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## Pre/Post Assessment Answer Key

Instructions: Define the following terms.:

1. 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 3 router (IP addresses, subnet).
2. Subnet  
A logical division of an IP network.
3. CIDR Notation  
A compact representation of an IP address and its network mask.
4. OSI Layer 3  
The network layer that provides a means of transferring data packets from a source to a destination host via one or more networks.
5. Podman container  
A packaged application and its dependencies in a virtual container that can run on any Linux, Windows, or macOS computer. Podman containers rely on virtual machine kernels, but are not VMs.
6. IP Address  
A unique identifying number in the form of four octets assigned to every device connected to a network.
7. Windows Subsystem for Linux (WSL2)  
A feature of Windows that makes it possible to run a Linux environment on a Windows machine, without the need for a separate virtual machine or dual booting.
8. 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.
9. 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.
10. Linux root  
The name or account that by default has administrative access to all commands and files on a Linux or Unix operating system.
11. Linux sudo  
Short for "superuser do," it elevates a user's privileges to execute admin-level commands.
12. Podman Desktop  
A one-click install application for Mac, Linux, or Windows that makes it possible to build, share, network, and run containerized applications and microservices.

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13. Hydra

A parallelized network login and password cracker that supports multiple protocols.

14. Maskprocessor (mp64)

A wordlist generator that enables the specification of a standard character set or any set of characters to be used in generating the wordlists.

15. Advanced Package Tool (APT)

The main command-line package manager for Debian (Kali Linux) and its derivatives.

16. Medusa

A parallelized network login and password cracker that supports multiple protocols.

17. Wordlists

Sequences of commonly used words typically packaged in large, delimited text files and used for brute-force password cracking.

18. Plocate

The Linux binary that allows a user to "locate" a directory or file in the system.

19. Grok

An AI assistant and chatbot developed by xAI. It is programmed to "maximize truth and objectivity," and can answer "spicy" questions with witty and "rebellious" answers. Grok is built upon a language learning model (LLM) algorithm.

20. Gemini

An AI assistant and chatbot developed by Google. It is built upon a language learning model (LLM) algorithm.

21. dCode

dCode is a site hosted in France that incorporates a variety of useful cryptography tools and converters.

22. Language Learning Models (LLMs)

A machine learning model that aims to predict and generate plausible language. Autocomplete is a language model, for example. These models work by estimating the probability of a token or sequence of tokens occurring within a longer sequence of tokens

23. Subnet Ninja

A site dedicated to understanding IP addressing, auto calculating subnets, and CIDR conversions.

24. 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.

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25. Explain the difference between a virtual machine and container.

The key differentiator 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.

26. Please highlight the difference between a wordlist used for password cracking and a dictionary.

There is no difference; wordlists and password dictionaries are the same.

27. Please explain the cryptographic connection between passwords and hashes.

On systems, plaintext strings like passwords are masked using a hashing protocol like md5, sha1, or sha256 for security purposes.