**Hardware Networking**

**TERM-1 A+ Assignment**

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**MODULE 2 [installation and maintenance of hardware and it's components]**

**Topic : USER MANAGEMENT**

**1.What is user management?**

User management is an organizational function that enables users to access and control digital assets, such as applications, devices, networks, and cloud services.

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

User management allows administrators to manage resources and organize users according to their needs and roles while maintaining the security of IT systems. Administrators need powerful user management capabilities that can allow them to group users and define flexible access policies.

**Topic : FILE AND FOLDER PERMISSION**

**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).

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

File permissions control what user is permitted to perform which actions on a file. File permissions form a crucial part of a resistance strategy. On public systems, only part of the system is public. The system files, at least, need to be protected from wanton modification by attackers.

**3.Write down the steps to give a folder read only permission?**

1.Open the folder's property menu. One of the easiest ways to set a folder to read-only is through its property menu.

2.Select read-only

3.Copy as path

4.Open your command prompt

5.Change folder attributes via command line

**4.Write a step to give a file only admin permission?**

1.R-Click on Program Files -> Properties -> Security Tab.

2.Click Advanced -> Change Permission.

3.Select Administrators (any entry) -> Edit.

4.Change the Apply To drop down box to This Folder, Subfolder & Files.

5.Put check in Full Control under Allow column -> OK -> Apply.

**Topic : INSTALL OS**

**1.What is OS?**

An operating system is system software that manages computer hardware and software resources, and provides common services for computer programs.

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

**Here are the different types of operating systems you need to know:**

1.Batch OS. The batch operating system does not have a direct link with the computer.

2.Time-sharing or multitasking OS.

3.Distributed OS.

4mNetwork OS.

5.Real-time OS.

6.Mobile OS.

**Topic : CLEAN INSTALL**

**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.

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

Restart your PC while holding the Shift key to boot into the Windows Recovery Environment (WinRE). Once in the Windows Recovery Environment, choose to boot from the USB drive. On the Windows Setup page, select your language, time and keyboard preferences and then select Next. Select Install now.

**3.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.

**Topic : UPGRADE INSTALLATION**

**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.

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

Latest Security Patch : New software tackles/prevents the latest security vulnerabilities of operation.

Improve Stability

Being trustworthy

Well Structured

Enjoy new features

Benefits of pricing

Keep hardware healthy

Enhanced user interface

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

1. Identify And Engage Your Stakeholders

2. Undertake Change Control Planning

3. Perform A Site Review

4. Establish Upgrade Requirements

5.Make An Upgrade Plan

6.Make A Roll-Out Plan

7.backup everything

8.Run A Trial Upgrade

9.Upgrade A Staging Site

10.perform testing

11.Undertake Configuration

12.prepare documentation

13.provide training

14.Prepare Your Infrastructure

15.go live

16.offer support

17.Perform An Upgrade Review

**Topic : PARTITION AND FORMATTING**

**1.What is partitioning?**

Partitioning is the creation of one or more regions on secondary storage, so that each region can be managed separately.

**2.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.

**3.What is format?**

A format is the layout or structure of data saved in a computer file.

**4.covert a partition to gpt by cmd?**

1.Right click on the Windows icon and select “Search.”

2.Type cmd or command prompt, right click on Command Prompt from the result, and select “Run as administrator.”

3.Type mbr2gpt /convert /disk:0 /allowfullos and hit Enter.

**5.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**

**1.What is transferring files?**

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. It enables sharing, transferring or transmitting a file or a logical data object between different users and/or computers both locally and remotely.”

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

It can involve transferring data over a network, such as the Internet, or physically moving a file from one computer to another. Transferring files can be done in a variety of ways, including using cloud services, email, USB drives, and peer to peer networks.

**3.How do we transfer files from one system to another?**

The simplest way to transfer files between two computers is by using USB drives or external hard disks. All you have to do is plug the drive into one computer and copy the file onto it. Then unplug it and plug it into the other computer and paste (or drag and drop) it into that computer's storage.

**4.Types of file transferring media?**

FTPS

FTP

Managed file transfer

AS2

AS3

PESIT

**Topic : ADMINISTRATIVE TOOLS**

**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.

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

Admin management tools can install and maintain network protection software, monitor hardware and software behavior, track endpoint devices, and resolve security issues easily.

**3.List out the administrative tools?**

Performance Monitor

Computer Management

Event Viewer

Task Scheduler

Microsoft Windows

Microsoft Drive Optimizer

Disk Cleanup

Local Security Policy

System Configuration

iSCSI initiator

Print management

Services

Windows Firewall

ODBC Data Sources

Windows Registry

Resource Monitor

Clonezilla

Control Panel

Google Drive

Wireshark

Netwrix Lockout Examiner

Notepad

Component Services

PowerShell ISE

**4.What is disk management tools ?**

Disk Management is a system utility in Windows for advanced storage operations. Here are some tasks you can complete with Disk Management: Set up a new drive. For more information, see Initialize new disks. Extend a volume into space that's not already part of a volume on the same drive.

**Topic : WINDOWS FEATURES**

**1.list out the window features?**

Control Panel

Cortana

File Explorer

Internet browser

Start menu

Taskbar

Disk Cleanup

Task Manager

Desktop

**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.

**Topic : BACKUP AND RESTORE**

**1.What is backup?**

In information technology, a backup, or data backup is a copy of computer data taken and stored elsewhere so that it may be used to restore the original after a data loss event. The verb form, referring to the process of doing so, is "back up", whereas the noun and adjective form is "backup".

**2.What is restore?**

A restore is performed to return data that has been lost, stolen or damaged to its original condition or to move data to a new location.

**3.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.

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

BackupBuddy

Borgbackup

Iperius Backup

Acronis Cyber Protect Home Office

AOMEI

Areca Backup

BackupPC

Cobian Backup

FileFort Backup

Rubrik

Spanning Backup

Acronis

Backblaze

Cloud computing

**5.How do we restore?**

Search Control Panel for Recovery, and select Recovery > Open System Restore > Next. Choose the restore point related to the problematic app, driver, or update, and then select Next > Finish.

**6.How to create a resort 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.

**Topic : DISK MANAGEMENT**

**1.What is disk management?**

Disk Management is a system utility in Windows for advanced storage operations. Here are some tasks you can complete with Disk Management: Set up a new drive. For more information, see Initialize new disks. Extend a volume into space that's not already part of a volume on the same drive.

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

Disk Management shows the details for each drive on your PC and all partitions for each drive. The details include statistics about the partitions, including the amount of space allocated or used.

**3.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.

**4.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.

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

**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**

**Topic : DEVICE MANAGEMENT**

**1.What is device management?**

device management is the administration of mobile devices, such as smartphones, tablet computers, and laptops. MDM is usually implemented with the use of a third-party product that has management features for particular vendors of mobile devices.

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

Device management is a critical component of any organization's security strategy. It helps ensure that devices are secure, up-to-date, and compliant with organizational policies, with the goal of protecting the corporate network and data from unauthorized access.

**3.What are the benefits of device management?**

Guaranteed data quality

Eradicates slow business process

Promotes business agility

Avoids duplication and increases data accuracy

Reduces security risk and ensures better data compliance

Remote management

Regulatory compliance

Application control

Cost savings

Productivity

Data backup

**4.Where can we assess device management?**

**5.list out the devices connected to the device management?**

Boot Device: It stores information in a fixed-size block, each one with its own address. Example, disks.

Character Device: It delivers or accepts a stream of characters. the individual characters are not addressable.

Network Device: It is for transmitting data packets.

**Topic : PHYSICAL SECURITY**

**1.Why physical security needed?**

Robust physical security acts as a powerful deterrent against criminal activities. Access control systems, surveillance cameras, and well-structured security protocols discourage potential intruders, reducing the risk of theft, vandalism, and unauthorised access.

**2.What is physical security?**

Physical security describes security measures that are designed to deny unauthorized access to facilities, equipment, and resources and to protect personnel and property from damage or harm.

**3.List out the way of physical security?**

Access control

Security

Surveillance

Intrusion detection

Lighting

Risk assessment

Alarm systems

Annual security audit

Cameras

Emergency management

Guards

Install video surveillance

Physical barriers

Protect your printers

Secure Assets

Sensitive informations

Physical access

**4.How to protect system from malfunctioning due to electrical fluctuations?**

Surge protectors. Use power strips or surge-protected protectors.

Uninterruptible power supplies. Consider utilising a UPS to filter out voltage spikes or sags, and a UPS offers battery backup during power outages.

Surge protective devices.

**Topic : FIREWALL SETTINGS**

**1.What is firewall?**

In computing, a firewall is a network security system that monitors and controls incoming and outgoing network traffic based on predetermined security rules. A firewall typically establishes a barrier between a trusted network and an untrusted network, such as the Internet.

**2.Why is firewall needed?**

Firewalls protect your network from unauthorized access by hackers who use a variety of tools to gain entry such as viruses, backdoors, denial-of-service (DoS) attacks, macros, remote logins, phishing emails, social engineering, and spam.

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

Threat Prevention

Scalable Performance

Intrusion prevention

Log Traffic

Security management

Access control

Application control

Deep packet inspection

Encryption

Cloud computing

Stateful inspection

Decrypt outbound ssl

Computer network

Content filtering

Performance

Advanced malware detection

Advanced Security technology

Alerts

Content control

DDoS protection

DNS Security

Fastest time to detection

Flexible security policies

**4.Describe types of firewall?**

Network firewall.

Host-based firewall.

Hardware firewall.

Software firewall.

Internal firewall.

Distributed firewall.

Perimeter firewall.

Next-generation firewall (NGFW).