Here is a **meticulously detailed, sentence-by-sentence bullet-point breakdown** of the document titled **“55. System”**, formatted as **Comprehensive Study Notes** tailored to **CompTIA A+ 1102 Objective 1.4** (“Given a scenario, configure Microsoft Windows settings”). No critical information has been omitted.

**📘 STUDY NOTES – System Settings Applet in Control Panel (Windows)**

**🔹 Introduction to System Applet Behavior**

* The **System applet** is listed under **Control Panel** in exam objectives.
* However, **clicking it opens the Windows Settings interface**, not the legacy Control Panel.
  + System settings have been migrated to the **newer Windows Settings** UI.
* Example: In Windows 10, clicking System opens the **Settings > System** page.

**🧾 System Overview Screen**

* This page **consolidates key system information** and links to configuration areas.
* Displays **security status**: e.g., “PC is being monitored and protected.”
  + Indicates **Windows Security** is active: firewall, antivirus, anti-malware.
  + Can click “See details in Windows Security” for more specifics.

**➤ Device Specifications (Displayed on Main System Page)**

* **Device name** (e.g., DESKTOP-N477ISQ).
* **Processor**: e.g., Intel Xeon at 3.2 GHz, with 2 processors.
* **Installed RAM**: 8 GB in this example.
* **Device ID / Product ID**
* **System type**: 64-bit OS on 64-bit CPU.
* **Pen and touch support**: Indicates if touchscreen or stylus is enabled.
  + Example: Not enabled on standard desktops, but available on Surface tablets.

**➤ Windows Version Info**

* Example: Windows 10 Pro, Version 21H1 (1st half of 2021).
* **Build number** and **Experience Pack** also listed.

**🔧 Advanced System Settings**

* Found on the **right side** of the System window.
* Clicking opens the **System Properties** dialog.

**🖥️ Tab 1: Computer Name**

* Displays current name and optional description (e.g., DionTrainingVM).
* Use **Network ID** to join **domains** or **workgroups**.
* Click **Change** to rename computer or reassign domain/workgroup.

**🔩 Tab 2: Hardware**

* Links to:
  + **Device Manager** (covered separately in later lessons).
  + **Device Installation Settings**

**⚙️ Tab 3: Advanced**

This is the **most configurable section** with three sub-areas:

**1. Performance**

* Controls:
  + **Visual effects**
  + **Processor scheduling**
  + **Memory usage**
  + **Virtual memory**

**➤ Visual Effects**

* Options:
  1. **Let Windows decide** (default)
  2. **Adjust for best appearance** (more graphics, more resources)
  3. **Adjust for best performance** (less visual flair, more efficiency)
  4. **Custom**: Manually select which animations/effects to keep or remove.

**➤ Windows Performance Examples**

* Default includes most effects, excluding:
  + Taskbar thumbnail previews
  + Shadows under mouse pointer

**2. Processor Scheduling**

* Determines whether to prioritize:
  + **Programs** (user-interfacing apps)
  + **Background services** (e.g., print spooler, system tasks)
* Guidance:
  + Most desktops = set for **Programs**
  + **Servers** or “headless” systems = set for **Background services**

**3. Virtual Memory**

* Uses **page file** on the hard drive as “fake RAM” when physical memory runs low.
* Can be **auto-managed by Windows**, or manually configured.

**Example Custom Configuration:**

* Initial size: 2048 MB (2 GB)
* Max size: 4096 MB (4 GB)
* Changes require **system reboot** to take effect.

**🔐 Data Execution Prevention (DEP)**

* DEP = **Data Execution Prevention**
* **Security feature** that protects against memory-based attacks.

**➤ What It Does:**

* **Randomizes RAM allocation** for program execution.
* Prevents attackers from exploiting predictable memory locations.

**➤ DEP Configuration Options:**

1. **On for essential Windows programs and services only** (default).
2. **On for all programs and services**, except those on an exclusion list.

**Trade-off:**

* More security = potential **performance impact**.
* Must **balance security vs. system responsiveness**.

**💾 Tab 4: System Protection**

* Used to **create and manage restore points**.
* Allows rollback to previous stable state in case of system changes/issues.

**➤ Configuring System Protection:**

* Enable by clicking **Turn on system protection**.
* Set **disk space** for storing restore points (e.g., 20 GB).
* Click **Create** to generate a new restore point (e.g., “Brand new install”).

**🌐 Tab 5: Remote**

* Controls whether to allow **Remote Assistance** or **Remote Desktop** connections.

**➤ Use Cases:**

* Helpful for **IT support teams** to troubleshoot remotely.
* Must be **enabled manually** for remote access.

**➤ Permissions:**

* Can **add specific users** (e.g., Jason, Susan) for remote access.
* Remote support tools can then connect to that system securely.

**➤ Security Recommendation:**

* **By default**, remote connections should be **disabled** for security.
* Enable only when necessary and restrict access to **trusted users**.

**🔧 Real-Life Implementation Examples**

1. 🧠 **Memory Management**:
   * System is lagging? Check **virtual memory** settings.
   * Expand page file to avoid out-of-memory crashes.
2. 🎨 **Performance vs. Appearance**:
   * For low-end PCs: Set visual effects to **best performance**.
   * For gaming PCs: Customize for **aesthetic UX**.
3. 🧪 **System Restore**:
   * Before installing major software: Create a **restore point**.
   * Rollback if installation breaks system stability.
4. 🧰 **Remote Troubleshooting**:
   * Help desk enables **Remote Desktop** on user’s PC.
   * Adds technician to **authorized users** list.
5. 🔐 **DEP for Security-Hardened Systems**:
   * Enterprise PCs can enable **DEP for all programs**.
   * Increases resistance to memory-exploit malware.

**✅ Exam Inclusion Notification**

* **Fully Covered in CompTIA A+ 1102 Exam**, specifically under:
  + **Objective 1.4: Configure Microsoft Windows settings**
* Candidates should:
  + Know where **System settings** are accessed.
  + Understand how to configure:
    - **Performance settings**
    - **System restore**
    - **Remote access**
    - **Virtual memory**
    - **Data Execution Prevention (DEP)**
* Be prepared for **scenario-based questions**, such as:
  + “What to configure to improve app responsiveness?”
  + “How to allow help desk to connect remotely?”
  + “Where to go to change memory and visual performance?”