Task 2: Every student should disassemble and assemble the PC back to working condition. Lab instructors should verify the work and follow it up with a Viva. Also students need to go through the video which shows the process of assembling a PC. A video would be given as part of the course content.

Safety Precautions:

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

Steps for Assembling

- Fix the SMPS on the cabinet of PC using the screws provided.
- Fix the motherboard on the cabinet of PC using the screws provided.
- Connect the power cables from SMPS to motherboard.
- Insert the preprocessor into the slot provided such that the corner with no pin coincide with corner without pinhole on motherboard.
- Apply the appropriate adhesive on the processor for fixing the processor fan.
- Fix the processor fan on the processor and use clips on it to keep it firm.
- Connect the power cable to the processor fan
- Insert the RAM card into the slots provided on the motherboard.
- Set the jumpers setting on the hard disc drive.
- Fix the hard disc drive in the space provided in the PC cabinet using screws provided.
- Fix the FDD in the space provided in the PC cabinet using screws provided.
- Fix the CD-ROM in the space provided in the PC cabinet using screws provided.
- Connect the FDD,HDD, CD-ROM drive to motherboard using flat ribbon.
- Connect power supply to the HDD, FDD, CD-ROM drive using the cables from the SMPS.
- Connect wires of speakers and lights of cabinet to the motherboard.
- Connect the network interface and other cards to motherboard by inserting in right slots and fix them in cabinet using the screws provided.
- Place the cabinet in right position.
- Fix the doors of the cabinet.
- Connect the data cable of monitor to the CPU.

- Connect the keyboard cable to the CPU.
- Connect the mouse cable to the CPU.
- Connect other devices to CPU.
- Connect the LAN cable to NIC in CPU.
- Connect the power supply to CPU.
- Connect the power supply to Monitor.
- Switch on the computer after giving the power supply.

Getting the Cabinet ready:-

1. Check how to open the cabinet and determine where to fix the components.
2. Determine if the case has the appropriate risers installed.

Preparing to fit the Components:

1. Network adapter drive.
2. Floppy disk drive.
3. Ribbon cables.
4. Hard disk.
5. CD-ROM Drive.
6. RAM
7. CPU
8. Heat sink / cooler / fan.
9. Mother board.
10. Screws.

Fitting the Mother board.

1. Line up the patch on the motherboard (ps/l, USB, etc) with the appropriate holes in the block panel I/O shield of the case.
2. Check the points where you and to install
3. Install them and make the mother board sit on them and fix screws if required.

Mother board parts:

1. ACR slot.
2. PCI Slot.
3. AGP Slot.
4. ATX Connectors.
5. CPU Fan.

6. Chipset North Bridge.
7. CPU socket.
8. Floppy.
9. System memory.
10. Chipset south bridge.
11. Panel connector.
12. Power supply.
13. IDE connectors.

ATX Connectors:

1. PS, Mouse.
2. Key board.
3. USB.
4. Parallel (Prints)
5. Serial COM1.
6. Serial COM 2.
7. Joystick.
8. Sound.

Fitting the processor:

1. Raise the small lever at the side of the socket.
2. Notice that there is a pin missing at one corner, determine the direction to fit in the processor.
3. You should not force the CPU. When inserting it. All pins should slide smoothly into the socket.
4. Lock the lever back down.
5. Install the heat sink over it (Different type for each processor). Heat sink / CPU fan.

Fitting the RAM:

1. The RAM must be suitable for motherboard.
2. There are currently 3 types of RAM available.
    a) SD RAM.
    b) DDR SD RAM.
    c) RD RAM.
3. The mother board's chipset determines which type of RAM may be used.
4.

Installing the PCI Cards:

1. Most of the cards are inbuilt these days.
2. NIL, Sound Cards etc. are fitted into PCI slots.

Fitting the hard disk and Floppy disk:

1. Place the floppy and hard disks in their slots.
2. Leave some space above HDD to prevent heat building.
3. Check the jumper configuration.
4. Fix the screws.

Installing the CD-ROM Drives:

1. CD-ROM drive is similar to installing a hard disk.
2. 1^{ST} check that the jumper configuration is correct.
3. Fix the screw.

Connecting the ribbon Cables:-

1. Attach the long end of the cable to the IDEU connector on the motherboard first.
2. The red stripe on the IDE cable should be facing the CD Power.

Powering the driver and motherboard:

Connecting the cables for the case front pane

1. SD, SPK or SPEAK: The loud speakers o/p. it has 4 pins.
2. RS, RE, RS or RESET: Connect the two pin Reset cable here.
3. PWR, PW, PWSW, PS or power SW: Power switch, the pc's on (switch, the plug is two pin).
4. PWLED, PWRLED or Power LED: The light emitting diode on the front panel of the case illuminates when the computer is switched on. It's a 2-pin cable.
5. HD, HDD, and LED: These two pins connect to the cable for the hard disk activity LED.

Final Check:-

1. Mother board jumper configurations are the settings for the processor operator.
2. Drive jumper settings, master/ slave correct?
3. Are the processor, RAM modules and plug in cards finally seated in there sockets?
4. Did you plug all the cables in? Do they all fit really?
5. Have you frightened all the screws in plug- in cards or fitted the clips?
6. Are the drive secure?
7. Have u connected the power cables to all driver?

Powering up for the first time:

1. Ensure that no wires are touching the CPU heat sink fan.
2. Plug your monitor, mouse and keyboard.

3. Plug in power card and switch the power supply.
4. If everything is connected as it should be
    - All system, fans should start spinning.
    - U should hear a single beep and after about 5-10 sec.
    - Amber light on monitor should go green.
    - You will see computer start to boot with a memory check.
    - Now check front LED'S to see if u plugged them in correctly.
    - Check all other buttons.
    - Power afford change any wrong settings.

Steps for Dissembling

- Switch of the power supply
- Disconnect the power supply cable from monitor.
- Disconnect the power supply cable from CPU.
- Disconnect the LAN cable to NIC in CPU.
- Disconnect the other devices in CPU such as printers.
- Disconnect the mouse cable from CPU.
- Disconnect the keyboard cable from CPU.
- Disconnect data cable of monitor from CPU.
- Remove the doors of cabinet.
- Place the cabinet such that motherboard faces the ceiling.
- Disconnect the NIC and other cards from mother board by removing from slots and unscrewing from cabinet.
- Disconnect the wires of speakers from mother board.
- Remove power supply cables from HDD, FDD, CD-ROM drive etc.
- Disconnect the HDD, FDD, CD-ROM drive from mother board by removing flat ribbon cable.
- Remove CR-ROM from cabinet.
- Remove the FDD from cabinet by unscrewing it.
- Remove the HDD from cabinet by unscrewing it.
- Removing RAM cards from slots on mother board.
- Disconnect the power cables from processor fan.
- Remove the processor fan by unlocking clips on it.
- Disconnect the power cables from SMPS on power cabinet.

- Remove mother board from cabinet by unscrewing it.
- Remove the SMPS from cabinet of PC by unscrewing it.

Viva Questions:

1) Define a computer?
2) Define hardware and software?
3) What are the functional units of a computer?
4) Define the following: RAM,ROM,BIOS,BUS,BIT,PROGRAM.
5) What is the use of a mother board?
6) Define assembling of a system?
7) Explain the steps involved in the installation of the mother board?
8) What is the use of pin 1 indicated on the processor?
9) What is the use of locking level at the processor slot?
10) Define a port?