VII Work Situation:

a. Faculty will demonstrate different types of Computer System.
b. Faculty must form a group of two or three students.
c. Students group will observe different parts of computer system with its specification.

VIII Resources required

S. No.	Instrument /Object	Specification	Quantity	Remarks
1.	Desktop PC	Pentium IV or above with Keyboard, Mouse, Monitor	1 No.	Whichever is available
2.	Laptop	Pentium IV or above with Keyboard, LED/LCD TFT Display	1 No.	Whichever is available
3.	Server	Any Latest Server Computer	1 No.	Whichever is available

IX Procedure

1. Identify Desktop PC, Laptop and Server available in Laboratory.
2. Identify the various parts of Desktop PC, Laptop and Server.
3. Observe the standard specification of Desktop PC, Laptop and Server.
4. Observe the various parts of Desktop PC, Laptop and Server.
5. Compare Desktop PC, Laptop and Server.
6. Find the price difference of Desktop PC, Laptop and Server.

X Precautions

1. Connect all the parts of Desktop PC correctly.
2. Connect power supply carefully.
3. Shut down PC properly.

XI Resources used (with major specifications)

1) Desktop PC - Pentium IV prabove with keyboard, mouse, monitor
2) Laptop - Pentium IV prabove with keyboard LED/LCD TFT display
3) Server - Any latest server computer

XII Actual procedure followed

1) Identify Desktop PC, Laptop & Server available in laboratory.
2) Identify the various path of Desktop PC.
3) Observe the standard specification of Desktop PC, Laptop & Server.
4) Compare Desktop PC, Laptop & Server.

XIII Precautions followed

1) Connect all the parts of Desktop PC correctly.
2) Connect power supply carefully.
3) Shut down PC properly.

XIV Observations:

Table 1: Specification of Desktop PC

Sr. No.	Part	Manufacturer	Specification
1	Processor (CPU)	Intel	Core i3 - 3220
2	Processor Speed	Intel	3.30 GHz
3	Operating System	Intel	32 bit
4	Memory	Intel	4 GB
5	Storage (Hard Disk)		500GB internal Storage
6	Graphics Card		Standerd VGA graphics
7	Display/Monitor		Generic EHP monitor
8	Hard Disk Drive		
9	CD/DVD Drive	HP	hP-DVD-RAM GH82 NATA
10	Keyboard	HP	HID keyboard.
11	Mouse	HP	HID Compilent mouse
12	Network Adaptor		
13	HDMI Port (if available)		
14	USB Ports (if available)		Generic USB Port hub
15	Card Reader		—

Table 2: Specification of Laptop

Sr. No.	Part	Manufacturer	Specification
1	Processor (CPU)	Intel	Core i7 - 2640M
2	Processor Speed	Intel	2.80 GHz
3	Operating System	Intel	64 bit
4	Memory		8.00 GB
5	Storage		500 GB
6	Graphics Card		ATI mobility
7	Display (LED/LCD)		10 inch color 1024X600 LCD
8	Hard Disk Drive		250 GB
9	CD/DVD Drive		hP - DVD
10	Network Adapter		Intgrated Gigabit Ethernet
11	HDMI Port (if available)		—
12	USB Port (if available)		Generic USB hub
13	Wireless Network (if available)		802.11 b/g/n
14	Camera (if available)		720 P
15	Card Reader (if available)		—

Table 3: Specification of Server

Sr. No.	Part	Manufacturer	Specification
1	Server Type	Intel	Core i5 1500
2	Processor (CPU)	Intel	6.4 GHz 12M cache
3	Processor Speed	Intel	—
4	Nos. of Processors		—
5	Memory- RAM		8 GB

6	Cache Memory (L1 and L2)		
7	Hard Disk Drive		1 TB
8	Hard Drives Supported (IDE SCSI)		
9	Network Adapter		
10	Fire wire Port (if available)		
11	USB Port (if available)		
12	Wireless(if available)		
13	Operating System		
14	CD/DVD Drive		

XVI. Practical related Questions

Note: Below given are few sample questions for reference. Teachers must design more such questions to ensure the achievement of identified CO.

1. Write the frequency of processor in Desktop PC, Laptop and Server.
2. Label different parts of Desktop Computer shown in Fig. 1

Fig. 1 Desktop Computer

3. Label different parts of Laptop shown in Fig. 2

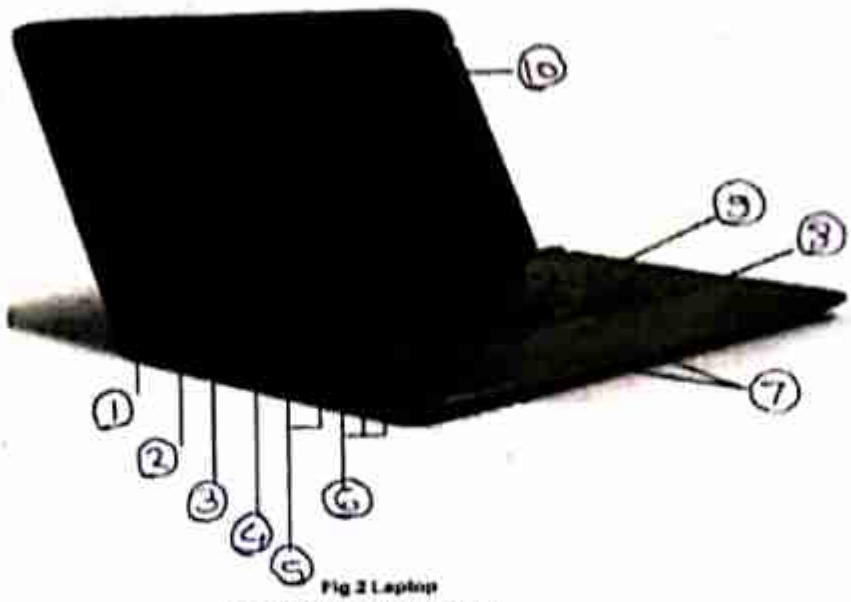

Fig 2 Laptop

(Space for Answers)

Q.1.
i) Frequency of processor in Desktop PC is 3.30 GHz
ii) Frequency of processor in laptop is Server is 3.30 GHz

Q.2.
i) Monitor
ii) CPU
iii) Speaker
iv) Keyboard
v) Mouse

Q.3.
1) Power
2) VGA Port
3) LAN Port
4) HDMI Port
5) USB Port
6) Audio Port
7) Buttons / click of mouse
8) Arrow key
9) Numeric key
10) Display Screen

Q.4

Q.1
iii) Frequency of processor in Laptop is 850 MHz

IX Procedure

1. Take motherboard from faculty.
2. Identify different components on motherboard.
3. Understand the function of different components of motherboard.
4. Remove the data and power supply cables.
5. Remove other components connected to the motherboard such as processor, RAM and add-on cards.
6. Clean the components by removing dust and contaminants deposited on contacts using vacuum cleaner.
7. After cleaning, fix the components firmly in their respective slots.
8. After fixing, the components connect the data and power cables.

X Precautions

a. Before removing components, remove power supply cable carefully.
b. Remove components carefully.
c. While cleaning hold the cards by its sides only.
d. Avoid touching the contact edges.

XI Resources used (with major specifications)

i) Motherboard - Pentium IV onwards
ii) Vaccum cleaner

XII Actual procedure followed

i) Take motherboard from faculty.
ii) Identify different components on motherboard
iii) Understant the function of different component of motherboard.
iv) Remove the data & power supply cables.

XIII Precautions followed

i) Before removing components, remove power supply cable carefully.
ii) Remove components carefully.
iii) While cleaning hold the cards by its sides only.
iv) Avoid touching the contact edges.

XIV Observations:

(a) Motherboard supports 2 RAM banks.

(b) There are 3 Numbers of SATA/IDE connectors on motherboard.

(c) The motherboard supports PGA Type of CPU socket.

(d) 20/0 pin ATX power supply connector supplies power to the motherboard.

(e) List different components of motherboard and their use in Table 1.

Table 1: Components of Motherboard

Sr. No.	Component	Use
1.	Processor Socket	Is the central piece of the motherboard it holds the processor.
2.	Power Connector	Computer components cannot operate without power. It provide.
3.	Memory Slots	It is used to use of computer memory modules.
4.	Video card slot	It install a discrete video card having reply intergrated one.
5.	SATA Port	It is use to provide connectivity for the storage device.
6.	BIOS chip	It is used to the basic code needed to take your computer.
7.	North bridge	It is used to provide thermal Protection to components of motherboard.
8.	Parallel Port	It is used to connect most of old Printers that is wire.
9.	CMOS battery	It is used to store the data & time & also Bios Setting.
10.	USB Connector	It is used to connect the USB port of the front Panel of USB.

(1) Note down the motherboard problems and solutions in Table-2

Table 2: Motherboard- common problems and its solution

Sr. No.	Problem	Solution
1.	PC overheating	Dont use PC for long time
2.	PC beeps	Take out the ram completely & clean it.
3	PC fans not working	The app will let you you control the fans.
4.	PC isn't powering on	Problem may be with the PC's power cable.

XV Practical related Questions

Note: Below given are few sample questions for reference. Teachers must design more such questions so as to ensure the achievement of identified CO.

a. Give details of chipset used in your computer motherboard.
b. How many USB ports, serial and parallel ports are available in the computer used.
c. Give the details of buses available on the motherboard used.
d. Label components of motherboard given in Fig. 1

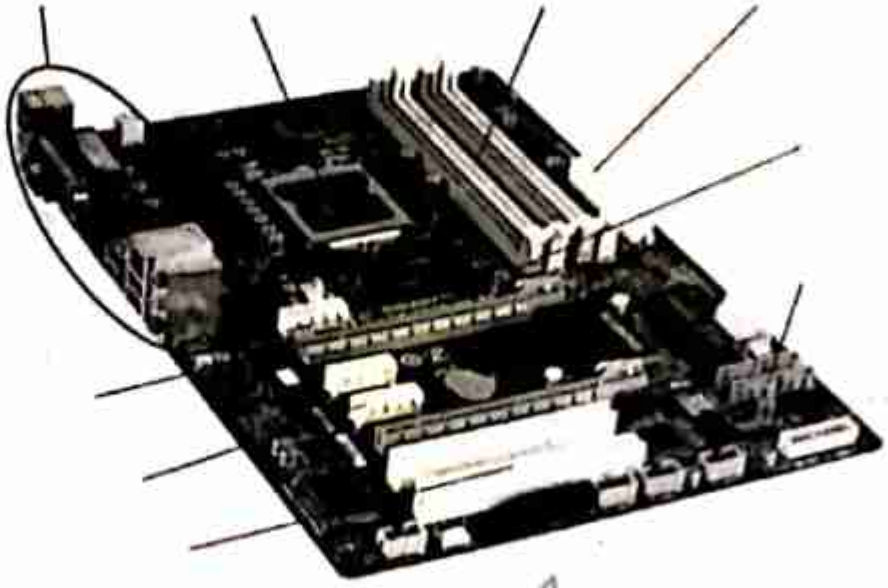

Fig.1. Motherboard

(Space for answers)

Q.1

→ Their in a computer system a chipset is a set of electronics components in a integrated circuit system. It is usually used in matherboard. Chipset is designed to work with a specific family of microprocessor.

Q.2

→ There are 6 at least 6 use ports. 4 at back & 2 at front side of CPU. usually their is at least one serial port & usually there is 1-3 parallel ports.

VIII Resources required

S. No.	Instrument /Object	Specification	Quantity	Remarks
1.	Desktop PC	Pentium IV or above with Keyboard, Mouse, Monitor	1 No. per Group	Whichever is available Group of two or three students

IX Procedure

Steps to enter the BIOS Setup Program Utility

1. Power ON the computer.
2. After power On, black screen appear on you monitor, wait until the message appears briefly at the bottom of the screen such as "*Press F2 to enter SETUP. F12 for Network Boot, ESC for Boot Menu*"
3. Now press F2 key to enter the setup program. (This key may vary from one machine to other machine depending on the manufacture of the BIOS Setup program)
4. Observe different BIOS set ups.

X Precautions

1. Change the setting carefully.
2. Save changes if required under the guidance of teacher.

XI Resources used (with major specifications)

Desktop PC - Pentium IV or above keyboard, Mouse, Monitor

XII Actual procedure followed

i) Power on the computer. ii) After power on, black screen appears on you monitor, wait until the message appears briefly at the bottom of the screen such as "Press F2 to enter SETUP F12 for network book, ESC for boot menu"

XIII Precautions followed

i) Change the setting carefully.
ii) Save changes if required under the guidance of teacher.

XIV Observations:

1. The key/key combination used to enter the BIOS setup is F10
2. The computer system has 16 MB L2 cache memory.
3. The computer system has 4 MB/GB RAM.
4. First Boot Priority Device is S.P.I. DVD Drive
5. Various BIOS settings are stored in CMOS chip.

XV Practical related Questions

Note: Below given are few sample questions for reference. Teachers must design more such questions so as to ensure the achievement of identified CO.

1. List cache type, size and memory size of the system from Main setup.
2. State any two setting under CPU configuration.
3. Write down boot devices priority in boot sequence menu as follows:
   - 1st Boot Device:
   - 2nd Boot Device:
   - 3rd Boot Device:

(Space for answers)

Q.1
→ The type of cache is L2 cache it's size is 512 KB to 8 MB, it's capacity of storage is 64 KB to 16 MB

Q.2
→ Two setting under CPU configuration as follows :-
1) BIOS setting
2) CMOS setting

Q.3
→ 1st Boot Device : CD / DVD Drive
2nd Boot Device : Hard Drive
3rd Boot Device : External Hard Disk

8. Give the new volume a letter name or path. Select from the menu, a letter name for your new partition and click on the "Next" button.
   Note: The letter name or path is used by Windows to identify and navigate to your new volume.
9. Settings for the new volume.
   Click on the Format this volume with the following settings:
   a. For File System, select NTFS
   b. For Allocation unit size, select Default
   c. For Volume Label, type the name you wish to give your new drive.
   d. Click on the Perform a quick format
   e. Then click on the Next button
10. Create the new volume. Look over your settings and click on the Finish button.
11. Format the new volume.
   a. You will get a popup asking you to partition your new drive. Click on the Format disk button.
   b. A new window will popup. Keep the settings and click on the Start button.
   c. A warning will popup. Click on the OK button.
12. Check new volume. If everything was done correctly, you should now see your new drive in the Disk Management window.

For Formatting:

1. Boot your PC using bootable media.
2. Follow the instructions that appear on the screen.
3. On the "Install " page, enter your language and other preferences, and then click Next.
4. Follow the instructions and proceed till the partitions are displayed or the system is waiting for partitions.
5. Click the partition that you want to format and click Format.
   a. If you have more than one partition on this hard drive and want to get rid of them to make one big drive again, then select a partition and click on the Delete option for each partition. Once you have deleted all of the partitions, select the Unallocated Space partition and click Format.
   b. Pick the formatting option (i.e the file System) that you want.
   c. When you've finished formatting, click Next.

XI Precautions

Selection of any drive for formatting/partitioning must be done carefully so as not to delete any useful data.

XII Resources used (with major specifications)

i) Computer System - Any desktop P.C. with hard disk.
ii) External hard disks.....
iii) Pendrive / Any Secondary Storage media.
iv) Bootable CD-DVD / Any bootable media.....
v) Projector.....

XIII Actual procedure followed

i) Open the computer management tool. open Start menu. Type "computer management" in the search bar of the Start menu & press enter.....
ii) Select the Disk management tool.....

XIV Precautions followed

Selection of any drive for formatting / partitioning must be done carefully. So as not to delete any useful data.

XV Observations :

1. Every drive must be Format before use.
2. Mention size of each partition created.
3. State the O/P of shrinking the partition.
4. USB Drive media can be used to boot the PC.
5. State time required to format a drive.
6. List volume Labels assigned with NTFS.

XVI Practical Assignment Summary :

Note: Student has to specify - storage media used for formatting, file systems used, number of partitions created, size of created partitions, usable size after formatting.

XVII Practical related Questions

Note: Below given are few sample questions for reference. Teachers must design more such questions to ensure the achievement of identified CO.

1. List file systems displayed while formatting along with its full form.
2. List Linux file system used while formatting.
3. How does Linux identify partitions?
4. Differentiate between the concept of Primary and secondary partitions.
5. List Storage media used for formatting and partitioning.
6. List Partitioning Methods Used.

(Space for answers)

Q.1.

→ 1) NTFS - (New technology file System) NTFS is the microsoft property file System started with the windows NT family.
2) FAT - (File allocation table) FAT is the simplest file system designed for smaller disks & simple folder structure.

Q.2

→ Types of Linux file System :-
i) ext 2
ii) ext 3
iii) ext 4
iv) JFS
v) Reiser FS
vi) XFS
vii) BTRFS

Q 3
→ In a terminal, run the command of & look at the output the column needed "Mounted on" will a " / " against the position partition that holds your root the file.

XVIII References / Suggestions for further Reading

https://en.wikipedia.org

XIX Assessment Scheme

	Performance indicators	Weightage
Process related (15 Marks)		**60%**
1	Handling of the devices	20%
2	Attentiveness	10%
3	Performance	30%
Product related (10 Marks)		**40%**
4	Practical related questions	20%
5	Completion and submission of practical in time	10%
6	Observations	10%
	Total (25 Marks)	**100%**

List of student Team Members

1. Saprit
2. Karthik
3. Sagash
4. Ramadha

Marks Obtained			Dated signature of Teacher
Process Related(15)	Product Related(10)	Total (25)	

IX Resources required

Sr. No.	Instrument /Object	Specification	Quantity	Remarks
1.	Computer System	Any desktop PC with attached HardDisk.	10 No.	Whichever is available
2.	Bootable CD/Any bootable media	–	1 No.	Linux/Windows. Multiple Copies of original CDs can be used.

X Procedure :

1. Boot your computer from OS media.
2. When the computer starts, press a key if you are asked if you would like to boot from the disc by pressing any key.
3. You should have Windows product key, a 25-character alphanumeric code unique to your copy of Windows. After you choose to start from the disc, Windows Setup will begin loading.
4. Choose your Windows Setup options and click the Install Now button.
5. Accept the License Terms-Accept the Windows 7 License Terms : Read through the agreement, check the *I accept the license terms* checkbox under the agreement text and then click **Next** to confirm that you agree with the terms.
6. Select the Custom installation. Choose the Type of Windows Installation to Complete
7. For clean install erase all the drives, recreate drives as required again.
8. Decide on which hard drive and partition you want to install Windows on.
9. Start guided Windows Installations on your preferred hard drive .
10. Choose Language and Other Preferences: Choose the Language to install, Time and currency format, and Keyboard or input method that you'd like to use in your new Windows installation.
11. The Repair your computer link is used to start a Windows startup repair. Perform another recovery or repair task from System Recovery Option.
12. Wait for the installation process to complete. Once it is finished, you will be prompted to restart the computer and Windows will load.

XI Precautions

Selection of any drive for installation must be done carefully so as not to delete any useful data or partition.

XII Resources used (with major specifications)

(1) Fixed Hard Disk.
(2) Windows Operating System Licensed Media.

XIII Actual procedure followed

i) Boot your computer from OS media.
ii) When the computer starts, press a key if you are asked if you would like to boot from the disc by pressing any key
iii) You should have Windows product key i.e. 25-character alphanumeric code unique to your copy of Windows. After you choose to start from the disc, windows Setup will being loading.

iv) choose your windows setup options & click the install now button.

XIV Precautions followed

Selection of any drive for installation must be done carefully so as not to delete any useful data or partition.

XV Observations :

1. Every drive must be format before use.
2. A product key is a not used to activate Windows.
3. Indian Language supported in Windows Installation : English (US) (Specify for your Windows Version)
4. Time Zone Chosen S :30 (GMT +)
5. Keyboard Chosen hp
6. File Format chosen

XVI Practical Assignment Summary :

Note: Student has to specify – Windows operating system family, method used for installation, file systems used, size of created partitions.

Windows operating system family -
Windows - 7
Bootable CD used for installation
NTFS file system is used
Size is 50 GB

XVII Practical related Questions

Note: Below given are few suggestive sample questions for reference. Teachers must design more such questions to ensure the achievement of identified CO.

1. Is any partition automatically created during installations? If yes, mention size.
2. Name Formatting options displayed and chosen.
3. State information about number and size of partitions created. Mention File systems.
4. Name Windows Operating system with its specifications.

(Space for answers)

Q.1]
i) 450 MB Recovery
ii) 100 MB EFI System [Hidden from disk management]
iii) 16 MB msk
iv) The rest is your C drive
v) 500 MB recovered partitions 260 MB, System partition windows (416 18 GB ntps, boot page file crash dump primary partitions

Q.2]
Formatting options on the Smart pad preprefiles tab consist of a series of links that opens a dialog or changes the Smart pad to display additional

Level of Specifications Control & formatting options
i) Title & explanation
ii) Chart Properties
iii) Axes Calculation
iv) Visibility
v) Labels & Units
vi) Numbers
vii) Dynamic caption
viii) Element Colour.

XVIII References / Suggestions for further Reading

a. https://en.wikipedia.org
b. http://www.wikihow.com/Install-Window

XIX Assessment Scheme

Performance Indicators		Weightage
Process related (15 Marks)		**60%**
1	Handling of the devices	20%
2	Attentiveness	10%
3	Performance	30%
Product related (10 Marks)		**40%**
4	Practical related questions	20%
5	Completion and submission of practical in time	10%
6	Observations	10%
	Total (25 Marks)	**100%**

List of student Team Members

1. Sumit
2. Ajinkya
3. Kartik
4. Shivnath

Marks Obtained			Dated signature of Teacher
Process Related(15)	**Product Related(10)**	**Total (25)**	

IX Resources required

S. No.	Instrument /Object	Specification	Quantity	Remarks
1.	Computer System	Any desktop PC with attached HardDisk.	10 No.	Whichever is available
2.	Boqtable CD/Any bootable media	--	1 No.	Linux/Windows. Multiple Copies of original CDs can be used.

X Procedure:

Installation of Linux OS

1. Boot from the OS media.
2. Choose what to do with your existing operating system
3. Set partition size
4. Once you are satisfied with your settings, click Install Now.
5. Choose your location Set and keyboard layout
6. Enter your login information. Enter your name, the name of the computer (which will be displayed on the network), choose a username, and come up with a password.
7. You can choose to have Ubuntu automatically log you in, or require your username and password when it starts.
8. Wait for the installation process to complete. Once it is finished, you will be prompted to restart the computer and Ubuntu will load.

XI Precautions

Selection of any drive for installation must be done carefully so as not to delete any useful data.

XII Resources used (with major specifications)

.....

.....

.....

.....

.....

XIII Actual procedure followed

i) Boot from the os media.

ii) Choose what to do with your existing operating system.

iii) Set partition system.

iv) Once you are satisfied with your settings, click install now.

XIV Precautions followed

Selection of any above for installation must be done carefully so as not to delete any useful data.

.....

.....

5. Heat and dust : Make sure that the CPU fans are in proper condition. Check whether the processor is getting sufficient cooling or not. Users can make use of SMART tools that notify them about the condition of the hard disk and risks that the hard disk may face in future.

Checking Hard Drive through Windows GUI

a. Open File Explorer
b. Click **Properties** from **This PC / Computer**
c. Choose the **Tools** tab
d. Click the **Check** button followed by **Scan drive**.
e. Two options are available before starting an Error Checking scan in:

- Automatically fix file system errors : automatically corrects file system related errors that the scan detects.

-Scan for and attempt recovery of bad sectors will perform a search for areas of the hard drive that may be damaged or unusable. If found, this tool will mark those areas as "bad" and prevent your computer from using them in the future. This is a very useful feature but could extend the scan time as much as a few hours.

-Advanced: The first option is equivalent to executing **chkdsk/f** and the second to executing **chkdsk /scan /r**. Checking both is the same as executing **chkdsk /r**.

1. Click the **Start** button.
2. Wait while Error Checking scans the selected hard drive for errors and, depending on options you selected and/or what errors are found, fixes any errors found. Note: If you get a Windows can't check the disk while *it's in use* message, click the Schedule disk check button, close any other open windows, and then restart your computer. You'll notice that Windows takes much longer to start up and you'll see text on the screen as the Error Checking (chkdsk) process completes.
3. Follow whatever advice is given after the scan. If errors were found, you may be asked to restart your computer. If no errors were found, you can close any open windows and continue using your computer normally. **Advanced:** If you're interested, a detailed log of the Error Checking scan, and what was corrected if anything was, can be found in the list of *Application* events in Event Viewer.

Command Line Check Disk Through chkdsk command

- To use the command line check disk version, open a Command Prompt using the 'Run As Administrator' option. Type command chkdsk at the prompt. This will run chkdsk in a Read-Only mode and display the status of the current drive.
- Typing chkdsk /? and hitting Enter will give you its parameters or switches.

XI Precautions

1. Do not defragment a media card or flash drive. Optical drives cannot be defragmented.
2. Do not run the defragmentation utilities over and over, trying to get a perfectly defragmented hard drive.

XII Resources used (with major specifications)

1) Computer System
2) HDD

XIII Actual procedure followed

i) Restart the software. ii) Uninstall & the software, reinstall it. iii) Look for software patches. iv) Scan for viruses & malware. v) Boot up in safe mode. vi) Defragment your hard drive.

XIV Precautions followed

Do not defragment a media card or flash drive can not be defragment. Do not run the defragmentation until over & over trying to get a perfectly defragment.

XV Observations :

a. State the O/P of disk cleanup utility.
a. List viruses and malware detected on your PC.
b. State Percent Fragmented value by the disk in the Disk Defragmenter window.
c. On detecting the hard disk state the entry shown in BIOS.
d. State the output of *chkdsk*.

XVI Practical Summary :

Note: Student has to specify steps followed for troubleshooting hard disk, note down problems faced and solution practiced. Students must write syntax of commands used along with their explanations.

XVII Practical related Questions

Note: Below given are few sample questions for reference. Faculty must design more such questions so as to ensure the achievement of identified CO.

a. State the command used for checking disk errors.
b. State the SMART tools used.
c. Write the disk space used before and after disk cleanup.
d. Write name of the antivirus software.
e. Name the malware and or virus detected by your antivirus.
f. Write format of *chkdsk* command.

(Space for answers)

Q.1] Short for check disk, chkdsk is a command run untility that is used on DOS & microsoft-windows based systems to checks the file system & status of the systems hard drive. The chkdsk command lists & corrects errors on the disk. If by this command you can fixed errors detected.

Q.4]
i) Quick Heal.
ii) Net protector antivirus.
iii) Norton.
iv) McAfee
v) Avira

Q5] → i) Worms
ii) adware
iii) ransomware
iv) Trojan virus.
v) Spyware

Q6] → Press the win key menu in windows 8 open an elevated command prompt window & type this following chkdsk (F: Here E is the letter of the USB or external drive or any drive for that matter - where you would like to scan for errors & repair the errors if found.

XVIII References / Suggestions for further Reading

https://en.wikipedia.org

XIX Assessment Scheme

Performance Indicators		Weightage
Process related (15 Marks)		**60%**
1	Handling of the devices	20%
2	Attentiveness	10%
3	Performance	30%
Product related (10 Marks)		**40%**
4	Practical related questions	20%
5	Completion and submission of practical in time	10%
6	Observations	10%
	Total (25 Marks)	**(100%)**

List of student Team Members

1. Sumit
2. Dhyash
3. Shnath
4. Karthik

Marks Obtained			Dated signature of Teacher
Process Related(15)	Product Related(10)	Total (25)	

4. In the "Printers Properties" window, click the "**Print Test Page**" button
5. If the printer can print a test page, your printer is installed and setup properly

Sharing the printer:

After the printer is installed, you can share a printer in network if your PC is connected in the network.

1. Click "Start", Settings, and open "Control Panel".
2. Double-click the "Printers or Printers and Fax icon".
3. Right-click on the Printer you want to share and click "**Sharing**". If you do not see your printer, your printer is not installed.
4. In the "Sharing" window, Check the box that says "Share this printer".
5. Then, you can edit the share name of the printer, in case you don't want to use the default name provided by Windows.
6. When done, click OK
7. The printer is now shared with the other computers on your network, regardless of the operating systems they are using

Troubleshoot the printer:

1. If you do not have any indicator light, make sure the printer is connected to a working power outlet by verifying each end of the power cable.
2. If the indicator is blinking or is orange, often this is an indication of a printer error, like a paper jam or an issue with the ink or toner cartridge. Remove the panel and carefully pull out the jammed paper.
3. No paper or paper jam -without paper, your printer will not be able to print. Make sure you have paper loaded into the printer paper cartridge or tray.

X Precautions

1. Change the printer setting carefully.
2. Switch OFF before Connecting data and power cable.

XI Resources used (with major specifications)

1) Desktop PC Pentium with ... drive with keyboard, mouse, monitor with CD/DVD drive
2) Printer with device driver CD/DVD laser, inkjet & dot matrix printer

XII Actual procedure followed

1) plug the power supply cable to printer properly
2) plug the data cable to printer & PC port such as USB or parallel.
3) Press the power button to turn on printer & the power light comes on
4) Put some papers in the paper tray

XIII Precautions followed

1) change the printer setting carefully
2) Switch off before connecting data & power cable.

XIV Observations:

1. The type of printer used for installation is Laser (Dot Matrix/Inkjet/Laser)
2. The model of printer installed is HP ... plus
3. The port used for connecting data cable is USB (Parallel/USB/Wireless)
4. Various buttons available on printer control panel are power, cancel ...

XV Practical related Questions

Note: Below given are few sample questions for reference. Teachers must design more such questions so as to ensure the achievement of identified CO.

1. List different printer drivers available in your PC.
2. State memory (RAM) available in printer.
3. Write features of printer used for installation.

(Space for answers)

Q 1)
1) bj 10
2) bj 10e
3) bj 10vn
4) bj c 800
5) bj c 600
6) by laser

Q 2)
Most black & white printers have RAM 32 MB to 64MB, Colour printers have RAM 128 MB

Q 3)
1) First we have to read installation guide for printer
2) plug the printer into your computer
3) Turn on the printer
4) wait for your OS to check detect & install printer
5) Install software that come with printer
6) Download drivers from manufacturer website.
7) Run the downloaded drivers

IX Procedure

1. Connect main AC supply to SMPS and switch ON.
2. Check voltage levels in all connectors of SMPS using digital multi-meter
3. Note all voltage levels in Observation table given below.
4. If voltage levels of all connector are correct, then switch OFF the power supply

X Precautions

1. Make connections properly
2. Use digital multi-meter correctly
3. Connect power supply carefully

XI Resources used (with major specifications)

1) SMPS
2) Digital Multimeter :- 3½ Digit Handheld
3) Screw driver set

XII Actual procedure followed

1) Connect main AC supply to SMPS & Switch on.
2) Check Voltage levels in all connectors of SMPS using digital multimeter.
3) Note all voltage levels in observation table.

XIII Precautions followed

1) make Connections properly.
2) Use digital multimeter correctly.
3) connect power supply carefully.

XIV Observations:

Write down the different voltage level observed in Table given below

Pin No	Wire Color	Output Voltage
1	Orange	+3.3 V
2	Orange	+3.3 V
3	Black	Ground
4	Red	+5 V
5	Black	Ground
6	Red	Ground
7	Black	+5 VSB
8	Gray	+12 V
9	Purple	+12 V
10	Yellow	+12 V
11	Yellow	+3.3 V
12	Orange	+3.3 V
13	Orange	+3.3 V
14	Blue	-12 V
15	Black	Ground

16	Green	Power on
17	Black	Ground
18	Black	Ground
19	Black	Ground
20	White	-5V
21	Red	+5V
22	Red	+5V
23	Red	+5V
24	Black	Ground

XV Practical related Questions

Note: Below given are few sample questions for reference. Teachers must design more such questions so as to ensure the achievement of identified CO.

1. Write wattage of given SMPS.
2. State how many power outlets (Connectors) on SMPS.

(Space for answers)

Q.1]
→ The wattage of SMPS is from 200 watts to 1500 watts

Q.2]
→ There are 10 Power outlets Connection on SMPS

- DIMM- There are plastic tabs on the end of the DIMM sockets. Press the tabs down and away from the socket. The DIMM will lift slightly. Now grab it by the edges and place it safely. Do not let the chips get dust at all.

6. **Remove the power supply:**
   - The power supply is attached into tower cabinet at the top back end of the tower.
   - Make sure the power connector is detached from the switchboard.
   - Start removing the power connector connected to motherboard including CPU fan power connector, cabinet fan, the front panel of cabinet power buttons and all the remaining drives if not detached yet.
   - Now remove the screws of SMPS from the back of the cabinet and the SMPS can be detached from the tower cabinet.
7. **Remove the motherboard:**
   - Before removing all the connectors from the motherboard, make sure you memorize the connectors for assembling the computer if required, as that may require connecting the connectors at its place.
   - Remove the screws from the back of the motherboard and you will be able to detach it from the cabinet. Now remove the CPU fan from the motherboard.
   - The heat sink will be visible now which can be removed by the pulling the tab upward.
   - Finally, the processor is visible now, which can be removed by the plastic tab which can be pulled back one stretching it side way.

X Precautions

1. Build computer on a hard surface, away from moisture.
2. Wear shoes and the short-sleeved cotton wear.
3. Use head screw driver.
4. Keep the components away from moisture.
5. Avoid using pressure while installing.
6. Beware of electrostatic discharge (ESD)

XI Resources used (with major specifications)

1) Desktop PC- Pentium IV or above with keyboard, mouse, Monitor.
2) Screw driver set.
3) Multimeter - 3½ Digit Handheld

XII Actual procedure followed

XIII Precautions followed

1) Build computer on a hard surface, away from moisture.
2) Wear shoes & the short-sleeved cotton wear
3) Use head screw driver.
4) Keep the components away from moisture.
5) Avoid using pressure while installing.
6) Beware of electrostatic discharge (ESD)

XIV Observations:

1. Memory module i.e. SIMM used is/are ..... (DDR1/DDR2/DDR3/DDR4)
2. Size of the Hard Disk used is ..... GB/TB.
3. Total numbers power connectors available in SMPS are.....
4. Hard disk CD-ROM/DVD is connected on motherboard using..... (SATA/IDE) cable.
5. Wattage of SMPS used is..... watts.

XV Practical related Questions

Note: Below given are few sample questions for reference. Teachers must design more such questions to ensure the achievement of identified CO.

1. State which processor is mounted on motherboard processor socket.
2. State the model of motherboard used.
3. State the type of Hard disk CD-ROM/DVD drive used.

(Space for answers)

Q.1] → Intel processor (Intel Core i5 - 3230M) is mounted on motherboard processor socket

Q.2] → The model of motherboard used is MS-7599

Q.3] → Types of hard disk drives
1) Parallel advanced technology attachment (PATA)
2) Serial ATA (SATA)
3) Small computer system interface (SCSI)
4) Solid States Drives (SSD)