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MOBILE PHONE TECHNICIAN

LEARNER GUIDE

National Vocational Certificate Level 2

Version 1 - November, 2019

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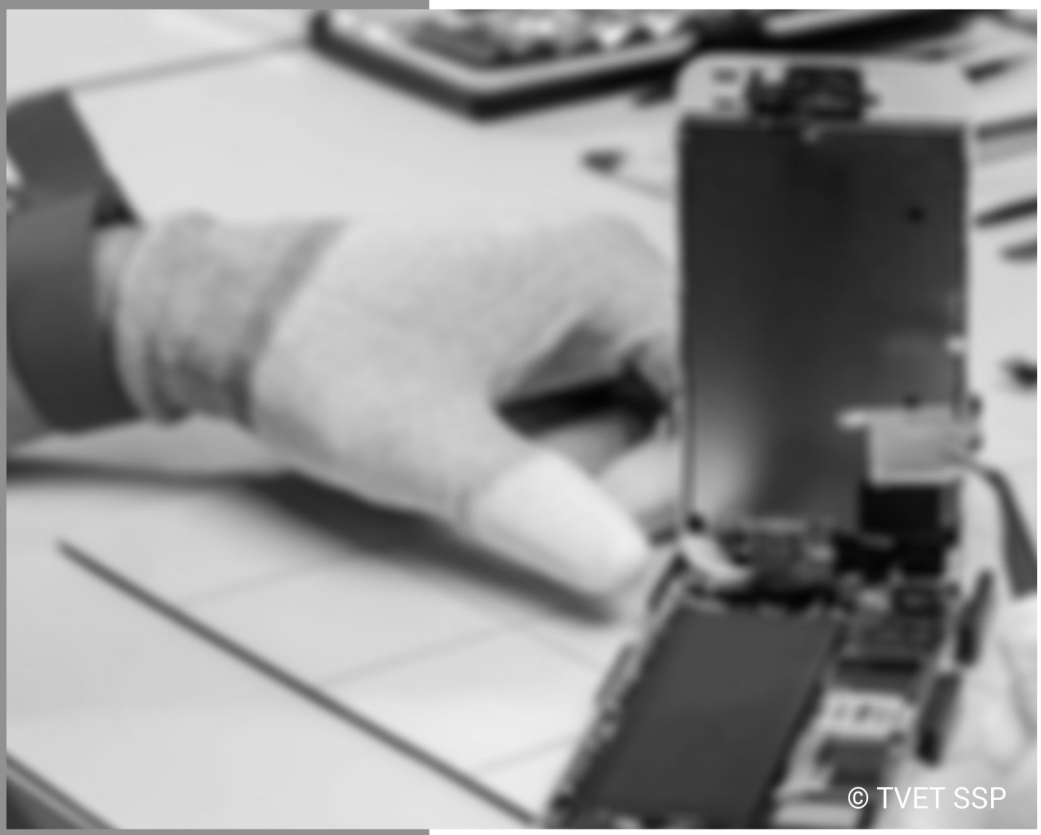
MOBILE PHONE TECHNICIAN



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Contents

Introduction

Welcome to your Learner's Guide for the ***Mobile Phone Technician*** Program. It will lead you towards successful completion of the program and to keep on further study or go straight into employment.

The ***Mobile Phone Technician*** program is to engage young people with a program of development that will provide them with the knowledge, skills and ability to start their career in Pakistan or seek their job across the borders. The program has been developed to address specific issues, such as the national, regional and local cultures, the manpower availability within the country, and meeting and exceeding the needs and expectations of their customers.

The main elements of your learner's guide are:

- **Introduction:**
  - This includes a brief description of your guide and guidelines for you to use it effectively
- **Modules:**
  - The modules form the sections in your learner's guide
- **Learning Units:**
  - Learning Units/Tasks are the main sections within each module
- **Learning outcomes**:
  - Learning outcomes of each learning units are taken from the curriculum document
- **Learning Elements:**
  - This is the main content of your learner's guide with detail of the knowledge and skills (practical activities, projects, assignments, practices etc.) you will require to achieve learning outcomes stated in the curriculum
  - This section will include examples, photographs and illustrations relating to each learning outcome
- **Ssummary of modules**:

  The summary of modules contains all the modules, clustered together in the qualification level (level 1—4), along with their learning units, aims and time frame

  Frequently asked questions:
  - These have been added to provide further explanation and clarity on some of the difficult concepts and areas and general information regarding the nature, duration, way of assessment, vertical and horizontal progression and future prospects of the training. This further helps you in preparing for your assessment.
- **Multiple choice questions for self-test**:

These are provided as an exercise at the end of your learner's guide to help you in preparing for your assessment.

Module D: Identify Incoming Quality

Objective: This module covers the skills and knowledge required to check physical condition of Mobile Phone, Take History of faulty Phone, Check Battery of phone, Check Phone Charger, Check Hardware fault, Check basic Software fault and Document faults

Duration:80 Hours **Theory:20 Hours** **Practice: 60 Hours**

Learning Unit	Learning Outcomes	Learning Elements	Materials Required
LU1. Check physical condition of Mobile Phone	• Inspect casing of mobile phone for physical damage • Detect cracks of mobile phone screen • Check Pre-scratches on mobile unit and record	Checking your device condition There are two main things to check on your device. Screen damage 1. Liquid damage 2. Broken screen Screen damage voids all warranties and can't be accepted. When inspecting a screen, remove any screen protectors and cases first. Tilt the device under good lighting conditions, and inspect at multiple angles. Screen damage includes hairline cracks that are difficult to see. Screen damage is: Broken screen, including damage from swollen batteries that impacted the screen Chew marks (from animals or children) on the screen Cracked or crushed	(1) specification sheet of different mobiles (2) dust remover

		screen Melted screen Liquid damage
		
		Mobile devices have a Liquid Damage Indicator (LDI) to show if the device has contacted any liquids. The indicator is white when it's new, and it turns pink or red when it contacts water.
		
		• The location of the LDI varies depending on the device. To find out more and see pictures, open the Devices page, select your device, and look for the Liquid Damage Indicator (LDI) page.
		  • If your LDI is:
		
		  ➢ White: The device may be eligible for warranty exchanges, buyer's remorse, device trade-ins, or a manufacturer warranty.
		  ➢ Pink or red: The device is out of warranty. This means it isn't eligible for returns.
		  ➢ Missing or tampered with: The device is out of warranty. Third-party repairs void the warranty and may remove the LDI.
		
		  • Liquid damage can also cause batteries to swell. Pay special attention to the LDI if the battery is swollen.	

LU2. Take History of faulty Phone	• Collect information of fault from customer • Collect customer personal contacts • Prepare estimated cost and take consent from customer	• Before collecting mobile from customer it is important to know about following quarries • Contact information of customer • Make physical verification of mobile if there is any physical damage verify it in front of customer • Know about fault and how the fault in occur in mobile in detail from customer • Check mobile for the fault if the fault is according to the description of customer calculate raw material expanses • Add your service charges and tell the overall charges to the customer	(1) information collecting form

LU3. Check Battery of phone	• Check physical condition of battery for swollen • Check charge status of the battery • Inspect battery connectors and Terminals for connectivity	• The source of power supply in mobile phone is known as battery **1. Types of cell phone batteries.** The most common are the following **types of batteries**: • Nickel-cadmium (NiCd), • NiMH (NiMH), • Lithium-ion (Li-ion), • Lithium Polymer (Li-pol) batteries. Ni-Cd or NiMH batteries you can find at household devices such as screwdriver type. Almost all mobile phones are equipped with lithium ion batteries. A lithium-polymer battery is the newest type of battery, which appeared recently. When mobile phone batteries have reached their limit or are left discharged for a long period of time, they eventually lose their ability to hold a charge. If your cell phone battery dies, you don't need to throw it out right away, why not try reviving it first? Maybe all the battery needs is just a little push to make it functional again. Wipe and clean contacts of your mobile phone and phone battery	(1) Multi-meter (2) Power supply (3) CTC cleaner (4) Terminal connectors

		After long term use, the metal surface of the lithium battery and even the contacts can suffer from oxidation. This may shorten the lifespan and effectiveness of the lithium battery. Carefully and routinely remove any residue/rust that has built up to ensure the battery has a clean contact with the phone. **Method 2: Bring a dead battery back to life by freezing** Lithium reactions in batteries work using a charge-discharge process in which positive and negative electric charges collide with each other. Under normal room temperature, the kinetic energy is relatively sizeable, however as the battery is maintaining an active/ready state, electric leakage can frequently occur. However, under low temperature conditions, the lithium coating on the battery's surface, along with the electrolyte micro-structure and the interface will be significantly altered leading to a temporary inactive state that minimizes electric leakage. This extends the phone battery's lifespan allowing it to be recharged across more cycles. **step 1:** Wrap your ageing phone battery in old newspaper and rewrap it with plastic film 2 times. Alternatively, place the battery inside a tightly sealed plastic bag that prevents it from getting	

		wet. **Step 2:** Place the battery in the ice compartment of your fridge, and take it out after 3 days. **Step 3:** Remove the wrapping and place the battery in cool location away from direct sunlight for 2 days. **Step 4:** Insert the battery into your phone but don't power on your device. Instead, plug the phone into the proper charger and allow the device to charge for 48 hours. After the device has charged for 48-hours, turn the device on and check the battery power level. If successful, this method will have revived your previously dead battery allowing it to hold a charge again. **Method 3: Try jump starting the battery** This method is generally effective for mobile phone batteries that have either reached their lifespan limit or have been left discharged for a long period of time; they eventually lose their ability to hold a charge. In fact, this can also occur to a phone battery during long distance shipping, due to the travel time from one country to another. But now you can learn how to resolve the issue yourself.	

		Before doing this, you will need the following: • 9V battery, for its easy-to-access terminals • A length of split wire to connect to the battery • Electrical tape to secure the wire • The battery itself **Step 1:** The positive and negative terminals on the **9V battery** will be clearly marked. Identify them and connect the corresponding side of your wire to each terminal, being sure to cover the connection with electrical tape for safety. **Step 2:** On your cell phone battery, the positive and negative terminals will also be marked. Connect the wire to these as well, remembering again to secure with electrical tape. **Warning:** Don't connect a positive side to a negative side. **Step 3:** Leave the batteries connected for between 10 to 60 seconds, or just long enough for your cell phone battery to get warm. Monitor the temperature and time closely. **Step 4:** As soon as the battery becomes warm, disconnect the batteries immediately. DO NOT try to	

		fully charge your cell phone battery this way. Place the battery into your phone. You may need to charge the battery the rest of the way as normal, then try to power on the phone. **Battery capacity** The capacity of a battery is measured in mill ampere-hours (or mAh), which indicates how much energy the battery can deliver over time. For instance, if a battery has a rating of 1000 mAh, it could deliver 1000 milliamps of power for 1 hour. If your device uses 500 milliamps of power, the battery should last about 2 hours. **How to Clean battery Contacts** • Pour a small amount of rubbing alcohol into the rubbing alcohol cap. • Dip the tip of a cotton swab into the rubbing alcohol. You want the cotton swab to be slightly dampened, not dripping wet. Rub the cotton swab on the **battery** contacts on both the bottom of the **wireless phone** and the charging or docking unit.	

LU4. Check Phone Charger	• Check output voltage of the charger by voltmeter • Check continuity of the charger cable	• Mobile chargers are devices which convert 220v AC to 3.5 up to 5v DC for charging purpose of mobile phone. Charges are normally rated in amps and volts in input as well as in output. Normally voltage and current at input and output are specify in rang • Mobile phone charger is basically switching mode power supply in order to check the states of charger we require multimeter and to check voltages of charger we need to set our multimeter in volts then check whither input as well as output voltages are present normally output voltage is checked. If voltage at output is not present then open charger check input section which normally consist on bridge rectifier with filter circuit and a power transistor (FET) and switching ic and ferrite core transformer while the output section consist on output rectifier filter circuit and feedback circuit . check each component	(1) Multi-meter (2) Power supply (3) SMD tester

		carefully and if find faulty component replace it	
LU5. Check basic Hardware fault	• Arrange tools and equipment as per requirement • Check power ON-Off status • Check charging status of the charging base	• DC power supply is very important equipment in mobile repairing field. Normally variable power supply is used the voltage is normally varies with knobs. It is rated in maximum output volts and amps • Two common methods are used for checking of charging base of mobile • Check the output volts of charging base with the help of multi-meter • Insert data cable in computer and check wither computer detect mobile phone or not check charging base	(1) Multi-meter (2) DC power supply (3) Different charging bases (4) Charger with charging indicator
LU6. Check basic Software fault	• Check mobile for corrupt software • Check mobile for abnormal restart • Check freezing on logo • Check specific voltage on power supply	**What to do When Your Phone Won't Turn on at all** This is the most dreaded thing that can happen to your phone. Before we proceed, please make sure yours is not due to a drained or damaged battery or faulty power switch/button. If your phone simply dies on you for no known reason (although it must have been giving you some signs which you ignored). Now do the followings to force your phone to wake up. • For older generation phones like Nokia java, Symbian,	(1) Computer (2) Data cable (3) Flashing tools

		Tecno java and so on, please take the phone to a phone engineer once it is dead. • For all iPhones (mind you, iPhones hardly dies except you jailbreak and install incompatible tweaks on it). If an iPhone enters a boot loop or gets stuck, ***try a soft reset on the iPhone by pressing your home button and the power button simultaneously. The iPhone should come up. If this fails, please restore your iPhone firmware via iTunes on PC or Mac.*** • Still, on iPhone, any other problems that you notice apart from your phone refusing to turn on or your phone getting stuck at the apple logo can be solved either by a restart, uninstalling the buggy app or ***by resetting the device under settings>>general>>reset>>reset all settings.*** • **For Android phones;** ifyour Android device appears to power on and boot up normally, but a problem occurs. Let's say maybe the boot process fails, the device freezes, or it immediately reboots or shuts off, and there may be a problem with your device's software. There's a hidden way to perform a factory reset of your	

		Android device when it isn't booting properly. Note that this will erase the contents of your Android device, resetting it back to its default state. ***This method should only be used in the worst case scenario***when your device is unusable due to crashing or freezing software. Note that you'll lose everything that isn't synced to online services or that is not backed up. First off, you'll need to access your device's recovery mode. Turn the device off completely, then boot it up with one of the following ***button combinations:*** ○ **Hold Volume Up + Volume Down + Power.** ○ **Now, Hold Volume Up + Home + Power.** ○ **Hold Home + Power.** ○ **Hold Volume Up + Camera.** This will vary from device to device. ***If none of these combinations*** works***, try performing a Google search with the name of your device and "recovery mode"*** to find the correct key combination for your device. The device will boot to a screen with an Android and an open chest panel if you're successful.Press the Volume Up and Volume Down buttons until	

		the Recovery mode option appears on the screen. Press the Power button and your device will reboot into recovery mode. The steps are self-explanatory once you enter recovery mode. **2. Fix Unresponsive Screen on your Phone Caused by a Software Glitch** You may want to throw your phone against the wall when it begins to malfunction, but there isn't a need to panic. Most problems are fixed with a simple restart. Press the power button and let the phone turn off. wait a minute or two before powering it back on. In extreme case do a factory reset as explained above. 3.solve phone's battery drain related to software problem This is more of an android device's problem then an iOS. Numerous user reported this problem with a buttery life of their devices. One of the easited way to prolong your smartphone's battery is to change your locations and brightness setting 4. when Android App crashes On an android phone you might get a message like "unfortunately ***** has stop the working App can crash for all	

		sort of reasons. Is there an update available for either the app or your smart phone? if so install it . otherwise, force closes the app by switching it away in multi task menu and then respond it. If not please wipe out the cache of that particular app 5. Frozen and slow user interface One of the major causes of slow response in phones is a memory. It may even be a corrupt MicroSD card or your internal memory getting filled up.. Try deleting unused apps and photos, or moving them to the cloud or a microSD card. In addition, you should close open apps that you are no longer using, delete app cache, and limit the use of live wallpapers. **6. Phones Synchronization/Syncing Error** We are still on Android. There are numerous steps you can take to address problems with syncing. First, ensure that you are connected to the internet and that the service you are trying to sync with, such as Google, emails or Drop box, isn't down. Double check that your password is corrects and tries syncing again. Still having problems? Remove the account from your device and add it again.	

		7. Overheating of Android Phones Most Android can get really warm. Try not to use your phone while you're charging it and don't use high CPU-sucking apps, like Pokémon Go or Facebook, for long periods of time. If it starts getting warm, give your phone a break. If you don't do these things, and your phone still gets hot to the touch, then you may want to get it looked at by a professional. This could be a sign of a manufacturer defect. Also, read more tweaks on my hardware solution page here **8. Apps won't download on Android Via Default Download Mgr** To start with, I do not use the stock android browser or chrome to download on my android phone. ***I use Ucweb browser because it supports download resume and it is extremely fast*** for downloading. There may be two causes for your apps not downloading. First, try clearing the Google Play store's cache. If that doesn't work, try wiping Google Play's history. The problem is probably a corrupt cache and all you need to do is clear it. ***Open the Google Play store and tap on the three lines in the upper left of the screen to open the app's menu***. Choose **Settings** and	

		tap on **Clear local search history**. **9. Android Homescreen is congested** Every time you get a new app, a new icon is added to your home screen. A fix to that: Open the Google Play app, then tap **Menu > Settings** and clear the checkbox next to **Add icon to Home screen**. •	
LU7. Prepare invoice	• Document list of faults • Estimate material cost and service charges • Verify invoice from the customer	• First of all documented all faults • Then calculate the cost of raw materials and then • Mention unite price and total price of raw materials in invoice • Mention the repair cost	(1) Martial bill (2) Invoice form

Examples and illustrations

https://www.youtube.com/watch?v=6Ddz4wZGk1Q

https://www.youtube.com/watch?v=-b_U6gCTt0w

https://www.youtube.com/watch?v=cjaQYyhYyhs

https://www.youtube.com/watch?v=-gPzUuRR5UY

https://www.youtube.com/watch?v=A2LUEd-jPbc

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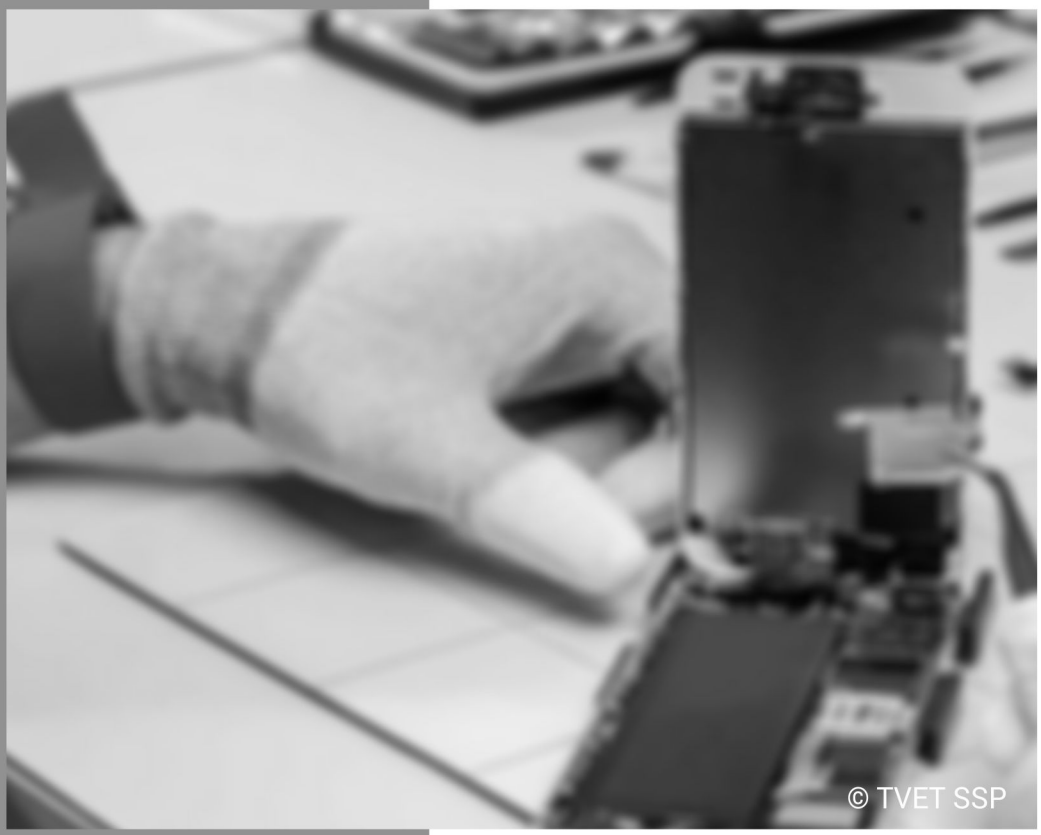

Module-E
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Module E: Diagnose fault in Power Section

Objective: This module covers the skills and knowledge required to disassemble Phone set, **check** supply Voltage, ON, OFF Switch, Charging Section, and power supply section of the mobile phone

Duration:110 Hours **Theory:20 Hours** **Practice:90Hours**

Learning Unit	Learning Outcomes	Learning Elements	Materials Required
LU1: Disassemble Phone set	• Select tools and equipment as per requirement • Remove back cover without damaging the phone • Remove screen without damaging	1. Following is the set of tools that you need in order to assemble and disassemble a mobile phone 2. Philips screwdriver 3. Flat screw driver 4. Plastic Separation tool Now let's begin with disassembling procedure mobile phone 5. Switch off the phone (If it's already not switched off). 6. Remove mobile battery cover 7. Now remove battery, SIM Card, Memory Card (If any) as per shown in figure 8. Next thing that you need to do is to remove all the screws from your Samsung Galaxy S3 with the help of Philips screwdriver. The best thing is that you don't need to worry about the screws and the method to put them back, as all of them are same in size	(1) Tuser (2) Body remover (3) Screw driver set (4) Knife (5) Glass remover

		9. Now after you have removed all the screws, lift back cover with the help of a flat screw driver. You need to be very careful while doing this procedure in order to avoid any kind of phone and cover damage. 10. After removing back cover, now remove your mobile buzzer strip using plastic separation tool and then gently remove the assembly in order to proceed further. 11. Now remove following strips: 12. Strips of Front Camera 13. Display Strip 14. Volume and Speaker button assembly strip 15. Remove Ant wire from outside, and it is considered to be important because there is a slight chance that you might damage the wire or connector (or both). Following is the image of Correct and Wrong methods of removal of Ant Wire: 16. Lift main camera from display assembly and then remove camera strip. 17. Finally remove Motherboard, Vibrator, Second Camera (after removing screw) and strip of Volume & Speaker	
LU2. Check supply Voltage	• Check specific Voltage by power supply • Check for short circuit in the power supply section	All Phone Short finding method is same. You can use Digital, Analog Multimeter, and Digital Power Supply both to find the shortage in smartphone motherboards. You also can use a DC Digital power supply for testing Shortage but this is	(1) Multi-meter (2) Power supply (3) SMD tester (4) Charger with charging indicator

		better to find where or which part of the smartphone is really short. This way is not a good way to identify a shortage because DC Power supply can't detect very small shorts in the motherboard which cause some faults on Phones. So remember the best method is using a Digital or Analog Multimeter. **How to Check Shorting in Mobile with Multimeter?** How to find short circuit in mobile phone it is a very easy and quick method to find if there any shortage on a Phone is using both Multimeter. 1. Analog Multimeter 2. Digital Multimeter Now final, how to check short circuit with multimeter in mobile **Analog Multimeter** 1. Put multimeter to x1 buzzer or x10 2. Check Battery Connector two pins 3. simply put (+) test meter probe on GND pin and (-) test meter probe on +Vbat Pin 4. if the Analog multimeter pointer moves even a little there or buzzer is short this is, how to check half shortingin mobile with multimeter **Digital Multimeter** 1. Set multi-meter on CONTINUITY 2. Scenior1: Connect Black probe to	

		Circuit's +VE print. and Red probe to Circuit's -VE print shows some reading. 3. Scenior2: Connect Black probe to Circuit's -VE print and Red probe to Circuit's +VE print shows no reading. Note: IF reading shows in BOTH scenarios it means circuit has Shortage. **Now you have a question?**How to use a multimeter to test a smartphone motherboard. **Answer:** you can apply the same method on smartphones, as I told you in the starting of this blog post. now move on to check shot on circuit board of phone we are testing phone PCB with power supply how to use multimeter for mobile repairing read my blog post Digital Multimeter Step by Step Guide **How to Find Half Shorting in Mobile using Digital DC Power Supply** 1. Put power to your Smartphone using DC Power Supply(As your Phone's DC power needs) Normally 3.8 volts is enough and in tablets, 4 volts some Chinese mobiles needs 4.2 volts 2. Connect Power Supply Red clip to Battery Connector +Vbat pin 3. And connect Black clip to both Battery Connector BSI and GND Do not touch any volume or power button 4. If your Digital or Analog Power supply's Ampere Reading Scale shows any of current amount that's mean there is a shortage in it. 5. Mobile Short Solution: if your Power	

		supply Shows “0.00” on Ampere Reading Scale it means there is No any shortage in motherboard if you don't know how to operate a dc power supply read my blog post how to use DC Power Supply ***Is it Possible to Repair Phone after a Short Circuit?*** Yes is it possible to repair phone after a short circuit! now listening to this you want to know how to repair short mobile phones. if your smartphone is short, it can have various issues like it may not turn on (dead), it may overheat (although it is normal in some smartphone models!), its battery may drain and discharge very fast, it may hang or auto restart and freeze frequently, it may auto turn off sometimes, etc. It is called short-circuit smartphone motherboard. Before removing shortage you should know whether your smartphone motherboard is short or not. ***Reasons for shorting in smartphone motherboard*** If the smartphone gets dropped on the floor or on some hard surface. Or the phone gets wet or is dropped in rain or swimming pool water. Phoneoverheating. Trying to use the faulty charger for charging in the smartphone.	

		Electric Sparks or smoke coming out of the Phone due to any reason form Handset charging port. To repair a short smartphone, you will have to first remove its shortage to repair it. You have to follow the procedure to remove it, especially in dead Smartphones. how to remove shorting in mobile phone and smartphones 1. the shorted phone printed circuit board (PCB). Be careful, so that you do not damage it! I suggest you watch the disassembling video on youtube first then remove LCD, camera, etc because we just need the motherboard, not whole phone short circuit no disassemble. 2. Clean the entire motherboard thoroughly with any circuit cleaner like Philips contact cleaner spray, alcohol, thinner etc. Now dry it completely. After each cleaning step, you have to check if the shortage is not gone proceed to the next step. 3. Now try to deep clean the Phone Circuit Board. There is a liquid called Elma used by smartphone repair technicians in the Eastern Europe countries named Elma. lma procedure: Dip the Circuit Board in Elma for 1 to 2 hours. Remove the Circuit Board and clean it thoroughly with a toothbrush. Dry the Circuit Board	

		completely with cotton or ultrasonic cleaner machine, not even a droplet of water remains. For drying, you can use direct sunlight or 100-watt yellow bulb.	
LU3.Check ON, OFF Switch	• Check power switch for faulty contacts /connector • Check On- Off switch flex (ribbon cable) connectivity • Check power value on circuit through multi meter	• In most cases, only card level parts of a mobile cell phone are checked for fault and then repaired or replaced with a new one. Card level parts of a mobile cell phone include ringer, speaker, microphone, vibrator, LED, charging connector, headphone connector, data cable connector, battery, battery connector, SIM card, SIM card connector, memory card, memory card connector, camera, camera connector, keypad button, keypad connector, ON / OFF Switch, Display, Display connector, Internal antenna and PDA. • Remove the battery and see if it gets charged or not. Check voltage using a Multimeter. Voltage must be 3.7-4.2 Volt DC. Use a Battery Booster to Boost the Power of the Battery and Charge it again. □ Check Battery Point and Battery Connector. Clean Battery Point and Battery Connector to remove any carbon deposits. □ Resold or change the Battery Connector. □ Insert charger and se if the "*Battery Charging*" appears or not. If there is icon of "*Battery Charging*" but the mobile phone does not gets switched ON then	(1) CTC with cleaner (2) Tuser (3) Knife (4) Multi-meter

		check ON / OFF Switch. Voltage of ON / OFF Switch must be 2.5 to 3.5 Volt (*DC*). Clean or change the ON / OFF Switch. Check track of ON / OFF Switch and Jumper if required. □ If the charging icon is not there then check voltage of ON / OFF Switch. If the voltage is between 2.5 to 3.7 Volts DC, then RELOAD Software in the Phone (*Software Flashing*). □ If the phone won't get switched ON even after reloading software then Heat the C.P.U, Power IC and Flash IC. • □ If there is no voltage on the ON / OFF Switch then check track of the ON / OFF Switch. Jumper if required.	
LU4. Check Charging Section	• Check charging port for connectivity • Check charging flex cable for connectivity • Check battery terminal for voltage	**Problems when Mobile Phone Battery Not Charging** • Battery of the mobile phone is not charging at all. • There is sign of battery charging but the battery is actually not getting charged. • When the charger is Plugged in, it shows Not Charging. • When the charger is connected or plugged in, it shows Bad Connecting Charging. • When the charger is plugged in the mobile phone gets hot.	(1) Charger with charging indicator (2) Multi-meter (3) CTC (4) Power supply (5) Hot air gun (6) Solder iron (7) Solder wire

		• Phone that won't charge properly. • Non removable battery phone not charging. • Phone showing charging but battery percentage not increasing. • Phone charging slow. • Battery won't charge to 100% in Android Phone. Following are the steps use for repair of charging section 1. Change the charger and check. Voltage must be 5 to 7 Volts. 2. Clean, Resold or Change the Charger Connector. 3. If the problem is not solved then change the Battery and Check. Non Removable Battery are Just Glued at the Bottom. They can be Removed Easily but Little Carefully. 4. Check Voltage of the Battery Connector using a Multimeter. Voltage must be 1.5 to 3.7 DC Volts. 5. If there is no voltage in the connector then check track of the charging section. Refer to the diagram of the particular model of the mobile phone. Books with track diagrams are easily available in the market. The same can also be searched on the internet. 6. If the problem still not fixed then check Fuse, Coil and Regulator – one by one. Change if required. 7. If the problem is still not solved then Heat or Change the Charging IC. 8. Lastly Heat, Reball or Change the Power IC.	

		For checking of battery following steps are require Step1 Turn off your cell phone and open up the battery compartment. Remove the battery and set it down on a flat surface so the terminals are facing you. ***Step2*** Identify the two terminals on the battery that are labeled with a "+" and a "-" sign. Then, look on the battery's label to find out how much voltage it is rated at. For instance, on the battery, the voltage is rated at 3.7 VDC, or approximately 4 volts DC. Turn the dial on your digital multimeter so it is set to read DC volts. This is indicated by the letter "V" with both solid and dotted lines above it. Touch the tip of the red probe to the terminal labeled "+." Keep them in contact while you press the tip of the black probe to the terminal labeled "-."	

		Check the digital reading on your multimeter to see how much charge the battery has. In this case, the battery has a 4 volt DC charge. It is fully charged.	
LU5. Check power supply section	• Check physical condition of power IC for damage • Check powersection components for rated voltage	• Power Management IC is a power IC, that manage, control and distribute and Supply Power voltages from the battery source to other corresponding circuits or chips. It is highly designed to convert, regulate, stabilize current and voltages that flow across unto it. A power supply IC Chips can divide and multiply certain voltage from one desired voltage source to any desired power output voltages. Which is for example a battery voltage source amounts at 3.7voltsDC while other components chips or circuit only requires the amount of 1.8volts, This 1.8volts is the amount of voltage is what the power management IC are going to convert	(1) Power supply (2) Multi-meter (3) Oscilloscope (4) SMD tester (5) Logic prob (6) Hot air gun (7) Solder iron (8) Solder wire (9) Soldering past

Examples and illustrations

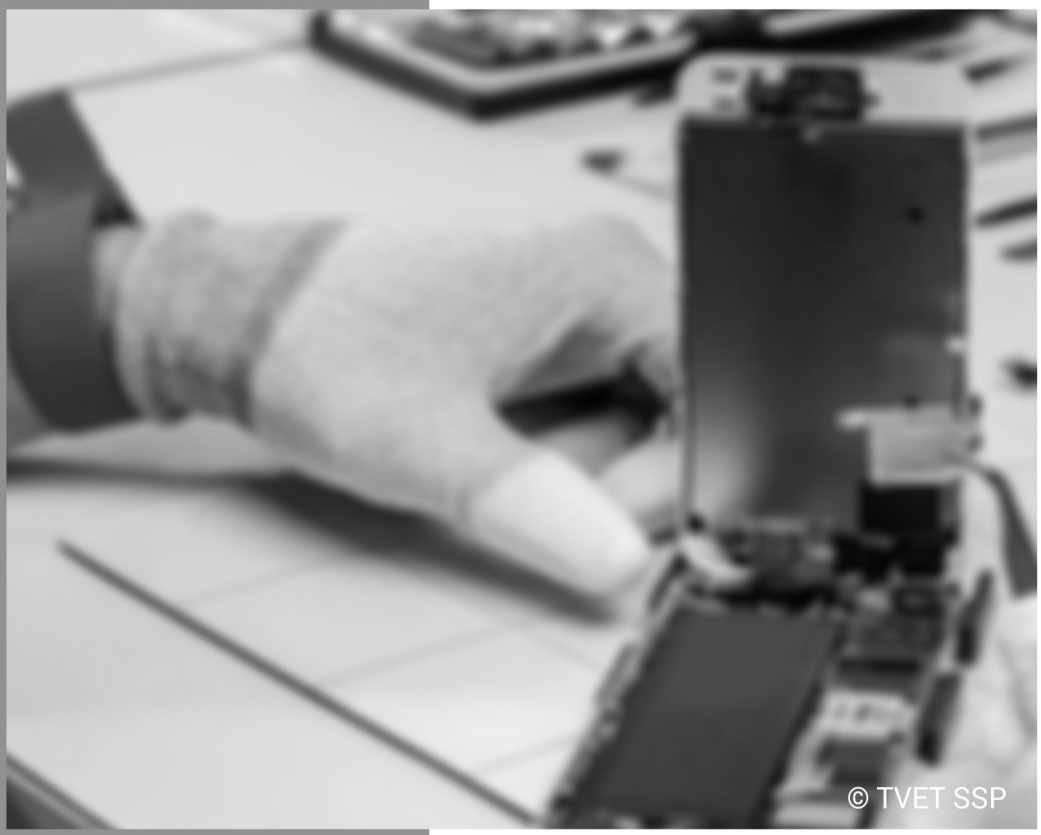
https://www.youtube.com/watch?v=a0Cvhl2Fc2g

https://www.youtube.com/watch?v=_M0T4I-h-9c

https://www.youtube.com/watch?v=lotPNj4J798

https://www.youtube.com/watch?v=jbYbHN-ZrII

MOBILE PHONE TECHNICIAN



Module-F

LEARNER GUIDE

National Vocational Certificate Level 2

Version 1 - November, 2019

Module F: Detect fault in Display Panel

Objective: This module covers the skills and knowledge required to **check** display Glass, LCD Light Panel, Digitizer/soft keys, LCD Connector and display Strip of mobile phone.

Duration: 110 **Theory:20** **Practice:90**

Learning Unit	Learning Outcomes	Learning Elements	Materials Required
LU1. Check display Glass	• Remove glass protector from display glass without damage the screen • Check physical condition of display glass for damage	There are protectors in a variety of materials including: • Tempered glass – Offers decent protection against impact as well as scratches • PET plastic – Generally covers basic scratch protection • TPU plastic – Scratch protection only • Multi-layered screen protector – Very durable and can withstand significant amounts of shock Beyond the basic material of the phone protector, you may find various differences in the actual appearance of the accessory. **Ultra-clear screen protector** – Highly transparent so that it can provide a sharp, clear view of the screen. These screen protectors can block UV rays and come with a non-adhesive silicone back which makes it easy to take off and replace. **Anti-glare screen protector** – Ideal for people who use their phones outdoors and need to block the glare fromUV rays. These types of screen protectors also prevent fingerprint coating in addition to being scratch resistant. **Privacy screen protector** – These protectors are right	(1) Hot air gun (2) Screen separator (3) Double tap (4) Tuser (5) CTC

		for anyone who wants to secure the information they're looking at by disallowing anyone to be able to see the phone's screen without viewing it straight on. At any other angle, the phone will appear black. **Mirror screen protector** – These can turn your phone into a decent mirror when it's not in use. However, their popularity has decreased now that most phones have a front facing camera. •	
LU2. Check LCD Light Panel	• Check LCD light panel for liquid damage • Check LCD light panel for fused lights	When it comes to smartphone displays, there are two main types that are utilized; the first of which is LCD. LCD stands for Liquid Crystal Display, and while I'm not going to go into the complex designs of LCD panel circuits and exactly how they work, I'll explain the different parts of an LCD display and exactly what the crystals do. There are four main layers to an LCD panel: there's the outer protective layer, the polarizing layer (or layers), the liquid crystal layer and the backlight. The outer protective layer is basically there to protect the other components from getting damaged, and it's usually made of clear plastic or glass. The polarizing layers help the crystal layer deliver the correct light, or no light when off or black, to your eyes. The most important part is the liquid crystal layer, which is what controls the colors passed through and ultimately the picture displayed. When an electrical current is passed through the crystalline layer, liquid crystal cells coupled with filters of red, blue and green, corresponding to the subpixels in the display, "twist" to let backlight through at different intensities. The crystals filter the neutral back light into certain color intensities, and combined with neighboring crystals of different colors, the full range of	(1) Multi-meter (2) SMD tester (3) Power supply

		millions of colors is created. *A basic diagram of a TFT LCD panel | Image: TEAC* The backlighting layer is almost always LED backlight, and while there are different types of LED backlighting the one used almost always is white LED backlighting. This is where thin and solid white light-emitting diodes (LEDs) are placed behind the liquid crystal layer to provide a base light for the crystals to modify. RGB LED backlighting also exists which allows for better color reproduction, but this is more expensive and seldom used in smartphones (as far as I know). Again this is a simplified explanation of how LCD panels work, LCDs that are used in smartphones are all active matrix, which refers to the way the pixels are addressed, and they are all also used TFT technology. TFT basically means thin-film transistor and its these components that help with more accurate color reproduction, contrast and responsiveness. Underneath the TFT banner there are a two different types you can get. **Twisted Nematic (TN) LCD** Twisted Nematic is a term that is rarely used by smartphone manufacturers, instead preferring to call their displays simply "TFT LCD". It refers to the method in which crystal cells are twisted in the display to reproduce the colors, and is most commonly used in cheaper smartphone displays due to their ease of production. Compared to the other type of LCD, In-Plane Switching	

		(IPS), TN LCD panels have more limited viewing angles, contrast and color reproduction, hence why they are generally used in cheaper devices. That said, your computer monitor or (older) LCD TV is most likely going to be using a TN panel, so they are not always bad, just there is better technology out there. IPS LCD panels use a more organized method of crystal cell twisting, which allows for a better quality picture and so it's the preferred type of display for higher end smartphones. The main advantages over TN panels is significantly better viewing angles and truer color reproduction because the way the panel works reduces off-angle color shift. Modern generation IPS panels also feature much better contrast ratios than TN panels, which makes them (in some instances) comparable with AMOLED technology. **What is LED in a Mobile Cell Phone?** LED in any mobile cell phone is an electronic component or part that generates light in the Mobile Phone. These are generally LED or Light Emitting Diode. There are 2 types of connection in the Light Section of a Mobile Phone: (i) Series Connection; and (ii) Parallel Connection. **There are two types of display screens of any mobile phone:** 1. Connector type. 2. Soldered to the Mobile Phone PCB. To replace a connector-type LCD Display Screen is very easy. Just disassemble the mobile phone and remove the connector of the display. Replace the faulty screen with a	

		new one by inserting the connector to the PCB. **There are two types of display screens of any mobile phone:** 1. Connector type. 2. Soldered to the Mobile Phone PCB. To replace a connector-type LCD Display Screen is very easy. Just disassemble the mobile phone and remove the connector of the display. Replace the faulty screen with a new one by inserting the connector to the PCB. The real task is to replace soldered display screens. It need some practice. **Tools Needed to Replace LCD Display Screen** You will need following Mobile Phone Repairing Tools and Equipment to Replace LCD Display Screen of Mobile Phone: 1. Liquid Flux. 2. Soldering Iron 3. Desoldering Wire. 4. Solder wire. 5. Tweezers. 6. Precision screwdriver. 7. Mobile Phone Opener. **How to Desolder and Remove Display of Mobile Phone** 1. Disassemble the mobile phone using precision screwdriver and mobile opening tool. 2. You will see the display soldered to the PCB of the Mobile Phone.	

		3. Apply flux to the solder joints. 4. Using soldering iron, heat all the solder joints. Be careful while using soldering iron. 5. Using tweezers or hand, gently pull out the display once the solder starts melting. 6. Using Desoldering wire and soldering iron, remove all the extra solder paste from the PCB Track. **How to Solder and Replace Display of Mobile Phone** 1. Apply flux to the track on the PCB and the New Display. 2. Using soldering iron, apply solder to both the display and the PCB track. 3. Place the display on the PCB and solder each point of the display to the track one by one. Try to solder both the ends first and then solder the middle part. **Types of Mobile Phone Light LED Problem** Mobile Phone Light LED problems • No Light al all. • Light in only Keypad or Display. • Some lights not working. • Backlight Not Working Solution to LED section problem 1. Check Light Settings.	

		2. If settings are OK then Resold all LED. Mobile Phone Boosting Coil 3. If the problem is not solved then change the display or the screen and check. 4. If the problem is not solved the check all the LEDs using a multimeter. Keep the multimeter on Buzzer mode and Check LED. If LED is Good then it will Glow. If LED is Faulty then it will Not Glow. 5. Change LED or Jumper if required. 6. If the problem is not solved then Check Track of the Light Section of the PCB of the Mobile Phone and Jumper if Required. 7. If the problem is not solved the Check the SMD Boosting Coil and Change if Required. 8. If the problem is not solved the Heat or Change the Light IC. 9. If the problem is still not solved the Heat, Reball (BGA) or Change the Power IC.	
LU3.Check Digitizer/soft keys	• Check physical condition of digitizer for damage • Check digitizer strip for connectivity • Check polarizer paper for spots • Check soft keys for continuity	The strip is the process of removing coupons from a bond and then selling the separate parts as a zero coupon bond and an interest paying coupon bond. ... In the bond market, coupon bonds are literally stripped of their coupons and principle and sold as z-bonds and interest-bearing. • Types and uses of digitizers 1) Bonding type for ipad 2) LCD adhesive strips 3) I pad pro	

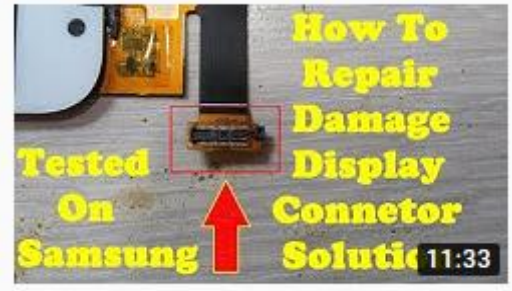
		4) Pre cut If a charged plastic tube is held near to neutral paper bits, the attraction between ... In the context of electricity, polarization is the process of separating opposite charges within an object.	
LU4. Check display Connector	• Check input connectors for connectivity • Check output connectors for connectivity	• Display connector is normally check with working display if it not start working display then check if the voltage that is come from LED light section is present or not. This is done on multimeter similarly the continuity of all point can be also check but for that purpose circuit diagram is use if available	(1) Multi-meter (2) SMD tester (3)Power supply (4) Hot air gun (5) Solder iron (6) Solder wire (7) Solder paste
LU5. Check display Strip	• Check physical condition of display strip for connectivity • Check display strip components for connectivity	• Display strips are actually collection of wires that is present in the form of plastic strip. This plastic strip is use to carry signals of different sections of mobile from one place to other • First keenly observe it for physical damage • Then check the continuity of all points with the of multi-meter	

Examples and illustrations

https://www.youtube.com/watch?v=N5DPDWlcJ9Q

https://www.youtube.com/watch?v=9B6tkETxSi4

https://www.youtube.com/watch?v=YNbkTi8DJDw



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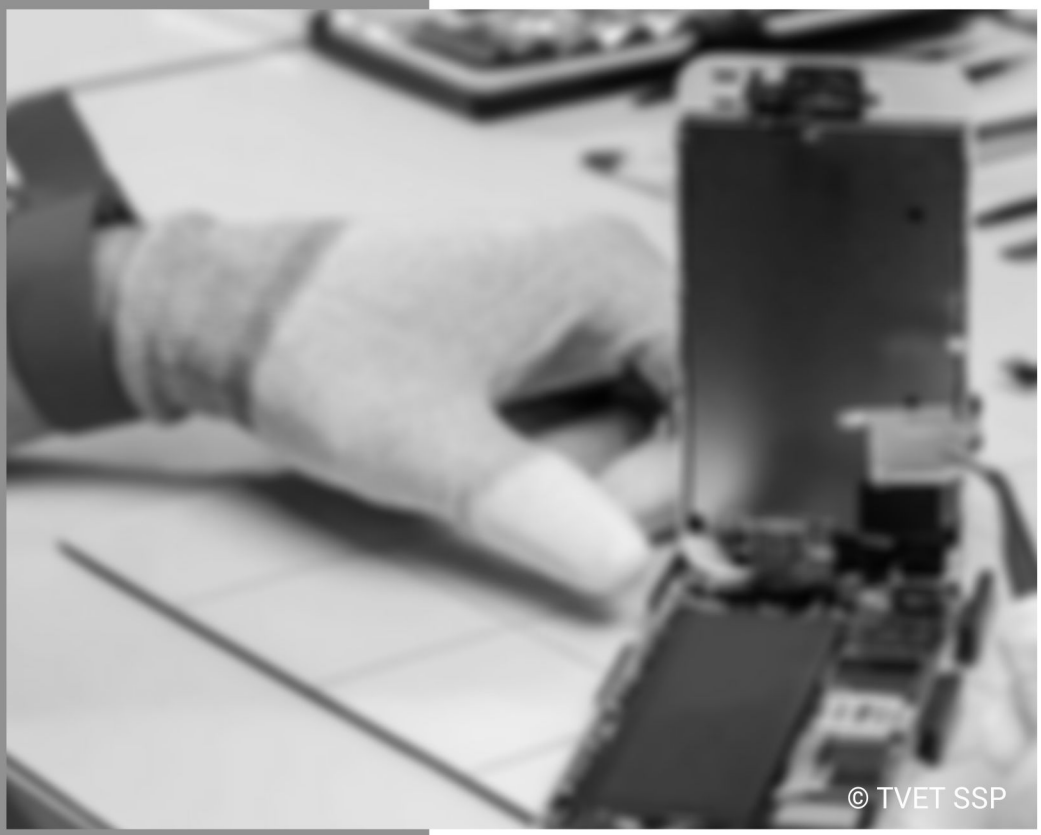
MOBILE PHONE TECHNICIAN



Module-G

LEARNER GUIDE

National Vocational Certificate Level 2

Version 1 - November, 2019

Module:G Develop basic communication Skill.

Objective: This module covers the skills and knowledge required to adopt effective Listening, Develop Nonverbal Communication, Develop verbal communication, Develop Confidence and Pick the Right Medium.

Duration: 100 Hours **Theory: 20 Hours** **Practice: 80 Hours**

Learning Unit	Learning Outcomes	Learning Elements	Materials Required
LU1. Adopt effective Listening	• Practice active listening**.** • Ask clarifying questions. • Listen and sympathize with other person.	'*Active listening*' means, as its name suggests, actively listening. That is fully concentrating on what is being said rather than just passively 'hearing' the message of the speaker. Active listening involves listening with all senses. As well as giving full attention to the speaker, it is important that the 'active listener' is also 'seen' to be listening - otherwise the speaker may conclude that what they are talking about is uninteresting to the listener. Interest can be conveyed to the speaker by using both verbal and non-verbal messages such as maintaining eye contact, nodding your head and smiling, agreeing by saying 'Yes' or simply 'Mmm hmm' to encourage them to continue. By providing this 'feedback' the person speaking will usually feel more at ease and therefore communicate more easily, openly and honestly. • Phrasing and **Clarity**. The phrasing	• Nil

		and **clarity** of words used in formulating a **question** greatly influences its effectiveness. An ambiguous **question** is one that is unclear to students and confounds their response • **Sympathy** is easier because you just have to feel sorry for **someone**. Send a **sympathy** card if **someone's** cat died; feel empathy if your cat died, too. Continue reading... The ability to feel **sympathy** for others is a great part of what make us human, and it's what compels us to reach out and offer help.	
LU2. Develop Nonverbal Communication	• Adopt hand gestures if required. • Encourage others to speak openly with you. • Make eye contact with communicator. • Make relaxed, open stance during communication. • Perform friendly tone during communication.	• **Gestures** are movements of the head, **hands**, arms and body that send a message – actions like pointing, waving and nodding. ... **Gestures** are an **important** way babies and young children deliberately communicate with caregivers to make themselves understood • **Eye contact** is a form of **body language** which is **important**	• Nil

		during **communication**. ... When you keep **eye contact** with the person you are talking to it indicates that you are focused and paying attention. It means that you are actually listening to what the person has to say Non-verbal communication is often described as 'body language'. Body language says a lot about our interest and engagement in the communication we're having. Even when we 'say the right things', the message can be lost if our body language suggests we're thinking something very different. • Merely using positive language in conversations (e.g., "thank you") only has a 7% impact on customers. To truly connect with your audience, you need to also incorporate positive tone of voice and body language. This is true for over the phone, in person, or inwriting	

LU3. Develop verbal communication	• Adopt face to face conversations • Convey your message clearly and directly. • Adopt phrases as simple as possible • Respect others and their ideas	• **Meaning** of **face-to-face conversation**. **Conversation means** the informal discussion among the people. When one person discusses his views, opinion to another person and exchanges their views in the presence of both then it is called **face to face conversation**. There are two reasons why you need to have a clear message about what you are offering: • You need it to connect with customers, investors, potential employees, the press, etc. and if you don't have a simple, compelling message, they won't bother to learn more. They won't take the time to learn about, and ultimately love and share your product. More so, if you don't steer how people think about your product, the market will make up its own version which may not match your vision. • Every touch point a customer or potential customer has with your product or company will shape their view of you. It's critical that each of those touch points send the same message. When you create a clear brand message it ensures your team is fully aligned.	• Nil

		This gets everyone moving in the same direction, telling the same story and creating consistent touch points for your customers. • Describe importance of individual respect and their ideas • Receiving **respect** from others is **important** because it helps us to feel safe and to express ourselves. ... **Respect** means that you accept somebody for who they are, even when they're different from you or you don't agree with them. **Respect** in **your** relationships builds feelings of trust, safety, and wellbeing.	
LU4. Develop Confidence	• Demonstrate confidence when you interact with others • Adopt firm communication but in friendly tone. • Demonstrate behavioural skills. • Develop sound interpersonal skills • Ensure understanding	• This is likely the most used term for these related concepts outside of psychological research, but there is still some confusion about what exactly self-confidence is. One of the most cited sources about self-confidence refers to it as simply believing in oneself (Bénabou&Tirole, 2002). Another popular article defines self-confidence as an individual's expectations of performance and self-	• Nil

		evaluations of abilities and prior performance (Lenney, 1977). • **Behavioral skills** often fall under the general heading of good character, friendliness, maturity, or common sense, and many people assume they come naturally as part of being good or smart—they don't. These are **skills** that must be learned and practiced. ... Many of these **behavioral skills** are social in nature. • **Interpersonal skills** include a wide variety of **skills**, though many are centredaround**communication**, such as listening, questioning and understanding body language. They also include the **skills** and attributes associated with emotional intelligence, or being able to understand and manage your own and others' emotions • noun. mental process of a person who comprehends; comprehension; personal interpretation: My **understanding** of the word does not agree with yours.	

LU5. Select the Right Medium	• Convey your message in few words. • Convey message through live phone calls. • Convey text message through cell phone. • Convey message through WhatsApp. • Convey message through email. • Convey message through writing.	• **Brevity** not only communicates the main idea faster, it also improves **message clarity**. Excess words and unnecessary phrases act as verbal clutter, a.k.a. noise. When communicating something **important** such as how to do a surgical procedure, or a strategic command for a military unit, you really need maximum **clarity**. • Dealing with customers on the phone in a call center is something that needs more personalizing today as customer expectations continue to go up. They want to connect closer with the companies they deal with since the services or products they buy make up the bulk of their everyday lives **Text messaging**, or **texting**, is the act of composing and sending electronic messages, typically consisting of alphabetic and numeric characters, between two or more users of mobile devices, desktops/laptops, or other type of compatible computer. Text messages may be sent over a cellular network, or may also be sent via an Internet	• Nil

		connection. The term originally referred to messages sent using the Short Message Service (SMS). It has grown beyond alphanumeric text to include multimedia messages (known as MMS) containing digital images, videos, and sound content, as well as ideograms known as emoji (happy faces, sad faces, and other icons).	

Examples and illustrations

https://www.youtube.com/watch?v=lwWj_SfDpzg

https://www.youtube.com/watch?v=lMkyWEm-SA0

Summary of the Modules:

Module Title and Aim	Learning Units	Timeframe of modules
Module D: Identify Incoming Quality **Aim:** The aim of this module is to develop basic knowledge, skills and understanding of basic mobile hardware. Students should know about the basic fault diagnosis techniques**.**	• **LU1:** Students should Define Incoming Quality Control. They should know about Types of mobile phones ,Types of display screens • **LU2:** Students should describe procedure for collection of information. nature of fault Contact information of customer cost estimation for rectification of fault • **LU3 :**Students should define batteryTypes of Batteries and fixing Techniques Knowledge of battery connectors and terminals • **LU4:** Types and specification of different chargers Know about testing techniques of charger. • **LU5:** Identification of tools and equipment Knowledge of DC power supply Describe checking procedure of charging base • **LU6:** Describe testing techniques of basic software fault. • **LU7:** Knowledge of standard operating Procedure (SOP) of the firm	60 hours

Module Title and Aim	Learning Units	Timeframe of modules
Module E: Diagnose fault in Power Section **Aim: it is** essential **to know about basic repairing techniques .this module equipped students with the knowledge and skills required for checking and fault diagnosis in ON/OFF switches/flex cable and connector. It also cover charging problems of mobile phone**	**LU1.** Disassemble Phone set **LU2.** Check supply Voltage **LU3.** Check ON, OFF Switch **LU4.** Check Charging Section LU5.Check power supply section	120 hours
Module F: Detect fault in Display Panel **Aim**: This module covers the skills and knowledge required to check display Glass, Check LCD Light Panel, Check Digitizer/soft keys, Check LCD Connector and Check display Strip of mobile phone.	**LU1:** Types of display glass protector. describe types of display glass describe removal procedure of glass from display **LU2:** Define LCD light panel **LU3:**Define Digitizer strips and connectors Types and uses of digitizers Knowledge of polarizer paper and soft keys **LU4:** Describe Types of display connectors **LU5.** Check display Strip	60 ours

Module Title and Aim	Learning Units	Timeframe of modules
Module G: Develop basic communication Skills. **Aims:** This module covers the skills and knowledge required to adopt effective Listening, Develop Nonverbal Communication, Develop verbal communication,. They know about importance of communication and face to face conversation. They know about modern mediums of communication and interaction with clients and customers	**LU1:** Student should know about importance of active listening. They should describe clarity of questioning More ever they are able to Explain importance of sympathizing a person **LU2:**Students should Explain importance of hand gestures They are able to describe importance of encouraging others to speak openly They must know about the importance of eye contact in communication They must know about the importance of open stance and relaxed communication **LU3:** Students should explain face to face conversation They must aware the importance of clarity in direct messaging **LU4:** Students should gain self confidence in interaction with others They should know about usefulness of firm communication in friendly tone **LU5:**Student should describe the importance of brevity in messaging They must know the importance of live phone calls They should aware the importance of text message through cell phone, WhatsApp, email and written form	

Frequently Asked Questions

1. What is Competency Based Training (CBT) and how is it different from currently offered trainings in institutes?	Competency-based training (CBT) is an approach to vocational education and training that places emphasis on what a person can do in the workplace as a result of completing a program of training. Compared to conventional programs, the competency based training is not primarily content based; it rather focuses on the competence requirement of the envisaged job role. The whole qualification refers to certain industry standard criterion and is modularized in nature rather than being course oriented.
2. What is the passing criterion for CBT certificate?	You shall be required to be declared “Competent” in the summative assessment to attain the certificate.
3. What are the entry requirements for this course?	The entry requirement for this course is 10 th Grade or equivalent.
4. How can I progress in my educational career after attaining this certificate?	You shall be eligible to take admission in the National Vocational Certificate Level-3 in Mobile phone technician program. You shall be able to progress further to National Vocational Certificate Level-4 in Mobile phone technician program; and take admission in a level-5, DAE or equivalent course. In certain case, you may be required to attain an equivalence certificate from The Inter Board Committee of Chairmen (IBCC).
5. If I have the experience and skills mentioned in the competency standards, do I still need to attend the course to attain this certificate?	You can opt to take part in the Recognition of Prior Learning (RPL) program by contacting the relevant training institute and getting assessed by providing the required evidences.
6. What is the entry requirement for Recognition of Prior Learning program (RPL)?	There is no general entry requirement. The institute shall assess you, identify your competence gaps and offer you courses to cover the gaps; after which you can take up the final assessment.
7. Is there any age restriction for entry in this course or Recognition of Prior Learning program (RPL)?	There are no age restrictions to enter this course or take up the Recognition of Prior Learning program
8. What is the duration of this course?	The duration of the course work is 6 Month. (11 months)
9. What are the class timings?	The classes are normally offered 25 days a month from 08:00am to 01:30pm. These

	may vary according to the practices of certain institutes.
10. What is equivalence of this certificate with other qualifications?	As per the national vocational qualifications framework, the level-4 certificate is equivalent to Matriculation. The equivalence certificate can be obtained from The Inter Board Committee of Chairmen (IBCC).
11. What is the importance of this certificate in National and International job market?	This certificate is based on the nationally standardized and notified competency standards by National Vocational and Technical Training Commission (NAVTTC). These standards are also recognized worldwide as all the standards are coded using international methodology and are accessible to the employers worldwide through NAVTTC website.
12. Which jobs can I get after attaining this certificate? Are there job for this certificate in public sector as well?	You shall be able to take up jobs in Mobile phone technician industries ,workshops and you can start business in Mobile phones in house or internationally.
13. What are possible career progressions in industry after attaining this certificate?	You shall be able to progress up to the level of supervisor after attaining sufficient experience, knowledge and skills during the job. Attaining additional relevant qualifications may aid your career advancement to even higher levels.
14. Is this certificate recognized by any competent authority in Pakistan?	This certificate is based on the nationally standardized and notified competency standards by National Vocational and Technical Training Commission (NAVTTC). The official certificates shall be awarded by the relevant certificate awarding body.
15. Is on-the-job training mandatory for this certificate? If yes, what is the duration of on-the-job training?	On-the-job training is not a requirement for final / summative assessment of this certificate. However, taking up on-the-job training after or during the course work may add your chances to get a job afterwards.
16. How much salary can I get on job after attaining this certificate?	The minimum wages announced by the Government of Pakistan in 2019 are PKR 17,500. This may vary in subsequent years and different regions of the country. Progressive employers may pay more than the mentioned amount.
17. Are there any alternative certificates which I can take up?	There are some short courses offered by some training institutes on this subject. Some institutes may still be offering conventional certificate courses in the field.
18. What is the teaching language of this course?	The leaching language of this course is Urdu and English.
19. Is it possible to switch to other	There are some short courses offered by some training institutes on this subject. Some

certificate programs during the course?	institutes may still be offering conventional certificate courses in the field.
20. What is the examination / assessment system in this program?	Competency based assessments are organized by training institutes during the course which serve the purpose of assessing the progress and preparedness of each student. Final / summative assessments are organized by the relevant qualification awarding bodies at the end of the certificate program. You shall be required to be declared "Competent" in the summative assessment to attain the certificate.
21. Does this certificate enable me to work as freelancer?	You can start your small business of stitching leather garments, gloves of other products. You may need additional skills on entrepreneurship to support your initiative.

Test Yourself (Multiple Choice Questions)

MODULE D

Please mark the correct one from the given options.

QNO1: Check the device's housing and buttons for

A. Cracks
C. scratch
B. Separation between the halves
D. All of them

QNO2: Check the device's display screen for

A. Cracks
C. Lines
B. Punctures
D. None of them

QNO3: Port Damage is check by checking

A. Bent pins or bent housing
C. Loose or wiggling ports
B. By inserting charger in charging port
D. All of them

QNO4: which fault is related to hardware fault

A. Booting Problems
C. Insert Sim Card
B. Test Mode
D. Call Divert to happen

QNO5:which of following is setting fault

A. Unable to send SMS

C. Some Applications not work

C. Camera Not work

D. Auto Restart

Module E

QNO6: power button provide_____ to CPU of mobile

A: current signal

B: enable signal

C: voltage signal

D:all of them

QNO7: BMS is stand for

A: battery main supply

B: buttery managements system

C:battery main section

D:all of them

QNO8:short circuit is normally checked by

A: multi meter

B: SMD tester

C: power supply

D:all of them

QNO9:charger voltage must be in range of_____

A: 5v to 7v

B: 1.5v to 3v

C: 2v to 8v

D: none of them

Module F

QNO10: in low brightness mode

A. battery provide low energy to phone

C. Leds are on with dim lights

B. power sections use low power

D. All of them

QNO11: LED means

A. light emitting devoice

C. Light dimming devoice

B. light emitting diode

D. Light engaging diode

QNO12: basic difference in LED and LCD is ?

A. source of energy

B Source of light

C. source of voltage

D Source of current

QNO13:boost coil is use in _____ section of mobile

A. network section

B. Audio section mobile

C. power section of mobile

D. Display section of mobile

QNO14: voltage range in display section is

A. 5v to 10v B. 15v to 30v

C. 30V to 50v D. None of them

Module

Q15:WHEN LISTNEING TO SOMEONE WHAT SHOULD YOU BE DOING?

A: SLOUCHING B:TALKING

C: PAYING ATTENTION D: all of them

AND ASKING QUESTIONS

QNO16: WHICH ONE OF THESE IS NOT A FORM OF VERBAL COMMUNCATION?

A: FACIAL EXPRESSIONS B:COMMUNICATING FACE TO FACE

C: TALKING OVER TELEPHONE D: all of them

QNO17:Which of the following is positive body language to use when speaking?

A: fold your arms B: cross your eggs

C: make in eye contact D: none of them

QNO18: The content of the communication is called:

A: a message B: noise

C:media richness D:jargon

Answers Key	
Number	Correct Answer
1	D
2	C
3	B
4	C
5	A

6	D
7	B
8	D
9	A
10	C
11	B
12	B
13	D
14	B
15	C
16	A
17	C
18	A

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