

CWSP-208 Detailed Answers | Hot CWSP-208 Spot Questions

Department of Chemical Engineering, BUET
Computer Programming and Applications

CHE 208
Quiz 2

Time: 1 hour Marks: 100

[Read the problems carefully and complete all tasks using MATLAB code. Do not solve any part manually. Good luck!]

Problem 1: (56 Marks)

The Gaussian plume model is a widely used mathematical model for predicting the dispersion of pollutants from a single, continuous point source, like a stack. This model assumes that the pollutant concentration spreads out from the source in a Gaussian shape. According to this model, the concentration of pollutant at a point is given by the following equation:

$$C(x, y, z) = \frac{Q}{2\pi\sigma_y\sigma_z u} \exp\left[-\frac{y^2}{2\sigma_y^2}\right] \left\{ \exp\left[-\frac{(z-H)^2}{2\sigma_z^2}\right] + \exp\left[-\frac{(z+H)^2}{2\sigma_z^2}\right] \right\}$$

Here, $\sigma_y = 1_y \times x$, $\sigma_z = 1_z \times x$, $1_y = \frac{\sigma_y}{x}$, $1_z = \frac{\sigma_z}{x}$

See the following figure for more information:

A 100 m tall chimney emits sulfur dioxide at a rate of $Q = 2.5 \text{ kg/s}$. The plume rise, Δh , after exiting the chimney follows a trajectory given by the equation, $\Delta h = 0.13 x^{0.75}$. The wind speed is $u = 10 \text{ m/s}$ and the local ground roughness length is $x_g = 0.01 \text{ m}$. Find the pollutant concentrations at 0 km to 4 km distances, with 1 km increment, along the y -axis for 2 to 10 km distances, with 1 km increment, along the x -axis for heights of 0 m , 100 m , 200 m and 300 m . Prepare a matrix A that shows the distance along x -axis, y axis and the corresponding pollutant concentration in the following manner:

$$A = \begin{bmatrix} 0 & x_1 & x_2 & \dots & x_4 \\ y_1 & C_{1,y_1} & C_{2,y_1} & \dots & 1 \\ y_2 & C_{1,y_2} & C_{2,y_2} & \dots & 1 \\ \dots & \dots & \dots & \dots & \dots \\ y_5 & \dots & \dots & \dots & C_{5,y_5} \end{bmatrix}$$

Now, show how pollutant concentration varies with distance in the y direction for the 2 km , 5 km and 10 km distance in the x direction for all four elevations in a 2×2 subplot. All the values are to be in SI unit in the Gaussian plume model.

[Hint: The command to create a zero matrix is $A = \text{zeros}(n, m)$.]

Problem 2: (50 Marks)

During World War II, the U.S. military faced a critical problem: Japanese cryptographers kept breaking their encrypted messages, putting troops at risk. In 1942, the Marine Corps recruited Navajo soldiers to develop an unbreakable code based on their complex native language.

The Navajo Code Talkers translated military terms into Navajo, then transmitted them via radio. Unlike traditional ciphers, this code had no mathematical pattern, making it impossible for the Japanese to crack. Their code saved countless lives in battles like Iwo Jima.

But what if the enemy had intercepted non-mathematical transmissions instead? Could matrix encryption, like the Hill Cipher, have provided another layer of security?

Scenario: Secure Message Transmission Using the Hill Cipher

Suppose the Navajo Code Talkers also used matrix encryption to further secure their messages. Your task is to decrypt intercepted messages using matrix and polynomial operations.

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At the fork in the road, we always face many choices. When we choose job, job are also choosing us. Today's era is a time of fierce competition. Our CWSP-208 exam question can make you stand out in the competition. Why is that? The answer is that you get the certificate. What certificate? Certificates are certifying that you have passed various qualifying examinations. Watch carefully you will find that more and more people are willing to invest time and energy on the CWSP-208 Exam, because the exam is not achieved overnight, so many people are trying to find a suitable way.

CWNP CWSP-208 Exam Syllabus Topics:

Topic	Details

Topic 1	<ul style="list-style-type: none"> • Vulnerabilities, Threats, and Attacks: This section of the exam evaluates a Network Infrastructure Engineer in identifying and mitigating vulnerabilities and threats within WLAN systems. Candidates are expected to use reliable information sources like CVE databases to assess risks, apply remediations, and implement quarantine protocols. The domain also focuses on detecting and responding to attacks such as eavesdropping and phishing. It includes penetration testing, log analysis, and using monitoring tools like SIEM systems or WIPS • WIDS. Additionally, it covers risk analysis procedures, including asset management, risk ratings, and loss calculations to support the development of informed risk management plans.
Topic 2	<ul style="list-style-type: none"> • WLAN Security Design and Architecture: This part of the exam focuses on the abilities of a Wireless Security Analyst in selecting and deploying appropriate WLAN security solutions in line with established policies. It includes implementing authentication mechanisms like WPA2, WPA3, 802.1X • EAP, and guest access strategies, as well as choosing the right encryption methods, such as AES or VPNs. The section further assesses knowledge of wireless monitoring systems, understanding of AKM processes, and the ability to set up wired security systems like VLANs, firewalls, and ACLs to support wireless infrastructures. Candidates are also tested on their ability to manage secure client onboarding, configure NAC, and implement roaming technologies such as 802.11r. The domain finishes by evaluating practices for protecting public networks, avoiding common configuration errors, and mitigating risks tied to weak security protocols.
Topic 3	<ul style="list-style-type: none"> • Security Lifecycle Management: This section of the exam assesses the performance of a Network Infrastructure Engineer in overseeing the full security lifecycle—from identifying new technologies to ongoing monitoring and auditing. It examines the ability to assess risks associated with new WLAN implementations, apply suitable protections, and perform compliance checks using tools like SIEM. Candidates must also demonstrate effective change management, maintenance strategies, and the use of audit tools to detect vulnerabilities and generate insightful security reports. The evaluation includes tasks such as conducting user interviews, reviewing access controls, performing scans, and reporting findings in alignment with organizational objectives.
Topic 4	<ul style="list-style-type: none"> • Security Policy: This section of the exam measures the skills of a Wireless Security Analyst and covers how WLAN security requirements are defined and aligned with organizational needs. It emphasizes evaluating regulatory and technical policies, involving stakeholders, and reviewing infrastructure and client devices. It also assesses how well high-level security policies are written, approved, and maintained throughout their lifecycle, including training initiatives to ensure ongoing stakeholder awareness and compliance.

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CWNP Certified Wireless Security Professional (CWSP) Sample Questions (Q25-Q30):

NEW QUESTION # 25

You are using a utility that takes input and generates random output. For example, you can provide the input of a known word as a secret word and then also provide another known word as salt input. When you process the input it generates a secret code which is a combination of letters and numbers with case sensitivity. For what is the described utility used? (Choose 3)

- A. Generating secret keys for RADIUS servers and WLAN infrastructure devices
- B. Generating passwords for WLAN infrastructure equipment logins
- C. Generating dynamic session keys used for IPsec VPNs
- D. Generating PMKs that can be imported into 802.11 RSN-compatible devices

- E. Generating passphrases for WLAN systems secured with WPA2-Personal

Answer: A,D,E

Explanation:

A utility that combines a secret and salt to generate a random string is effectively a key derivation tool. It can be used to:
 Generate PMKs (Pairwise Master Keys) to preload ready-made keys into RSN devices
 Generate shared secrets (e.g., RADIUS shared secrets, WLAN controller keys)
 Create strong passphrases for WPA2-Personal networks
 Using it for IPSec session keys is less common (those are usually dynamically negotiated), and creating management passwords is possible but not the main use

NEW QUESTION # 26

Given: During 802.1X/LEAP authentication, the username is passed across the wireless medium in clear text.
 From a security perspective, why is this significant?

- A. 4-Way Handshake nonces are based on the username in WPA and WPA2 authentication.
- B. The username is needed for Personal Access Credential (PAC) and X.509 certificate validation.
- C. The username is an input to the LEAP challenge/response hash that is exploited, so the username must be known to conduct authentication cracking.
- D. The username can be looked up in a dictionary file that lists common username/password combinations.

Answer: C

Explanation:

In Cisco LEAP (Lightweight EAP), the username is sent in clear text as part of the 802.1X authentication process. LEAP uses a challenge/response authentication mechanism that is susceptible to offline dictionary attacks because the attacker only needs to know the username and capture the challenge/response exchange to perform brute-force guessing of passwords. The username is used in generating the hash for the authentication exchange, making its disclosure critical for an attacker.

Incorrect:

A). PACs are used in EAP-FAST, not LEAP.

C). The 4-Way Handshake nonces are unrelated to the username.

D). While dictionary files may include username/password combos, the cryptographic significance in LEAP is due to the challenge/response mechanism.

References:

CWSP-208 Study Guide, Chapter 4 (EAP Types and Authentication Attacks)

CWNP Whitepaper: LEAP Vulnerabilities

NEW QUESTION # 27

What statement is true regarding the nonces (ANonce and SNonce) used in the IEEE 802.11 4 Way Handshake?

- A. Nonces are sent in EAPoL frames to indicate to the receiver that the sending station has installed and validated the encryption keys.
- B. Both nonces are used by the Supplicant and Authenticator in the derivation of a single PTK.
- C. The Supplicant uses the SNonce to derive its unique PTK and the Authenticator uses the ANonce to derive its unique PTK, but the nonces are not shared.
- D. The nonces are created by combining the MAC addresses of the Supplicant, Authenticator, and Authentication Server into a mixing algorithm.

Answer: B

Explanation:

The PTK derivation requires:

PMK

ANonce (generated by the Authenticator)

SNonce (generated by the Supplicant)

MAC addresses of both Authenticator and Supplicant

Both the Supplicant and Authenticator derive the same PTK using identical inputs during the 4-Way Handshake.

Incorrect:

B). The nonces are shared—each party uses both ANonce and SNonce.

C). Nonces indicate no such validation message.

D). The MACs are part of the PTK input but not used to generate the nonces themselves.

References:

CWSP-208 Study Guide, Chapter 3 (4-Way Handshake)

IEEE 802.11i Key Management Process

NEW QUESTION # 28

An attack is under way on the network. The attack is preventing users from accessing resources required for business operations, but the attacker has not gained access to any files or data. What kind of attack is described?

- A. Man-in-the-middle
- B. Hijacking
- C. DoS
- D. ASLEAP

Answer: C

Explanation:

A Denial-of-Service (DoS) attack focuses on preventing legitimate users from accessing network resources. In this case, the attacker has not accessed files or data but is interrupting services. This aligns perfectly with a DoS attack scenario.

References:

CWSP-208 Study Guide, Chapter 5 (WLAN Threat Categories)

CWNP Learning Center: DoS and Availability Attacks

NEW QUESTION # 29

The IEEE 802.11 Pairwise Transient Key (PTK) is derived from what cryptographic element?

- A. PeerKey (PK)
- B. Group Temporal Key (GTK)
- C. Phase Shift Key (PSK)
- D. Group Master Key (GMK)
- E. Pairwise Master Key (PMK)
- F. Key Confirmation Key (KCK)

Answer: E

Explanation:

The PTK (Pairwise Transient Key) is derived during the 4-Way Handshake using:
PMK (from PSK or EAP authentication)

ANonce and SNonce (nonces from authenticator and supplicant)

MAC addresses of client and AP

The PTK is then split into keys used for encryption and integrity protection.

Incorrect:

A). PSK can derive the PMK, but not the PTK directly.

B). GMK is used to derive the GTK, not PTK.

D). GTK is for group traffic encryption.

E & F. PK and KCK are components of PTK or alternate key usage-not used to derive PTK.

References:

CWSP-208 Study Guide, Chapter 3 (PTK Derivation and Usage)

IEEE 802.11i-2004 Key Hierarchy

NEW QUESTION # 30

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