

Name:

Date:

Class:

Pre/Post Assessment **Answer Key**

1. Define the following terms:

a. Local Area Network (LAN)

A computer network that often serves as an internet gateway connecting devices in a limited area, usually managed by a layer three router (IP addresses, subnet).

b. Subnet

A logical division of an IP network.

c. CIDR notation

A compact representation of an IP address and its network mask.

d. OSI Layer Three

The network layer that provides a means of transferring data packets from a source to a destination host via one or more networks.

e. Docker container

A packaged application and its dependencies in a virtual container that can run on any Linux, Windows, or macOS computer. Docker containers rely on virtual machine kernels but are not VMs.

f. IP address

A unique identifying number in the form of four octets assigned to every device connected to a network.

g. Windows Subsystem for Linux (WSL2)

A feature of Windows that allows a user to run a Linux environment on a Windows machine without the need for a separate virtual machine or dual booting.

h. Windows PowerShell

A cross-platform, text-based task automation solution made of a command-line shell, a scripting language, and a configuration management framework. It runs on Windows, Linux, and macOS.

i. Linux terminal

A text-based interface that allows users to interact with the system by entering commands and utilizing functions and arguments, managing files, and controlling system processes.

j. Linux root

The name or account that by default has administrative access to all commands and files on a Linux or Unix operating system.

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- k. Linux sudo
Short for superuser do, a command-line utility that elevates a user's privileges to execute admin-level commands.
 - l. Docker Desktop
An application that provides a graphical user interface (GUI) to build, share, and run containerized applications on a local machine.
 - m. Hydra
A parallelized network login and password cracker that supports multiple protocols.
 - n. Crunch
A wordlist generator where you can specify a standard character set or any set of characters to be used in generating the wordlists.
 - o. Advanced Package Tool (APT)
Advanced Package Tool (or APT), the main command-line package manager for Debian (Kali Linux) and its derivatives
2. Explain the difference between the Metasploit Framework and Metasploitable2.
Metasploitable2 is based on Ubuntu and is designed with security flaws for pen testing and ethical hacking. Metasploit is a framework and malware database for attacking vulnerable target systems.
3. Explain the difference between a virtual machine and a container.
The key difference between containers and virtual machines is that virtual machines virtualize an entire machine down to the hardware layers and containers only virtualize software layers above the operating system level.
4. Crunch uses what symbol to denote lower case alpha characters?
The symbol is "@".
5. Highlight the difference between a wordlist used for password cracking and a dictionary.
There is no difference. Wordlists and password dictionaries are the same.
6. Explain the cryptographic connection between passwords and hashes.
On systems, plaintext strings like passwords are masked using a hashing protocol such as md5, sha1, or sha256 for security purposes.

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