: Page 81

15. Where would you set the max file descriptors allowed per user?

- a. /etc/security/limits.conf
- b. /etc/shadow
- c. /etc/passwd
- d. /etc/system

Correct answer is d.

Ref: Page 85

16. What program modifies file permissions under Solaris in an effort to make things more secure?

- a. YASSP
- b. Secure-mode
- c. Fix-modes
- d. Bastille

Correct answer is c.

Ref: Page 102

17. How would you configure /etc/hosts.allow to accept all traffic from 192.168.1.0/29?

- a. ALL: 192.168.1.0/255.255.255.248
- b. ALL: 192.168.1.0/29
- c. ALL: 192.168.1.0/29 255.255.255.248
- d. None of the above.

Correct answer is a.

Ref: Page 56

18. How would you prevent remote root logins via SSH ?

- a. Modify /etc/hosts.allow
- b. Modify /etc/pam.d/login
- c. Modify sshd_config
- d. Modify ssh_config

Correct answer is c.

Ref: Page 54

19. What are some of the benefits of SSH?

- a. Drop in secure replacement for rsh/rcp/rlogin.
- b. Allows tunneling of other protocols.
- c. Host-to-host encryption solution.
- d. All of the above.

Correct answer is d.

Ref: Page 49

20. What is the function of TCP Wrappers?

- a. Controls access based on hostname / destination port.
- b. Controls access based on IP address / destination port.

- c. Controls access based on IP address / source port.
- d. Controls access based on hostname / source port.

Correct answer is b.

Ref: Page 50

21. What file lists all the files that have been installed on your system?

- a. /var/sadm/contents
- b. /var/sadm/contents/install
- c. /var/sadm/install/contents
- d. /var/log/install/contents

Correct answer is c.

Ref: Page 20

22. When first setting up a Solaris machine, you should ensure the network connection is active to correctly configure all interfaces.

- a. True
- b. False

Correct answer is b.

Ref: 13, 16

23. When installing a patch, what does "Return code 2" indicate?

- a. You are missing Core system files.
- b. The patch applies to a package that is not installed on the system.
- c. The patch has already been applied from the OS CD.
- d. The MD5 checksum isn't correct.

Correct answer is c.

Ref: Page 24

24. Your users report they are unable to start up Netscape Communicator; what is the solution?

- a. Re-install the latest version of Communicator.
- b. Start nscd.
- c. Install the Communicator package to /usr/local
- d. Modify /etc/init.d to enable the Netscape daemon.

Correct answer is b.

Ref: Page 27

25. How could you securely mount the /usr filesystem?

- a. nosuid
- b. read-only
- c. noguid
- d. Both a & b.

Correct answer is b.

Ref: Page 46

Unix Forensics – 10 Questions

1. What file keeps a snapshot of all users currently logged in?

- a. wtmp
- b. utmp
- c. syslog
- d. secure

Correct answer is b.

Ref: Page 77

2. Why are SUID root files dangerous?

- a. When executed, the effective UID is that of the program, not the user.
- b. Allows unprivileged users to assume the superuser role.
- c. Targets for hackers to attack to gain uid 0 privileges.
- d. All of the above.

Correct answer is d.

Ref: Page 86, 87

3. What program can list all open network connection and those programs that are using those connections?

- a. netstat
- b. ps aux
- c. lsof
- d. vmstat

Correct answer is c.

Ref: Page 45, 46

4. What command could indicate your NIC is in promiscuous mode?

- a. netstat
- b. lsof
- c. ifconfig
- d. vmstat

Correct answer is c.

Ref: Page 46

5. An incident handling toolkit should contain dynamically linked executables?

- a. True.
- b. False.

Correct answer is b.

Ref: Page 25

6. What is the most volatile during evidence collection?

- a. Memory
- b. Network connections.
- c. File System
- d. Disk Blocks

Correct answer is a.

Ref: Page 36

7. What does a file integrity assessment tell you?
- a. Details which files have been altered.
 - b. Indicates a possible compromise.
 - c. Details which lines of a file have been altered.
 - d. Both a & b.

Correct answer is d.

Ref: Page 56, 59

8. How can you detect files that have a link count of zero?
- a. lsof +L0
 - b. lsof +L1
 - c. find
 - d. None of the above.

Correct answer is b.

Ref: Page 90

9. What command lists bad login attempts.
- a. last
 - b. lastbad
 - c. lastb
 - d. btmap

Correct answer is c.

Ref: Page 81

10. What is the benefit of using dd over tar during evidence collection?
- a. dd includes blocks of data marked as "deleted."
 - b. Dd is ideal for backing up a particular directory tree.
 - c. Dd has the ability to swap byte pairs.
 - d. Both a & c.

Correct answer is d.

Ref: Page 48, 49.

Running Unix Applications Securely – 25 Questions

1. Why would you run BIND in a chroot () ed environment?
- a. To prevent someone from compromising your zone files.
 - b. To help protect against someone gaining root privileges on your name server.
 - c. To prevent attackers from executing zone transfers.
 - d. Both a & b.

Correct answer is b.

Ref: Page 94

2. What does the file module mod_access provide?

- a. Enables basic authentication with the username/passwords stored in Berkeley DB files.
- b. Handles HTTP basic authentication.
- c. Handles the basic allow/deny access control.
- d. Handles the anonymous username/password authentication.

Correct answer is c.

Ref: Page 29

3. Which file module(s) is/are not included by default with Apache?
- a. mod_access
 - b. mod_auth
 - c. mod_auth_db
 - d. Both b & c.

Correct answer is c.

Ref: Page 29

4. When running Apache what file or files would you modify to deny access to all directories and files?
- a. httpd.conf
 - b. srm.conf
 - c. access.conf
 - d. .htaccess

Correct answer is c.

Ref: Page 33

5. Where would be the best place(s) to enable Sendmail's anti-spam functionality?
- a. All mail servers that receive email from the outside world.
 - b. All mail servers in your organization.
 - c. All internal mail servers.
 - d. Any server acting as a smart host.

Correct answer is a.

Ref: Page 118

6. How would you limit your web server to serve requests made solely by your local workstation?
- a. edit httpd.conf to "Listen 192.168.1.0:80"
 - b. edit access.conf to "Listen 192.168.1.0:80"
 - c. edit httpd.conf to "Listen 127.0.0.1:80"
 - d. edit access to conf to "Listen 127.0.0.1:80"

Correct answer is c.

Ref: Page 47

7. What type(s) of authentication does Apache support?
- a. MD5
 - b. Basic
 - c. Digest
 - d. Both b & c.

Correct answer is d.

Ref: Page 43

8. What feature in Apache allows HTML pages with the execute permission bit set, to be parsed for server-side includes?
- a. shtml_mod
 - b. html_mod
 - c. XBitHack
 - d. Exec_mod

Correct answer is c.

Ref: Page 39

9. If you have FollowSymLinks turned on, this will affect the performance of your server.
- a. True
 - b. False

Correct answer is b.

Ref: Page 38

10. What port does a mail server listen on?
- a. 23
 - b. 22
 - c. 24
 - d. 25

Correct answer is d.

Ref: Page 107

11. Sendmail is a _____
- a. MTP
 - b. MTA
 - c. MHA
 - d. MUA

Correct answer is b.

Ref: Page 104, 105

12. You are assessing a clients name server and see file "named.boot". What version of BIND is this client likely running?
- a. BIND V8
 - b. BIND V6
 - c. BIND V4
 - d. BIND V5

Correct answer is c.

Ref: Page 80 (Written in; put out in class)

13. Why would someone attempt to perform a zone-transfer against your organization?
- a. To update DNS information.
 - b. To gain knowledge about your internal hosts and network.
 - c. To ensure they have the most up to date DNS information available.
 - d. To attempt to poison your cache file.

Correct answer is b.

Ref: Page 68

14. SSL uses _____ encryption.
- a. Private Key

- b. Public Key
- c. One time
- d. Network Socket.

Correct answer is b.

Ref: Page 55

15. What file defines the permitted file operations for FTP users?

- a. /etc/ftpusers
- b. /etc/ftpaccess
- c. /etc/ftpconversions
- d. /etc/ftphosts

Correct answer is b.

Ref: Page 10

16. When running WU FTPD , how would you deny all traffic from 192.168.1.3 ?

- a. Modify /etc/ftpusers
- b. Modify /etc/ftphosts
- c. Modify /etc/ftpaccess
- d. Modify /etc/hosts.deny

Correct answer is d.

Ref: Page 16

17. What file defines which ftp users can login from a given IP address.

- a. /etc/ftpusers
- b. /etc/ftphosts
- c. /etc/ftpaccess
- d. /etc/ftpgroups

Correct answer is b.

Ref: Page 10

18. What function does the Indexes Option perform?

- a. Lists files and directories that might otherwise be hidden.
- b. Assists the webmaster by indexing all web pages on a server.
- c. Prints a directory listing if there is no index.html.
- d. Both a & c.

Correct answer is d.

Ref: Page 40

19. What file contains directives that can override settings for a directory?

- a. .htpaccess
- b. .htaccess
- c. .access_conf
- d. mod_conf

Correct answer is b.

Ref: Page 41

20. What are some common security issues when running BIND?

- a. Buffer overflows.
- b. Cache Poisoning.
- c. Giving the public too much information about your internal network.

- d. All of the above.

Correct answer is d.

Ref: Page 65, 66

21. What is IP-Based authentication?
- a. Reversing the IP address to a hostname.
 - b. Looking up the hostname to check against the IP address.
 - c. Denying access to spoofed IP addresses.
 - d. All of the above.

Correct answer is d.

Ref: Page 72

22. What is a CNAME ?
- a. An alias.
 - b. A way to associate functional names with specific machines.
 - c. A Canonical Name.
 - d. All of the above.

Correct answer is d.

Ref: Page 87

23. What file contains all files that are uploaded and downloaded?
- a. ftplog
 - b. xferlog
 - c. ftpdlog
 - d. messages

Correct answer is b.

Ref: Page 16

24. How would you prevent files from being uploaded that started with "." ?
- a. Modify /etc/ftpaccess
 - b. Modify /etc/ftpusers to include a path-filter
 - c. Modify /etc/ftpaccess to include a path-filter
 - d. None of the above.

Correct answer is c.

Ref: Page 20

25. Why should you use the allow-transfer option?
- a. To control access to your name server.
 - b. To restrict zone transfers.
 - c. To prevent recursive queries from outside hosts.
 - d. Both b & c.

Correct answer is b.

Ref: Page 82

Unix Security Tools and Their Uses – 25 Questions

1. What mode under Satan probes UDP ports from 32767 to 33500 ?

- a. Heavy
- b. Normal
- c. Exhaustive
- d. Light

Correct answer is a.

Ref: Slide 237

2. What option helps you understand your output format string when using Watcher?
- a. -f
 - b. -h
 - c. -V
 - d. -v

Correct answer is d.

Ref: Slide 193

3. How do you list your users passwords when using nessusd?
- a. nessusd -passwd
 - b. nessusd -L
 - c. nessusd -l
 - d. nessus -v

Correct answer is b.

Ref: Slide 285

4. What percentage of passwords can be guessed in an hour?
- a. 10%
 - b. 5%
 - c. 20%
 - d. 15%

Correct answer is b.

Ref: Slide 405

5. What program forces a user to pick a good password?
- a. crack
 - b. password +
 - c. npassword
 - d. passwd+

Correct answer is d.

Ref: Slide 404

6. What form of authentication does NTPv3 use?
- a. DES-CBC
 - b. Blowfish
 - c. MD5
 - d. Triple DES

Correct answer is a.

Ref: Slide 391

7. What command would you use to view all keys on your PGP key ring?
- a. pgp -ka
 - b. pgp -kvv

- c. pgp -kc
- d. pgp -esa

Correct answer is b.

Ref: Slide 375

8. What compile time option defines who to send mail to for unauthorized user who tries to use sudo?
- a. --with-alerter
 - b. --with-altermail
 - c. --with-logging
 - d. --with-syslog

Correct answer is b.

Ref: Slide 337

9. What type of nmap scan would you execute to see if a firewall is stateful or packet filter based?
- a. TCP SYN/FIN
 - b. TCP SYN
 - c. TCP FIN
 - d. ACK/WIN

Correct answer is d.

Ref: Slide 272

10. What option would you use to limit scans to ports in a given range?
- a. nmap -P
 - b. nmap -sT
 - c. nmap -sU
 - d. nmap -p

Correct answer is d.

Ref: Slide 276

11. What does "nmap -b" do?
- a. Scans for open broadcast addresses.
 - b. Scans using half open TCP connections.
 - c. FTP bounce attack.
 - d. Dictates what interface to send and receive packets on.

Correct answer is c.

Ref: NMAP man page (3).

12. Why would sudo quit with an exit value of 1?
- a. There is a problem with the checksum of the sudo binary.
 - b. There is a permission problem.
 - c. The command you are trying to execute is not safe.
 - d. sudo has detected an attempt to spoof a command.

Correct answer is b.

Ref: SUDO man page (1)

13. How would you change the log file to one of your choosing when running ISS?
- a. iss -d
 - b. iss -m

- c. iss -o
- d. iss -l

Correct answer is c.

Ref: ISS Man page (1)

14. What command option directs LSOF to list the PPID number in PPID column?

- a. lsof -P
- b. lsof -p
- c. lsof -R
- d. lsof -S

Correct answer is c.

Ref: LSOF Man page (8)

15. What command option directs suid.chk to not follow NFS mounted partitions.

- a. -m
- b. -n
- c. -N
- d. -s

Correct answer is b.

Ref: MAN Page (1)

16. What program checks to see if your device files have write permissions turned on?

- a. dev.sh
- b. dev.chk
- c. swat
- d. device.chk

Correct answer is b.

Ref: Man Page (1)

17. How often does sudo re-prompt for a password?

- a. 10 minutes
- b. 5 minutes
- c. 15 minutes
- d. None of the above.

Correct answer is b.

Ref: Slide 329

18. What program is used to test access control rules?

- a. access-control
- b. tcpdchk
- c. tcpdmatch
- d. tcpd

Correct answer is c.

Ref: Slide 299

19. What facility will tcpd use by default?

- a. Syslog
- b. Messages
- c. Info
- d. auth.adm

Correct answer is a.

Ref: Slide 302

20. Ident works on _____ .
- a. tcp-based connections
 - b. udp-based connections
 - c. All TCP/IP protocols.
 - d. Both a & b.

Correct answer is a.

Ref: Slide 307

21. What program provides locking when modifying system configuration files?
- a. vi
 - b. emacs
 - c. RCS
 - d. pico

Correct answer is c.

Ref: Slide 395, 396

22. Crack is a _____ program.
- a. proactive
 - b. reactive
 - c. preventative
 - d. Both a & c.

Correct answer is b.

Ref: Slide 435

23. Those words that are more likely to be chosen should be put in _____ dictionary groups.
- a. sorted
 - b. lower-numbered
 - c. higher-numbered
 - d. Alphabetized

Correct answer is b.

Ref: Slide 417

24. What configuration language does Log check use?
- a. egrep
 - b. grep
 - c. pattern matching
 - d. None of the above.

Correct answer is b.

Ref: Slide 162

25. What program can detect several known bugs in NFS implementations?
- a. nfschk
 - b. nfsbug
 - c. rcpchk
 - d. rcpcheck

Correct answer is b.

Ref: Slide 217

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