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Exam A

QUESTION 1

A client asked a security company to provide a document outlining the project, the cost, and the completion time frame. Which of the following documents should the company provide to the client?

- A. MSA
- B. SLA
- C. BPA
- D. SOW

Correct Answer: D

Section:

Explanation:

An ISOW is a document that outlines the project, the cost, and the completion time frame for a security company to provide a service to a client. ISOW stands for Information Security Operations Work, and it is a type of contract that specifies the scope, deliverables, milestones, and payment terms of a security project. An ISOW is usually used for one-time or short-term projects that have a clear and defined objective and outcome. For example, an ISOW can be used for a security assessment, a penetration test, a security audit, or a security training.

The other options are not correct because they are not documents that outline the project, the cost, and the completion time frame for a security company to provide a service to a client. A MSA is a master service agreement, which is a type of contract that establishes the general terms and conditions for a long-term or ongoing relationship between a security company and a client. A MSA does not specify the details of each individual project, but rather sets the framework for future projects that will be governed by separate statements of work (SOWs). A SLA is a service level agreement, which is a type of contract that defines the quality and performance standards for a security service provided by a security company to a client. A SLA usually includes the metrics, targets, responsibilities, and penalties for measuring and ensuring the service level. A BPA is a business partnership agreement, which is a type of contract that establishes the roles and expectations for a strategic alliance between two or more security companies that collaborate to provide a joint service to a client. A BPA usually covers the objectives, benefits, risks, and obligations of the partnership. Reference=CompTIA Security+ Study Guide (SY0-701), Chapter 8: Governance, Risk, and Compliance, page 387. Professor Messer's CompTIA SY0-701 Security+ Training Course, Section 8.2: Compliance and Controls, video: Contracts and Agreements (5:12).

QUESTION 2

Which of the following best represents an application that does not have an on-premises requirement and is accessible from anywhere?

- A. Pass
- B. Hybrid cloud
- C. Private cloud
- D. IaaS
- E. SaaS

Correct Answer: E

Section:

Explanation:

Software as a Service (SaaS) represents an application that is hosted in the cloud and accessible via the internet from anywhere, with no requirement for on-premises infrastructure. SaaS applications are managed by a third-party provider, allowing users to access them through a web browser, making them highly scalable and flexible for remote access.

CompTIA Security+ SY0-701 Course Content: Domain 3: Security Architecture, where cloud service models such as SaaS are discussed, highlighting their accessibility and lack of on-premises requirements.

QUESTION 3

A company is utilizing an offshore team to help support the finance department. The company wants to keep the data secure by keeping it on a company device but does not want to provide equipment to the offshore team. Which of the following should the company implement to meet this requirement?

- A. VDI

- B. MDM
- C. VPN
- D. VPC

Correct Answer: A

Section:

Explanation:

Virtual Desktop Infrastructure (VDI) allows a company to host desktop environments on a centralized server. Offshore teams can access these virtual desktops remotely, ensuring that sensitive data stays within the company's infrastructure without the need to provide physical devices to the team. This solution is ideal for maintaining data security while enabling remote work, as all data processing occurs on the company's secure servers.

Reference =

CompTIA Security+ SY0-701 Course Content: VDI is discussed as a method for securely managing remote access to company resources without compromising data security.

QUESTION 4

An employee fell for a phishing scam, which allowed an attacker to gain access to a company PC. The attacker scraped the PC's memory to find other credentials. Without cracking these credentials, the attacker used them to move laterally through the corporate network. Which of the following describes this type of attack?

- A. Privilege escalation
- B. Buffer overflow
- C. SQL injection
- D. Pass-the-hash

Correct Answer: D

Section:

Explanation:

The scenario describes an attacker who obtained credentials from a compromised system's memory and used them without cracking to move laterally within the network. This technique is known as a 'pass-the-hash' attack, where the attacker captures hashed credentials (e.g., NTLM hashes) and uses them to authenticate and gain access to other systems without needing to know the plaintext password. This is a common attack method in environments where weak security practices or outdated protocols are in use.

Reference =

CompTIA Security+ SY0-701 Course Content: The course discusses credential-based attacks like pass-the-hash, emphasizing their impact and the importance of protecting credential stores.

QUESTION 5

A company wants to reduce the time and expense associated with code deployment. Which of the following technologies should the company utilize?

- A. Serverless architecture
- B. Thin clients
- C. Private cloud
- D. Virtual machines

Correct Answer: A

Section:

Explanation:

Serverless architecture allows companies to deploy code without managing the underlying infrastructure. This approach significantly reduces the time and expense involved in code deployment because developers can focus solely on writing code, while the cloud provider manages the servers, scaling, and maintenance. Serverless computing also enables automatic scaling and pay-per-execution billing, which further optimizes costs.

Reference =

CompTIA Security+ SY0-701 Course Content: The course covers cloud technologies, including serverless architectures, which are highlighted as a method to streamline and reduce costs associated with code deployment.

QUESTION 6

A security team created a document that details the order in which critical systems should be brought back online after a major outage. Which of the following documents did the team create?

- A. Communication plan
- B. Incident response plan
- C. Data retention policy
- D. Disaster recovery plan

Correct Answer: D

Section:

Explanation:

The document described in the question is a Disaster Recovery Plan (DRP). A DRP outlines the process and procedures for restoring critical systems and operations after a major disruption or outage. It includes the order in which systems should be brought back online to ensure minimal impact on business operations, prioritizing the most critical systems to recover first.

CompTIA Security+ SY0-701 Course Content: Domain 5: Security Program Management and Oversight, which discusses the development and implementation of disaster recovery plans.

QUESTION 7

An organization wants to limit potential impact to its log-in database in the event of a breach. Which of the following options is the security team most likely to recommend?

- A. Tokenization
- B. Hashing
- C. Obfuscation
- D. Segmentation

Correct Answer: B

Section:

Explanation:

To limit the potential impact on the log-in database in case of a breach, the security team would most likely recommend hashing. Hashing converts passwords into fixed-length strings of characters, which cannot be easily reversed to reveal the original passwords. Even if the database is breached, attackers cannot easily retrieve the actual passwords if they are properly hashed (especially with techniques like salting).

Tokenization is used to replace sensitive data with a token, but it is more common for protecting credit card data than passwords.

Obfuscation is the process of making data harder to interpret but is weaker than hashing for password protection.

Segmentation helps isolate data but doesn't directly protect the contents of the login database.

QUESTION 8

A visitor plugs a laptop into a network jack in the lobby and is able to connect to the company's network. Which of the following should be configured on the existing network infrastructure to best prevent this activity?

- A. Port security
- B. Web application firewall
- C. Transport layer security
- D. Virtual private network

Correct Answer: A

Section:

Explanation:

Port security is the best solution to prevent unauthorized devices, like a visitor's laptop, from connecting to the company's network. Port security can limit the number of devices that can connect to a network switch port and block unauthorized MAC addresses, effectively stopping unauthorized access attempts.

Web application firewall (WAF) protects against web-based attacks, not unauthorized network access.

Transport Layer Security (TLS) ensures encrypted communication but does not manage physical network access.

Virtual Private Network (VPN) secures remote connections but does not control access through physical network ports.

QUESTION 9

Which of the following examples would be best mitigated by input sanitization?

- A. `<script>alert ('Warning!') ,-</script>`
- B. `nmap - 10.11.1.130`
- C. Email message: 'Click this link to get your free gift card.'
- D. Browser message: 'Your connection is not private.'

Correct Answer: A

Section:

Explanation:

This example of a script injection attack would be best mitigated by input sanitization. Input sanitization involves cleaning or filtering user inputs to ensure that they do not contain harmful data, such as malicious scripts. This prevents attackers from executing script-based attacks (e.g., Cross-Site Scripting or XSS).

Nmap command is unrelated to input sanitization, as it is a network scanning tool.

Email phishing attempts require different mitigations, such as user training.

Browser warnings about insecure connections involve encryption protocols, not input validation

QUESTION 10

A security engineer is installing an IPS to block signature-based attacks in the environment. Which of the following modes will best accomplish this task?

- A. Monitor
- B. Sensor
- C. Audit
- D. Active

Correct Answer: D

Section:

Explanation:

To block signature-based attacks, the Intrusion Prevention System (IPS) must be in active mode. In this mode, the IPS can actively monitor and block malicious traffic in real time based on predefined signatures. This is the best mode to prevent known attack types from reaching the internal network.

Monitor mode and sensor mode are typically passive, meaning they only observe and log traffic without actively blocking it.

Audit mode is used for review purposes and does not actively block traffic.

QUESTION 11

A security team is reviewing the findings in a report that was delivered after a third party performed a penetration test. One of the findings indicated that a web application form field is vulnerable to cross-site scripting. Which of the following application security techniques should the security analyst recommend the developer implement to prevent this vulnerability?

- A. Secure cookies
- B. Version control
- C. Input validation
- D. Code signing

Correct Answer: C

Section:

Explanation:

Input validation is a technique that checks the user input for any malicious or unexpected data before processing it by the web application. Input validation can prevent cross-site scripting (XSS) attacks, which exploit the vulnerability of a web application to execute malicious scripts in the browser of a victim. XSS attacks can compromise the confidentiality, integrity, and availability of the web application and its users. Input validation can be implemented on both the client-side and the server-side, but server-side validation is more reliable and secure. Input validation can use various methods, such as whitelisting, blacklisting, filtering, escaping, encoding, and sanitizing the input data. Reference=CompTIA Security+ Study Guide with over 500 Practice Test Questions: Exam SY0-701, 9th Edition, Chapter 2, page 70. CompTIA Security+ (SY0-701) Certification Exam Objectives, Domain



QUESTION 12

Which of the following must be considered when designing a high-availability network? (Choose two).

- A. Ease of recovery
- B. Ability to patch
- C. Physical isolation
- D. Responsiveness
- E. Attack surface
- F. Extensible authentication

Correct Answer: A, E

Section:

Explanation:

A high-availability network is a network that is designed to minimize downtime and ensure continuous operation even in the event of a failure or disruption. A high-availability network must consider the following factors:
Ease of recovery: This refers to the ability of the network to restore normal functionality quickly and efficiently after a failure or disruption. Ease of recovery can be achieved by implementing backup and restore procedures, redundancy and failover mechanisms, fault tolerance and resilience, and disaster recovery plans.

Attack surface: This refers to the amount of exposure and vulnerability of the network to potential threats and attacks. Attack surface can be reduced by implementing security controls such as firewalls, encryption, authentication, access control, segmentation, and hardening.

The other options are not directly related to high-availability network design:

Ability to patch: This refers to the process of updating and fixing software components to address security issues, bugs, or performance improvements. Ability to patch is important for maintaining the security and functionality of the network, but it is not a specific factor for high-availability network design.

Physical isolation: This refers to the separation of network components or devices from other networks or physical environments. Physical isolation can enhance the security and performance of the network, but it can also reduce the availability and accessibility of the network resources.

Responsiveness: This refers to the speed and quality of the network's performance and service delivery. Responsiveness can be measured by metrics such as latency, throughput, jitter, and packet loss. Responsiveness is important for ensuring customer satisfaction and user experience, but it is not a specific factor for high-availability network design.

Extensible authentication: This refers to the ability of the network to support multiple and flexible authentication methods and protocols. Extensible authentication can improve the security and convenience of the network, but it is not a specific factor for high-availability network design.

Reference=1: CompTIA Security+ SY0-701 Certification Study Guide, page 972: High Availability -- CompTIA Security+ SY0-701 -- 3.4, video by Professor Messer.

QUESTION 13

A technician needs to apply a high-priority patch to a production system. Which of the following steps should be taken first?

- A. Air gap the system.
- B. Move the system to a different network segment.
- C. Create a change control request.
- D. Apply the patch to the system.

Correct Answer: C

Section:

Explanation:

= A change control request is a document that describes the proposed change to a system, the reason for the change, the expected impact, the approval process, the testing plan, the implementation plan, the rollback plan, and the communication plan. A change control request is a best practice for applying any patch to a production system, especially a high-priority one, as it ensures that the change is authorized, documented, tested, and communicated. A change control request also minimizes the risk of unintended consequences, such as system downtime, data loss, or security breaches. Reference=CompTIA Security+ Study Guide with over 500 Practice Test Questions: Exam SY0-701, 9th Edition, Chapter 6, page 235. CompTIA Security+ SY0-701 Exam Objectives, Domain 4.1, page 13.

QUESTION 14

Which of the following describes the reason root cause analysis should be conducted as part of incident response?

- A. To gather IoCs for the investigation
- B. To discover which systems have been affected
- C. To eradicate any trace of malware on the network
- D. To prevent future incidents of the same nature

Correct Answer: D

Section:

Explanation:

Root cause analysis is a process of identifying and resolving the underlying factors that led to an incident. By conducting root cause analysis as part of incident response, security professionals can learn from the incident and implement corrective actions to prevent future incidents of the same nature. For example, if the root cause of a data breach was a weak password policy, the security team can enforce a stronger password policy and educate users on the importance of password security. Root cause analysis can also help to improve security processes, policies, and procedures, and to enhance security awareness and culture within the organization. Root cause analysis is not meant to gather IoCs (indicators of compromise) for the investigation, as this is a task performed during the identification and analysis phases of incident response. Root cause analysis is also not meant to discover which systems have been affected or to eradicate any trace of malware on the network, as these are tasks performed during the containment and eradication phases of incident response. Reference=CompTIA Security+ SY0-701 Certification Study Guide, page 424-425; Professor Messer's CompTIA SY0-701 Security+ Training Course, video 5.1 - Incident Response, 9:55 - 11:18.

QUESTION 15

A penetration tester begins an engagement by performing port and service scans against the client environment according to the rules of engagement. Which of the following reconnaissance types is the tester performing?

- A. Active
- B. Passive
- C. Defensive
- D. Offensive

Correct Answer: A

Section:

Explanation:

Active reconnaissance is a type of reconnaissance that involves sending packets or requests to a target and analyzing the responses. Active reconnaissance can reveal information such as open ports, services, operating systems, and vulnerabilities. However, active reconnaissance is also more likely to be detected by the target or its security devices, such as firewalls or intrusion detection systems. Port and service scans are examples of active reconnaissance techniques, as they involve probing the target for specific information.

Reference=CompTIA Security+ Certification Exam Objectives, Domain 1.1: Given a scenario, conduct reconnaissance using appropriate techniques and tools. CompTIA Security+ Study Guide (SY0-701), Chapter 2: Reconnaissance and Intelligence Gathering, page 47. CompTIA Security+ Certification Exam SY0-701 Practice Test 1, Question 1.

QUESTION 16

Which of the following is required for an organization to properly manage its restore process in the event of system failure?

- A. IRP
- B. DRP
- C. RPO
- D. SDLC

Correct Answer: B

Section:

Explanation:

A disaster recovery plan (DRP) is a set of policies and procedures that aim to restore the normal operations of an organization in the event of a system failure, natural disaster, or other emergency. A DRP typically includes the following elements:

A risk assessment that identifies the potential threats and impacts to the organization's critical assets and processes.



A business impact analysis that prioritizes the recovery of the most essential functions and data.

A recovery strategy that defines the roles and responsibilities of the recovery team, the resources and tools needed, and the steps to follow to restore the system.

A testing and maintenance plan that ensures the DRP is updated and validated regularly. A DRP is required for an organization to properly manage its restore process in the event of system failure, as it provides a clear and structured framework for recovering from a disaster and minimizing the downtime and data loss. Reference=CompTIA Security+ Study Guide (SY0-701), Chapter 7: Resilience and Recovery, page 325.

QUESTION 17

Which of the following vulnerabilities is associated with installing software outside of a manufacturer's approved software repository?

- A. Jailbreaking
- B. Memory injection
- C. Resource reuse
- D. Side loading

Correct Answer: D

Section:

Explanation:

Side loading is the process of installing software outside of a manufacturer's approved software repository. This can expose the device to potential vulnerabilities, such as malware, spyware, or unauthorized access. Side loading can also bypass security controls and policies that are enforced by the manufacturer or the organization. Side loading is often done by users who want to access applications or features that are not available or allowed on their devices. Reference=Sideloaded - CompTIA Security + Video Training | Interface Technical Training, Security+ (Plus) Certification | CompTIA IT Certifications, Load Balancers -- CompTIA Security+ SY0-501 -- 2.1, CompTIA Security+ SY0-601 Certification Study Guide.

QUESTION 18

A security analyst is reviewing the following logs:

```
[10:00:00 AM] Login rejected - username administrator - password Spring2023
[10:00:01 AM] Login rejected - username jsmith - password Spring2023
[10:00:01 AM] Login rejected - username guest - password Spring2023
[10:00:02 AM] Login rejected - username cpolk - password Spring2023
[10:00:03 AM] Login rejected - username fmartin - password Spring2023
```

Which of the following attacks is most likely occurring?

- A. Password spraying
- B. Account forgery
- C. Pass-the-hash
- D. Brute-force

Correct Answer: A

Section:

Explanation:

Password spraying is a type of brute force attack that tries common passwords across several accounts to find a match. It is a mass trial-and-error approach that can bypass account lockout protocols. It can give hackers access to personal or business accounts and information. It is not a targeted attack, but a high-volume attack tactic that uses a dictionary or a list of popular or weak passwords.

The logs show that the attacker is using the same password ('password123') to attempt to log in to different accounts ('admin', 'user1', 'user2', etc.) on the same web server. This is a typical pattern of password spraying, as the attacker is hoping that at least one of the accounts has a weak password that matches the one they are trying. The attacker is also using a tool called Hydra, which is one of the most popular brute force tools, often used in cracking passwords for network authentication.

Account forgery is not the correct answer, because it involves creating fake accounts or credentials to impersonate legitimate users or entities. There is no evidence of account forgery in the logs, as the attacker is not creating any new accounts or using forged credentials.

Pass-the-hash is not the correct answer, because it involves stealing a hashed user credential and using it to create a new authenticated session on the same network. Pass-the-hash does not require the attacker to know or

crack the password, as they use the stored version of the password to initiate a new session⁴. The logs show that the attacker is using plain text passwords, not hashes, to try to log in to the web server. Brute-force is not the correct answer, because it is a broader term that encompasses different types of attacks that involve trying different variations of symbols or words until the correct password is found. Password spraying is a specific type of brute force attack that uses a single common password against multiple accounts⁵. The logs show that the attacker is using password spraying, not brute force in general, to try to gain access to the web server. Reference=¹: Password spraying: An overview of password spraying attacks ... - Norton, ²: Security: Credential Stuffing vs. Password Spraying - Baeldung, ³: Brute Force Attack: A definition + 6 types to know | Norton, ⁴: What is a Pass-the-Hash Attack? - CrowdStrike, ⁵: What is a Brute Force Attack? | Definition, Types & How It Works - Fortinet

QUESTION 19

An analyst is evaluating the implementation of Zero Trust principles within the data plane. Which of the following would be most relevant for the analyst to evaluate?

- A. Secured zones
- B. Subject role
- C. Adaptive identity
- D. Threat scope reduction

Correct Answer: D

Section:

Explanation:

The data plane, also known as the forwarding plane, is the part of the network that carries user traffic and data. It is responsible for moving packets from one device to another based on the routing and switching decisions made by the control plane. The data plane is a critical component of the Zero Trust architecture, as it is where most of the attacks and breaches occur. Therefore, implementing Zero Trust principles within the data plane can help to improve the security and resilience of the network.

One of the key principles of Zero Trust is to assume breach and minimize the blast radius and segment access. This means that the network should be divided into smaller and isolated segments or zones, each with its own security policies and controls. This way, if one segment is compromised, the attacker cannot easily move laterally to other segments and access more resources or data. This principle is also known as threat scope reduction, as it reduces the scope and impact of a potential threat.

The other options are not as relevant for the data plane as threat scope reduction. Secured zones are a concept related to the control plane, which is the part of the network that makes routing and switching decisions.

Subject role is a concept related to the identity plane, which is the part of the network that authenticates and authorizes users and devices. Adaptive identity is a concept related to the policy plane, which is the part of the network that defines and enforces the security policies and rules.

Reference= <https://bing.com/search?q=Zero+Trust+data+plane>

<https://learn.microsoft.com/en-us/security/zero-trust/deploy/data>

QUESTION 20

An engineer needs to find a solution that creates an added layer of security by preventing unauthorized access to internal company resources. Which of the following would be the best solution?

- A. RDP server
- B. Jump server
- C. Proxy server
- D. Hypervisor

Correct Answer: B

Section:

Explanation:

= A jump server is a server that acts as an intermediary between a user and a target system. A jump server can provide an added layer of security by preventing unauthorized access to internal company resources. A user can connect to the jump server using a secure protocol, such as SSH, and then access the target system from the jump server. This way, the target system is isolated from the external network and only accessible through the jump server. A jump server can also enforce security policies, such as authentication, authorization, logging, and auditing, on the user's connection. A jump server is also known as a bastion host or a jump box. Reference= CompTIA Security+ Certification Exam Objectives, Domain 3.3: Given a scenario, implement secure network architecture concepts. CompTIA Security+ Study Guide (SY0-701), Chapter 3: Network Architecture and Design, page 101. Other Network Appliances -- SY0-601 CompTIA Security+ : 3.3, Video 3:03. CompTIA Security+ Certification Exam SY0-701 Practice Test 1, Question 2.

QUESTION 21

A company's web filter is configured to scan the URL for strings and deny access when matches are found. Which of the following search strings should an analyst employ to prohibit access to non-encrypted websites?

- A. encryption=off\
- B. http://
- C. www.*.com
- D. :443

Correct Answer: B

Section:

Explanation:

A web filter is a device or software that can monitor, block, or allow web traffic based on predefined rules or policies. One of the common methods of web filtering is to scan the URL for strings and deny access when matches are found. For example, a web filter can block access to websites that contain the words "gambling", "porn", or "malware" in their URLs. A URL is a uniform resource locator that identifies the location and protocol of a web resource. A URL typically consists of the following components: protocol://domain:port/path?query#fragment. The protocol specifies the communication method used to access the web resource, such as HTTP, HTTPS, FTP, or SMTP. The domain is the name of the web server that hosts the web resource, such as www.google.com or www.bing.com. The port is an optional number that identifies the specific service or application running on the web server, such as 80 for HTTP or 443 for HTTPS. The path is the specific folder or file name of the web resource, such as /index.html or /images/logo.png. The query is an optional string that contains additional information or parameters for the web resource, such as ?q=security or ?lang=en. The fragment is an optional string that identifies a specific part or section of the web resource, such as #introduction or #summary.

To prohibit access to non-encrypted websites, an analyst should employ a search string that matches the protocol of non-encrypted web traffic, which is HTTP. HTTP stands for hypertext transfer protocol, and it is a standard protocol for transferring data between web servers and web browsers. However, HTTP does not provide any encryption or security for the data, which means that anyone who intercepts the web traffic can read or modify the data. Therefore, non-encrypted websites are vulnerable to eavesdropping, tampering, or spoofing attacks. To access a non-encrypted website, the URL usually starts with http://, followed by the domain name and optionally the port number. For example, http://www.example.com or http://www.example.com:80. By scanning the URL for the string http://, the web filter can identify and block non-encrypted websites.

The other options are not correct because they do not match the protocol of non-encrypted web traffic. Encryption=off is a possible query string that indicates the encryption status of the web resource, but it is not a standard or mandatory parameter. https:// is the protocol of encrypted web traffic, which uses hypertext transfer protocol secure (HTTPS) to provide encryption and security for the data. www.*.com is a possible domain name that matches any website that starts with www and ends with .com, but it does not specify the protocol. :443 is the port number of HTTPS, which is the protocol of encrypted web traffic. Reference=CompTIA Security+ Study Guide (SY0-701), Chapter 2: Securing Networks, page 69. Professor Messer's CompTIA SY0-701 Security+ Training Course, Section 2.1: Network Devices and Technologies, video: Web Filter (5:16).

QUESTION 22

During a security incident, the security operations team identified sustained network traffic from a malicious IP address:

10.1.4.9. A security analyst is creating an inbound firewall rule to block the IP address from accessing the organization's network. Which of the following fulfills this request?

- A. access-list inbound deny ig source 0.0.0.0/0 destination 10.1.4.9/32
- B. access-list inbound deny ig source 10.1.4.9/32 destination 0.0.0.0/0
- C. access-list inbound permit ig source 10.1.4.9/32 destination 0.0.0.0/0
- D. access-list inbound permit ig source 0.0.0.0/0 destination 10.1.4.9/32

Correct Answer: B

Section:

Explanation:

A firewall rule is a set of criteria that determines whether to allow or deny a packet to pass through the firewall. A firewall rule consists of several elements, such as the action, the protocol, the source address, the destination address, and the port number. The syntax of a firewall rule may vary depending on the type and vendor of the firewall, but the basic logic is the same. In this question, the security analyst is creating an inbound firewall rule to block the IP address 10.1.4.9 from accessing the organization's network. This means that the action should be deny, the protocol should be any (or ig for IP), the source address should be 10.1.4.9/32 (which means a single IP address), the destination address should be 0.0.0.0/0 (which means any IP address), and the port number should be any. Therefore, the correct firewall rule is:

```
access-list inbound deny ig source 10.1.4.9/32 destination 0.0.0.0/0
```

This rule will match any packet that has the source IP address of 10.1.4.9 and drop it. The other options are incorrect because they either have the wrong action, the wrong source address, or the wrong destination address. For example, option A has the source and destination addresses reversed, which means that it will block any packet that has the destination IP address of 10.1.4.9, which is not the intended goal. Option C has the wrong action, which is permit, which means that it will allow the packet to pass through the firewall, which is also not the intended goal. Option D has the same problem as option A, with the source and destination addresses reversed.

Reference=Firewall Rules -- CompTIA Security+ SY0-401: 1.2, Firewalls -- SY0-601 CompTIA Security+ : 3.3, Firewalls -- CompTIA Security+ SY0-501, Understanding Firewall Rules -- CompTIA Network+ N10-005: 5.5, Configuring Windows Firewall -- CompTIA A+ 220-1102 -- 1.6.

QUESTION 23

A company needs to provide administrative access to internal resources while minimizing the traffic allowed through the security boundary. Which of the following methods is most secure?

- A. Implementing a bastion host
- B. Deploying a perimeter network
- C. Installing a WAF
- D. Utilizing single sign-on

Correct Answer: A

Section:

Explanation:

A bastion host is a special-purpose server that is designed to withstand attacks and provide secure access to internal resources. A bastion host is usually placed on the edge of a network, acting as a gateway or proxy to the internal network. A bastion host can be configured to allow only certain types of traffic, such as SSH or HTTP, and block all other traffic. A bastion host can also run security software such as firewalls, intrusion detection systems, and antivirus programs to monitor and filter incoming and outgoing traffic. A bastion host can provide administrative access to internal resources by requiring strong authentication and encryption, and by logging all activities for auditing purposes^{1,2}.

A bastion host is the most secure method among the given options because it minimizes the traffic allowed through the security boundary and provides a single point of control and defense. A bastion host can also isolate the internal network from direct exposure to the internet or other untrusted networks, reducing the attack surface and the risk of compromise³.

Deploying a perimeter network is not the correct answer, because a perimeter network is a network segment that separates the internal network from the external network. A perimeter network usually hosts public-facing services such as web servers, email servers, or DNS servers that need to be accessible from the internet. A perimeter network does not provide administrative access to internal resources, but rather protects them from unauthorized access. A perimeter network can also increase the complexity and cost of network management and security⁴.

Installing a WAF is not the correct answer, because a WAF is a security tool that protects web applications from common web-based attacks by monitoring, filtering, and blocking HTTP traffic. A WAF can prevent attacks such as cross-site scripting, SQL injection, or file inclusion, among others. A WAF does not provide administrative access to internal resources, but rather protects them from web application vulnerabilities. A WAF is also not a comprehensive solution for network security, as it only operates at the application layer and does not protect against other types of attacks or threats⁵.

Utilizing single sign-on is not the correct answer, because single sign-on is a method of authentication that allows users to access multiple sites, services, or applications with one username and password. Single sign-on can simplify the sign-in process for users and reduce the number of passwords they have to remember and manage. Single sign-on does not provide administrative access to internal resources, but rather enables access to various resources that the user is authorized to use. Single sign-on can also introduce security risks if the user's credentials are compromised or if the single sign-on provider is breached⁶. Reference=1: Bastion host - Wikipedia, 2: 14 Best Practices to Secure SSH Bastion Host - goteleport.com, 3: The Importance Of Bastion Hosts In Network Security, 4: What is the network perimeter? | Cloudflare, 5: What is a WAF? | Web Application Firewall explained, 6: [What is single sign-on (SSO)? - Definition from WhatIs.com]

QUESTION 24

An administrator is reviewing a single server's security logs and discovers the following;

Keywords	Date and Time	Source	Event ID	Task Category
Audit	09/16/2022	Microsoft	4625	Logon
Failure	11:13:05 AM	Windows security		
Audit	09/16/2022	Microsoft	4625	Logon
Failure	11:13:07 AM	Windows security		
Audit	09/16/2022	Microsoft	4625	Logon
Failure	11:13:09 AM	Windows security		
Audit	09/16/2022	Microsoft	4625	Logon
Failure	11:13:11 AM	Windows security		
Audit	09/16/2022	Microsoft	4625	Logon
Failure	11:13:13 AM	Windows security		
Audit	09/16/2022	Microsoft	4625	Logon
Failure	11:13:15 AM	Windows security		
Audit	09/16/2022	Microsoft	4625	Logon
Failure	11:13:17 AM	Windows security		
Audit	09/16/2022	Microsoft	4625	Logon
Failure	11:13:19 AM	Windows security		
Audit	09/16/2022	Microsoft	4625	Logon
Failure	11:13:21 AM	Windows security		
Audit	09/16/2022	Microsoft	4625	Logon
Failure	11:13:23 AM	Windows security		
Audit	09/16/2022	Microsoft	4625	Logon
Failure	11:13:25 AM	Windows security		
Audit	09/16/2022	Microsoft	4625	Logon
Failure	11:13:27 AM	Windows security		

Which of the following best describes the action captured in this log file?

- A. Brute-force attack
- B. Privilege escalation
- C. Failed password audit
- D. Forgotten password by the user



Correct Answer: A

Section:

Explanation:

A brute-force attack is a type of attack that involves systematically trying all possible combinations of passwords or keys until the correct one is found. The log file shows multiple failed login attempts in a short amount of time, which is a characteristic of a brute-force attack. The attacker is trying to guess the password of the Administrator account on the server. The log file also shows the event ID 4625, which indicates a failed logon attempt, and the status code 0xC000006A, which means the user name is correct but the password is wrong. These are indicators of compromise (IoC) that suggest a brute-force attack is taking place. Reference: CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, page 215-216 and 2231

QUESTION 25

A security engineer is implementing FDE for all laptops in an organization. Which of the following are the most important for the engineer to consider as part of the planning process? (Select two).

- A. Key escrow
- B. TPM presence
- C. Digital signatures
- D. Data tokenization
- E. Public key management
- F. Certificate authority linking

Correct Answer: A, B

Section:

Explanation:

Key escrow is a method of storing encryption keys in a secure location, such as a trusted third party or a hardware security module (HSM). Key escrow is important for FDE because it allows the recovery of encrypted data in case of lost or forgotten passwords, device theft, or hardware failure. Key escrow also enables authorized access to encrypted data for legal or forensic purposes.

TPM presence is a feature of some laptops that have a dedicated chip for storing encryption keys and other security information. TPM presence is important for FDE because it enhances the security and performance of encryption by generating and protecting the keys within the chip, rather than relying on software or external devices. TPM presence also enables features such as secure boot, remote attestation, and device authentication.

QUESTION 26

A hacker gained access to a system via a phishing attempt that was a direct result of a user clicking a suspicious link. The link laterally deployed ransomware, which laid dormant for multiple weeks, across the network. Which of the following would have mitigated the spread?

- A. IPS
- B. IDS
- C. WAF
- D. UAT

Correct Answer: A

Section:

Explanation:

IPS stands for intrusion prevention system, which is a network security device that monitors and blocks malicious traffic in real time. IPS is different from IDS, which only detects and alerts on malicious traffic, but does not block it. IPS would have mitigated the spread of ransomware by preventing the hacker from accessing the system via the phishing link, or by stopping the ransomware from communicating with its command and control server or encrypting the files.

QUESTION 27

A user is attempting to patch a critical system, but the patch fails to transfer. Which of the following access controls is most likely inhibiting the transfer?

- A. Attribute-based
- B. Time of day
- C. Role-based
- D. Least privilege

Correct Answer: D

Section:

Explanation:

The least privilege principle states that users and processes should only have the minimum level of access required to perform their tasks. This helps to prevent unauthorized or unnecessary actions that could compromise security. In this case, the patch transfer might be failing because the user or process does not have the appropriate permissions to access the critical system or the network resources needed for the transfer. Applying the least privilege principle can help to avoid this issue by granting the user or process the necessary access rights for the patching activity. Reference: CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, page 931

QUESTION 28

A systems administrator wants to prevent users from being able to access data based on their responsibilities. The administrator also wants to apply the required access structure via a simplified format. Which of the following should the administrator apply to the site recovery resource group?

- A. RBAC
- B. ACL
- C. SAML
- D. GPO

Correct Answer: A

Section:

Explanation:

RBAC stands for Role-Based Access Control, which is a method of restricting access to data and resources based on the roles or responsibilities of users. RBAC simplifies the management of permissions by assigning roles to users and granting access rights to roles, rather than to individual users. RBAC can help enforce the principle of least privilege and reduce the risk of unauthorized access or data leakage. The other options are not as suitable for the scenario as RBAC, as they either do not prevent access based on responsibilities, or do not apply a simplified format. Reference: CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, page 1331

QUESTION 29

One of a company's vendors sent an analyst a security bulletin that recommends a BIOS update. Which of the following vulnerability types is being addressed by the patch?

- A. Virtualization
- B. Firmware
- C. Application
- D. Operating system

Correct Answer: B

Section:

Explanation:

Firmware is a type of software that is embedded in hardware devices, such as BIOS, routers, printers, or cameras. Firmware controls the basic functions and operations of the device, and can be updated or patched to fix bugs, improve performance, or enhance security. Firmware vulnerabilities are flaws or weaknesses in the firmware code that can be exploited by attackers to gain unauthorized access, modify settings, or cause damage to the device or the network. A BIOS update is a patch that addresses a firmware vulnerability in the basic input/output system of a computer, which is responsible for booting the operating system and managing the communication between the hardware and the software. The other options are not types of vulnerabilities, but rather categories of software or technology.

QUESTION 30

A security analyst locates a potentially malicious video file on a server and needs to identify both the creation date and the file's creator. Which of the following actions would most likely give the security analyst the information required?

- A. Obtain the file's SHA-256 hash.
- B. Use hexdump on the file's contents.
- C. Check endpoint logs.
- D. Query the file's metadata.

Correct Answer: D

Section:

Explanation:

Metadata is data that describes other data, such as its format, origin, creation date, author, and other attributes. Video files, like other types of files, can contain metadata that can provide useful information for forensic analysis. For example, metadata can reveal the camera model, location, date and time, and software used to create or edit the video file. To query the file's metadata, a security analyst can use various tools, such as MedialInfo1, ffprobe2, or hexdump3, to extract and display the metadata from the video file. By querying the file's metadata, the security analyst can most likely identify both the creation date and the file's creator, as well as other relevant information. Obtaining the file's SHA-256 hash, checking endpoint logs, or using hexdump on the file's contents are other possible actions, but they are not the most appropriate to answer the question. The file's SHA-256 hash is a cryptographic value that can be used to verify the integrity or uniqueness of the file, but it does not reveal any information about the file's creation date or creator. Checking endpoint logs can provide some clues about the file's origin or activity, but it may not be reliable or accurate, especially if the logs are tampered with or incomplete. Using hexdump on the file's contents can show the raw binary data of the file, but it may not be easy or feasible to interpret the metadata from the hex output, especially if the file is large or encrypted.

Reference:1:How do I get the meta-data of a video file?2:How to check if an mp4 file contains malware?3: [Hexdump - Wikipedia]

QUESTION 31

After a recent vulnerability scan, a security engineer needs to harden the routers within the corporate network. Which of the following is the most appropriate to disable?

- A. Console access
- B. Routing protocols
- C. VLANs

D. Web-based administration

Correct Answer: D

Section:

Explanation:

Web-based administration is a feature that allows users to configure and manage routers through a web browser interface. While this feature can provide convenience and ease of use, it can also pose a security risk, especially if the web interface is exposed to the internet or uses weak authentication or encryption methods. Web-based administration can be exploited by attackers to gain unauthorized access to the router's settings, firmware, or data, or to launch attacks such as cross-site scripting (XSS) or cross-site request forgery (CSRF). Therefore, disabling web-based administration is a good practice to harden the routers within the corporate network. Console access, routing protocols, and VLANs are other features that can be configured on routers, but they are not the most appropriate to disable for hardening purposes. Console access is a physical connection to the router that requires direct access to the device, which can be secured by locking the router in a cabinet or using a strong password. Routing protocols are essential for routers to exchange routing information and maintain network connectivity, and they can be secured by using authentication or encryption mechanisms. VLANs are logical segments of a network that can enhance network performance and security by isolating traffic and devices, and they can be secured by using VLAN access control lists (VACLs) or private VLANs (PVLANS).

Reference:CCNA SEC: Router HardeningYour Router's Security Stinks: Here's How to Fix It

QUESTION 32

Which of the following is used to protect a computer from viruses, malware, and Trojans being installed and moving laterally across the network?

- A. IDS
- B. ACL
- C. EDR
- D. NAC

Correct Answer: C

Section:

Explanation:

Endpoint detection and response (EDR) is a technology that monitors and analyzes the activity and behavior of endpoints, such as computers, laptops, mobile devices, and servers. EDR can help to detect and prevent malicious software, such as viruses, malware, and Trojans, from infecting the endpoints and spreading across the network. EDR can also provide visibility and response capabilities to contain and remediate threats. EDR is different from IDS, which is a network-based technology that monitors and alerts on network traffic anomalies. EDR is also different from ACL, which is a list of rules that control the access to network resources. EDR is also different from NAC, which is a technology that enforces policies on the network access of devices based on their identity and compliance status. Reference:CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, page 2561

QUESTION 33

A systems administrator set up a perimeter firewall but continues to notice suspicious connections between internal endpoints. Which of the following should be set up in order to mitigate the threat posed by the suspicious activity?

- A. Host-based firewall
- B. Web application firewall
- C. Access control list
- D. Application allow list

Correct Answer: A

Section:

Explanation:

A host-based firewall is a software application that runs on an individual endpoint and filters the incoming and outgoing network traffic based on a set of rules. A host-based firewall can help to mitigate the threat posed by suspicious connections between internal endpoints by blocking or allowing the traffic based on the source, destination, port, protocol, or application. A host-based firewall is different from a web application firewall, which is a type of firewall that protects web applications from common web-based attacks, such as SQL injection, cross-site scripting, and session hijacking. A host-based firewall is also different from an access control list, which is a list of rules that control the access to network resources, such as files, folders, printers, or routers. A host-based firewall is also different from an application allow list, which is a list of applications that are authorized to run on an endpoint, preventing unauthorized or malicious applications from executing. Reference:CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, page 254

QUESTION 34

A security analyst is reviewing alerts in the SIEM related to potential malicious network traffic coming from an employee's corporate laptop. The security analyst has determined that additional data about the executable running on the machine is necessary to continue the investigation. Which of the following logs should the analyst use as a data source?

- A. Application
- B. IPS/IDS
- C. Network
- D. Endpoint

Correct Answer: D

Section:

Explanation:

An endpoint log is a file that contains information about the activities and events that occur on an end-user device, such as a laptop, desktop, tablet, or smartphone. Endpoint logs can provide valuable data for security analysts, such as the processes running on the device, the network connections established, the files accessed or modified, the user actions performed, and the applications installed or updated. Endpoint logs can also record the details of any executable files running on the device, such as the name, path, size, hash, signature, and permissions of the executable.

An application log is a file that contains information about the events that occur within a software application, such as errors, warnings, transactions, or performance metrics. Application logs can help developers and administrators troubleshoot issues, optimize performance, and monitor user behavior. However, application logs may not provide enough information about the executable files running on the device, especially if they are malicious or unknown.

An IPS/IDS log is a file that contains information about the network traffic that is monitored and analyzed by an intrusion prevention system (IPS) or an intrusion detection system (IDS). IPS/IDS logs can help security analysts identify and block potential attacks, such as exploit attempts, denial-of-service (DoS) attacks, or malicious scans. However, IPS/IDS logs may not provide enough information about the executable files running on the device, especially if they are encrypted, obfuscated, or use legitimate protocols.

A network log is a file that contains information about the network activity and communication that occurs between devices, such as IP addresses, ports, protocols, packets, or bytes. Network logs can help security analysts understand the network topology, traffic patterns, and bandwidth usage. However, network logs may not provide enough information about the executable files running on the device, especially if they are hidden, spoofed, or use proxy servers.

Therefore, the best log type to use as a data source for additional information about the executable running on the machine is the endpoint log, as it can provide the most relevant and detailed data about the executable file and its behavior.

Reference= <https://www.crowdstrike.com/cybersecurity-101/observability/application-log/>

<https://owasp.org/www-project-proactive-controls/v3/en/c9-security-logging>

QUESTION 35

A cyber operations team informs a security analyst about a new tactic malicious actors are using to compromise networks.

SIEM alerts have not yet been configured. Which of the following best describes what the security analyst should do to identify this behavior?

- A. [Digital forensics
- B. E-discovery
- C. Incident response
- D. Threat hunting

Correct Answer: D

Section:

Explanation:

Threat hunting is the process of proactively searching for signs of malicious activity or compromise in a network, rather than waiting for alerts or indicators of compromise (IOCs) to appear. Threat hunting can help identify new tactics, techniques, and procedures (TTPs) used by malicious actors, as well as uncover hidden or stealthy threats that may have evaded detection by security tools. Threat hunting requires a combination of skills, tools, and methodologies, such as hypothesis generation, data collection and analysis, threat intelligence, and incident response. Threat hunting can also help improve the security posture of an organization by providing feedback and recommendations for security improvements. Reference=CompTIA Security+ Certification Exam Objectives, Domain 4.1: Given a scenario, analyze potential indicators of malicious activity. CompTIA Security+ Study Guide (SY0-701), Chapter 4: Threat Detection and Response, page 153. Threat Hunting -- SY0-701 CompTIA Security+ : 4.1, Video 3:18. CompTIA Security+ Certification Exam SY0-701 Practice Test 1, Question 3.

QUESTION 36

A company purchased cyber insurance to address items listed on the risk register. Which of the following strategies does this represent?

- A. Accept
- B. Transfer
- C. Mitigate
- D. Avoid

Correct Answer: B

Section:

Explanation:

Cyber insurance is a type of insurance that covers the financial losses and liabilities that result from cyberattacks, such as data breaches, ransomware, denial-of-service, phishing, or malware. Cyber insurance can help a company recover from the costs of restoring data, repairing systems, paying ransoms, compensating customers, or facing legal actions. Cyber insurance is one of the possible strategies that a company can use to address the items listed on the risk register. A risk register is a document that records the identified risks, their probability, impact, and mitigation strategies for a project or an organization. The four common risk mitigation strategies are: Accept: The company acknowledges the risk and decides to accept the consequences without taking any action to reduce or eliminate the risk. This strategy is usually chosen when the risk is low or the cost of mitigation is too high.

Transfer: The company transfers the risk to a third party, such as an insurance company, a vendor, or a partner. This strategy is usually chosen when the risk is high or the company lacks the resources or expertise to handle the risk.

Mitigate: The company implements controls or measures to reduce the likelihood or impact of the risk. This strategy is usually chosen when the risk is moderate or the cost of mitigation is reasonable.

Avoid: The company eliminates the risk by changing the scope, plan, or design of the project or the organization. This strategy is usually chosen when the risk is unacceptable or the cost of mitigation is too high.

By purchasing cyber insurance, the company is transferring the risk to the insurance company, which will cover the financial losses and liabilities in case of a cyberattack. Therefore, the correct answer is B.

Transfer. Reference=CompTIA Security+ Study Guide (SY0-701), Chapter 8: Governance, Risk, and Compliance, page 377. Professor Messer's CompTIA SY0-701 Security+ Training Course, Section 8.1: Risk Management, video: Risk Mitigation Strategies (5:37).

QUESTION 37

A security administrator would like to protect data on employees' laptops. Which of the following encryption techniques should the security administrator use?

- A. Partition
- B. Asymmetric
- C. Full disk
- D. Database

Correct Answer: C

Section:

Explanation:

Full disk encryption (FDE) is a technique that encrypts all the data on a hard drive, including the operating system, applications, and files. FDE protects the data from unauthorized access in case the laptop is lost, stolen, or disposed of without proper sanitization. FDE requires the user to enter a password, a PIN, a smart card, or a biometric factor to unlock the drive and boot the system. FDE can be implemented by using software solutions, such as BitLocker, FileVault, or VeraCrypt, or by using hardware solutions, such as self-encrypting drives (SEDs) or Trusted Platform Modules (TPMs). FDE is a recommended encryption technique for laptops and other mobile devices that store sensitive data.

Partition encryption is a technique that encrypts only a specific partition or volume on a hard drive, leaving the rest of the drive unencrypted. Partition encryption is less secure than FDE, as it does not protect the entire drive and may leave traces of data on unencrypted areas. Partition encryption is also less convenient than FDE, as it requires the user to mount and unmount the encrypted partition manually.

Asymmetric encryption is a technique that uses a pair of keys, one public and one private, to encrypt and decrypt data. Asymmetric encryption is mainly used for securing communication, such as email, web, or VPN, rather than for encrypting data at rest. Asymmetric encryption is also slower and more computationally intensive than symmetric encryption, which is the type of encryption used by FDE and partition encryption.

Database encryption is a technique that encrypts data stored in a database, such as tables, columns, rows, or cells. Database encryption can be done at the application level, the database level, or the file system level.

Database encryption is useful for protecting data from unauthorized access by database administrators, hackers, or malware, but it does not protect the data from physical theft or loss of the device that hosts the database.

Reference=Data Encryption -- CompTIA Security+ SY0-401: 4.4, CompTIA Security+ Cheat Sheet and PDF | Zero To Mastery, CompTIA Security+ SY0-601 Certification Course - Cybr, Application Hardening -- SY0-601 CompTIA Security+ : 3.2.

QUESTION 38

Which of the following security control types does an acceptable use policy best represent?

- A. Detective
- B. Compensating
- C. Corrective
- D. Preventive

Correct Answer: D

Section:

Explanation:

An acceptable use policy (AUP) is a set of rules that govern how users can access and use a corporate network or the internet. The AUP helps companies minimize their exposure to cyber security threats and limit other risks. The AUP also serves as a notice to users about what they are not allowed to do and protects the company against misuse of their network. Users usually have to acknowledge that they understand and agree to the rules before accessing the network¹.

An AUP best represents a preventive security control type, because it aims to deter or stop potential security incidents from occurring in the first place. A preventive control is proactive and anticipates possible threats and vulnerabilities, and implements measures to prevent them from exploiting or harming the system or the data. A preventive control can be physical, technical, or administrative in nature².

Some examples of preventive controls are:

Locks, fences, or guards that prevent unauthorized physical access to a facility or a device

Firewalls, antivirus software, or encryption that prevent unauthorized logical access to a network or a system

Policies, procedures, or training that prevent unauthorized or inappropriate actions or behaviors by users or employees

An AUP is an example of an administrative preventive control, because it defines the policies and procedures that users must follow to ensure the security and proper use of the network and the IT resources. An AUP can prevent users from engaging in activities that could compromise the security, performance, or availability of the network or the system, such as:

Downloading or installing unauthorized or malicious software

Accessing or sharing sensitive or confidential information without authorization or encryption

Using the network or the system for personal, illegal, or unethical purposes

Bypassing or disabling security controls or mechanisms

Connecting unsecured or unapproved devices to the network

By enforcing an AUP, a company can prevent or reduce the likelihood of security breaches, data loss, legal liability, or reputational damage caused by user actions or inactions³.

Reference=¹:How to Create an Acceptable Use Policy - CoreTech,²: [Security Control Types: Preventive, Detective, Corrective, and Compensating],³:Why You Need A Corporate Acceptable Use Policy - CompTIA

QUESTION 39

An IT manager informs the entire help desk staff that only the IT manager and the help desk lead will have access to the administrator console of the help desk software. Which of the following security techniques is the IT manager setting up?

- A. Hardening
- B. Employee monitoring
- C. Configuration enforcement
- D. Least privilege

Correct Answer: D

Section:

Explanation:

The principle of least privilege is a security concept that limits access to resources to the minimum level needed for a user, a program, or a device to perform a legitimate function. It is a cybersecurity best practice that protects high-value data and assets from compromise or insider threat. Least privilege can be applied to different abstraction layers of a computing environment, such as processes, systems, or connected devices. However, it is rarely implemented in practice.

In this scenario, the IT manager is setting up the principle of least privilege by restricting access to the administrator console of the help desk software to only two authorized users: the IT manager and the help desk lead. This way, the IT manager can prevent unauthorized or accidental changes to the software configuration, data, or functionality by other help desk staff. The other help desk staff will only have access to the normal user interface of the software, which is sufficient for them to perform their job functions.

The other options are not correct. Hardening is the process of securing a system by reducing its surface of vulnerability, such as by removing unnecessary software, changing default passwords, or disabling unnecessary services. Employee monitoring is the surveillance of workers' activity, such as by tracking web browsing, application use, keystrokes, or screenshots. Configuration enforcement is the process of ensuring that a system adheres to a predefined set of security settings, such as by applying a patch, a policy, or a template.

Reference=

https://en.wikipedia.org/wiki/Principle_of_least_privilege
https://en.wikipedia.org/wiki/Principle_of_least_privilege

QUESTION 40

Which of the following is the most likely to be used to document risks, responsible parties, and thresholds?

- A. Risk tolerance
- B. Risk transfer
- C. Risk register
- D. Risk analysis

Correct Answer: C

Section:

Explanation:

A risk register is a document that records and tracks the risks associated with a project, system, or organization. A risk register typically includes information such as the risk description, the risk owner, the risk probability, the risk impact, the risk level, the risk response strategy, and the risk status. A risk register can help identify, assess, prioritize, monitor, and control risks, as well as communicate them to relevant stakeholders. A risk register can also help document the risk tolerance and thresholds of an organization, which are the acceptable levels of risk exposure and the criteria for escalating or mitigating risks. Reference=CompTIA Security+ Certification Exam Objectives, Domain 5.1: Explain the importance of policies, plans, and procedures related to organizational security. CompTIA Security+ Study Guide (SY0-701), Chapter 5: Governance, Risk, and Compliance, page 211. CompTIA Security+ Certification Guide, Chapter 2: Risk Management, page 33. CompTIA Security+ Certification Exam SY0-701 Practice Test 1, Question 4.

QUESTION 41

Which of the following should a security administrator adhere to when setting up a new set of firewall rules?

- A. Disaster recovery plan
- B. Incident response procedure
- C. Business continuity plan
- D. Change management procedure

Correct Answer: D

Section:

Explanation:

A change management procedure is a set of steps and guidelines that a security administrator should adhere to when setting up a new set of firewall rules. A firewall is a device or software that can filter, block, or allow network traffic based on predefined rules or policies. A firewall rule is a statement that defines the criteria and action for a firewall to apply to a packet or a connection. For example, a firewall rule can allow or deny traffic based on the source and destination IP addresses, ports, protocols, or applications. Setting up a new set of firewall rules is a type of change that can affect the security, performance, and functionality of the network.

Therefore, a change management procedure is necessary to ensure that the change is planned, tested, approved, implemented, documented, and reviewed in a controlled and consistent manner. A change management procedure typically includes the following elements:

A change request that describes the purpose, scope, impact, and benefits of the change, as well as the roles and responsibilities of the change owner, implementer, and approver.

A change assessment that evaluates the feasibility, risks, costs, and dependencies of the change, as well as the alternatives and contingency plans.

A change approval that authorizes the change to proceed to the implementation stage, based on the criteria and thresholds defined by the change policy.

A change implementation that executes the change according to the plan and schedule, and verifies the results and outcomes of the change.

A change documentation that records the details and status of the change, as well as the lessons learned and best practices.

A change review that monitors and measures the performance and effectiveness of the change, and identifies any issues or gaps that need to be addressed or improved.

A change management procedure is important for a security administrator to adhere to when setting up a new set of firewall rules, as it can help to achieve the following objectives:

Enhance the security posture and compliance of the network by ensuring that the firewall rules are aligned with the security policies and standards, and that they do not introduce any vulnerabilities or conflicts.

Minimize the disruption and downtime of the network by ensuring that the firewall rules are tested and validated before deployment, and that they do not affect the availability or functionality of the network services or applications.

Improve the efficiency and quality of the network by ensuring that the firewall rules are optimized and updated according to the changing needs and demands of the network users and stakeholders, and that they do not cause any performance or compatibility issues.

Increase the accountability and transparency of the network by ensuring that the firewall rules are documented and reviewed regularly, and that they are traceable and auditable by the relevant authorities and parties.



The other options are not correct because they are not related to the process of setting up a new set of firewall rules. A disaster recovery plan is a set of policies and procedures that aim to restore the normal operations of an organization in the event of a system failure, natural disaster, or other emergency. An incident response procedure is a set of steps and guidelines that aim to contain, analyze, eradicate, and recover from a security incident, such as a cyberattack, data breach, or malware infection. A business continuity plan is a set of strategies and actions that aim to maintain the essential functions and operations of an organization during and after a disruptive event, such as a pandemic, power outage, or civil unrest. Reference=CompTIA Security+ Study Guide (SY0-701), Chapter 7: Resilience and Recovery, page 325. Professor Messer's CompTIA SY0-701 Security+ Training Course, Section 1.3: Security Operations, video: Change Management (5:45).

QUESTION 42

A company is expanding its threat surface program and allowing individuals to security test the company's internet-facing application. The company will compensate researchers based on the vulnerabilities discovered. Which of the following best describes the program the company is setting up?

- A. Open-source intelligence
- B. Bug bounty
- C. Red team
- D. Penetration testing

Correct Answer: B

Section:

Explanation:

A bug bounty is a program that rewards security researchers for finding and reporting vulnerabilities in an application or system. Bug bounties are often used by companies to improve their security posture and incentivize ethical hacking. A bug bounty program typically defines the scope, rules, and compensation for the researchers. Reference=CompTIA Security+ Study Guide with over 500 Practice Test Questions: Exam SY0-701, 9th Edition, Chapter 1, page 10. CompTIA Security+ (SY0-701) Certification Exam Objectives, Domain 1.1, page 2.

QUESTION 43

Which of the following threat actors is the most likely to use large financial resources to attack critical systems located in other countries?

- A. Insider
- B. Unskilled attacker
- C. Nation-state
- D. Hacktivist

Correct Answer: C

Section:

Explanation:

A nation-state is a threat actor that is sponsored by a government or a political entity to conduct cyberattacks against other countries or organizations. Nation-states have large financial resources, advanced technical skills, and strategic objectives that may target critical systems such as military, energy, or infrastructure. Nation-states are often motivated by espionage, sabotage, or warfare. Reference=1: CompTIA Security+ SY0-701 Certification Study Guide, page 542: Threat Actors -- CompTIA Security+ SY0-701 -- 2.1, video by Professor Messer.

QUESTION 44

Which of the following enables the use of an input field to run commands that can view or manipulate data?

- A. Cross-site scripting
- B. Side loading
- C. Buffer overflow
- D. SQL injection

Correct Answer: D

Section:

Explanation:

= SQL injection is a type of attack that enables the use of an input field to run commands that can view or manipulate data in a database. SQL stands for Structured Query Language, which is a language used to communicate with databases. By injecting malicious SQL statements into an input field, an attacker can bypass authentication, access sensitive information, modify or delete data, or execute commands on the server. SQL injection is one of the most common and dangerous web application vulnerabilities. Reference=CompTIA Security+ Study Guide with over 500 Practice Test Questions: Exam SY0-701, 9th Edition, Chapter 5, page 195. CompTIA Security+ SY0-701 Exam Objectives, Domain 1.1, page 8.

QUESTION 45

Employees in the research and development business unit receive extensive training to ensure they understand how to best protect company data. Which of the following is the type of data these employees are most likely to use in day-to-day work activities?

- A. Encrypted
- B. Intellectual property
- C. Critical
- D. Data in transit

Correct Answer: B

Section:

Explanation:

Intellectual property is a type of data that consists of ideas, inventions, designs, or other creative works that have commercial value and are protected by law. Employees in the research and development business unit are most likely to use intellectual property data in their day-to-day work activities, as they are involved in creating new products or services for the company. Intellectual property data needs to be protected from unauthorized use, disclosure, or theft, as it can give the company a competitive advantage in the market. Therefore, these employees receive extensive training to ensure they understand how to best protect this type of data. Reference=CompTIA Security+ SY0-701 Certification Study Guide, page 90; Professor Messer's CompTIA SY0-701 Security+ Training Course, video 1.2 - Security Concepts, 7:57 - 9:03.

QUESTION 46

A company has begun labeling all laptops with asset inventory stickers and associating them with employee IDs. Which of the following security benefits do these actions provide? (Choose two.)

- A. If a security incident occurs on the device, the correct employee can be notified.
- B. The security team will be able to send user awareness training to the appropriate device.
- C. Users can be mapped to their devices when configuring software MFA tokens.
- D. User-based firewall policies can be correctly targeted to the appropriate laptops.
- E. When conducting penetration testing, the security team will be able to target the desired laptops.
- F. Company data can be accounted for when the employee leaves the organization.

Correct Answer: A, F

Section:

Explanation:

Labeling all laptops with asset inventory stickers and associating them with employee IDs can provide several security benefits for a company. Two of these benefits are:

A) If a security incident occurs on the device, the correct employee can be notified. An asset inventory sticker is a label that contains a unique identifier for a laptop, such as a serial number, a barcode, or a QR code. By associating this identifier with an employee ID, the security team can easily track and locate the owner of the laptop in case of a security incident, such as a malware infection, a data breach, or a theft. This way, the security team can notify the correct employee about the incident, and provide them with the necessary instructions or actions to take, such as changing passwords, scanning for viruses, or reporting the loss. This can help to contain the incident, minimize the damage, and prevent further escalation.

F) Company data can be accounted for when the employee leaves the organization. When an employee leaves the organization, the company needs to ensure that all the company data and assets are returned or deleted from the employee's laptop. By labeling the laptop with an asset inventory sticker and associating it with an employee ID, the company can easily identify and verify the laptop that belongs to the departing employee, and perform the appropriate data backup, wipe, or transfer procedures. This can help to protect the company data from unauthorized access, disclosure, or misuse by the former employee or any other party.

The other options are not correct because they are not related to the security benefits of labeling laptops with asset inventory stickers and associating them with employee IDs. B. The security team will be able to send user awareness training to the appropriate device. User awareness training is a type of security education that aims to improve the knowledge and behavior of users regarding security threats and best practices. The security team can send user awareness training to the appropriate device by using the email address, username, or IP address of the device, not the asset inventory sticker or the employee ID. C. Users can be mapped to their devices when configuring software MFA tokens. Software MFA tokens are a type of multi-factor authentication that uses a software application to generate a one-time password or a push notification for verifying the identity of a user. Users can be mapped to their devices when configuring software MFA tokens by using the device ID, phone number, or email address of the device, not the asset inventory sticker or the employee ID. D. User-based firewall

policies can be correctly targeted to the appropriate laptops. User-based firewall policies are a type of firewall rules that apply to specific users or groups of users, regardless of the device or location they use to access the network. User-based firewall policies can be correctly targeted to the appropriate laptops by using the username, domain, or certificate of the user, not the asset inventory sticker or the employee ID. E. When conducting penetration testing, the security team will be able to target the desired laptops. Penetration testing is a type of security assessment that simulates a real-world attack on a network or system to identify and exploit vulnerabilities. When conducting penetration testing, the security team will be able to target the desired laptops by using the IP address, hostname, or MAC address of the laptop, not the asset inventory sticker or the employee ID. Reference=CompTIA Security+ Study Guide (SY0-701), Chapter 1: General Security Concepts, page 17. Professor Messer's CompTIA SY0-701 Security+ Training Course, Section 1.4: Asset Management, video: Asset Inventory (6:12).

QUESTION 47

A technician wants to improve the situational and environmental awareness of existing users as they transition from remote to in-office work. Which of the following is the best option?

- A. Send out periodic security reminders.
- B. Update the content of new hire documentation.
- C. Modify the content of recurring training.
- D. Implement a phishing campaign

Correct Answer: C

Section:

Explanation:

Recurring training is a type of security awareness training that is conducted periodically to refresh and update the knowledge and skills of the users. Recurring training can help improve the situational and environmental awareness of existing users as they transition from remote to in-office work, as it can cover the latest threats, best practices, and policies that are relevant to their work environment. Modifying the content of recurring training can ensure that the users are aware of the current security landscape and the expectations of their roles. Reference=CompTIA Security+ Study Guide with over 500 Practice Test Questions: Exam SY0-701, 9th Edition, Chapter 5, page 232. CompTIA Security+ (SY0-701) Certification Exam Objectives, Domain 5.1, page 18.

QUESTION 48

A newly appointed board member with cybersecurity knowledge wants the board of directors to receive a quarterly report detailing the number of incidents that impacted the organization. The systems administrator is creating a way to present the data to the board of directors. Which of the following should the systems administrator use?

- A. Packet captures
- B. Vulnerability scans
- C. Metadata
- D. Dashboard

Correct Answer: D

Section:

Explanation:

A dashboard is a graphical user interface that provides a visual representation of key performance indicators, metrics, and trends related to security events and incidents. A dashboard can help the board of directors to understand the number and impact of incidents that affected the organization in a given period, as well as the status and effectiveness of the security controls and processes. A dashboard can also allow the board of directors to drill down into specific details or filter the data by various criteria¹².

A packet capture is a method of capturing and analyzing the network traffic that passes through a device or a network segment. A packet capture can provide detailed information about the source, destination, protocol, and content of each packet, but it is not a suitable way to present a summary of incidents to the board of directors¹³.

A vulnerability scan is a process of identifying and assessing the weaknesses and exposures in a system or a network that could be exploited by attackers. A vulnerability scan can help the organization to prioritize and remediate the risks and improve the security posture, but it is not a relevant way to report the number of incidents that occurred in a quarter¹⁴.

Metadata is data that describes other data, such as its format, origin, structure, or context. Metadata can provide useful information about the characteristics and properties of data, but it is not a meaningful way to communicate the impact and frequency of incidents to the board of directors. Reference=1: CompTIA Security+ SY0-701 Certification Study Guide, page 3722: SIEM Dashboards -- SY0-601 CompTIA Security+ : 4.3, video by Professor Messer³: CompTIA Security+ SY0-701 Certification Study Guide, page 3464: CompTIA Security+ SY0-701 Certification Study Guide, page 362. : CompTIA Security+ SY0-701 Certification Study Guide, page 97.

QUESTION 49

A systems administrator receives the following alert from a file integrity monitoring tool:

The hash of the cmd.exe file has changed.

The systems administrator checks the OS logs and notices that no patches were applied in the last two months. Which of the following most likely occurred?

- A. The end user changed the file permissions.
- B. A cryptographic collision was detected.
- C. A snapshot of the file system was taken.
- D. A rootkit was deployed.

Correct Answer: D

Section:

Explanation:

A rootkit is a type of malware that modifies or replaces system files or processes to hide its presence and activity. A rootkit can change the hash of the cmd.exe file, which is a command-line interpreter for Windows systems, to avoid detection by antivirus or file integrity monitoring tools. A rootkit can also grant the attacker remote access and control over the infected system, as well as perform malicious actions such as stealing data, installing backdoors, or launching attacks on other systems. A rootkit is one of the most difficult types of malware to remove, as it can persist even after rebooting or reinstalling the OS. Reference=CompTIA Security+ Study Guide with over 500 Practice Test Questions: Exam SY0-701, 9th Edition, Chapter 4, page 147. CompTIA Security+ SY0-701 Exam Objectives, Domain 1.2, page 9.

QUESTION 50

Which of the following roles, according to the shared responsibility model, is responsible for securing the company's database in an IaaS model for a cloud environment?

- A. Client
- B. Third-party vendor
- C. Cloud provider
- D. DBA

Correct Answer: A

Section:

Explanation:

According to the shared responsibility model, the client and the cloud provider have different roles and responsibilities for securing the cloud environment, depending on the service model. In an IaaS (Infrastructure as a Service) model, the cloud provider is responsible for securing the physical infrastructure, such as the servers, storage, and network devices, while the client is responsible for securing the operating systems, applications, and data that run on the cloud infrastructure. Therefore, the client is responsible for securing the company's database in an IaaS model for a cloud environment, as the database is an application that stores data. The client can use various security controls, such as encryption, access control, backup, and auditing, to protect the database from unauthorized access, modification, or loss. The third-party vendor and the DBA (Database Administrator) are not roles defined by the shared responsibility model, but they may be involved in the implementation or management of the database security. Reference=CompTIA Security+ SY0-701 Certification Study Guide, page 263-264; Professor Messer's CompTIA SY0-701 Security+ Training Course, video 3.1 - Cloud and Virtualization, 5:00 - 7:40.

QUESTION 51

Which of the following is the most likely outcome if a large bank fails an internal PCI DSS compliance assessment?

- A. Fines
- B. Audit findings
- C. Sanctions
- D. Reputation damage

Correct Answer: A

Section:

Explanation:

PCI DSS is the Payment Card Industry Data Security Standard, which is a set of security requirements for organizations that store, process, or transmit cardholder data. PCI DSS aims to protect the confidentiality, integrity, and availability of cardholder data and prevent fraud, identity theft, and data breaches. PCI DSS is enforced by the payment card brands, such as Visa, Mastercard, American Express, Discover, and JCB, and applies to all entities involved in the payment card ecosystem, such as merchants, acquirers, issuers, processors, service providers, and payment applications.

If a large bank fails an internal PCI DSS compliance assessment, the most likely outcome is that the bank will face fines from the payment card brands. An internal PCI DSS compliance assessment is a self-assessment that the



bank performs to evaluate its own compliance with the PCI DSS requirements. The bank must submit the results of the internal assessment to the payment card brands or their designated agents, such as acquirers or qualified security assessors (QSAs). If the internal assessment reveals that the bank is not compliant with the PCI DSS requirements, the payment card brands may impose fines on the bank as a penalty for violating the PCI DSS contract. The amount and frequency of the fines may vary depending on the severity and duration of the non-compliance, the number and type of cardholder data compromised, and the level of cooperation and remediation from the bank. The fines can range from thousands to millions of dollars per month, and can increase over time if the non-compliance is not resolved.

The other options are not correct because they are not the most likely outcomes if a large bank fails an internal PCI DSS compliance assessment. B. Audit findings. Audit findings are the results of an external PCI DSS compliance assessment that is performed by a QSA or an approved scanning vendor (ASV). An external assessment is required for certain entities that handle a large volume of cardholder data or have a history of non-compliance. An external assessment may also be triggered by a security incident or a request from the payment card brands. Audit findings may reveal the gaps and weaknesses in the bank's security controls and recommend corrective actions to achieve compliance. However, audit findings are not the outcome of an internal assessment, which is performed by the bank itself. C. Sanctions. Sanctions are the measures that the payment card brands may take against the bank if the bank fails to pay the fines or comply with the PCI DSS requirements. Sanctions may include increasing the fines, suspending or terminating the bank's ability to accept or process payment cards, or revoking the bank's PCI DSS certification. Sanctions are not the immediate outcome of an internal assessment, but rather the possible consequence of prolonged or repeated non-compliance. D. Reputation damage. Reputation damage is the loss of trust and credibility that the bank may suffer from its customers, partners, regulators, and the public if the bank fails an internal PCI DSS compliance assessment. Reputation damage may affect the bank's brand image, customer loyalty, market share, and profitability. Reputation damage is not a direct outcome of an internal assessment, but rather a potential risk that the bank may face if the non-compliance is exposed or exploited by malicious actors.

Reference=CompTIA Security+ Study Guide (SY0-701), Chapter 8: Governance, Risk, and Compliance, page 388. Professor Messer's CompTIA SY0-701 Security+ Training Course, Section 8.2: Compliance and Controls, video: PCI DSS (5:12). PCI Security Standards Council, PCI DSS Quick Reference Guide, page 4. PCI Security Standards Council, PCI DSS FAQs, question 8. PCI Security Standards Council, PCI DSS FAQs, question 9. [PCI Security Standards Council], PCI DSS FAQs, question 10. [PCI Security Standards Council], PCI DSS FAQs, question 11. [PCI Security Standards Council], PCI DSS FAQs, question 12. [PCI Security Standards Council], PCI DSS FAQs, question 13. [PCI Security Standards Council], PCI DSS FAQs, question 14. [PCI Security Standards Council], PCI DSS FAQs, question 15. [PCI Security Standards Council], PCI DSS FAQs, question 16. [PCI Security Standards Council], PCI DSS FAQs, question 17. [PCI Security Standards Council], PCI DSS FAQs, question 18. [PCI Security Standards Council], PCI DSS FAQs, question 19. [PCI Security Standards Council], PCI DSS FAQs, question 20. [PCI Security Standards Council], PCI DSS FAQs, question 21. [PCI Security Standards Council], PCI DSS FAQs, question 22. [PCI Security Standards Council], PCI DSS FAQs, question 23. [PCI Security Standards Council], PCI DSS FAQs, question 24. [PCI Security Standards Council], PCI DSS FAQs, question 25. [PCI Security Standards Council], PCI DSS FAQs, question 26. [PCI Security Standards Council], PCI DSS FAQs, question 27. [PCI Security Standards Council], PCI DSS FAQs, question 28. [PCI Security Standards Council], PCI DSS FAQs, question 29. [PCI Security Standards Council], PCI DSS FAQs, question 30. [PCI Security Standards Council]

QUESTION 52

A company is developing a business continuity strategy and needs to determine how many staff members would be required to sustain the business in the case of a disruption. Which of the following best describes this step?

- A. Capacity planning
- B. Redundancy
- C. Geographic dispersion
- D. Tablet exercise



Correct Answer: A

Section:

Explanation:

Capacity planning is the process of determining the resources needed to meet the current and future demands of an organization. Capacity planning can help a company develop a business continuity strategy by estimating how many staff members would be required to sustain the business in the case of a disruption, such as a natural disaster, a cyberattack, or a pandemic. Capacity planning can also help a company optimize the use of its resources, reduce costs, and improve performance.

Reference=CompTIA Security+ Study Guide with over 500 Practice Test Questions: Exam SY0-701, 9th Edition, Chapter 4, page 184. CompTIA Security+ (SY0-701) Certification Exam Objectives, Domain 4.1, page 14. Business Continuity -- SY0-601 CompTIA Security+ : 4.1

QUESTION 53

A company's legal department drafted sensitive documents in a SaaS application and wants to ensure the documents cannot be accessed by individuals in high-risk countries. Which of the following is the most effective way to limit this access?

- A. Data masking
- B. Encryption
- C. Geolocation policy
- D. Data sovereignty regulation

Correct Answer: C

Section:

Explanation:

A geolocation policy is a policy that restricts or allows access to data or resources based on the geographic location of the user or device. A geolocation policy can be implemented using various methods, such as IP address filtering, GPS tracking, or geofencing. A geolocation policy can help the company's legal department to prevent unauthorized access to sensitive documents from individuals in high-risk countries¹².

The other options are not effective ways to limit access based on location:

Data masking: This is a technique of obscuring or replacing sensitive data with fictitious or anonymized data. Data masking can protect the privacy and confidentiality of data, but it does not prevent access to data based on location³.

Encryption: This is a process of transforming data into an unreadable format using a secret key or algorithm. Encryption can protect the integrity and confidentiality of data, but it does not prevent access to data based on location. Encryption can also be bypassed by attackers who have the decryption key or method⁴.

Data sovereignty regulation: This is a set of laws or rules that govern the storage, processing, and transfer of data within a specific jurisdiction or country. Data sovereignty regulation can affect the availability and compliance of data, but it does not prevent access to data based on location. Data sovereignty regulation can also vary depending on the country or region.

Reference=1: CompTIA Security+ SY0-701 Certification Study Guide, page 972: Account Policies -- SY0-601 CompTIA Security+ : 3.7, video by Professor Messer³: CompTIA Security+ SY0-701 Certification Study Guide, page 1004: CompTIA Security+ SY0-701 Certification Study Guide, page 101. : CompTIA Security+ SY0-701 Certification Study Guide, page 102.

QUESTION 54

Which of the following is a hardware-specific vulnerability?

- A. Firmware version
- B. Buffer overflow
- C. SQL injection
- D. Cross-site scripting

Correct Answer: A

Section:

Explanation:

Firmware is a type of software that is embedded in a hardware device, such as a router, a printer, or a BIOS chip. Firmware controls the basic functions and operations of the device, and it can be updated or modified by the manufacturer or the user. Firmware version is a hardware-specific vulnerability, as it can expose the device to security risks if it is outdated, corrupted, or tampered with. An attacker can exploit firmware vulnerabilities to gain unauthorized access, modify device settings, install malware, or cause damage to the device or the network. Therefore, it is important to keep firmware updated and verify its integrity and authenticity. Reference=CompTIA Security+ Study Guide with over 500 Practice Test Questions: Exam SY0-701, 9th Edition, Chapter 2, page 67. CompTIA Security+ SY0-701 Exam Objectives, Domain 2.1, page 10.

QUESTION 55

While troubleshooting a firewall configuration, a technician determines that a "deny any" policy should be added to the bottom of the ACL. The technician updates the policy, but the new policy causes several company servers to become unreachable.

Which of the following actions would prevent this issue?

- A. Documenting the new policy in a change request and submitting the request to change management
- B. Testing the policy in a non-production environment before enabling the policy in the production network
- C. Disabling any intrusion prevention signatures on the 'deny any*' policy prior to enabling the new policy
- D. Including an 'allow any1 policy above the 'deny any* policy

Correct Answer: B

Section:

Explanation:

A firewall policy is a set of rules that defines what traffic is allowed or denied on a network. A firewall policy should be carefully designed and tested before being implemented, as a misconfigured policy can cause network disruptions or security breaches. A common best practice is to test the policy in a non-production environment, such as a lab or a simulation, before enabling the policy in the production network. This way, the technician can verify the functionality and performance of the policy, and identify and resolve any issues or conflicts, without affecting the live network. Testing the policy in a non-production environment would prevent the issue of the 'deny any' policy causing several company servers to become unreachable, as the technician would be able to detect and correct the problem before applying the policy to the production network.

Documenting the new policy in a change request and submitting the request to change management is a good practice, but it would not prevent the issue by itself. Change management is a process that ensures that any changes to the network are authorized, documented, and communicated, but it does not guarantee that the changes are error-free or functional. The technician still needs to test the policy before implementing it.

Disabling any intrusion prevention signatures on the 'deny any' policy prior to enabling the new policy would not prevent the issue, and it could reduce the security of the network. Intrusion prevention signatures are patterns that identify malicious or unwanted traffic, and allow the firewall to block or alert on such traffic. Disabling these signatures would make the firewall less effective in detecting and preventing attacks, and it would not affect

the reachability of the company servers.

Including an 'allow any' policy above the 'deny any' policy would not prevent the issue, and it would render the 'deny any' policy useless. A firewall policy is processed from top to bottom, and the first matching rule is applied. An 'allow any' policy would match any traffic and allow it to pass through the firewall, regardless of the source, destination, or protocol. This would negate the purpose of the 'deny any' policy, which is to block any traffic that does not match any of the previous rules. Moreover, an 'allow any' policy would create a security risk, as it would allow any unauthorized or malicious traffic to enter or exit the network. Reference=CompTIA Security+ SY0-701 Certification Study Guide, page 204-205; Professor Messer's CompTIA SY0-701 Security+ Training Course, video 2.1 - Network Security Devices, 8:00 - 10:00.

QUESTION 56

A software development manager wants to ensure the authenticity of the code created by the company. Which of the following options is the most appropriate?

- A. Testing input validation on the user input fields
- B. Performing code signing on company-developed software
- C. Performing static code analysis on the software
- D. Ensuring secure cookies are use

Correct Answer: B

Section:

Explanation:

Code signing is a technique that uses cryptography to verify the authenticity and integrity of the code created by the company. Code signing involves applying a digital signature to the code using a private key that only the company possesses. The digital signature can be verified by anyone who has the corresponding public key, which can be distributed through a trusted certificate authority. Code signing can prevent unauthorized modifications, tampering, or malware injection into the code, and it can also assure the users that the code is from a legitimate source. Reference=CompTIA Security+ Study Guide with over 500 Practice Test Questions: Exam SY0-701, 9th Edition, Chapter 2, page 74. CompTIA Security+ (SY0-701) Certification Exam Objectives, Domain 3.2, page 11. Application Security -- SY0-601 CompTIA Security+ : 3.2

QUESTION 57

Which of the following can be used to identify potential attacker activities without affecting production servers?

- A. Honey pot
- B. Video surveillance
- C. Zero Trust
- D. Geofencing

Correct Answer: A

Section:

Explanation:

A honey pot is a system or a network that is designed to mimic a real production server and attract potential attackers. A honey pot can be used to identify the attacker's methods, techniques, and objectives without affecting the actual production servers. A honey pot can also divert the attacker's attention from the real targets and waste their time and resources¹².

The other options are not effective ways to identify potential attacker activities without affecting production servers:

Video surveillance: This is a physical security technique that uses cameras and monitors to record and observe the activities in a certain area. Video surveillance can help to deter, detect, and investigate physical intrusions, but it does not directly identify the attacker's activities on the network or the servers³.

Zero Trust: This is a security strategy that assumes that no user, device, or network is trustworthy by default and requires strict verification and validation for every request and transaction. Zero Trust can help to improve the security posture and reduce the attack surface of an organization, but it does not directly identify the attacker's activities on the network or the servers⁴.

Geofencing: This is a security technique that uses geographic location as a criterion to restrict or allow access to data or resources. Geofencing can help to protect the data sovereignty and compliance of an organization, but it does not directly identify the attacker's activities on the network or the servers⁵.

Reference=1: CompTIA Security+ SY0-701 Certification Study Guide, page 542: Honeypots and Deception -- SY0-601 CompTIA Security+ : 2.1, video by Professor Messer³: CompTIA Security+ SY0-701 Certification Study Guide, page 974: CompTIA Security+ SY0-701 Certification Study Guide, page 985: CompTIA Security+ SY0-701 Certification Study Guide, page 99.

QUESTION 58

During an investigation, an incident response team attempts to understand the source of an incident. Which of the following incident response activities describes this process?

- A. Analysis
- B. Lessons learned
- C. Detection
- D. Containment

Correct Answer: A

Section:

Explanation:

Analysis is the incident response activity that describes the process of understanding the source of an incident. Analysis involves collecting and examining evidence, identifying the root cause, determining the scope and impact, and assessing the threat actor's motives and capabilities. Analysis helps the incident response team to formulate an appropriate response strategy, as well as to prevent or mitigate future incidents. Analysis is usually performed after detection and before containment, eradication, recovery, and lessons learned. Reference=CompTIA Security+ Study Guide with over 500 Practice Test Questions: Exam SY0-701, 9th Edition, Chapter 6, page 223. CompTIA Security+ SY0-701 Exam Objectives, Domain 4.2, page 13.

QUESTION 59

A security practitioner completes a vulnerability assessment on a company's network and finds several vulnerabilities, which the operations team remediates. Which of the following should be done next?

- A. Conduct an audit.
- B. Initiate a penetration test.
- C. Rescan the network.
- D. Submit a report.

Correct Answer: C

Section:

Explanation:

After completing a vulnerability assessment and remediating the identified vulnerabilities, the next step is to rescan the network to verify that the vulnerabilities have been successfully fixed and no new vulnerabilities have been introduced. A vulnerability assessment is a process of identifying and evaluating the weaknesses and exposures in a network, system, or application that could be exploited by attackers. A vulnerability assessment typically involves using automated tools, such as scanners, to scan the network and generate a report of the findings. The report may include information such as the severity, impact, and remediation of the vulnerabilities. The operations team is responsible for applying the appropriate patches, updates, or configurations to address the vulnerabilities and reduce the risk to the network. A rescan is necessary to confirm that the remediation actions have been effective and that the network is secure.

Conducting an audit, initiating a penetration test, or submitting a report are not the next steps after completing a vulnerability assessment and remediating the vulnerabilities. An audit is a process of reviewing and verifying the compliance of the network with the established policies, standards, and regulations. An audit may be performed by internal or external auditors, and it may use the results of the vulnerability assessment as part of the evidence. However, an audit is not a mandatory step after a vulnerability assessment, and it does not validate the effectiveness of the remediation actions.

A penetration test is a process of simulating a real-world attack on the network to test the security defenses and identify any gaps or weaknesses. A penetration test may use the results of the vulnerability assessment as a starting point, but it goes beyond scanning and involves exploiting the vulnerabilities to gain access or cause damage. A penetration test may be performed after a vulnerability assessment, but only with the proper authorization, scope, and rules of engagement. A penetration test is not a substitute for a rescan, as it does not verify that the vulnerabilities have been fixed.

Submitting a report is a step that is done after the vulnerability assessment, but before the remediation. The report is a document that summarizes the findings and recommendations of the vulnerability assessment, and it is used to communicate the results to the stakeholders and the operations team. The report may also include a follow-up plan and a timeline for the remediation actions. However, submitting a report is not the final step after the remediation, as it does not confirm that the network is secure.

Reference=CompTIA Security+ SY0-701 Certification Study Guide, page 372-375;Professor Messer's CompTIA SY0-701 Security+ Training Course, video 4.1 - Vulnerability Scanning, 0:00 - 8:00.

QUESTION 60

An administrator was notified that a user logged in remotely after hours and copied large amounts of data to a personal device.

Which of the following best describes the user's activity?

- A. Penetration testing
- B. Phishing campaign
- C. External audit
- D. Insider threat

Correct Answer: D

Section:

Explanation:

An insider threat is a security risk that originates from within the organization, such as an employee, contractor, or business partner, who has authorized access to the organization's data and systems. An insider threat can be malicious, such as stealing, leaking, or sabotaging sensitive data, or unintentional, such as falling victim to phishing or social engineering. An insider threat can cause significant damage to the organization's reputation, finances, operations, and legal compliance. The user's activity of logging in remotely after hours and copying large amounts of data to a personal device is an example of a malicious insider threat, as it violates the organization's security policies and compromises the confidentiality and integrity of the data. Reference=Insider Threats -- CompTIA Security+ SY0-701: 3.2, video at 0:00;CompTIA Security+ SY0-701 Certification Study Guide, page 133.

QUESTION 61

Which of the following allows for the attribution of messages to individuals?

- A. Adaptive identity
- B. Non-repudiation
- C. Authentication
- D. Access logs

Correct Answer: B

Section:

Explanation:

Non-repudiation is the ability to prove that a message or document was sent or signed by a particular person, and that the person cannot deny sending or signing it. Non-repudiation can be achieved by using cryptographic techniques, such as hashing and digital signatures, that can verify the authenticity and integrity of the message or document. Non-repudiation can be useful for legal, financial, or contractual purposes, as it can provide evidence of the origin and content of the message or document. Reference=Non-repudiation -- CompTIA Security+ SY0-701 -- 1.2,CompTIA Security+ SY0-301: 6.1 -- Non-repudiation, CompTIA Security+ (SY0-701) Certification Exam Objectives, Domain 1.2, page 2.

QUESTION 62

Which of the following is the best way to consistently determine on a daily basis whether security settings on servers have been modified?

- A. Automation
- B. Compliance checklist
- C. Attestation
- D. Manual audit

Correct Answer: A

Section:

Explanation:

Automation is the best way to consistently determine on a daily basis whether security settings on servers have been modified. Automation is the process of using software, hardware, or other tools to perform tasks that would otherwise require human intervention or manual effort. Automation can help to improve the efficiency, accuracy, and consistency of security operations, as well as reduce human errors and costs. Automation can be used to monitor, audit, and enforce security settings on servers, such as firewall rules, encryption keys, access controls, patch levels, and configuration files. Automation can also alert security personnel of any changes or anomalies that may indicate a security breach or compromise¹².

The other options are not the best ways to consistently determine on a daily basis whether security settings on servers have been modified:

Compliance checklist: This is a document that lists the security requirements, standards, or best practices that an organization must follow or adhere to. A compliance checklist can help to ensure that the security settings on servers are aligned with the organizational policies and regulations, but it does not automatically detect or report any changes or modifications that may occur on a daily basis³.

Attestation: This is a process of verifying or confirming the validity or accuracy of a statement, claim, or fact. Attestation can be used to provide assurance or evidence that the security settings on servers are correct and authorized, but it does not continuously monitor or audit any changes or modifications that may occur on a daily basis⁴.

Manual audit: This is a process of examining or reviewing the security settings on servers by human inspectors or auditors. A manual audit can help to identify and correct any security issues or discrepancies on servers, but it is time-consuming, labor-intensive, and prone to human errors. A manual audit may not be feasible or practical to perform on a daily basis.

Reference=1: CompTIA Security+ SY0-701 Certification Study Guide, page 1022: Automation and Scripting -- CompTIA Security+ SY0-701 -- 5.1, video by Professor Messer³: CompTIA Security+ SY0-701 Certification Study Guide, page 974: CompTIA Security+ SY0-701 Certification Study Guide, page 98. : CompTIA Security+ SY0-701 Certification Study Guide, page 99.

QUESTION 63

Which of the following tools can assist with detecting an employee who has accidentally emailed a file containing a customer's PII?

- A. SCAP
- B. Net Flow
- C. Antivirus
- D. DLP

Correct Answer: D

Section:

Explanation:

DLP stands for Data Loss Prevention, which is a tool that can assist with detecting and preventing the unauthorized transmission or leakage of sensitive data, such as a customer's PII (Personally Identifiable Information). DLP can monitor, filter, and block data in motion (such as emails), data at rest (such as files), and data in use (such as applications). DLP can also alert the sender, the recipient, or the administrator of the data breach, and apply remediation actions, such as encryption, quarantine, or deletion. DLP can help an organization comply with data protection regulations, such as GDPR, HIPAA, or PCI DSS, and protect its reputation and assets. Reference=CompTIA Security+ Study Guide with over 500 Practice Test Questions: Exam SY0-701, 9th Edition, Chapter 2, page 78. CompTIA Security+ SY0-701 Exam Objectives, Domain 2.5, page 11.

QUESTION 64

An organization recently updated its security policy to include the following statement:

Regular expressions are included in source code to remove special characters such as \$, |, ;, &, ` , and ? from variables set by forms in a web application.

Which of the following best explains the security technique the organization adopted by making this addition to the policy?

- A. Identify embedded keys
- B. Code debugging
- C. Input validation
- D. Static code analysis



Correct Answer: C

Section:

Explanation:

Input validation is a security technique that checks the user input for any malicious or unexpected data before processing it by the application. Input validation can prevent various types of attacks, such as injection, cross-site scripting, buffer overflow, and command execution, that exploit the vulnerabilities in the application code. Input validation can be performed on both the client-side and the server-side, using methods such as whitelisting, blacklisting, filtering, sanitizing, escaping, and encoding. By including regular expressions in the source code to remove special characters from the variables set by the forms in the web application, the organization adopted input validation as a security technique. Regular expressions are patterns that match a specific set of characters or strings, and can be used to filter out any unwanted or harmful input. Special characters, such as \$, |, ;, &, ` , and ? , can be used by attackers to inject commands or scripts into the application, and cause damage or data theft. By removing these characters from the input, the organization can reduce the risk of such attacks.

Identify embedded keys, code debugging, and static code analysis are not the security techniques that the organization adopted by making this addition to the policy. Identify embedded keys is a process of finding and removing any hard-coded keys or credentials from the source code, as these can pose a security risk if exposed or compromised. Code debugging is a process of finding and fixing any errors or bugs in the source code, which can affect the functionality or performance of the application. Static code analysis is a process of analyzing the source code without executing it, to identify any vulnerabilities, flaws, or coding standards violations. These techniques are not related to the use of regular expressions to remove special characters from the input.

Reference = CompTIA Security+ SY0-701 Certification Study Guide, page 375-376; Professor Messer's CompTIA SY0-701 Security+ Training Course, video 4.1 - Vulnerability Scanning, 8:00 - 9:08; Application Security -- SY0-601 CompTIA Security+ : 3.2, 0:00 - 2:00.

QUESTION 65

A security analyst and the management team are reviewing the organizational performance of a recent phishing campaign. The user click-through rate exceeded the acceptable risk threshold, and the management team wants to reduce the impact when a user clicks on a link in a phishing message. Which of the following should the analyst do?

- A. Place posters around the office to raise awareness of common phishing activities.
- B. Implement email security filters to prevent phishing emails from being delivered
- C. Update the EDR policies to block automatic execution of downloaded programs.

D. Create additional training for users to recognize the signs of phishing attempts.

Correct Answer: C

Section:

Explanation:

An endpoint detection and response (EDR) system is a security tool that monitors and analyzes the activities and behaviors of endpoints, such as computers, laptops, mobile devices, and servers. An EDR system can detect, prevent, and respond to various types of threats, such as malware, ransomware, phishing, and advanced persistent threats (APTs). One of the features of an EDR system is to block the automatic execution of downloaded programs, which can prevent malicious code from running on the endpoint when a user clicks on a link in a phishing message. This can reduce the impact of a phishing attack and protect the endpoint from compromise. Updating the EDR policies to block automatic execution of downloaded programs is a technical control that can mitigate the risk of phishing, regardless of the user's awareness or behavior. Therefore, this is the best answer among the given options.

The other options are not as effective as updating the EDR policies, because they rely on administrative or physical controls that may not be sufficient to prevent or stop a phishing attack. Placing posters around the office to raise awareness of common phishing activities is a physical control that can increase the user's knowledge of phishing, but it may not change their behavior or prevent them from clicking on a link in a phishing message. Implementing email security filters to prevent phishing emails from being delivered is an administrative control that can reduce the exposure to phishing, but it may not be able to block all phishing emails, especially if they are crafted to bypass the filters. Creating additional training for users to recognize the signs of phishing attempts is an administrative control that can improve the user's skills of phishing detection, but it may not guarantee that they will always be vigilant or cautious when receiving an email. Therefore, these options are not the best answer for this question. Reference=Endpoint Detection and Response -- CompTIA Security+ SY0-701 -- 2.2, video at 5:30;CompTIA Security+ SY0-701 Certification Study Guide, page 163.

QUESTION 66

A company decided to reduce the cost of its annual cyber insurance policy by removing the coverage for ransomware attacks.

Which of the following analysis elements did the company most likely use in making this decision?

- A. IMTTR
- B. RTO
- C. ARO
- D. MTBF



Correct Answer: C

Section:

Explanation:

ARO (Annualized Rate of Occurrence) is an analysis element that measures the frequency or likelihood of an event happening in a given year. ARO is often used in risk assessment and management, as it helps to estimate the potential loss or impact of an event. A company can use ARO to calculate the annualized loss expectancy (ALE) of an event, which is the product of ARO and the single loss expectancy (SLE). ALE represents the expected cost of an event per year, and can be used to compare with the cost of implementing a security control or purchasing an insurance policy.

The company most likely used ARO in making the decision to remove the coverage for ransomware attacks from its cyber insurance policy. The company may have estimated the ARO of ransomware attacks based on historical data, industry trends, or threat intelligence, and found that the ARO was low or negligible. The company may have also calculated the ALE of ransomware attacks, and found that the ALE was lower than the cost of the insurance policy. Therefore, the company decided to reduce the cost of its annual cyber insurance policy by removing the coverage for ransomware attacks, as it deemed the risk to be acceptable or manageable.

IMTTR (Incident Management Team Training and Readiness), RTO (Recovery Time Objective), and MTBF (Mean Time Between Failures) are not analysis elements that the company most likely used in making the decision to remove the coverage for ransomware attacks from its cyber insurance policy. IMTTR is a process of preparing and training the incident management team to respond effectively to security incidents. IMTTR does not measure the frequency or impact of an event, but rather the capability and readiness of the team. RTO is a metric that defines the maximum acceptable time for restoring a system or service after a disruption. RTO does not measure the frequency or impact of an event, but rather the availability and continuity of the system or service. MTBF is a metric that measures the average time between failures of a system or component. MTBF does not measure the frequency or impact of an event, but rather the reliability and performance of the system or component.

Reference=CompTIA Security+ SY0-701 Certification Study Guide, page 97-98;Professor Messer's CompTIA SY0-701 Security+ Training Course, video 5.2 - Risk Management, 0:00 - 3:00.

QUESTION 67

Which of the following is the most likely to be included as an element of communication in a security awareness program?

- A. Reporting phishing attempts or other suspicious activities
- B. Detecting insider threats using anomalous behavior recognition
- C. Verifying information when modifying wire transfer data

D. Performing social engineering as part of third-party penetration testing

Correct Answer: A

Section:

Explanation:

A security awareness program is a set of activities and initiatives that aim to educate and inform the users and employees of an organization about the security policies, procedures, and best practices. A security awareness program can help to reduce the human factor in security risks, such as social engineering, phishing, malware, data breaches, and insider threats. A security awareness program should include various elements of communication, such as newsletters, posters, videos, webinars, quizzes, games, simulations, and feedback mechanisms, to deliver the security messages and reinforce the security culture. One of the most likely elements of communication to be included in a security awareness program is reporting phishing attempts or other suspicious activities, as this can help to raise the awareness of the users and employees about the common types of cyberattacks and how to respond to them. Reporting phishing attempts or other suspicious activities can also help to alert the security team and enable them to take appropriate actions to prevent or mitigate the impact of the attacks. Therefore, this is the best answer among the given options.

The other options are not as likely to be included as elements of communication in a security awareness program, because they are either technical or operational tasks that are not directly related to the security awareness of the users and employees. Detecting insider threats using anomalous behavior recognition is a technical task that involves using security tools or systems to monitor and analyze the activities and behaviors of the users and employees and identify any deviations or anomalies that may indicate malicious or unauthorized actions. This task is usually performed by the security team or the security operations center, and it does not require the communication or participation of the users and employees. Verifying information when modifying wire transfer data is an operational task that involves using verification methods, such as phone calls, emails, or digital signatures, to confirm the authenticity and accuracy of the information related to wire transfers, such as the account number, the amount, or the recipient. This task is usually performed by the financial or accounting department, and it does not involve the security awareness of the users and employees. Performing social engineering as part of third-party penetration testing is a technical task that involves using deception or manipulation techniques, such as phishing, vishing, or impersonation, to test the security posture and the vulnerability of the users and employees to social engineering attacks. This task is usually performed by external security professionals or consultants, and it does not require the communication or consent of the users and employees. Therefore, these options are not the best answer for this question. Reference=Security Awareness and Training - - CompTIA Security+ SY0-701: 5.2, video at 0:00;CompTIA Security+ SY0-701 Certification Study Guide, page 263.

QUESTION 68

HOTSPOT

Select the appropriate attack and remediation from each drop-down list to label the corresponding attack with its remediation.

INSTRUCTIONS

Not all attacks and remediation actions will be used.

If at any time you would like to bring back the initial state of the simulation, please click the Reset All button.

Hot Area:

Attack Description	Target	Attack Identified	BEST Preventative or Remediation Action
An attacker sends multiple SYN packets from multiple sources.	Web server	<ul style="list-style-type: none"> Botnet RAT Logic Bomb Backdoor Virus Spyware Worm Adware Ransomware Keylogger Phishing 	<ul style="list-style-type: none"> Enable DDoS protection Patch vulnerable systems Disable vulnerable services Change the default system password Update the cryptographic algorithms Change the default application password Implement 2FA using push notification Conduct a code review Implement application fuzzing Implement a host-based IPS Disable remote access services
The attack establishes a connection, which allows remote commands to be executed.	User	<ul style="list-style-type: none"> Botnet RAT Logic Bomb Backdoor Virus Spyware Worm Adware Ransomware Keylogger Phishing 	<ul style="list-style-type: none"> Enable DDoS protection Patch vulnerable systems Disable vulnerable services Change the default system password Update the cryptographic algorithms Change the default application password Implement 2FA using push notification Conduct a code review Implement application fuzzing Implement a host-based IPS Disable remote access services
The attack is self propagating and compromises a SQL database using well-known credentials as it moves through the network.	Database server	<ul style="list-style-type: none"> Botnet RAT Logic Bomb Backdoor Virus Spyware Worm Adware Ransomware Keylogger Phishing 	<ul style="list-style-type: none"> Enable DDoS protection Patch vulnerable systems Disable vulnerable services Change the default system password Update the cryptographic algorithms Change the default application password Implement 2FA using push notification Conduct a code review Implement application fuzzing Implement a host-based IPS Disable remote access services
The attacker uses hardware to remotely monitor a user's input activity to harvest credentials.	Executive	<ul style="list-style-type: none"> Botnet RAT Logic Bomb Backdoor Virus Spyware Worm Adware Ransomware Keylogger Phishing 	<ul style="list-style-type: none"> Enable DDoS protection Patch vulnerable systems Disable vulnerable services Change the default system password Update the cryptographic algorithms Change the default application password Implement 2FA using push notification Conduct a code review Implement application fuzzing Implement a host-based IPS Disable remote access services
The attacker embeds hidden access in an internally developed application that bypasses account login.	Application	<ul style="list-style-type: none"> Botnet RAT Logic Bomb Backdoor Virus Spyware 	<ul style="list-style-type: none"> Enable DDoS protection Patch vulnerable systems Disable vulnerable services Change the default system password Update the cryptographic algorithms Change the default application password Implement 2FA using push notification Conduct a code review Implement application fuzzing Implement a host-based IPS Disable remote access services

Answer Area:



Attack Description	Target	Attack Identified	BEST Preventative or Remediation Action
An attacker sends multiple SYN packets from multiple sources.	Web server	<ul style="list-style-type: none"> Botnet RAT Logic Bomb Backdoor Virus Spyware Worm Adware Ransomware Keylogger Phishing 	<ul style="list-style-type: none"> Enable DDoS protection Patch vulnerable systems Disable vulnerable services Change the default system password Update the cryptographic algorithms Change the default application password Implement 2FA using push notification Conduct a code review Implement application fuzzing Implement a host-based IPS Disable remote access services
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The attacker uses hardware to remotely monitor a user's input activity to harvest credentials.	Executive	<ul style="list-style-type: none"> Botnet RAT Logic Bomb Backdoor Virus Spyware Worm Adware Ransomware Keylogger Phishing 	<ul style="list-style-type: none"> Enable DDoS protection Patch vulnerable systems Disable vulnerable services Change the default system password Update the cryptographic algorithms Change the default application password Implement 2FA using push notification Conduct a code review Implement application fuzzing Implement a host-based IPS Disable remote access services
The attacker embeds hidden access in an internally developed application that bypasses account login.	Application	<ul style="list-style-type: none"> Botnet RAT Logic Bomb Backdoor Virus Spyware 	<ul style="list-style-type: none"> Enable DDoS protection Patch vulnerable systems Disable vulnerable services Change the default system password Update the cryptographic algorithms Change the default application password

Section:**Explanation:**

Web server Botnet Enable DDoS protection
User RAT Implement a host-based IPS
Database server Worm Change the default application password
Executive Keylogger Disable vulnerable services
Application Backdoor Implement 2FA using push notification

QUESTION 69

After a recent ransomware attack on a company's system, an administrator reviewed the log files. Which of the following control types did the administrator use?

- A. Compensating
- B. Detective
- C. Preventive
- D. Corrective

Correct Answer: B

Section:**Explanation:**

Detective controls are security measures that are designed to identify and monitor any malicious activity or anomalies on a system or network. They can help to discover the source, scope, and impact of an attack, and provide evidence for further analysis or investigation. Detective controls include log files, security audits, intrusion detection systems, network monitoring tools, and antivirus software. In this case, the administrator used log files as a detective control to review the ransomware attack on the company's system. Log files are records of events and activities that occur on a system or network, such as user actions, system errors, network traffic, and security alerts. They can provide valuable information for troubleshooting, auditing, and forensics.

Security+ (Plus) Certification | CompTIA IT Certifications, under "About the exam", bullet point 3: "Operate with an awareness of applicable regulations and policies, including principles of governance, risk, and compliance."

CompTIA Security+ Certification Kit: Exam SY0-701, 7th Edition, Chapter 1, page 14: "Detective controls are designed to identify and monitor any malicious activity or anomalies on a system or network."

Control Types -- CompTIA Security+ SY0-401: 2.1 - Professor Messer IT ..., under "Detective Controls": "Detective controls are security measures that are designed to identify and monitor any malicious activity or anomalies on a system or network."

QUESTION 70

Which of the following agreement types defines the time frame in which a vendor needs to respond?

- A. SOW
- B. SLA
- C. MOA
- D. MOU

Correct Answer: B

Section:**Explanation:**

A service level agreement (SLA) is a type of agreement that defines the expectations and responsibilities between a service provider and a customer. It usually includes the quality, availability, and performance metrics of the service, as well as the time frame in which the provider needs to respond to service requests, incidents, or complaints. An SLA can help ensure that the customer receives the desired level of service and that the provider is accountable for meeting the agreed-upon standards.

Security+ (Plus) Certification | CompTIA IT Certifications, under "About the exam", bullet point 3: "Operate with an awareness of applicable regulations and policies, including principles of governance, risk, and compliance."

CompTIA Security+ Certification Kit: Exam SY0-701, 7th Edition, Chapter 1, page 14: "Service Level Agreements (SLAs) are contracts between a service provider and a customer that specify the level of service expected from the service provider."

QUESTION 71

A Chief Information Security Officer wants to monitor the company's servers for SQLi attacks and allow for comprehensive investigations if an attack occurs. The company uses SSL decryption to allow traffic monitoring. Which

of the following strategies would best accomplish this goal?

- A. Logging all NetFlow traffic into a SIEM
- B. Deploying network traffic sensors on the same subnet as the servers
- C. Logging endpoint and OS-specific security logs
- D. Enabling full packet capture for traffic entering and exiting the servers

Correct Answer: D

Section:

Explanation:

Full packet capture is a technique that records all network traffic passing through a device, such as a router or firewall. It allows for detailed analysis and investigation of network events, such as SQLi attacks, by providing the complete content and context of the packets. Full packet capture can help identify the source, destination, payload, and timing of an SQLi attack, as well as the impact on the server and database. Logging NetFlow traffic, network traffic sensors, and endpoint and OS-specific security logs can provide some information about network activity, but they do not capture the full content of the packets, which may limit the scope and depth of the investigation.

Reference: CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, page 372-373

QUESTION 72

A company is developing a critical system for the government and storing project information on a fileshare. Which of the following describes how this data will most likely be classified? (Select two).

- A. Private
- B. Confidential
- C. Public
- D. Operational
- E. Urgent
- F. Restricted



Correct Answer: B, F

Section:

Explanation:

Data classification is the process of assigning labels to data based on its sensitivity and business impact. Different organizations and sectors may have different data classification schemes, but a common one is the following:

Public: Data that can be freely disclosed to anyone without any harm or risk.

Private: Data that is intended for internal use only and may cause some harm or risk if disclosed.

Confidential: Data that is intended for authorized use only and may cause significant harm or risk if disclosed.

Restricted: Data that is intended for very limited use only and may cause severe harm or risk if disclosed.

In this scenario, the company is developing a critical system for the government and storing project information on a fileshare. This data is likely to be classified as confidential and restricted, because it is not meant for public or private use, and it may cause serious damage to national security or public safety if disclosed. The government may also have specific requirements or regulations for handling such data, such as encryption, access control, and auditing.

Reference:1: CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, page 16-172:Data Classification Practices: Final Project Description Released

QUESTION 73

After reviewing the following vulnerability scanning report:

Server:192.168.14.6

Service: Telnet

Port: 23 Protocol: TCP

Status: Open Severity: High

Vulnerability: Use of an insecure network protocol

A security analyst performs the following test:

```
nmap -p 23 192.168.14.6 ---script telnet-encryption
```

PORT STATE SERVICE REASON

23/tcp open telnet syn-ack

| telnet encryption:

| _ Telnet server supports encryption

Which of the following would the security analyst conclude for this reported vulnerability?

- A. It is a false positive.
- B. A rescan is required.
- C. It is considered noise.
- D. Compensating controls exist.

Correct Answer: A

Section:

Explanation:

A false positive is a result that indicates a vulnerability or a problem when there is none. In this case, the vulnerability scanning report shows that the telnet service on port 23 is open and uses an insecure network protocol. However, the security analyst performs a test using nmap and a script that checks for telnet encryption support. The result shows that the telnet server supports encryption, which means that the data transmitted between the client and the server can be protected from eavesdropping. Therefore, the reported vulnerability is a false positive and does not reflect the actual security posture of the server. The security analyst should verify the encryption settings of the telnet server and client and ensure that they are configured properly.

Reference:3:Telnet Protocol - Can You Encrypt Telnet?

QUESTION 74

A security consultant needs secure, remote access to a client environment. Which of the following should the security consultant most likely use to gain access?

- A. EAP
- B. DHCP
- C. IPSec
- D. NAT



Correct Answer: C

Section:

Explanation:

IPSec is a protocol suite that provides secure communication over IP networks. IPSec can be used to create virtual private networks (VPNs) that encrypt and authenticate the data exchanged between two or more parties. IPSec can also provide data integrity, confidentiality, replay protection, and access control. A security consultant can use IPSec to gain secure, remote access to a client environment by establishing a VPN tunnel with the client's network. Reference: CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, Chapter 8: Secure Protocols and Services, page 3851

QUESTION 75

Which of the following best practices gives administrators a set period to perform changes to an operational system to ensure availability and minimize business impacts?

- A. Impact analysis
- B. Scheduled downtime
- C. Backout plan
- D. Change management boards

Correct Answer: B

Section:

Explanation:

Scheduled downtime is a planned period of time when a system or service is unavailable for maintenance, updates, upgrades, or other changes. Scheduled downtime gives administrators a set period to perform changes to an operational system without disrupting the normal business operations or affecting the availability of the system or service. Scheduled downtime also allows administrators to inform the users and stakeholders about the

expected duration and impact of the changes. Reference: CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, Chapter 12: Security Operations and Administration, page 5791

QUESTION 76

Which of the following actions could a security engineer take to ensure workstations and servers are properly monitored for unauthorized changes and software?

- A. Configure all systems to log scheduled tasks.
- B. Collect and monitor all traffic exiting the network.
- C. Block traffic based on known malicious signatures.
- D. Install endpoint management software on all systems.

Correct Answer: D

Section:

Explanation:

Endpoint management software is a tool that allows security engineers to monitor and control the configuration, security, and performance of workstations and servers from a central console. Endpoint management software can help detect and prevent unauthorized changes and software installations, enforce policies and compliance, and provide reports and alerts on the status of the endpoints. The other options are not as effective or comprehensive as endpoint management software for this purpose. Reference: CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, page 1371

QUESTION 77

After a security awareness training session, a user called the IT help desk and reported a suspicious call. The suspicious caller stated that the Chief Financial Officer wanted credit card information in order to close an invoice. Which of the following topics did the user recognize from the training?

- A. Insider threat
- B. Email phishing
- C. Social engineering
- D. Executive whaling



Correct Answer: C

Section:

Explanation:

Social engineering is the practice of manipulating people into performing actions or divulging confidential information, often by impersonating someone else or creating a sense of urgency or trust. The suspicious caller in this scenario was trying to use social engineering to trick the user into giving away credit card information by pretending to be the CFO and asking for a payment. The user recognized this as a potential scam and reported it to the IT help desk. The other topics are not relevant to this situation. Reference: CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, page 191

QUESTION 78

Which of the following exercises should an organization use to improve its incident response process?

- A. Tabletop
- B. Replication
- C. Failover
- D. Recovery

Correct Answer: A

Section:

Explanation:

A tabletop exercise is a simulated scenario that tests the organization's incident response plan and procedures. It involves key stakeholders and decision-makers who discuss their roles and actions in response to a hypothetical incident. It can help identify gaps, weaknesses, and improvement areas in the incident response process. It can also enhance communication, coordination, and collaboration among the participants. Reference: CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, page 5251

QUESTION 79

Which of the following is used to validate a certificate when it is presented to a user?

- A. OCSP
- B. CSR
- C. CA
- D. CRC

Correct Answer: A

Section:

Explanation:

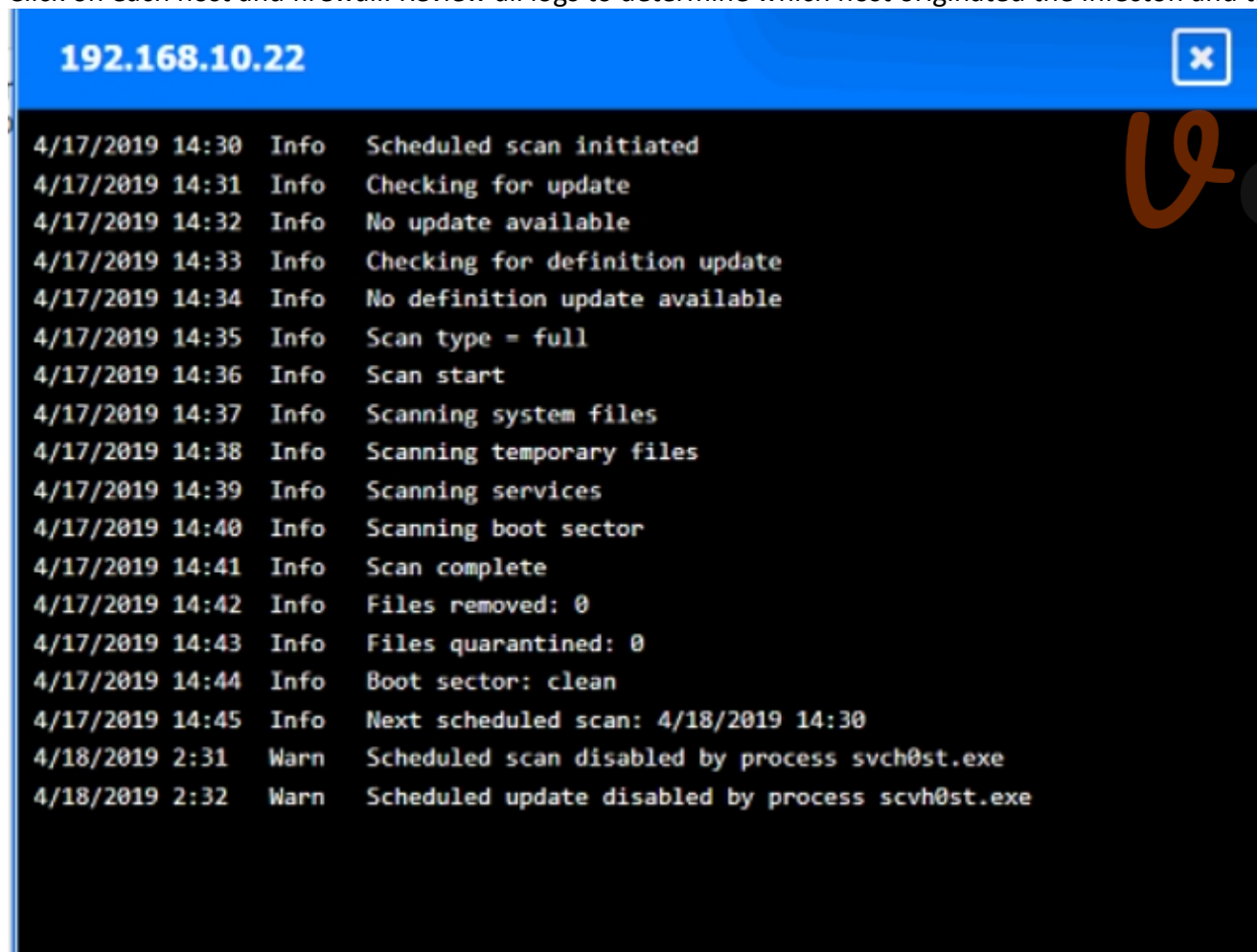
OCSP stands for Online Certificate Status Protocol. It is a protocol that allows applications to check the revocation status of a certificate in real-time. It works by sending a query to an OCSP responder, which is a server that maintains a database of revoked certificates. The OCSP responder returns a response that indicates whether the certificate is valid, revoked, or unknown. OCSP is faster and more efficient than downloading and parsing Certificate Revocation Lists (CRLs), which are large files that contain the serial numbers of all revoked certificates issued by a Certificate Authority (CA). Reference: CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, page 3371

QUESTION 80

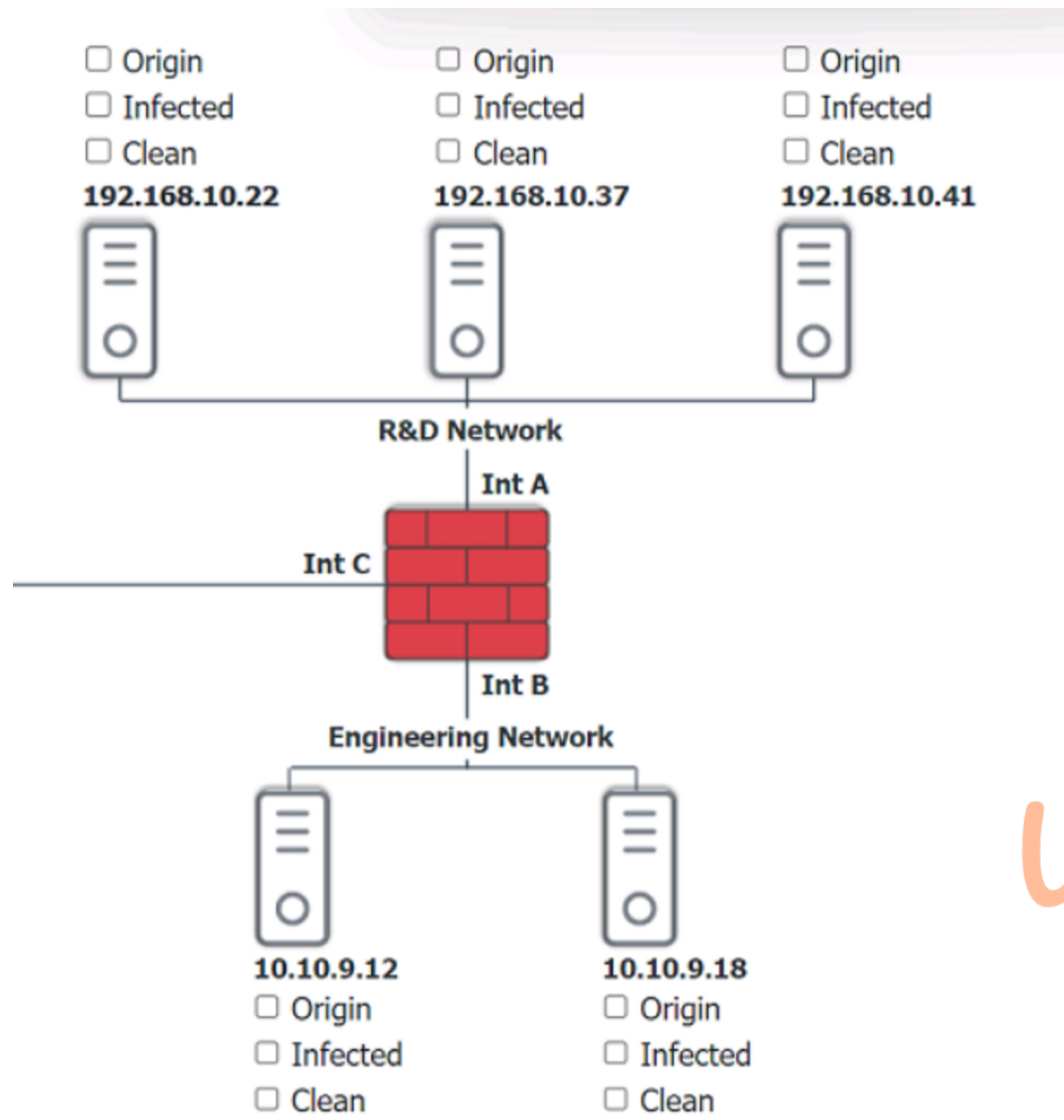
HOTSPOT

You are security administrator investigating a potential infection on a network.

Click on each host and firewall. Review all logs to determine which host originated the infection and then deny each remaining hosts clean or infected.



```
192.168.10.22
4/17/2019 14:30 Info Scheduled scan initiated
4/17/2019 14:31 Info Checking for update
4/17/2019 14:32 Info No update available
4/17/2019 14:33 Info Checking for definition update
4/17/2019 14:34 Info No definition update available
4/17/2019 14:35 Info Scan type - full
4/17/2019 14:36 Info Scan start
4/17/2019 14:37 Info Scanning system files
4/17/2019 14:38 Info Scanning temporary files
4/17/2019 14:39 Info Scanning services
4/17/2019 14:40 Info Scanning boot sector
4/17/2019 14:41 Info Scan complete
4/17/2019 14:42 Info Files removed: 0
4/17/2019 14:43 Info Files quarantined: 0
4/17/2019 14:44 Info Boot sector: clean
4/17/2019 14:45 Info Next scheduled scan: 4/18/2019 14:30
4/18/2019 2:31 Warn Scheduled scan disabled by process svch0st.exe
4/18/2019 2:32 Warn Scheduled update disabled by process scvh0st.exe
```



192.168.10.41



```
4/17/2019 14:36 Info Scan start
4/17/2019 14:37 Info Scanning system files
4/17/2019 14:38 Info Scanning temporary files
4/17/2019 14:39 Info Scanning services
4/17/2019 14:40 Info Scanning boot sector
4/17/2019 14:41 Info Scan complete
4/17/2019 14:42 Info Files removed: 0
4/17/2019 14:43 Info Files quarantined: 0
4/17/2019 14:44 Info Boot sector: clean
4/17/2019 14:45 Info Next scheduled scan: 4/18/2019 14:30
4/18/2019 14:30 Info Scheduled scan initiated
4/18/2019 14:31 Info Checking for update
4/18/2019 14:32 Info No update available
4/18/2019 14:33 Info Checking for definition update
4/18/2019 14:34 Error Unable to reach update server
4/18/2019 14:35 Info Scan type = full
4/18/2019 14:36 Info Scan start
4/18/2019 14:37 Info Scanning system files
4/18/2019 14:37 Warn File svch0st.exe match heuristic pattern 0c09488c08d0f3k
4/18/2019 14:37 Error Unable to quarantine file svch0st.exe
4/18/2019 14:38 Info Scanning temporary files
4/18/2019 14:39 Info Scanning services
4/18/2019 14:40 Info Scanning boot sector
4/18/2019 14:41 Info Scan complete
4/18/2019 14:42 Info Files removed: 0
4/18/2019 14:43 Info Files quarantined: 0
4/18/2019 14:43 Warn File quarantine file
4/18/2019 14:44 Info Boot sector: clean
4/18/2019 14:45 Info Next scheduled scan: 4/19/2019 14:30
```

Vdumps

Firewall



Timestamp	Source	Destination	Destination Port	Application	Action	Client Bytes	Server Bytes
4/17/2019 16:01:44	10.10.9.18	57.203.54.183	443	ssl	Permit	6953	99427
4/17/2019 16:01:58	192.168.10.37	57.203.54.221	443	ssl	Permit	9301	199386
4/17/2019 16:17:06	192.168.10.22	10.10.9.12	135	rpc	Permit	175	1504
4/17/2019 16:27:36	192.168.10.41	10.10.9.12	445	smbv1	Permit	345	34757
4/17/2019 16:28:06	10.10.9.12	192.168.10.41	135	rpc	Permit	754	4771
4/17/2019 16:33:31	10.10.9.18	192.168.10.22	135	rpc	Permit	643	2355
4/17/2019 16:35:36	192.168.10.37	10.10.9.12	135	smbv2	Permit	649	5644
4/17/2019 23:58:36	10.10.9.12	192.168.10.41		icmp	Permit	128	128
4/17/2019 23:58:43	10.10.9.12	192.168.10.22		icmp	Permit	128	128
4/17/2019 23:58:45	10.10.9.12	192.168.10.37		icmp	Permit	128	128
4/18/2019 2:31:36	10.10.9.18	192.168.10.41	445	smbv2	Permit	1874	23874
4/18/2019 2:31:45	192.168.10.22	57.203.55.29	8080	http	Permit	7203	75997
4/18/2019 2:31:51	10.10.9.18	57.203.56.201	443	ssl	Permit	9953	199730
4/18/2019 2:31:02	192.168.10.22	57.203.55.234	443	http	Permit	4937	84937
4/18/2019 2:39:11	192.168.10.41	57.203.53.89	8080	http	Permit	8201	133183
4/18/2019 2:39:12	10.10.9.18	57.203.55.19	8080	ssl	Permit	1284	9102854
4/18/2019 2:39:32	192.168.10.37	57.203.56.113	443	ssl	Permit	9341	9938
4/18/2019 13:37:36	192.168.10.22	10.10.9.18	445	smbv3	Permit	1874	23874
4/18/2019 13:39:43	192.168.10.22	10.10.9.18	135	rpc	Permit	673	41358
4/18/2019 13:45:04	10.10.9.18	192.168.10.37	135	rpc	Permit	693	1952
4/18/2019 13:47:44	10.10.9.12	192.168.10.41	445	smbv3	Permit	482	3505
4/18/2019 13:52:57	10.10.9.18	192.168.10.22	135	rpc	Permit	545	9063
4/18/2019 13:53:01	192.168.10.37	10.10.9.12	335	smbv3	Permit	876	8068
4/18/2019 14:30:04	10.10.9.12	57.203.56.231	443	ssl	Permit	9901	199730
4/18/2019 14:30:04	192.168.10.37	57.203.56.143	443	ssl	Permit	10092	209938

10.10.9.12



```
4/17/2019 14:30 Info Scheduled scan initiated
4/17/2019 14:31 Info Checking for update
4/17/2019 14:32 Info No update available
4/17/2019 14:33 Info Checking for definition update
4/17/2019 14:34 Info No definition update available
4/17/2019 14:35 Info Scan type = full
4/17/2019 14:36 Info Scan start
4/17/2019 14:37 Info Scanning system files
4/17/2019 14:38 Info Scanning temporary files
4/17/2019 14:39 Info Scanning services
4/17/2019 14:40 Info Scanning boot sector
4/17/2019 14:41 Info Scan complete
4/17/2019 14:42 Info Files removed: 0
4/17/2019 14:43 Info Files quarantined: 0
4/17/2019 14:44 Info Boot sector: clean
4/17/2019 14:45 Info Next scheduled scan: 4/18/2019 14:30
4/18/2019 14:30 Info Scheduled scan initiated
4/18/2019 14:31 Info Checking for update
4/18/2019 14:32 Info No update available
4/18/2019 14:33 Info Checking for definition update
4/18/2019 14:34 Info Update available v10.2.3.4440
4/18/2019 14:33 Info Downloading update
4/18/2019 14:35 Info Definition update complete
4/18/2019 14:35 Info Scan type = full
4/18/2019 14:36 Info Scan start
4/18/2019 14:37 Info Scanning system files
4/18/2019 14:37 Warn File found svchost.exe match definition v10.2.3.4440
4/18/2019 14:37 Warn File quarantined svchost.exe
4/18/2019 14:38 Info Scanning temporary files
4/18/2019 14:39 Info Scanning services
```

Vdumps

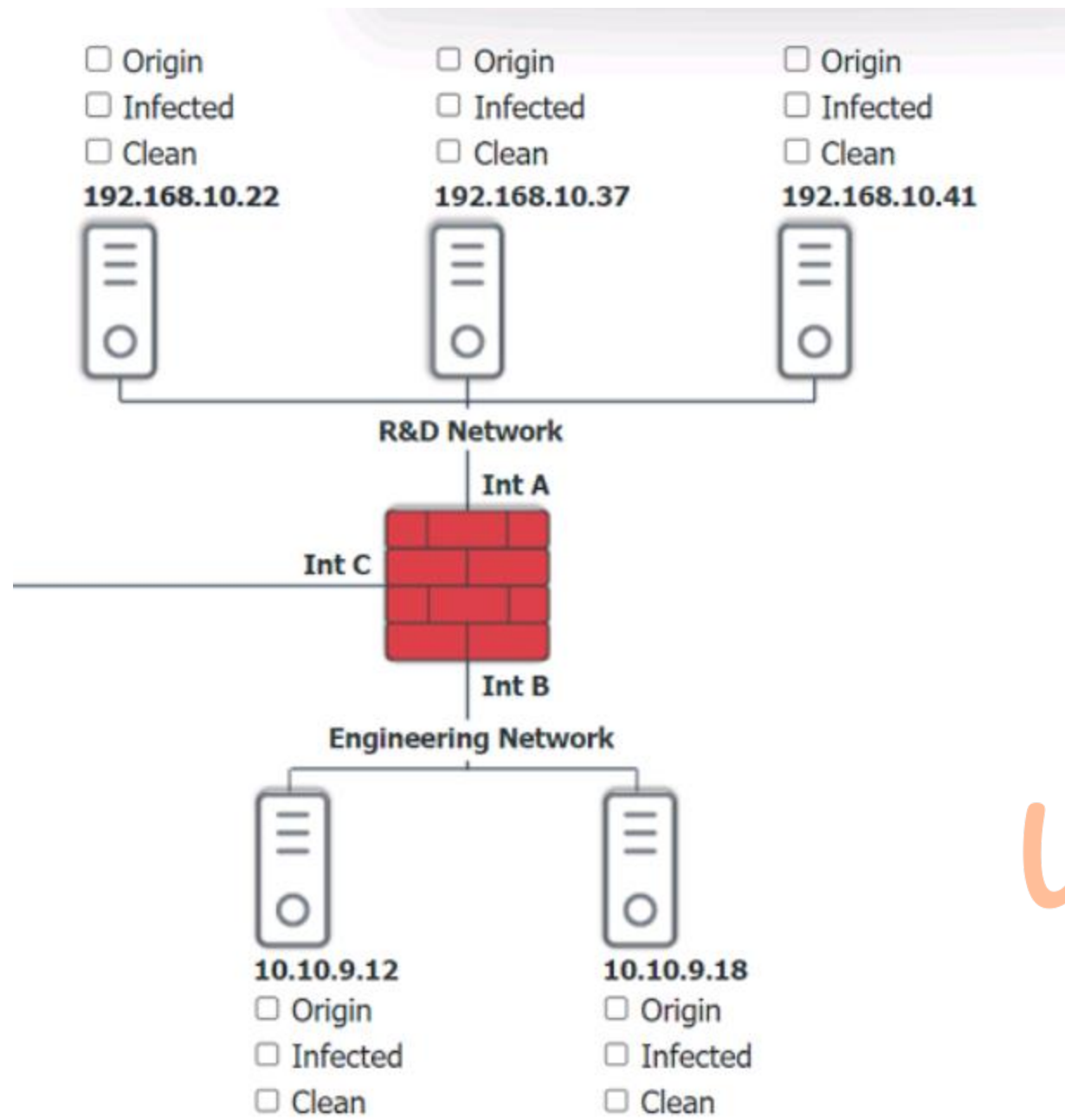
10.10.9.18



```
4/17/2019 14:30 Info Scheduled scan initiated
4/17/2019 14:31 Info Checking for update
4/17/2019 14:32 Info No update available
4/17/2019 14:33 Info Checking for definition update
4/17/2019 14:34 Info No definition update available
4/17/2019 14:35 Info Scan type = full
4/17/2019 14:36 Info Scan start
4/17/2019 14:37 Info Scanning system files
4/17/2019 14:38 Info Scanning temporary files
4/17/2019 14:39 Info Scanning services
4/17/2019 14:40 Info Scanning boot sector
4/17/2019 14:41 Info Scan complete
4/17/2019 14:42 Info Files removed: 0
4/17/2019 14:43 Info Files quarantined: 0
4/17/2019 14:44 Info Boot sector: clean
4/17/2019 14:45 Info Next scheduled scan: 4/18/2019 14:30
4/18/2019 14:30 Info Scheduled scan initiated
4/18/2019 14:31 Info Checking for update
4/18/2019 14:32 Info No update available
4/18/2019 14:33 Info Checking for definition update
4/18/2019 14:34 Error Unable to reach update server
4/18/2019 14:35 Info Scan type = full
4/18/2019 14:36 Info Scan start
4/18/2019 14:37 Info Scanning system files
4/18/2019 14:37 Warn File svch0st.exe match heuristic pattern 0c09488c08d0f3k
4/18/2019 14:37 Error Unable to quarantine file svch0st.exe
4/18/2019 14:38 Info Scanning temporary files
4/18/2019 14:39 Info Scanning services
4/18/2019 14:40 Info Scanning boot sector
4/18/2019 14:41 Info Scan complete
```

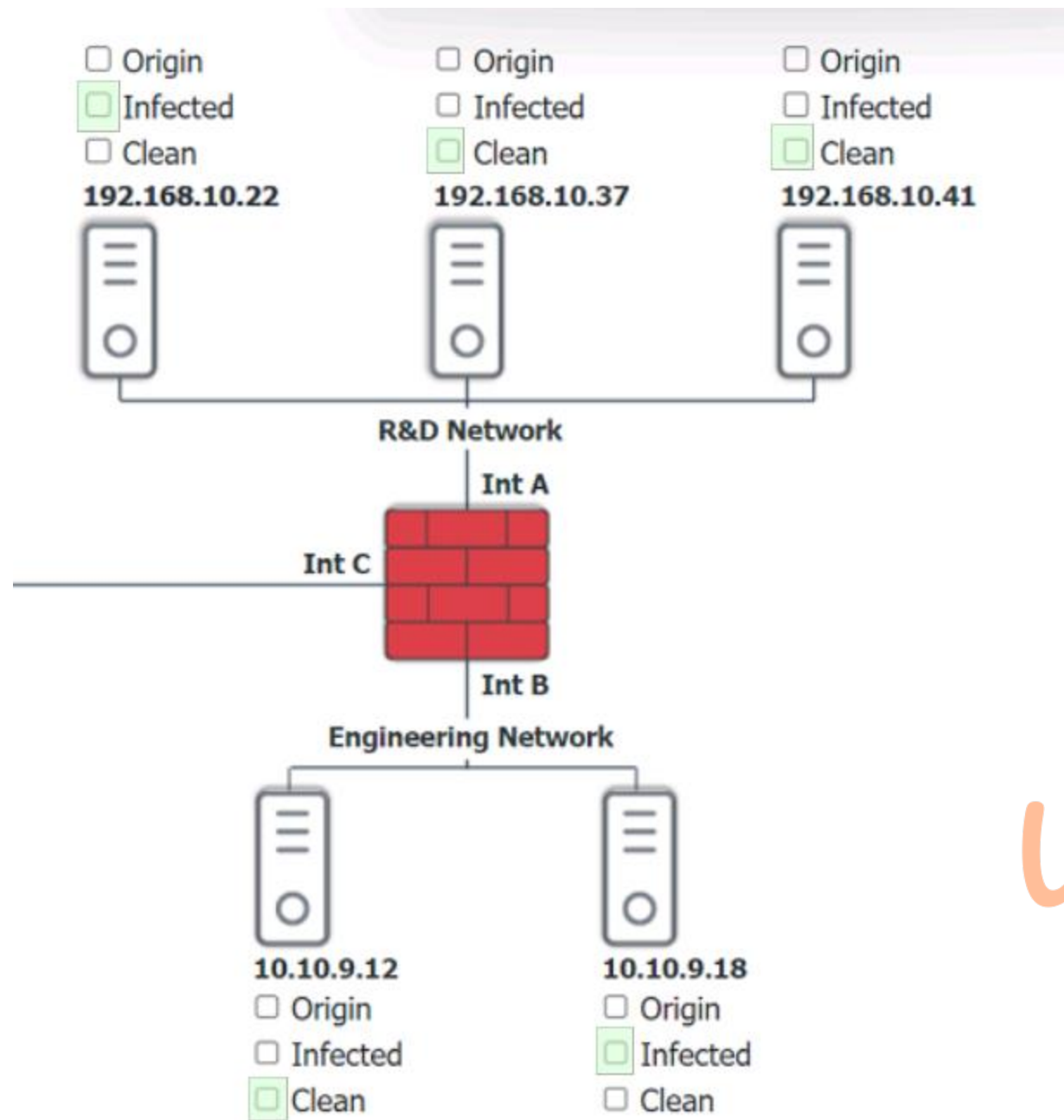
Vdumps

Hot Area:



 Vdumps

Answer Area:



Section:

Explanation:

QUESTION 81

Which of the following vulnerabilities is exploited when an attacker overwrites a register with a malicious address?

- A. VM escape
- B. SQL injection
- C. Buffer overflow
- D. Race condition

Correct Answer: C

Section:

Explanation:

A buffer overflow is a vulnerability that occurs when an application writes more data to a memory buffer than it can hold, causing the excess data to overwrite adjacent memory locations. A register is a small storage area in

the CPU that holds temporary data or instructions. An attacker can exploit a buffer overflow to overwrite a register with a malicious address that points to a shellcode, which is a piece of code that gives the attacker control over the system. By doing so, the attacker can bypass the normal execution flow of the application and execute arbitrary commands.

QUESTION 82

Which of the following would be the best way to handle a critical business application that is running on a legacy server?

- A. Segmentation
- B. Isolation
- C. Hardening
- D. Decommissioning

Correct Answer: B

Section:

Explanation:

QUESTION 83

Which of the following describes the process of concealing code or text inside a graphical image?

- A. Symmetric encryption
- B. Hashing
- C. Data masking
- D. Steganography

Correct Answer: D

Section:

Explanation:

Steganography is the process of hiding information within another medium, such as an image, audio, video, or text file. The hidden information is not visible or noticeable to the casual observer, and can only be extracted by using a specific technique or key. Steganography can be used for various purposes, such as concealing secret messages, watermarking, or evading detection by antivirus software¹²

1: CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, Chapter 5: Cryptography and PKI, page 2332: CompTIA Security+ Certification Kit: Exam SY0-701, 7th Edition, Chapter 5: Cryptography and PKI, page 235

QUESTION 84

After a company was compromised, customers initiated a lawsuit. The company's attorneys have requested that the security team initiate a legal hold in response to the lawsuit. Which of the following describes the action the security team will most likely be required to take?

- A. Retain the emails between the security team and affected customers for 30 days.
- B. Retain any communications related to the security breach until further notice.
- C. Retain any communications between security members during the breach response.
- D. Retain all emails from the company to affected customers for an indefinite period of time.

Correct Answer: B

Section:

Explanation:

A legal hold (also known as a litigation hold) is a notification sent from an organization's legal team to employees instructing them not to delete electronically stored information (ESI) or discard paper documents that may be relevant to a new or imminent legal case. A legal hold is intended to preserve evidence and prevent spoliation, which is the intentional or negligent destruction of evidence that could harm a party's case. A legal hold can be triggered by various events, such as a lawsuit, a regulatory investigation, or a subpoena¹²

In this scenario, the company's attorneys have requested that the security team initiate a legal hold in response to the lawsuit filed by the customers after the company was compromised. This means that the security team will most likely be required to retain any communications related to the security breach until further notice. This could include emails, instant messages, reports, logs, memos, or any other documents that could be relevant to



the lawsuit. The security team should also inform the relevant custodians (the employees who have access to or control over the ESI) of their preservation obligations and monitor their compliance. The security team should also document the legal hold process and its scope, as well as take steps to protect the ESI from alteration, deletion, or loss³⁴

1: CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, Chapter 6: Risk Management, page 3032: CompTIA Security+ Certification Kit: Exam SY0-701, 7th Edition, Chapter 6: Risk Management, page 3053: Legal Hold (Litigation Hold) - The Basics of E-Discovery - Exterro⁵⁴: The Legal Implications and Consequences of a Data Breach⁶

QUESTION 85

A network manager wants to protect the company's VPN by implementing multifactor authentication that uses:

- . Something you know
- . Something you have
- . Something you are

Which of the following would accomplish the manager's goal?

- A. Domain name, PKI, GeolIP lookup
- B. VPN IP address, company ID, facial structure
- C. Password, authentication token, thumbprint
- D. Company URL, TLS certificate, home address

Correct Answer: C

Section:

Explanation:

The correct answer is C. Password, authentication token, thumbprint. This combination of authentication factors satisfies the manager's goal of implementing multifactor authentication that uses something you know, something you have, and something you are.

Something you know is a type of authentication factor that relies on the user's knowledge of a secret or personal information, such as a password, a PIN, or a security question. A password is a common example of something you know that can be used to access a VPN¹²

Something you have is a type of authentication factor that relies on the user's possession of a physical object or device, such as a smart card, a token, or a smartphone. An authentication token is a common example of something you have that can be used to generate a one-time password (OTP) or a code that can be used to access a VPN¹²

Something you are is a type of authentication factor that relies on the user's biometric characteristics, such as a fingerprint, a face, or an iris. A thumbprint is a common example of something you are that can be used to scan and verify the user's identity to access a VPN¹²

1: CompTIA Security+ Study Guide: Exam SY0-701, 9th Edition, Chapter 4: Identity and Access Management, page 1772: CompTIA Security+ Certification Kit: Exam SY0-701, 7th Edition, Chapter 4: Identity and Access Management, page 179

QUESTION 86

A company would like to provide employees with computers that do not have access to the internet in order to prevent information from being leaked to an online forum. Which of the following would be best for the systems administrator to implement?

- A. Air gap
- B. Jump server
- C. Logical segmentation
- D. Virtualization

Correct Answer: A

Section:

Explanation:

To provide employees with computers that do not have access to the internet and prevent information leaks to an online forum, implementing an air gap would be the best solution. An air gap physically isolates the computer or network from any outside connections, including the internet, ensuring that data cannot be transferred to or from the system.

Air gap: A security measure that isolates a computer or network from the internet or other networks, preventing any form of electronic communication with external systems.

Jump server: A secure server used to access and manage devices in a different security zone, but it does not provide isolation from the internet.

Logical segmentation: Segregates networks using software or network configurations, but it does not guarantee complete isolation from the internet.

Virtualization: Creates virtual instances of systems, which can be isolated, but does not inherently prevent internet access without additional configurations.

QUESTION 87

Which of the following penetration testing teams is focused only on trying to compromise an organization using an attacker's tactics?

- A. White
- B. Red
- C. Purple
- D. Blue

Correct Answer: B

Section:

Explanation:

Red teams are focused only on trying to compromise an organization using an attacker's tactics. They simulate real-world attacks to test the effectiveness of the organization's security defenses and identify vulnerabilities.

Red team: Acts as adversaries to simulate attacks and find security weaknesses.

White team: Oversees and ensures the rules of engagement are followed during the penetration test.

Purple team: Facilitates collaboration between the red team and the blue team to improve security.

Blue team: Defends against attacks and responds to security incidents.

QUESTION 88

Which of the following risks can be mitigated by HTTP headers?

- A. SQLi
- B. XSS
- C. DoS
- D. SSL



Correct Answer: B

Section:

Explanation:

HTTP headers can be used to mitigate risks associated with Cross-Site Scripting (XSS). Security-related HTTP headers such as Content Security Policy (CSP) and X-XSS-Protection can be configured to prevent the execution of malicious scripts in the context of a web page.

XSS (Cross-Site Scripting): A vulnerability that allows attackers to inject malicious scripts into web pages viewed by other users. HTTP headers like CSP help prevent XSS attacks by specifying which dynamic resources are allowed to load.

SQLi (SQL Injection): Typically mitigated by using parameterized queries and input validation, not HTTP headers.

DoS (Denial of Service): Mitigated by network and application-level defenses rather than HTTP headers.

SSL (Secure Sockets Layer): Refers to securing communications and is not directly mitigated by HTTP headers; rather, it's implemented using SSL/TLS protocols.

QUESTION 89

The marketing department set up its own project management software without telling the appropriate departments. Which of the following describes this scenario?

- A. Shadow IT
- B. Insider threat
- C. Data exfiltration
- D. Service disruption

Correct Answer: A

Section:**Explanation:**

The marketing department setting up its own project management software without informing the appropriate departments is an example of Shadow IT. Shadow IT refers to the use of IT systems, devices, software, applications, and services without explicit approval from the IT department.

Shadow IT: Involves the use of unauthorized systems and applications within an organization, which can lead to security risks and compliance issues.

Insider threat: Refers to threats from individuals within the organization who may intentionally cause harm or misuse their access, but this scenario is more about unauthorized use rather than malicious intent.

Data exfiltration: Involves unauthorized transfer of data out of the organization, which is not the main issue in this scenario.

Service disruption: Refers to interruptions in service availability, which is not directly related to the marketing department's actions.

QUESTION 90

A network administrator is working on a project to deploy a load balancer in the company's cloud environment. Which of the following fundamental security requirements does this project fulfill?

- A. Privacy
- B. Integrity
- C. Confidentiality
- D. Availability

Correct Answer: D

Section:**Explanation:**

Deploying a load balancer in the company's cloud environment primarily fulfills the fundamental security requirement of availability. A load balancer distributes incoming network traffic across multiple servers, ensuring that no single server becomes overwhelmed and that the service remains available even if some servers fail.

Availability: Ensures that services and resources are accessible when needed, which is directly supported by load balancing.

Privacy: Protects personal and sensitive information from unauthorized access but is not directly related to load balancing.

Integrity: Ensures that data is accurate and has not been tampered with, but load balancing is not primarily focused on data integrity.

Confidentiality: Ensures that information is accessible only to authorized individuals, which is not the primary concern of load balancing.

QUESTION 91

An external vendor recently visited a company's headquarters for a presentation. Following the visit a member of the hosting team found a file that the external vendor left behind on a server. The file contained detailed architecture information and code snippets. Which of the following data types best describes this file?

- A. Government
- B. Public
- C. Proprietary
- D. Critical

Correct Answer: C

Section:**Explanation:**

The file left by the external vendor, containing detailed architecture information and code snippets, is best described as proprietary data. Proprietary data is information that is owned by a company and is essential to its competitive advantage. It includes sensitive business information such as trade secrets, intellectual property, and confidential data that should be protected from unauthorized access.

Reference = CompTIA Security+ SY0-701 study materials, particularly in the domain of data classification and protection.

QUESTION 92

The security operations center is researching an event concerning a suspicious IP address. A security analyst looks at the following event logs and discovers that a significant portion of the user accounts have experienced faded log-in attempts when authenticating from the same IP address:

```
184.168.131.241 - userA - failed authentication
184.168.131.241 - userA - failed authentication
184.168.131.241 - userB - failed authentication
184.168.131.241 - userB - failed authentication
184.168.131.241 - userC - failed authentication
184.168.131.241 - userC - failed authentication
```

Which of the following most likely describes attack that took place?

- A. Spraying
- B. Brute-force
- C. Dictionary
- D. Rainbow table

Correct Answer: A

Section:

Explanation:

Password spraying is a type of attack where an attacker tries a small number of commonly used passwords across a large number of accounts. The event logs showing failed login attempts for many user accounts from the same IP address are indicative of a password spraying attack, where the attacker is attempting to gain access by guessing common passwords.

Reference = CompTIA Security+ SY0-701 study materials, particularly in the domain of identity and access management and common attack vectors like password spraying.

QUESTION 93

Which of the following explains why an attacker cannot easily decrypt passwords using a rainbow table attack?

- A. Digital signatures
- B. Salting
- C. Hashing
- D. Perfect forward secrecy

Correct Answer: B

Section:

Explanation:

Salting is a technique used to enhance the security of hashed passwords by adding a unique, random value (salt) to each password before hashing it. This prevents attackers from easily decrypting passwords using rainbow tables, which are precomputed tables for reversing cryptographic hash functions. Since each password has a unique salt, the same password will produce different hash values, making rainbow table attacks ineffective.

Reference =

CompTIA Security+ SY0-701 Course Content: Domain 04 Security Operations.

CompTIA Security+ SY0-601 Study Guide: Chapter on Cryptography and Hashing Techniques.

QUESTION 94

Which of the following describes the understanding between a company and a client about what will be provided and the accepted time needed to provide the company with the resources?

- A. SLA
- B. MOU
- C. MOA
- D. BPA

Correct Answer: A

Section:

Explanation:

A Service Level Agreement (SLA) is a formal document between a service provider and a client that defines the expected level of service, including what resources will be provided and the agreed-upon time frames. It typically includes metrics to evaluate performance, uptime guarantees, and response times.



MOU (Memorandum of Understanding) and MOA (Memorandum of Agreement) are less formal and may not specify the exact level of service. BPA (Business Partners Agreement) focuses more on the long-term relationship between partners.

QUESTION 95

Which of the following describes an executive team that is meeting in a board room and testing the company's incident response plan?

- A. Continuity of operations
- B. Capacity planning
- C. Tabletop exercise
- D. Parallel processing

Correct Answer: C

Section:

Explanation:

A tabletop exercise involves the executive team or key stakeholders discussing and testing the company's incident response plan in a simulated environment. These exercises are low-stress, discussion-based, and help to validate the plan's effectiveness by walking through different scenarios without disrupting actual operations. It is an essential part of testing business continuity and incident response strategies.

Continuity of operations refers to the ability of an organization to continue functioning during and after a disaster but doesn't specifically involve simulations like tabletop exercises.

Capacity planning is related to ensuring the infrastructure can handle growth, not incident response testing.

Parallel processing refers to running multiple processes simultaneously, which is unrelated to testing an incident response plan.

QUESTION 96

Which of the following methods would most likely be used to identify legacy systems?

- A. Bug bounty program
- B. Vulnerability scan
- C. Package monitoring
- D. Dynamic analysis

Correct Answer: B

Section:

Explanation:

A vulnerability scan is the most likely method to identify legacy systems. These scans assess an organization's network and systems for known vulnerabilities, including outdated or unsupported software (i.e., legacy systems) that may pose a security risk. The scan results can highlight systems that are no longer receiving updates, helping IT teams address these risks.

Bug bounty programs are used to incentivize external researchers to find security flaws, but they are less effective at identifying legacy systems.

Package monitoring tracks installed software packages for updates or issues but is not as comprehensive for identifying legacy systems.

Dynamic analysis is typically used for testing applications during runtime to find vulnerabilities, but not for identifying legacy systems.

QUESTION 97

Which of the following considerations is the most important for an organization to evaluate as it establishes and maintains a data privacy program?

- A. Reporting structure for the data privacy officer
- B. Request process for data subject access
- C. Role as controller or processor
- D. Physical location of the company

Correct Answer: C

Section:

Explanation:



The most important consideration when establishing a data privacy program is defining the organization's role as a controller or processor. These roles, as outlined in privacy regulations such as the General Data Protection Regulation (GDPR), determine the responsibilities regarding the handling of personal data. A controller is responsible for determining the purpose and means of data processing, while a processor acts on behalf of the controller. This distinction is crucial for compliance with data privacy laws.

Reporting structure for the data privacy officer is important, but it is a secondary consideration compared to legal roles.

Request process for data subject access is essential for compliance but still depends on the organization's role as controller or processor.

Physical location of the company can affect jurisdiction, but the role as controller or processor has a broader and more immediate impact.

QUESTION 98

Client files can only be accessed by employees who need to know the information and have specified roles in the company. Which of the following best describes this security concept?

- A. Availability
- B. Confidentiality
- C. Integrity
- D. Non-repudiation

Correct Answer: B

Section:

Explanation:

The scenario described, where client files are only accessible to employees who 'need to know' the information, reflects the concept of confidentiality. Confidentiality ensures that sensitive information is only accessible to those who are authorized to view it, preventing unauthorized access.

Availability ensures that data is accessible when needed but doesn't focus on restricting access.

Integrity ensures that data remains accurate and unaltered but doesn't pertain to access control.

Non-repudiation ensures that actions cannot be denied after they are performed, but this concept is unrelated to access control.

QUESTION 99

A user would like to install software and features that are not available with a smartphone's default software. Which of the following would allow the user to install unauthorized software and enable new features?

- A. SOU
- B. Cross-site scripting
- C. Jailbreaking
- D. Side loading

Correct Answer: C

Section:

Explanation:

Jailbreaking is the process of removing restrictions imposed by the manufacturer on a smartphone, allowing the user to install unauthorized software and features not available through official app stores. This action typically voids the warranty and can introduce security risks by bypassing built-in protections.

SOU (Statement of Understanding) is not related to modifying devices.

Cross-site scripting is a web-based attack technique, unrelated to smartphone software.

Side loading refers to installing apps from unofficial sources but without necessarily removing built-in restrictions like jailbreaking does.

QUESTION 100

A company is currently utilizing usernames and passwords, and it wants to integrate an MFA method that is seamless, can integrate easily into a user's workflow, and can utilize employee-owned devices. Which of the following will meet these requirements?

- A. Push notifications
- B. Phone call
- C. Smart card

D. Offline backup codes

Correct Answer: A

Section:

Explanation:

Push notifications offer a seamless and user-friendly method of multi-factor authentication (MFA) that can easily integrate into a user's workflow. This method leverages employee-owned devices, like smartphones, to approve authentication requests through a push notification. It's convenient, quick, and doesn't require the user to input additional codes, making it a preferred choice for seamless integration with existing workflows.

Reference =

CompTIA Security+ SY0-701 Course Content: Domain 04 Security Operations.

CompTIA Security+ SY0-601 Study Guide: Chapter on Identity and Access Management.

QUESTION 101

A financial institution would like to store its customer data in the cloud but still allow the data to be accessed and manipulated while encrypted. Doing so would prevent the cloud service provider from being able to decipher the data due to its sensitivity. The financial institution is not concerned about computational overheads and slow speeds. Which of the following cryptographic techniques would best meet the requirement?

- A. Asymmetric
- B. Symmetric
- C. Homomorphic
- D. Ephemeral

Correct Answer: C

Section:

Explanation:

Homomorphic encryption allows data to be encrypted and manipulated without needing to decrypt it first. This cryptographic technique would allow the financial institution to store customer data securely in the cloud while still permitting operations like searching and calculations to be performed on the encrypted data. This ensures that the cloud service provider cannot decipher the sensitive data, meeting the institution's security requirements.

Reference =

CompTIA Security+ SY0-701 Course Content: Domain 03 Security Architecture.

CompTIA Security+ SY0-601 Study Guide: Chapter on Cryptographic Techniques.

QUESTION 102

The Chief Information Security Officer of an organization needs to ensure recovery from ransomware would likely occur within the organization's agreed-upon RPOs and RTOs. Which of the following backup scenarios would best ensure recovery?

- A. Hourly differential backups stored on a local SAN array
- B. Daily full backups stored on premises in magnetic offline media
- C. Daily differential backups maintained by a third-party cloud provider
- D. Weekly full backups with daily incremental stored on a NAS drive

Correct Answer: D

Section:

Explanation:

A backup strategy that combines weekly full backups with daily incremental backups stored on a NAS (Network Attached Storage) drive is likely to meet an organization's Recovery Point Objectives (RPOs) and Recovery Time Objectives (RTOs). This approach ensures that recent data is regularly backed up and that recovery can be done efficiently, without significant data loss or lengthy downtime.

Reference =

CompTIA Security+ SY0-701 Course Content: Domain 05 Security Program Management and Oversight.

CompTIA Security+ SY0-601 Study Guide: Chapter on Disaster Recovery and Backup Strategies.

QUESTION 103

Which of the following best describe a penetration test that resembles an actual external attack?

- A. Known environment
- B. Partially known environment
- C. Bug bounty
- D. Unknown environment

Correct Answer: D

Section:

Explanation:

An unknown environment in penetration testing, also known as a black-box test, simulates an actual external attack where the tester has no prior knowledge of the system. This type of penetration test is designed to mimic real-world attack scenarios, where an attacker has little to no information about the target environment. The tester must rely on various reconnaissance and attack techniques to uncover vulnerabilities, much like a real-world attacker would. This approach helps organizations understand their security posture from an external perspective, providing insights into how their defenses would hold up against a true outsider threat.

Reference =

CompTIA Security+ SY0-701 Course Content: The course highlights the importance of understanding different penetration testing environments, including black-box testing, which aligns with the 'unknown environment' in the provided answer.

CompTIA Security+ SY0-601 Study Guide: The guide details penetration testing methodologies, including black-box testing, which is crucial for simulating real external attacks.

QUESTION 104

A company is implementing a vendor's security tool in the cloud. The security director does not want to manage users and passwords specific to this tool but would rather utilize the company's standard user directory. Which of the following should the company implement?

- A. 802.1X
- B. SAML
- C. RADIUS
- D. CHAP



Correct Answer: B

Section:

Explanation:

The company should implement Security Assertion Markup Language (SAML) to integrate the vendor's security tool with their existing user directory. SAML is an open standard that allows identity providers (IdP) to pass authorization credentials to service providers (SP), enabling Single Sign-On (SSO). This allows the company to use its existing directory services for authentication, avoiding the need to manage a separate set of user credentials for the new tool.

CompTIA Security+ SY0-701 Course Content: Domain 4: Identity and Access Management, which includes SAML as a key identity federation standard for SSO.

CompTIA Security+ Study Guide (SY0-601): Chapter 8, 'Identity and Access Management,' details the role of SAML in enabling SSO by utilizing an existing identity provider.

QUESTION 105

During a penetration test, a vendor attempts to enter an unauthorized area using an access badge. Which of the following types of tests does this represent?

- A. Defensive
- B. Passive
- C. Offensive
- D. Physical

Correct Answer: D

Section:

Explanation:

Attempting to enter an unauthorized area using an access badge during a penetration test is an example of a physical test. This type of test evaluates the effectiveness of physical security controls, such as access badges,

security guards, and locks, in preventing unauthorized access to restricted areas.
Defensive and offensive testing typically refer to digital or network-based penetration testing strategies.
Passive testing involves observing or monitoring but not interacting with the environment.

QUESTION 106

An organization experiences a cybersecurity incident involving a command-and-control server. Which of the following logs should be analyzed to identify the impacted host? (Select two).

- A. Application
- B. Authentication
- C. DHCP
- D. Network
- E. Firewall
- F. Database

Correct Answer: C, E

Section:

Explanation:

To identify the impacted host in a command-and-control (C2) server incident, the following logs should be analyzed:

DHCP logs: These logs record IP address assignments. By reviewing DHCP logs, an organization can determine which host was assigned a specific IP address during the time of the attack.

Firewall logs: Firewall logs will show traffic patterns, including connections to external C2 servers. Analyzing these logs helps to identify the IP address and port numbers of the communicating host.

Application, Authentication, and Database logs are less relevant in this context because they focus on internal processes and authentication events rather than network traffic involved in a C2 attack.

QUESTION 107

Which of the following is a reason why a forensic specialist would create a plan to preserve data after an incident and prioritize the sequence for performing forensic analysis?

- A. Order of volatility
- B. Preservation of event logs
- C. Chain of custody
- D. Compliance with legal hold

Correct Answer: A

Section:

Explanation:

When conducting a forensic analysis after an incident, it's essential to prioritize the data collection process based on the 'order of volatility.' This principle dictates that more volatile data (e.g., data in memory, network connections) should be captured before less volatile data (e.g., disk drives, logs). The idea is to preserve the most transient and potentially valuable evidence first, as it is more likely to be lost or altered quickly.

Reference =

CompTIA Security+ SY0-701 Course Content: Domain 04 Security Operations.

CompTIA Security+ SY0-601 Study Guide: Chapter on Digital Forensics.