**Module 2 {Installation and Maintenance of Hardware and Its components}**

Topic: User Management

• Assignment Level Basic

1. **What is user management?**

* User management is a system to handle activities related to individuals' access to devices, software, and services. It focuses on managing permissions for access and actions as well as monitoring usage.

1. **Why is user management needed?**

* User management offers a solution that helps IT keep control of users' activities and bolster other security measures to protect files, applications, systems, and devices on-premises and in the cloud from unauthorized access by internal and external users.

• Assignment level intermediate:

1. **Where can we access the user management?**

* Operating System (Windows):

• On Windows, user management can be accessed through the

"Control Panel" or "Settings."

• For example, on Windows 10, you can go to "Settings" >

"Accounts" to manage user accounts.

1. **What are the features of user management**?

* Modern user management services provide end-to-end management of user accounts, including user registration, login and authentication, single sign-on (SSO), and permissions management. User management systems allow administrators to manage users' access to devices, software, and services.

• Assignment level Advance:

1. **Do a practical to create a user from user management.**

* Done

1. **Do a practical to change the password of the administrator from the user management tool**.

* Done

Topic: File and Folder Permission

• Assignment Level Basic:

1. **What is file folder permission?**

* When you set permissions, you specify what users are allowed to do within that folder, such as save and delete files or create a new folder.

1. **What is the use of file and folder permission**?

* File permissions control what user is permitted to perform which actions on a file.

• Assignment level Intermediate:

1. **write down the steps to give a folder read only permission.**

* 1**. Navigate to the Folder:**

**Open File Explorer and locate the folder for which you want**

**to set read-only permissions.**

**2. Access the Properties:**

**Right-click on the folder, and select "Properties" from the**

**context menu.**

**3. Security Tab:**

**In the Properties window, go to the "Security" tab.**

**4. Edit Permissions:**

**Click on the "Edit" button.**

**5. Add User/Group:**

**Click on "Add" to add a new user or group.**

**6. Enter Object Names:**

**Enter the name of the user or group for which you want to**

**set permissions, and click "Check Names" to verify.**

**7. Set Permissions:**

**Select the user or group, and under the "Allow" column,**

**uncheck the "Full control" and "Modify" options. Check the**

**"Read & execute," "List folder contents," and "Read" options.**

**8. Apply and OK:**

**Click "Apply" and then "OK" to apply the changes.**

1. **Write a step to give a file only admin permission.**

* **Setting Permissions**

1. Access the Properties dialog box.

2. Select the Security tab.

3. Click Edit.

4. In the Group or user name section, select the user(s)

you wish to set permissions for.

5. In the Permissions section, use the checkboxes to

select the appropriat permission level.

6. Click Apply.

7. Click Okay.

• Assignment level Advance:

1. **Do a practical to give the folder permission of read only in network.**

* Done

1. **Do a practical to change the ownership of the folder and the sub folders in it.**

* Done

Topic: Install OS

• Assignment Level Basic

1. **What is OS?**

* An operating system (OS) is the program that, after being initially loaded into the computer by a boot program, manages all of the other application programs in a computer.

1. **What are the types of OS?**

* **10 Different Types of Operating Systems**
* Batch Operating System.
* Multi-processor Operating System.
* Multiprogramming Operating System.
* Distributed Operating System.
* Time sharing Operating System.
* Network Operating System.
* Mobile Operating System.
* Multi-tasking Operating System.

• Assignment Level Intermediate

1. **Do a practical to create bootable pendrive for kali Linux**

* Done

1. **Do a practical to create a bootable pendrive for windows 7**

* Done

1. **Do pendrive for creating a pendrive for mac os Mojave with unibeast.**

* Done

• Assignment level Advance:

1. **Do a practical to install Kali Linux**

* Done

1. **Do a practical to install windows 10**

* Done

1. **Do a practical to install Mac os X**

* Done

Topic: Clean Install

• Assignment Level Basic

1. **What is clean install?**

* A clean install is an installation of an operating system on a computer where the hard drive is formatted and completely erased. With a clean install, you can start over with a new Windows OS.

• Assignment Level Intermediate

1. **What is the process for clean install?**

* **Clean install Windows 10 from Reset this PC (cloud)**

1. Open Settings.

2. Click on Update & Security.

3. Click on Recovery.

4. Under the “Reset this PC” section, click the Get started

button.

5. Click the “Remove everything” option.

6. Click the “Cloud Download” option.

7. (Optional) Click the Change settings option.

1. **what are the benefits of clean install?**

* A clean install enables users to regain control over the system by eliminating programs and files that have not been used for a long time, if ever. It paves the way for a fresh start with a clean Windows registry and a decluttered system that includes only has the apps the user needs.

• Assignment level Advance:

1. **Do a clean installation of windows XP**

* Done

1. **Do a clean installation of windows 8**

* Done

Topic: Upgrade installation

• Assignment level basic

**1.What is upgrade installation?**

* An upgrade installation is a process of installing a newer version of the Windows operating system to replace the existing version. This process involves uninstalling the existing version and then installing the new version in its place.

**2.What is the benefit of upgrade installation?**

* **Benefits of Regularly Upgrading Your Operating**

**System (OS)**

* Improved security. All software is prone to bugs, and operating systems are no exception.
* Access latest features.
* Better compatibility.
* Boosted device performance.
* Reduced costs.
* Vendor support.
* Increased productivity and efficiency.

• Assignment level intermediate:

**1.Write down the steps of upgrade installation.**

* Upgrade Installation for Windows:
* Backup Important Data:
* Check System Requirement:
* Download the Upgrade:
* Run the Installer:
* Follow On-Screen Instructions:
* Choose Upgrade Option:
* Complete Installation:
* Configure Setting:
* Install Updates and Drivers:

• Assignment level advance.

1. **Do a practical to upgrade from windows 8 to windows 10.**

* Done

Topic: Partition & Formatting

• Assignment level Basic

1. **What is partitioning?**

* Partitioning is used to make solving maths problems involving large numbers easier by separating them into smaller units. For example, 782 can be partitioned into: 700 + 80 + 2.

1. **What is partition?**

* A partition is a logical division of a hard disk that is treated as a separate unit by operating systems (OSes) and file systems.

1. **What is format?**

* The formet of something is the way or order in which it is arranged and presented. ...a large-format book.

• Assignment level Intermediate:

1. **Do a Practical of mbr partition.**

* Done

1. **Do a Practical of gpt partition**

* Done

• Assignment level Advance:

1. **Do a practical using cmd.**

* Done

1. **covert a partition to gpt by cmd.**

* **Tip 1. Convert MBR to GPT Using DiskPart Tool**

1. Type CMD in the Search box.

2. Open Command Prompt, type DiskPart, and press Enter.

3. Type list disk and press Enter. (

4. Type select disk X. (

5. Now type clean and press Enter.

6. Type convert gpt and press Enter.

1. **Format a partition using cmd.**

* **Follow the steps below to format a drive:**

1. STEP 1: Open Command Prompt As Administrator.

Opening the command prompt.

2. STEP 2: Use Diskpart. Using diskpart.

3. STEP 3: Type List Disk.

4. STEP 4: Select the Drive to Format.

5. STEP 5: Clean the Disk.

6. STEP 6: Create Partition Primary.

7. STEP 7: Format the Drive.

8. STEP 8: Assign a Drive Letter.

Topic: Transferring Files

• Assignment level Basic

1. **What is transferring Files?**

* File transfer refers to the exchange of data files between computer systems .File transfer is the process of copying or moving a file from one computer to another over a network or internet connection.

1. **What are the ways of transferring files?**

* 1.Cloud storage or web data transfers.

2. SSD and HDD drives via SATA cables.

3. Basic cable transfer.

4. Use software to speed up your data transfer.

5. Transfer your data over WiFi or LAN.

6. Using an external storage device or flash drives.

• Assignment level Intermediate:

1. **How do we transfer files from one system to**

**another?**

* **Use External Hard Drive to Copy and Transfer Files**

1. Connect your external hard drive to the source

computer.

1. Select files you'd like to transfer and copy them to the

external hard drive.

1. Unplug the external hard drive and connect it to the

target laptop. Open the drive and copy files to the new

laptop.

1. **Types of file transferring media**

* 1 FTP (File Transfer Protocol)

2 HTTP (Hypertext Transfer Protocol)

3 FTPS (FTP over SSL)

4 HTTPS (HTTP over SSL)

5 SFTP (SSH File Transfer Protocol)

6 SCP (Secure Copy)

7 WebDAV (Web Distributed Authoring and Versioning)

8 WebDAVS.

. • Assignment level Advanced:

1. **Do a practical to transfer files from one system to**

**another via network.**

* Done

1. **DO a practical to transfer data from one hard disk to another.**

* Done

Topic: Administrative tools

• Assignment Level Basic

1. **What are administrative tools?**

* Administrative Tools is a folder in the Windows 10 Control Panel.

1. **What is the use of administrative tools?**

* It allows the admin to manage several parameters of the operating system for quick troubleshooting.

• Assignment level Intermediate:

1. **List out the administrative tools.**

* **Tools**
* Component Services.
* Computer Management.
* Defragment and Optimize Drives.
* Disk Cleanup.
* Event Viewer.
* iSCSI Initiator.
* Local Security Policy.
* ODBC Data Sources.

1. **What disk is management tools**

* Disk management tools are utility software that is used to manage data on disk by performing various functions on it.

• Assignment Level Advanced

1. **Do a practical to delete a driver and reinstall it**

**from administrative tools.**

* Done

1. **Do a practical to delete a partition and again**

**create it with administrative tool**

* Done

1. **Do a practical to create user with administrative**

**tool.**

* Done

Topic: Windows Feature.

• Assignment Level Base

1. **What is windows features?**

* Major features include- start menu, task manager, taskbar, Cortana, file explorer, MS Paint, Browser, control panel etc. The advantages of the windows Operating system

• Assignment level Intermediate

1. **List out the windows features.**

* **Features provided by the Windows Operating System**
* Provides an efficient speed.
* Allows disk access as well as file systems.
* Program execution is done in a smooth way.
* Protected and supervisor mode is always there.
* Memory Management is supported to allow multiprogramming.
* Provides regular updates to ease the usage.

1. **What is the use of IIS?**

* Internet Information Services, also known as IIS, is a Microsoft web server that runs on Windows operating system and is used to exchange static and dynamic web content with internet users. IIS can be used to host, deploy, and manage web applications using technologies such as ASP.NET and PHP.

• Assignment level Advance:

1. **Do a practical to re install IIS with windows feature.**

* Done

1. **Do a practical to install dotnet framework 3.5**

**with Windows feature.**

* Done

1. **Do a practical to disable internet explorer in**

**windows feature.**

* Done

Topic: Backup & Restore

• Assignment level Basic:

1. **What is backup?**

* Backup refers to the copying of physical or virtual files or databases to a secondary location for preservation in case of equipment failure or catastrophe. The process of backing up data is pivotal to a successful disaster recovery plan.

1. **What is Restore?**

* The term "Restore" can have various meanings depending on the context in which it is used. Here are a few possible interpretations:
* Data Restore:

In the context of computer systems and data management,

"restore" often refers to the process of recovering or returning

data to its previous state. This could involve restoring files or a

system from a backup after data loss or corruption.

* System Restore:

On Windows operating systems, there is a feature called "System

Restore" that allows users to revert their computer's state

(system files, settings, and programs) to a previous point in time,

effectively undoing system changes.

1. **What is the need of backup**

* Backups protect against human errors, hardware failure, virus attacks, power failure, and natural disasters. Backups can help save time and money if these failures occur.

• Assignment level Intermediate.

1. **What are the tools of backup?**

* B**ackup** tools include rsync, tar, zip, dd, Bacula, Amanda, Duplicity, Time Machine, Windows Backup and Restore as well as cloud-based services like Google Drive, Drop box and One Drive.

1. **How do we restore?**

* Data Restore:

From Backup:

Identify the backup source (external drive, cloud storage, etc.).

Choose the backup that corresponds to the point in time you

want to restore.

Copy or restore the data from the backup to the original

Location.

1. **How to create a restore point?**

* **Create a system restore point**

1. In the search box on the taskbar, type Create a restore

point, and select it from the list of results.

1. On the System Protection tab in System Properties,

select Create.

1. Type a description for the restore point, and then select

Create > OK.

• Assignment level Advance:

1. **Do a practical to create restore point.**

* Done

1. **Do a practical to restore from restore point.**

* Done

1. **Do a practical to take backup from another system.**

* Done

1. **Do a practical to take backup backup with a recuva backup tool.**

* Done

Topic: Disk Management

• Assignment level Basic:

1. **What is Disk management?**

* Disk Management is an important functionality provided by the Operating System which can be used to create, delete, format disk partitions, and much more.

1. **What is the use of disk management?**

* Disk management is the process of organizing and maintaining the storage on a computer's hard disk.

1. **What are the merits of Disk management tool?**

* **Advantages of disk management include:**
* Improved organization and management of data.
* Efficient use of available storage space.
* Improved data integrity and security.
* Improved performance through techniques such as

defragmentation.

• Assignment level Intermediate:

1. **Where can we find the disk management tool?**

* To open Disk Management, right-click (or long-press) the Start button and select Disk Management.

1. **List out the operations we can do with disk management tool?**

* **Basic Functions of Disk Management Tools**
* Partitioning of the disk.
* Formatting the disk.
* Changing disk's name.
* Shrinking a disk partition.
* Extending a disk partition.
* Deleting a disk partition.
* Changing the file system of a driver.

• Assignment level Advance:

1. **Do a practical to create a new partition with disk management tool.**

* Done

1. **Do a practical to convert from MBR to gpt from disk management tool**

* Done

1. **Do a practical to create new partition from existing partition.**

* Done

Topic: Device Management

• Assignment level Basic:

1. **What is Device Management?**

* Device management enables organizations to administer and maintain devices, including virtual machines, physical computers, mobile devices, and IoT devices.

1. **What is the need of device management?**

* Device management enables organizations to administer and maintain devices, including virtual machines, physical computers, mobile devices, and IoT devices. Device management is a critical component of any organization's security strategy

1. **What is the need of device management?**

* **In complex IT environments, organizations often have numerous devices, such as computers, servers, routers, switches, and more. Managing the configuration of these devices ensures that they function optimally and adhere to security policie.**

1. **What are the benefits of Device management?**

* **Device management ensures that security policies are consistently enforced across all devices. This includes implementing access controls, encryption, and other security measures to protect against unauthorized access and data breaches.**

• Assignment level Intermediate:

1. **Where can we access device management?**

* 1. Click the. (Start) button.

2. In the Start Menu, click Settings.

3. In the SETTINGS window, click Devices.

4. In the DEVICES screen, click Printers & scanners

or Connected devices, and under the Related

Settings category, click Device manager.

1. **List out the devices connected to the device management.**

* Computers:

Desktops: Workstation computers used by individuals.

Laptops: Portable computers for mobile users.

Servers: Computers that provide services to other devices on a

network.

Mobile Devices:

Smartphones: Devices running mobile operating systems (iOS,

Android).

Tablets: Portable touchscreen devices similar to smartphones but

with larger screens.

• Assignment level Advance:

1. **Do a practical to add a device with device management tool.**

* Done

1. **Do a practical to delete a driver from the device management tool.**

* Done

Topic: Physical security

• Assignment Level Basic

1. **Why physical security needed?**

* Physical security aims to protect people, property, and physical assets from any action or event that could lead to loss or damage. Physical security is crucial, and security teams must work together to ensure the security of digital assets.

1. **what is physical security?**

* Physical security is exactly what it sounds like: Protecting physical assets within your space. This includes expensive equipment, sensitive files and hardware like electronic locks and doors.

• Assignment Level Intermediate

1. **list out the ways of physical security.**

* Common methods include tall perimeter fences, barbed wire, clear signs stating that the site has active security, commercial video cameras and access controls.

1. **How to protect system from malfunctioning due to electrical fluctuation?**

* One of the easiest ways to protect your electronic devices from power surges is to use surge protectors. These devices work by diverting the excess voltage to the ground, thereby preventing it from reaching your electronics.

Topic: Firewall settings

• Assignment level basic:

1. **What is firewall?**

* A Firewall is a network security device that monitors and filters incoming and outgoing network traffic based on an organization's previously established security policies.

1. **Why is firewall needed?**

* The primary purpose of a firewall is to check if traffic or an incoming connection meets a predefined set of security standards, which is critical for internet security.

• Assignment level Intermediate:

1. **What are the features of firewall?**

* **Some general features you'll find in generation**

**firewalls include:**

* URL blocking.
* Virtual Private Networks
* Deep Packet Inspection and Packet Filtering.
* SSL and SSH inspection.
* Intrusion Prevention Systems
* QoS.
* Advanced malware detection

1. **Describe types of firewall ?**

* **The 5 different types of firewalls explained**
* packet filtering firewall.
* circuit-level gateway.
* application-level gateway (aka proxy firewall)
* stateful inspection firewall.
* next-generation firewall (NGFW)

• Assignment level advance:

1. **Do a practical to allow anydesk through firewall.**

* Done

1. **Do a practical to turn off the services of firewall.**

* Done

1. **Do a practical to block ip messenger to access the network.**

* Done