



Topic 5: _____

Disassembling and Assembling a Mobile Cell Phone

What is to disassemble?

To disassemble is to take something apart or to break it down into pieces.

What is to assemble?

To assemble is to fit together all the separate pieces in order to form one whole.

Before you continue reading, complete the following activity.



Activity 5:

Disassembling a mobile phone (5 minutes).

What steps would you follow when disassembling a mobile phone? Write them down in the space provided below

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____

Compare your answer with what you read in the following section.

Disassembling a Mobile Phone

The following are the steps that you should take when disassembling a mobile phone:

1. Switch off the phone
2. Remove the battery cover
3. Remove the battery, SIM card memory card (if any)
4. Remove all the screws from the phone
5. Lift back the cover with the help of a flat screwdriver
6. Remove the strips (buzzer strip, display, camera, volume and speaker button strips)
7. Remove the antennae wire from the outside
8. Remove the motherboard and vibrator.

To successfully disassemble a phone, you need to understand the various internal sections of a mobile phone and how they are connected to the CPU. Let us look at that next.

Internal Parts of a Mobile Phone

Table 3 below outlines the main sections and how they are connected.

Table 3: Internal parts of a mobile phone

Internal Section	Connections
SIM card section	SIM Card Interface section is directly connected with the CPU in most mobile cell phones. If there is no power supply in a mobile phone then the SIM section is connected with the CPU through the Power IC.
Memory card section	In most phones the micro SD card holder is connected through a 8-pin socket. The memory card section is found inside the CPU
Ear Speaker Section	In modern mobile cell phones which have a separate ear speaker, the speaker is directly connected to the CPU. It receives sound via signals directly from the CPU or from the audio section inbuilt within the CPU. In some mobile phones, these sound signals are received via coil / resistance. Some mobile phones have audio IC in the audio section, while others have audio amplifier.
Speaker/Ringer Section	The ringer, buzzer or speaker in most mobile phones are connected to the audio amplifier IC to obtain loud sound. The amplifier IC amplifies the sound or audio signal received from the CPU of the audio section.

Key Backlight Section	LED Lights are connected according to the parallel circuit in the key backlight section. Anode ends of all the LEDs are connected to each other and all the cathode ends to each other. 3 to 3.3 V is supplied for the functioning of these key LED Lights.
LCD Backlight Section	LCD Backlight in mobile cell phones is made according to the series circuit. A Boost Voltage Generator section is built for the supply of high voltage (10 to 18V) for the functioning of the LCD LED. Boost coil, Boost Volt Driver IC, Rectifier Diode are present in this section.
Vibrator Motor Section	Positive power supply is given to this section directly from the positive end of the battery. Negative power supply is given through a NPN transistor or from the ground of any circuit.
Network Section	Antenna, External Antenna Socket, RX-Band Pass Filter, RF Crystal, FEM, PFO, TX-Band Pass Filter, RF IC, CPU are connected in the Network Section.
Battery Charging Section	Charger and system interface connector is made together in most modern mobile cell phones. Regulator section is made separately for the battery charging section. In some mobile phones, the battery charging section is made inside the Power IC.
FM Radio Section	FM Radio Driver IC, FM Antenna, Signal and Supply Components are made in the FM Radio Section.
Bluetooth Section	Bluetooth Antenna, Bluetooth RF Signal Filter, Bluetooth Driver IC, Supply and Signal Components are found in this section. The Bluetooth section functions like the Network Section. The RF-CLK signal is given to the Bluetooth driver IC during signal processing.
Hands free (Earphone) Section:	The hands free jack, hands free MIC, speaker signal component and hands free audio amplifier are present in this section. Hands free symbol is displayed after connecting the Hands free jack.

Assembling a Mobile Phone

The following are the steps that you should take when assembling a mobile phone:

1. Fix the vibrator strips of speaker and volume button
2. Fix the motherboard
3. Connect the antenna with wire
4. Place the camera and connect it
5. Place the buzzer
6. Put the camera cover
7. Make sure that the LCD is working before you place the screen
8. Put battery and battery cover

So far you have learnt about the hazards of mobile phone repair, the parts of a mobile phone, the tools to use and how to assemble and disassemble a mobile phone. Now let us look at how to diagnose and repair a mobile phone.