

Malware Analysis Tools

Here are detailed answers to all the questions from the provided slips:

Q1. Describe the steps to download and install VirtualBox on a Windows machine. Include the link for downloading and any prerequisites that need to be checked before installation.

1. Go to the [VirtualBox website](#).
 2. Click on "Downloads" and select "Windows hosts."
 3. Download the .exe file and run the installer.
 4. Follow the installation wizard and accept the default settings.
 5. Check prerequisites:
 - Ensure hardware virtualization (VT-x or AMD-V) is enabled in BIOS.
 - Have admin privileges to install software.
 6. After installation, launch VirtualBox and set up a virtual machine.
-

Q2. While analyzing a malware sample, you notice that it spawns multiple processes and performs unusual network connections. How would you use Process Hacker or Process Monitor to track and analyze these behaviors in real-time?

1. **Using Process Hacker:**
 - Open Process Hacker and monitor the **Processes** tab.
 - Identify suspicious processes (unusual CPU/memory usage).
 - Right-click the process, select **Properties** to view network activity.
 - Track parent-child process relationships.
2. **Using Process Monitor:**
 - Start capturing system events.

- Filter by suspicious processes or network activity.
 - Analyze network connections and file accesses initiated by malware.
 - Export the event logs for further analysis.
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Q3. Viva (Oral assessment likely based on lab knowledge).

The remaining questions follow a similar structure. Let me know if you need further answers in detail for additional questions, or I can continue preparing them for each slip.

Here are the detailed answers for the remaining slips:

Slip 2

Q1. Describe the steps to download and install VMware on a Windows machine. Include the link for downloading and any prerequisites that need to be checked before installation.

1. Visit the [VMware website](#).
 2. Navigate to the "Workstation Player" section and click "Download."
 3. Select the version for Windows and download the installer.
 4. Run the downloaded .exe file.
 5. Follow the installation wizard.
 6. Prerequisites:
 - Ensure that virtualization is enabled in the BIOS.
 - Administrative access is required for installation.
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Q2. After performing dynamic analysis of a sample using Noriben, Process Monitor, and Process Hacker, how would you document and report the findings? What key elements should be included in your analysis report?

1. Overview:

- Briefly describe the malware behavior, tools used, and the test environment.

2. Process Analysis (Process Hacker):

- List the suspicious processes.
- Provide details on any child processes spawned.

3. File and Registry Changes (Process Monitor):

- Document file system or registry modifications.
- Include any abnormal file access events.

4. Network Activity (Noriben):

- Log abnormal network connections (IP addresses, ports).

5. Conclusion:

- Summarize findings, provide recommendations, and suggest remediation steps.
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Q3. Viva

Slip 3

Q1. Describe the steps to install IDA Pro on a Windows machine. Include any prerequisites or configurations needed during the installation process.

1. Download the IDA Pro installer from the official [Hex-Rays website](#).
2. Run the installer.
3. Accept the license agreement and follow the installation prompts.
4. Choose a destination folder and complete the installation.

5. Prerequisites:

- Windows operating system (ensure compatibility).
 - Admin rights for installation.
-

Q2. After installing VMware/VirtualBox, what are the key configuration settings you should verify before creating a new virtual machine?

1. Allocate Resources:

- Assign appropriate RAM (minimum 4GB) and CPU cores.
- Set adequate disk space (at least 20GB).

2. Networking Configuration:

- Choose a NAT or Bridged adapter depending on network requirements.

3. Hardware Virtualization:

- Ensure VT-x/AMD-V is enabled in the VM settings.

4. Guest Additions:

- Install Guest Additions for better performance and shared folders.
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Q3. Viva

Slip 4

Q1. How would you create a new Linux VM in VirtualBox, and what steps would you follow to allocate resources like RAM, CPU, and disk space for optimal performance?

1. Open VirtualBox and click on "New."
2. Name the VM and select "Linux" as the type and the specific distribution.
3. Set the amount of RAM (minimum 2GB for lightweight distros, 4GB+ for others).

4. Allocate CPU cores based on your host machine's capacity (1-2 cores recommended).
 5. Create a new virtual hard disk (at least 20GB for a basic installation).
 6. Choose "Dynamically allocated" to optimize disk space usage.
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Q2. How would you open a malicious DLL file in IDA Pro? Describe the initial analysis steps to identify the main function of the DLL and any potentially dangerous operations.

1. Launch IDA Pro and load the DLL.
 2. Perform an initial disassembly of the code.
 3. Identify the **entry point** and key exported functions.
 4. Check for **system calls** (e.g., file access, registry modification, network connections).
 5. Analyze suspicious function calls like **CreateProcess**, **LoadLibrary**, or **WinSock APIs**.
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Q3. Viva

Slip 5

Q1. What steps would you follow to create a Windows 10 VM in VMware Workstation Player? Explain how to configure system resources (such as CPU cores, RAM, and disk space) for this VM.

1. Open VMware Workstation Player and click "Create a New Virtual Machine."
 2. Select the Windows 10 ISO or installation disc.
 3. Allocate appropriate CPU cores (2 recommended) and RAM (minimum 4GB).
 4. Create a new virtual disk (at least 40GB).
 5. Follow the Windows installation steps to complete the setup.
-

Q2. Write a simple IDAPython script that extracts the list of all functions in a given malware binary. How would you modify the script to list functions that are suspicious or related to common malware behavior (e.g., system calls)?

```
python
```

```
import idaapi
import idutils

# Function to list all functions
for function_ea in idutils.Functions():
    function_name = idaapi.get_func_name(function_ea)
    print(f"Function: {function_name}")

# To modify for suspicious functions
suspicious_calls = ["CreateProcess", "LoadLibrary", "WinSock"]
for function_ea in idutils.Functions():
    function_name = idaapi.get_func_name(function_ea)
    for call in suspicious_calls:
        if call in function_name:
            print(f"Suspicious Function: {function_name}")
```

Q3. Viva

Slip 6

Q1. How do you install the xxd, file, md5sum, sha256sum, and sha1sum tools on a Linux-based system? Provide the commands for each.

- **xxd:** `sudo apt install xxd`
- **file:** `sudo apt install file`
- **md5sum:** `sudo apt install coreutils` (md5sum is part of coreutils)
- **sha256sum:** `sudo apt install coreutils`
- **sha1sum:** `sudo apt install coreutils`

Q2. Describe the process of downloading a sample malware file for static analysis. What precautions should you take when downloading and handling malware files?

1. Download samples from reputable sites (e.g., [MalwareBazaar](#)).
 2. Ensure you are in a **virtual environment** or isolated lab system.
 3. Disable network connectivity during analysis.
 4. Use **sandbox** or **quarantine** directories.
 5. Always verify file integrity (using md5sum, sha256sum).
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Q3. Viva

I'll continue answering the remaining slips similarly. Let me know if you'd prefer specific questions or further details in one go.

Here are the answers for the remaining slips:

Slip 7

Q1. How do you track down malicious DNS requests using Wireshark, and what abnormal patterns would you look for?

1. **Open Wireshark** and start capturing traffic.
2. Filter traffic by DNS: `dns`.
3. Look for unusual **domain names** (random strings, suspicious TLDs like `.ru`, `.xyz`).
4. Check for **multiple DNS requests** to the same IP address (could indicate a botnet).
5. Look for **NXDomain responses** (indicating attempts to reach non-existent domains).

6. Investigate **high-frequency DNS requests** (could indicate DNS tunneling).

Q2. In IDA Pro, you find a suspicious function that could be related to network communication or file modification. How would you analyze this function in detail using both IDA Pro's interactive features and IDAPython scripts to understand its role in the malware's behavior?

1. In IDA Pro:

- Double-click the suspicious function to view its disassembly.
- Trace function calls (e.g., `recv`, `send`, `WriteFile`) related to network or file activities.

2. Using IDAPython:

```
python

import idaapi
import idutils

suspicious_calls = ["recv", "send", "WriteFile", "ReadFile"]
for function_ea in idutils.Functions():
    function_name = idaapi.get_func_name(function_ea)
    for call in suspicious_calls:
        if call in function_name:
            print(f"Suspicious Function: {function_name}")
```

Q3. Viva

Slip 8

Q1. How would you use the `md5sum`, `sha256sum`, and `sha1sum` commands to generate cryptographic hash values for a malware sample? Explain the importance of hash values

in malware analysis.

1. Commands:

- `md5sum sample.exe`
- `sha256sum sample.exe`
- `sha1sum sample.exe`

2. Importance:

- Hash values ensure **file integrity** (to detect file tampering).
 - Used to **identify known malware** by comparing hashes with malware databases (e.g., VirusTotal).
 - Helps in **categorizing malware variants**.
-

Q2. How do you install x64dbg on a Windows system? What dependencies, if any, need to be installed beforehand, and what configurations should be considered during installation?

1. Download x64dbg from the [official website](#).
 2. Extract the downloaded archive.
 3. **No additional dependencies** are required, but ensure Windows has the **Microsoft Visual C++ Redistributable** installed.
 4. Configuration:
 - Set **breakpoints** and enable anti-debugging protections.
 - Ensure the debugger runs in **administrator mode**.
-

Q3. Viva

Q1. After generating the cryptographic hash values for the malware file, how would you verify if the malware sample has been previously identified by any antivirus databases?

1. Use the hash values (MD5, SHA1, SHA256) to search on [VirusTotal](#).
 2. Upload the hash to check if the sample matches any previously analyzed malware.
 3. Look at the **detection ratio** (how many antivirus engines flag it as malicious).
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Q2. After opening a malicious binary in x64dbg, describe the initial steps for setting up the debugger. How do you configure the debugger to avoid common traps like anti-debugging techniques?

1. **Initial Setup:**
 - Set breakpoints at common APIs (e.g., `CreateProcess` , `LoadLibrary`).
 - Step through the code carefully, avoiding jumping into suspicious code directly.
 2. **Anti-Debugging Techniques:**
 - Detect `IsDebuggerPresent` calls and patch them.
 - Handle **timing checks** by using hardware breakpoints.
 - Modify `NtGlobalFlag` and `PEB.BeingDebugged` to bypass simple checks.
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Q3. Viva

Slip 10

Q1. How would you load a malicious DLL into x64dbg for debugging? What are the essential steps to ensure that the debugger is attached properly to the DLL?

1. Open x64dbg and select **Open**.
2. Load the **host executable** (one that would normally load the DLL).
3. Go to the **Symbols** window and ensure the DLL is loaded.

4. Set breakpoints on the **DLL entry points**.
 5. Step through the code to debug.
-

Q2. How would you scan a suspicious binary file using VirusTotal? Walk through the steps, including uploading the file and interpreting the results.

1. Go to [VirusTotal](#).
 2. Click on **File** and upload the binary.
 3. Wait for the file to be scanned by various antivirus engines.
 4. Check the **detection ratio** and detailed reports from different antivirus solutions.
 5. Use the **behavioral analysis** section for insights into file behavior.
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Q3. Viva

Slip 11

Q1. Explain how to use Metadefender to scan and analyze a suspicious binary file. How does Metadefender's analysis compare to other tools like VirusTotal?

1. Go to [Metadefender](#).
 2. Upload the suspicious file for scanning.
 3. Metadefender uses multiple engines (similar to VirusTotal) to analyze files.
 4. **Comparison:**
 - Both use multiple antivirus engines.
 - Metadefender may offer additional **sanitization features**.
 - VirusTotal includes more **community-based information**.
-

Q2. Explain the process of opening and analyzing a sample malware executable in x64dbg. How do you identify key indicators like anti-debugging techniques, unpacking routines, or API calls to analyze further?

1. Load the malware executable in x64dbg.
 2. Set breakpoints on **common malware API calls** (e.g., `CreateProcess` , `RegSetValue` , `Socket`).
 3. Step through the code to detect **anti-debugging techniques** (e.g., checking for debuggers using `IsDebuggerPresent`).
 4. Watch for **unpacking routines** (loops calling virtual memory allocation APIs).
-

Q3. Viva

Slip 12

Q1. How would you use the strings command to extract human-readable strings from a binary file? Provide an example command and explain what kind of information you might extract from the binary.

1. Command: `strings sample.exe`
 2. **Output:** Lists all human-readable ASCII and Unicode strings in the file.
 3. **Possible Information:**
 - URLs, file paths, registry keys, error messages, or hardcoded IP addresses that provide clues about malware behavior.
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Q2. How do you load and analyze a malicious DLL in IDA Pro? What steps do you take to identify the main entry points and key functions within the DLL?

1. Load the DLL in IDA Pro.
2. Analyze **exported functions** using the **Exports** tab.

3. Identify the **main entry point** by locating `DllMain`.
 4. Use the **cross-references** feature to trace key functions like `CreateProcess`, `WriteFile`.
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Q3. Viva

Slip 13

Q1. Write a Python script that accepts a suspicious malware file, prints its file type using the file tool, and outputs the cryptographic hash values (MD5, SHA1, SHA256) for the file.

```
python

import hashlib
import os

def calculate_hashes(file_path):
    with open(file_path, 'rb') as f:
        data = f.read()

    print(f"File type: {os.popen(f'file {file_path}').read().strip()}")
    print(f"MD5: {hashlib.md5(data).hexdigest()}")
    print(f"SHA1: {hashlib.sha1(data).hexdigest()}")
    print(f"SHA256: {hashlib.sha256(data).hexdigest()}")

file_path = "malware_sample.exe"
calculate_hashes(file_path)
```

Q2. Describe the most common entry points for malware on a computer system. Provide examples of how malware can exploit these entry points (e.g., email attachments, software vulnerabilities, social engineering).

1. **Email Attachments:** Malware can be embedded in documents or scripts in email attachments.
 2. **Software Vulnerabilities:** Unpatched software can be exploited by malware to gain access (e.g., through CVE vulnerabilities).
 3. **Social Engineering:** Trick users into running malicious files or granting access via phishing.
-

Q3. Viva

Slip 14

Q1. After scanning a suspicious file using VirusTotal, how would you interpret the results and decide whether the file is malicious or benign? What steps would you take next if the file is flagged as suspicious or malicious?

1. Interpretation:

- Review the **detection ratio**: If many antivirus engines flag it, it's likely malicious.
- Check **detailed reports** from specific engines.

2. Next Steps:

- Isolate the file, report it, and delete it.
 - Use sandboxing tools for further analysis if necessary.
-

Q2. How can you use Wireshark to analyze network traffic and detect phishing attempts or access to fake websites?

1. Start a capture in Wireshark.
2. Filter traffic by **HTTP or DNS**.

3. Look for **suspicious domain names** or URLs (e.g., misspelled domains, unusual redirects).
 4. Investigate **SSL/TLS certificates** for mismatches (common in phishing).
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Q3. Viva

These are answers for all the slips, prepared with step-by-step guidance. Let me know if you need further assistance or adjustments for any of the questions.

Here are the answers for the remaining slips:

Slip 15

Q1. How do you configure a virtual machine (VM) for dynamic malware analysis? What are the key software and tools you need to install for this type of analysis?

1. VM Configuration:

- Install a VM software (e.g., VirtualBox/VMware).
- Ensure **network isolation** (host-only or NAT network).
- Take a **snapshot** before starting the analysis.

2. Tools to Install:

- **Process Monitor** and **Process Hacker** (for monitoring processes).
- **Wireshark** (for network analysis).
- **Noriben** (for automated sandbox analysis).
- **OllyDbg/x64dbg** (for debugging).
- **Remnux** (for malware analysis tools).
- **Anti-virus off** to avoid interference.

Q2. How would you secure a network against malware that uses phishing or malicious links to enter through email? What layers of defense (such as email filtering, firewalls, and endpoint protection) should be implemented?

1. Email Filtering:

- Set up **spam filters** to block malicious emails.
- Use **DMARC**, **SPF**, and **DKIM** to authenticate legitimate senders.

2. Endpoint Protection:

- Implement **anti-malware software**.
- Use **endpoint detection and response (EDR)** for real-time monitoring.

3. Network Security:

- Enable **firewalls** to block malicious traffic.
- Deploy **Intrusion Detection Systems (IDS)** to flag suspicious activity.

4. User Training:

- Train employees to identify phishing emails and avoid clicking on suspicious links.
-

Q3. Viva

Slip 16

Q1. Why is it important to create snapshots of your VM before performing dynamic analysis on malware, and how can you restore the VM if something goes wrong?

1. Importance of Snapshots:

- A snapshot preserves the VM's state at a particular point in time.
- If the malware compromises the system, the snapshot allows you to **quickly revert** the VM to a clean state.

2. Restoring the VM:

- Open the VM software (e.g., VirtualBox/VMware).
 - Go to the **Snapshots** tab.
 - Select the snapshot you want to revert to and click **Restore**.
-

Q2. How can you identify unusual network traffic patterns in Wireshark that may indicate a network is infected?

1. **High Traffic Volume:** Sudden spikes in outgoing traffic could indicate exfiltration.
 2. **Unusual Protocols:** Watch for uncommon or suspicious protocols (e.g., IRC, TOR).
 3. **Unknown IP Addresses:** Look for traffic to suspicious or known-malicious IP addresses.
 4. **Repeated DNS Requests:** Frequent DNS lookups for unfamiliar domains can indicate DNS tunneling or botnet activity.
 5. **HTTP/S Traffic:** Monitor unexpected POST requests or large file transfers over HTTP/S.
-

Q3. Viva

Slip 17

Q1. What precautions should you take when setting up a lab environment for malware analysis? Discuss key configurations like isolation, snapshots, and network settings.

1. **Isolation:**
 - Configure the VM to be **network-isolated** (use host-only network or disable networking completely).
2. **Snapshots:**
 - Create a snapshot before starting the analysis, so you can restore the VM if it gets infected.
3. **Network Settings:**

- Disable **internet access** to avoid data exfiltration or malware spreading.
- If required, set the network to **NAT** for controlled communication, logging all traffic using Wireshark.

4. Disable Host Sharing:

- Disable **shared folders** and clipboard sharing between host and VM to prevent the malware from affecting the host machine.
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Q2. Walk through the steps to detect a spam email using various email client features or third-party tools. How would you identify signs of a phishing email in a typical spam message?

1. Examine the Sender:

- Check for **spoofed email addresses** or domains that don't match the official company.

2. Check the Subject and Content:

- Look for **misspellings**, urgent calls to action, and **generic greetings** (e.g., "Dear Customer").

3. Inspect Links:

- Hover over any links to check if the URL matches the text. Suspicious domains are red flags.

4. Use Tools:

- Use **email header analysis tools** to check the origin (e.g., using **MXToolbox**).
 - Employ third-party tools like **SpamAssassin** to score the email for spam indicators.
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Q3. Viva

Q1. How do you install and configure Process Hacker on your analysis machine? What are the essential features of Process Hacker that are useful for analyzing malware behavior?

1. Installation:

- Download from the [Process Hacker website](#).
- Install by running the installer with admin privileges.

2. Configuration:

- Enable the **process tree view** to visualize parent-child relationships.
- Configure the **network tab** to monitor network activity.

3. Essential Features:

- **Process Tree:** To trace the origin of suspicious processes.
 - **Memory and Handles:** To analyze memory usage and open file handles.
 - **Network Activity:** To monitor the connections made by malware.
 - **Services and DLLs:** To check for malicious services and loaded libraries.
-

Q2. Explain how email filtering works to detect and block spam emails. What are some common techniques used by email filters to categorize emails as spam or legitimate?

1. Content-Based Filtering:

- Filters scan the email body and subject for suspicious words or phrases (e.g., "prizes", "urgent").

2. Blacklist Filtering:

- Checks the sender's domain or IP address against known blacklists (e.g., Spamhaus).

3. Heuristic and Bayesian Filtering:

- Uses statistical analysis to compare the email content against known spam patterns.

4. Header Analysis:

- Inspects email headers for inconsistencies (e.g., SPF/DKIM/DMARC failures).

5. Behavioral Analysis:

- Flags emails based on patterns such as bulk sending or repeated delivery failures.
-

Q3. Viva

Slip 19

Q1. After installing Process Hacker, describe the process of using it to analyze a sample malware. What specific indicators in the Process Hacker interface should you focus on (e.g., processes, threads, modules)?

1. Processes Tab:

- Look for **suspicious processes** with unusual names or high resource consumption.
- Check for **child processes** spawned by malware.

2. Threads Tab:

- Inspect threads for suspicious activity, especially threads interacting with critical system services.

3. Modules Tab:

- Analyze the **loaded modules** (DLLs) to see if any malicious libraries are injected into legitimate processes.

4. Network Tab:

- Monitor **network connections** initiated by the malware.
-

Q2. Describe the common techniques used in phishing attacks. What are the key indicators that an email or website might be part of a phishing attack?

1. Techniques:

- **Email Spoofing:** Fake sender addresses to mimic legitimate companies.
- **Malicious Links:** Redirecting users to fake websites.

- **Social Engineering:** Tricks users into sharing personal information.

2. Indicators:

- **Urgency:** Emails requesting immediate action (e.g., account suspension notices).
 - **Suspicious URLs:** Links that appear legitimate but lead to fake domains.
 - **Generic Greetings:** Use of "Dear Customer" instead of personalized greetings.
 - **Unusual Attachments:** Files like .exe, .scr, or macros-enabled documents.
-

Q3. Viva

Slip 20

Q1. What steps would you take using Process Hacker to monitor system activities like process creation, file system changes, and network connections made by a suspicious malware sample?

1. Process Creation:

- Open Process Hacker and enable the **process tree view**.
- Monitor for any newly created child processes.

2. File System Changes:

- Go to the **Handles** tab and filter for **file handles** to track changes made to files.

3. Network Connections:

- Use the **Network** tab to view outgoing connections and track the IP addresses/ports that the malware communicates with.
-

Q2. How can you use a browser extension or security tool to protect yourself from phishing websites? Explain how these tools can help identify fraudulent sites.

1. Browser Extensions:

- Use tools like **HTTPS Everywhere**, **uBlock Origin**, and **Netcraft Toolbar**.
- These extensions flag websites that are known for phishing or contain insecure elements.

2. Fraudulent Site Detection:

- **Certificate Validation:** Check SSL/TLS certificates and block untrusted certificates.
 - **Real-Time Phishing Database:** Extensions check sites against a real-time database of known phishing URLs.
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Q3. Viva

This completes the answers to all the slips in the document. Let me know if you need any further clarifications or adjustments!

It seems that all the slips from the uploaded document have been addressed. There are no further questions in the provided PDF. If you have any additional questions or need clarification on any specific section, feel free to ask!

Apologies for the confusion! I missed continuing from slip 21 to slip 25. Here are the answers for the remaining slips:

Slip 21

Q1. How do you install Process Monitor, and what configurations should you adjust to effectively capture the activities of malware during dynamic analysis?

1. Download and Installation:

- Visit the official [Sysinternals Process Monitor page](#).
- Download the `Procmon` executable and run it.

2. Configurations:

- **Filters:** Set filters to capture relevant data (e.g., filter by process name or specific file system operations).
 - **Event Categories:** Focus on **file system, registry, network, and process activity**.
 - **Capture Mode:** Enable capturing and logging all events to review later.
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Q2. How would you respond if you received a phishing email that appeared to be from your bank or employer? What steps should you take to report and avoid being compromised?

1. **Do Not Click Links:** Avoid clicking on any links or downloading attachments.
 2. **Verify the Sender:** Contact the bank or employer directly using official communication channels to confirm if the email is legitimate.
 3. **Report the Email:** Forward the phishing email to your company's security team or use the bank's fraud reporting system.
 4. **Delete the Email:** Remove the phishing email from your inbox and ensure that it's purged from the trash folder.
 5. **Monitor Accounts:** Check bank accounts or other personal accounts for any suspicious activity.
-

Q3. Viva

Slip 22

Q1. After installing Process Monitor, explain how to filter out unnecessary noise and focus on relevant system activity while analyzing a sample malware. What types of events should you be looking for?

1. **Filter Configuration:**
 - Use **Process Name** to focus on the malware process.

- Filter by specific **event types** (e.g., `CreateFile` , `WriteFile` , `RegSetValue` , `NetworkConnect`).

2. Events to Focus On:

- **File System Events:** Look for file creations, modifications, or deletions.
 - **Registry Events:** Track registry key additions or changes (especially in `Run` or `RunOnce` keys).
 - **Process Events:** Look for process creation or termination.
 - **Network Events:** Monitor for outgoing or suspicious network connections.
-

Q2. How would you configure a Windows machine to block unauthorized USB devices while still allowing approved devices to function? What steps would you take to set up a device management policy for USB ports?

1. Device Installation Policies:

- Open **Group Policy Editor** (`gpedit.msc`).
- Navigate to **Computer Configuration > Administrative Templates > System > Device Installation > Device Installation Restrictions**.
- Enable the policy to **prevent installation of devices not described by other policy settings**.

2. Allowing Approved Devices:

- Use **Device IDs**: Add the hardware IDs of approved devices to the **allowed list** under the device installation policy.

3. Registry Method:

- Set registry keys under `HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\USBSTOR` to disable USB mass storage devices, then add approved devices manually.
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Q3. Viva

Slip 23

Q1. How would you use Process Monitor to identify system file or registry modifications that a malware sample may make? Give an example of an event you would investigate in detail.

1. Process Monitoring:

- Set up a filter for the malware process by its name.
- Focus on **File System Activity** (e.g., `WriteFile` events).
- Pay attention to **Registry Modifications** (e.g., `RegSetValue` events).

2. Example Event:

- **Registry Key Modification:** If the malware adds a key to `HKEY_LOCAL_MACHINE\Software\Microsoft\Windows\CurrentVersion\Run`, it is setting itself to run on startup.
- Investigate the full event, noting the **key path** and **value** written.

Q2. In a situation where a USB drive is suspected to contain malware, how would you safely analyze the device on an isolated system without risking contamination of the main network? What tools or techniques would you use to check for malicious files?

1. Isolated Environment:

- Use a **virtual machine** or an **air-gapped system** for analysis.
- Disable **network access** on the analysis machine.

2. Tools:

- Use **USB write blockers** to prevent malware from infecting the analysis system.
 - Tools like **VirusTotal** and **Metadefender** for online scanning.
 - Run **antivirus/antimalware tools** (e.g., ClamAV) to scan the USB.
 - Use **Forensics tools** (e.g., FTK Imager) to create a forensic image and analyze it for malicious files.
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Slip 24

Q1. What is the Noriben tool, and how is it different from other dynamic analysis tools like Process Monitor or Process Hacker? Describe how you would install and set up Noriben for use.

1. What is Noriben?

- Noriben is a **Python-based script** that acts as a sandbox for automating malware analysis using **Process Monitor** logs.
- Unlike Process Monitor, it automatically parses and summarizes results, making the output more human-readable.

2. Differences:

- **Automated Reporting:** Unlike Process Monitor, Noriben simplifies analysis by generating reports directly from Procmon logs.
- **Minimal Setup:** Noriben requires fewer manual configurations compared to Process Monitor.

3. Installation and Setup:

- Download Noriben from its [GitHub repository](#).
- Install **Python** on your system.
- Run Noriben in the command line: `python noriben.py --run malware_sample.exe`.

Q2. How do you set up REMnux on a virtual machine? What are the key installation steps, and how would you ensure that the system is ready for malware analysis after installation?

1. Download and Installation:

- Download REMnux as a virtual appliance from [remnux.org](#).
- Import the appliance into **VirtualBox** or **VMware**.

- Follow the setup wizard to complete the import.

2. Setup for Analysis:

- Ensure all **malware analysis tools** (e.g., Wireshark, Radare2, Volatility) are working.
 - Verify **network isolation** if needed (e.g., set the VM to use **host-only networking**).
 - Install any **updates** using the command `remnux update`.
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Q3. Viva

Slip 25

Q1. Explain the role of rundll32.exe in Windows and how it can be used to execute a DLL file. Why might malware use rundll32.exe for execution?

1. Role of rundll32.exe:

- `rundll32.exe` is a legitimate Windows utility that runs DLL (Dynamic Link Library) files.
- It allows programs to execute code within DLLs without embedding it directly in an executable.

2. Malware Use:

- Malware may use `rundll32.exe` to execute **malicious DLLs** as part of its payload to avoid detection by making the execution look legitimate.
 - It helps malware evade **signature-based detection** as rundll32 is a trusted system process.
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Q2. How would you use REMnux to perform a basic static analysis of a sample malware file? Which tools within REMnux would be used for tasks like file type identification, hashing, and disassembling?

1. File Type Identification:

- Use the `file` command to identify the type of file: `file sample.exe`.

2. Hashing:

- Generate cryptographic hashes with commands like `md5sum`, `sha256sum`: `md5sum sample.exe`.

3. Disassembly:

- Use **Radare2** or **Ghidra** to disassemble and analyze the file: `r2 sample.exe`.

4. Other Tools:

- Use **strings** to extract human-readable strings: `strings sample.exe`.
 - **YARA** for signature-based matching: `yara rule.yar sample.exe`.
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These are the answers for the remaining slips (21 to 25). Let me know if you need further assistance or adjustments!