

# Mobile Technology (MT)

## Paper-I

Theory – 40  
Practical - 60

### Unit-I. Basics of Electrical Engineering

- OHM's Law: Electric current –conductors – insulators Semi-Conductors- Electric potential-Resistance-Ohm's Law-Resistances in Series and parallel simple problem.
- Work-power-Energy: Definitions of work, power & energy simple problems on power & energy-problems on energy consumption and monthly Billing – DC, AC power.

### Unit-II Basics Mobile Repairing Techniques

- Practical on Identification & Testing of SMD Resistors
- Identification & Testing of SMD coils
- Identification & Testing of SMD Capacitor
- Study of Diodes /Rectifiers
- Identification & Testing of SMD Transistors and Diodes
- Soldering of BGA components on Mobile trainer PCB's.

### Unit-III

- Dismantling and Assembling of Mobile phones with locks/slide.
- Troubleshooting for Network
- Study of Audio section and its troubleshooting tips.
- Tracing of charging section.
- Troubleshooting dead phones.
- Study of DCT4 Models like Color display, Camera or FM models.
- Installation of UFS 3 dongle and flash files.
- Installing DTH antennas and cabling
- Soft skills

### Unit.IV Mobile Repairing

- Basic Electronics.
- Introduction of Mobile Components
- Practical on Electronic Components & Testing.
- Soldering with iron.
- Multimeter, CRO, Bread Board.
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- How to use (SMD)
- PCB, General Purpose PCB.
- Checking Of Parts (Speaker, Buzzer, Earphone, PFO).
- (B) Mobile Communication
- Introduction of Mobile Communication.
- Introduction to Mobile Phones.
- Cellular Mobile Telephone Service.
- Service Information of Mobile Phone.
- (Base Band Module, Base Band)
- Identification Of different IC's

- Supply Voltage Regulator, Powering UP & Down the Phone.
- Receiver, Transmitter, Headset Detection.
- Memory, SRAM, EEPROM, FLASH.
- Display Circuit / Monitor.
- Comparison with computer.
- Batteries and charger.
- SIM Card.
- Network Section(PFO, FDK, Antenna, Antenna Switch).
- Chip level and BGA training.
- GSM Codes.
- Block Diagram of different phones.
- Ball IC Practice.
- How to fix the Ball IC.
- Checking of PCB Prints.
- Introduction of different categories of mobile phones.
- SMD Rework Station Practice on Working Phones.
- Parts Replacing & Checking.

### **Practicals**

- Use of Logo Manager.
- Identification of Dongle Switch and Interface Cable.
- Identify how to connect different type of Interface Cable with different mobiles.
- Unlock.
- Flashing.
- Blue tooth.
- Loading Games.
- Video clips.
- Blacklisting Software.
- Remote Software.
- UFS3.
- Measurement of power of an Appliance / Circuit.
- Determining the Fusing Current of a fuse.
- Calibration of Energy Meter
- Practical use of soldering implements and materials

## Paper-II

**Theory – 40**  
**Practical - 60**

### Unit.I Smart Phone Repair

- Block Diagram of Apple and Blackberry Phone
- Replacing Touching Screen in Smartphone
- Troubleshooting Network section in Smartphone
- Troubleshooting Audio Section in Apple /Blackberry Phone
- Troubleshooting Charging Section in Apple/ Blackberry
- Troubleshooting Power on failure in Smart phones
- Demonstration of Micro UFS installation & Flashing concept
- Demonstration of S.E. Tool installation & Flashing concept
- Demonstration of Infinity installation & Flashing concept
- Installing I-Tunes & updating firmware of Apple Phone
- Jailbrak Apple phone
- Installing Desktop Manager and updating firmware BB
- Using Mxkey for Blackberry (MEP unlocking)
- Using Mxkey for HTC unlocking
- Basics of PC Hardware & installing Device Driver
- Internet Browsing and WinZip/WinRAR
- Downloading – Games, Mp3
- Smartphone Repair Case

### Unit.II Tablet PC Repair

- Features and ports in Tablet
- Tablet PC Assembling –Disassembling
- Understanding component on motherboard of Tablet
- Understanding Circuit diagram of power section
- Voltage measurement in Tablet pc
- Troubleshooting power on failure in Tablet
- Replacing Touch panel on Tablet
- Troubleshooting No audio
- Installing O.S. in Tablet
- Troubleshooting Tablet Repair Case

### Unit.III Optical Fiber Communication

- Basics of Optical fiber communication:-Introduction: Block diagram of optical fiber communication system, Advantages of optical fiber communication
- Optical fiber waveguides: structure of optical wave guide, light propagation in optical fiber using ray theory, acceptance angle, numerical aperture.

### Unit.IV Telephone Exchange Switching Theory

- Development of Electronics Exchange, Telecom Network Model, Electronics Exchange facilities, Working principle of Exchange, Software of Exchange, Redundancy Method Telephony:
- Explain the working principle of Telephone Transmitter; explain the working principle of Telephone
- Receiver, Describe the different tones used in Telephone Exchanges with Waveforms (Showing frequency and intervals).
- Explain the working of Electronic Private Automatic Branch Exchange (EPABX).

- Block diagram of Intercom and explain function of each block, Mention the specifications of Typical Intercom, Mention typical faults at each stage and their rectification, understand the difference between Landline Telephone, cordless telephone and cell phone.

**Practicals**

- Broadband Technology, Introduction to Analog Modem, Types of DSL, Asymmetric
- Digital Subscriber line- Principle & Benefits, ADSL Components-DSLAM, BBRAS, ISP, ADSL Network plan, Modem Protocol & Standard, Dial up modems, Digital Modems
- Configuring the ADSL
- Installation of Modem with PC