4.0 Operational Procedures

4.1 Given a scenario, implement best practices associated with documentation and support systems information management.

- **Ticketing systems**
  - User information
  - Device information
  - Description of issues
  - Categories
  - Severity
  - Escalation levels
  - Clear, concise written communication
    - Issue description
    - Progress notes
    - Issue resolution
- **Asset management**
  - Inventory lists
  - Configuration management database (CMDB)
  - Asset tags and IDs
  - Procurement life cycle
  - Warranty and licensing
  - Assigned users
- **Types of documents**
  - Incident reports
  - Standard operating procedures (SOPs)
    - Software package custom installation procedure
  - New user/onboarding setup checklist
  - User off-boarding checklist
  - Service-level agreements (SLAs)
    - Internal
    - External/third-party
  - Knowledge base/articles

4.2 Given a scenario, apply change management procedures.

- **Documented business processes**
  - Rollback plan
  - Backup plan
  - Sandbox testing
  - Responsible staff members
- **Change management**
  - Request forms
  - Purpose of the change
  - Scope of the change
  - Change type
    - Standard change
    - Normal change
    - Emergency change
  - Date and time of change
    - Change freeze
    - Maintenance windows
  - Affected systems/impact
  - Risk analysis
    - Risk level
  - Change board approvals
  - Implementation
  - Peer review
  - End-user acceptance

4.3 Given a scenario, implement workstation backup and recovery methods.

- **Backup**
  - Full
  - Incremental
  - Differential
  - Synthetic full
- **Recovery**
  - In-place/overwrite
  - Alternative location
- **Backup testing**
  - Frequency
- **Backup rotation schemes**
  - Onsite vs. offsite
  - Grandfather-father-son (GFS)
  - 3-2-1 backup rule

4.4 Given a scenario, use common safety procedures.

- Electrostatic discharge (ESD) straps
- ESD mats
- Electrical safety
  - Equipment grounding
- Proper component handling and storage
- Cable management
- Antistatic bags
- Compliance with government regulations
- Personal safety
  - Disconnect power before repairing PC
  - Lifting techniques
  - Fire safety
  - Safety goggles
  - Air filter mask

4.5 Summarize environmental impacts and local environment controls.

- Material safety data sheet (MSDS) documentation for handling and disposal
  - Proper battery disposal
  - Proper toner disposal
  - Proper disposal of other devices and assets
- Temperature, humidity-level awareness, and proper ventilation
  - Location/equipment placement
  - Dust cleanup
  - Compressed air/vacuums
- Power surges, brownouts, and blackouts
  - Uninterruptible power supply (UPS)
  - Surge suppressor

4.6 Explain the importance of prohibited content/activity and privacy, licensing, and policy concepts.

- Incident response
  - Chain of custody
  - Informing management/law enforcement as necessary
  - Copy of drive (data integrity and preservation)
  - Incident documentation
  - Order of volatility
- Licensing/digital rights management (DRM)/ end-user license agreement (EULA)
  - Valid licenses
  - Perpetual license agreement
  - Personal-use license vs. corporate-use license
  - Open-source license
- Non-disclosure agreement (NDA)/mutual non-disclosure agreement (MNDA)
- Regulated data
  - Credit card payment information
  - Personal government-issued information
  - PII
  - Healthcare data
  - Data retention requirements
- Acceptable use policy (AUP)
- Regulatory and business compliance requirements
  - Splash screens

4.7 Given a scenario, use proper communication techniques and professionalism.

- Present a professional appearance and wear appropriate attire.
  - Match the required attire of the given environment.
    - Formal
    - Business casual
- Use proper language and avoid jargon, acronyms, and slang, when applicable.
- Maintain a positive attitude/ project confidence.
- Actively listen and avoid interrupting the customer.
- Be culturally sensitive.
  - Use appropriate professional titles and designations, when applicable.
- Be on time (if late, contact the customer).
- Avoid distractions.
  - Personal calls
  - Texting/social media sites
  - Personal interruptions
- Appropriately deal with difficult customers or situations.
  - Do not argue with customer and/or be defensive.
  - Avoid dismissing customer issues.
  - Avoid being judgmental.
  - Clarify customer statements (i.e., ask open-ended questions to narrow the scope of the issue, restate the issue, or question to verify understanding).
  - Use discretion and professionalism when discussing experiences/encounters.
- Set and meet expectations/ timeline and communicate status with the customer.
  - Offer repair/replacement options, as needed.
  - Provide proper documentation on the services provided.
  - Follow up with customer/user at a later date to verify satisfaction.
- Appropriately handle customers' confidential and private materials.
  - Located on a computer, desktop, printer, etc.

4.8 Explain the basics of scripting.

- Script file types
  - .bat
  - .ps1
  - .vbs
  - .sh
  - .js
  - .py
- Use cases for scripting
  - Basic automation
  - Restarting machines
  - Remapping network drives
  - Installation of applications
  - Automated backups
  - Gathering of information/data
  - Initiating updates
- Other considerations when using scripts
  - Unintentionally introducing malware
  - Inadvertently changing system settings
  - Browser or system crashes due to mishandling of resources

4.9 Given a scenario, use remote access technologies.

- Methods/tools
  - RDP
  - VPN
  - Virtual network computer (VNC)
  - Secure Shell (SSH)
  - Remote monitoring and management (RMM)
  - Simple Protocol for Independent Computing Environments (SPICE)
  - Windows Remote Management (WinRM)
  - Third-party tools
    - Screen-sharing software
    - Videoconferencing software
    - File transfer software
    - Desktop management software
- Security considerations of each access method

4.10 Explain basic concepts related to artificial intelligence (AI).

- Application integration
- Policy
  - Appropriate use
  - Plagiarism
- Limitations
  - Bias
  - Hallucinations
  - Accuracy
- Private vs. public
  - Data security
  - Data source
  - Data privacy