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

**Topic: User Management**

**Assignment Level Basic.**

1. **What is user management?**

* User management (UM) is defined as the effective management of users and their accounts, giving them access to various IT resources like devices, applications, systems, networks, SaaS services, storage systems, and more.

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?**

* A solution commonly used to implement user management is identity and access management (IAM). IAM enables administrators to define access to IT resources, both for internal and external users. IAM either includes or integrates with a user directory service, which contains credentials and other details of all users.

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

**User management functions include:**

* Preventing unauthorized access to infrastructure, applications, and data.
* Storing user details and credentials.
* Providing a convenient login mechanism for end-users.
* Allowing users to set and reset passwords.
* Enabling multi-factor authentication (MFA)

**Assignment level Advance:**

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

* **Yes**

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

* **Yes**

**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. You are not limited to choosing one of the standard permissions settings (Full Control, Modify, Read & Execute, List Folder Contents, Read, or Write).

1. **What is the use of file and 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. You are not limited to choosing one of the standard permissions settings (Full Control, Modify, Read & Execute, List Folder Contents, Read, or Write).

**Assignment level Intermediate:**

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

* **How to make a folder read-only**
* Open the folder's property menu. ...
* Select read-only. ...
* Copy as path. ...
* Open your command prompt. ...
* Change folder attributes via command line. ...
* Remember your settings. ...
* Communicate with other users. ...
* Don't change system folders or files.

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

* **Setting Permissions**
* Access the Properties dialog box.
* Select the Security tab. ...
* Click Edit.
* In the Group or user name section, select the user(s) you wish to set permissions for.
* In the Permissions section, use the checkboxes to select the appropriate permission level.
* Click Apply.
* Click Okay.

**Assignment level Advance:**

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

* **Yes**

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

* **Yes**

**Topic: Install OS**

**Assignment Level Basic**

1. **What is OS?**

* 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?**

* Batch OS. The batch operating system does not have a direct link with the computer. ...
* Time-sharing or multitasking OS. ...
* Distributed OS. ...
* Network OS. ...
* Real-time OS. ...
* Mobile OS.

**Assignment Level Intermediate**

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

* **Yes**

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

* **Yes**

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

* **Yes**

**Assignment level Advance:**

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

* **Yes**

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

* **Yes**

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

* **Yes**

**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)**

* Open Settings.
* Click on Update & Security.
* Click on Recovery.
* Under the “Reset this PC” section, click the Get started button.
* Click the “Remove everything” option.
* Click the “Cloud Download” option.
* (Optional) Click the Change settings option.

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

* With a clean install, the user starts over with a new Windows OS. A clean install of Windows 10 helps declutter the computer, frees up space, and eliminates performance and speed issues. It also helps remove viruses, Trojans, malware and bloatware from the system, and eliminates system problems like blue screen errors.

**Assignment level Advance:**

* **Do a clean installation of windows XP**
* **Yes**
* **Do a clean installation of windows 8**
* **Yes**

**Topic: Upgrade installation**

** Assignment level basic**

**1.What is upgrade installation?**

* Upgrade Install - This is where you have an older operating system on the computer such as Windows Me and you want to install a newer operating system. On this procedure, you install the newer operating system from within windows and let the CD upgrade the previous windows to the newer operating system.
* **2.What is the benefit of upgrade installation?**
* 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.**

* Step 1: Select the Operating System to be insolent into the computer (Window XP, Window Vista, Window 7, Window 8 & Window 10).
* Step 2: Create the Bootable Drive (Pen Drive & CD & DVD)
* Step 3: Insert the Bootable Drive into the PC.
* Step 4: Restart the System.

**Assignment level advance.**

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

* **Yes**

**Topic: Partition & Formatting**

** Assignment level Basic**

* **What is partitioning?**
* Partitioning is a way of splitting numbers into smaller parts to make them easier to work with. Partitioning links closely to place value: a child will be taught to recognise that the number 54 represents 5 tens and 4 ones, which shows how the number can be partitioned into 50 and 4.
* **What is partition?**
* The division of property into two parts is known as partition. Under the Hindu law, partition means a division of property of a Joint Hindu family in order to give separate conferment of status on the undivided coparceners.
* **What is format?**
* The format specifier in C is used to **tell the compiler about the type of data to be printed or scanned in input and** output operations.

**Assignment level Intermediate:**

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

**Assignment level Advance:**

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

* **Yes**

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

* Type CMD in the Search box.
* Open Command Prompt, type DiskPart, and press Enter.
* Type list disk and press Enter. (
* Type select disk X. (
* Now type clean and press Enter.
* Type convert gpt and press Enter.

**4.Format a partition using cmd.**

* STEP 1: Open Command Prompt As Administrator. Opening the command prompt. ...
* STEP 2: Use Diskpart. Using diskpart. ...
* STEP 3: Type List Disk. ...
* STEP 4: Select the Drive to Format. ...
* STEP 5: Clean the Disk. ...
* STEP 6: Create Partition Primary. ...
* STEP 7: Format the Drive. ...
* 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. According to Techopedia: “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?**
* Cloud storage or web data transfers. ...
* SSD and HDD drives via SATA cables. ...
* Basic cable transfer. ...
* Use software to speed up your data transfer. ...
* Transfer your data over WiFi or LAN. ...
* Using an external storage device or flash drives.

**Assignment level Intermediate:**

* 1. **How do we transfer files from one system to another?**
* **.** FTP (File Transfer Protocol) ...
* HTTP (Hypertext Transfer Protocol) ...
* FTPS (FTP over SSL) ...
* HTTPS (HTTP over SSL) ...
* SFTP (SSH File Transfer Protocol) ...
* SCP (Secure Copy) ...
* WebDAV (Web Distributed Authoring and Versioning) ...
* WebDAVS.

**Assignment level Advanced:**

* 1. **Do a practical to transfer files from one system to another via network.**
* **Yes**
  1. **DO a practical to transfer data from one hard disk to another.**
* **Yes**

**Topic: Administrative tools**

Assignment Level Basic

**1.What are administrative tools?**

* Administrative Tools is a folder in the Windows 10 Control Panel. These folders contain tools for system administrators and advanced users.
  1. **What is the use of administrative tools?**
* The programs can be used to schedule a test of your computer's memory, manage advanced aspects of users and groups, format hard drives, configure Windows services, change how the operating system starts, and much, much more.

**Assignment level Intermediate:**

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

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

1. **What is disk management tools.**

* Disk management tools are utility software that is used to manage data on disk by performing various functions on it. Moreover, they perform functions like partitioning devices, manage drives, disk checking, disk formatting, etc.

**Assignment Level Advanced**

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

* **Yes**

1. **Do a practical to delete a partition and again create it with administrative tool**

* **Yes**

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

* **Yes**

**Topic: Windows Feature.**

** Assignment Level Base**

* **What is windows features?**
* Disk management tools are utility software that is used to manage data on disk by performing various functions on it. Moreover, they perform functions like partitioning devices, manage drives, disk checking, disk formatting, etc.

**Assignment level Intermediate**

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

* 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.

**2.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.**

* **Yes**

1. **Do a practical to install dotnet framework 3.5 with Windows feature.**

* **Yes**

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

* **Yes**

Topic: Backup & Restore

**Assignment level Basic:**

* 1. **What is backup?**
* Backup is the process of creating a copy of the data on your system that you use for recovery in case your original data is lost or corrupted. You can also use backup to recover copies of older files if you have deleted them from your system.
  1. **What is Restore?**
* To bring back into existence, use, or the like; reestablish: to restore order. to bring back to a former, original, or normal condition, as a building, statue, or painting.
  1. **What is the need of backup**
* The purpose of the backup is to create a copy of data that can be recovered in the event of a primary data failure. Primary data failures can be the result of hardware or software failure, data corruption, or a human-caused event, such as a malicious attack (virus or malware), or accidental deletion of data.

**Assignment level Intermediate.**

* **What are the tools of backup?**
* The purpose of the backup is to create a copy of data that can be recovered in the event of a primary data failure. Primary data failures can be the result of hardware or software failure, data corruption, or a human-caused event, such as a malicious attack (virus or malware), or accidental deletion of data.
* **How do we restore?**
* **Yes**
* **How to create a restore point?**
* In the search box on the taskbar, type Create a restore point, and select it from the list of results.
* On the System Protection tab in System Properties, select Create.
* Type a description for the restore point, and then select Create > OK.

**Assignment level Advance**:

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

* **Yes**

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

* **Yes**

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

* **Yes**
* **4. Do a practical to take backup backup with a recuva backup tool.**
* **Yes**

**Topic: Disk Management**

Assignment level Basic:

1. **What is Disk management?**

* Disk Management is a tool in an operating system that helps users to manage and organize the hard disk and other storage devices. It allows users to create, delete, format, and resize partitions, as well as view and modify the attributes of disks, volumes, and partitions

**2.What is the use of 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. It enables users to manage and view the different disks and functions like viewing, creating, deleting, and shrinking the partitions associated with the disk drives.

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

* 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. If you need help freeing up space on your PC, see Disk cleanup in Windows or Free up drive space in Windows.

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

* Disk Partitioning.
* Disk Formatting.
* Renaming a disk.
* To shrink, extend or delete a disk partition.
* To change the file system of a driver.

**Assignment level Advance:**

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

* **Yes**

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

* **Yes**

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

* **Yes**

**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. Device management is a critical component of any organization's security strategy.

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

* An essential part of an operating system is device management, which controls how software applications interact with the hardware attached to the computer system. It entails the process of locating, setting up, allocating, and managing access to devices like printers, scanners, storage units, and network interfaces

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

* Enhanced security. ...
* Decreased downtime and deployment times. ...
* Improved productivity. ...
* Application control. ...
* Optimized data collection. ...
* Risk management. ...
* Cost saving.

**Assignment level Intermediate:**

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

* Click the. (Start) button.
* In the Start Menu, click Settings.
* In the SETTINGS window, click Devices.
* 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.**

* **There are three types of device management in the operating system: dedicated devices, shared devices, and virtual devices. Dedicated devices are non-shareable means at a single time only one process can use them, while shared devices can be used by more than one device at the same time.**

**Assignment level Advance:**

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

* **Yes**

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

* **Yes**

**Topic: Physical security**

**Assignment Level Basic**

1. **Why physical security needed?**

* Physical security is measures put in place to protect your business's personnel, property, and hardware from unauthorized access or from physical actions that could cause damage or serious loss. Physical security prevents security breaches and threats to your physical office environment.

1. **what is physical security?**

* Physical security is the protection of personnel, hardware, software, networks and data from physical actions and events that could cause serious loss or damage to an enterprise, agency or institution. This includes protection from fire, flood, natural disasters, burglary, theft, vandalism and terrorism.

**Assignment Level Intermediate**

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

* Physical security involves the use of multiple layers of interdependent systems that can include CCTV surveillance, security guards, protective barriers, locks, access control, perimeter intrusion detection, deterrent systems, fire protection, and other systems designed to protect persons and property.

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

* Inspect your wiring. Faulty or substandard wiring can make power surge problems worse. ...
* Unplug electronics during a storm. ...
* Use surge protectors. ...
* Install a whole-home surge processor. ...
* Install high-efficiency AC units.

**Topic: Firewall settings**

Assignment level basic:

1. **What is firewall?**

* A firewall is a network security device that monitors incoming and outgoing network traffic and decides whether to allow or block specific traffic based on a defined set of security rules. Firewalls have been a first line of defense in network security for over 25 years.

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

* #1. Unified Security Management. Organizations must cope with rapidly increasing network security complexity. ...
* #2. Threat Prevention. ...
* #3. Application and Identity-Based Inspection. ...
* #4. Hybrid Cloud Support. ...
* #5. Scalable Performance.

1. **Describe types of firewall**

* 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.**

* **Yes**

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

* **Yes**

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

* **Yes**