SECTOR - ELECTRONICS & HARDWARE JOB ROLE: Field Technican - Other Home Appliances QP CODE: ELE/Q3104 CLASS - IX				
Note - This syllabus has been reduced according to time. Total No of Topics - 12 Total No of Topics Deducted from four section - 6 % of (Total no of topics) = 15% (Total Duration in Hours = 100-12=89) 15% Reduction Of Sector as Follows - (Theory and Practicals need to drop out are highlighted in red color)				
Sl. No.	**List Of Units**	**List of Practicals Aligned With Each Unit**	**Unit/Session to be reduced(Theory and Practical)**	**Remark(Reason for dropping or reduce)**
UNIT 1:	**Basic Electricity and Electronics**			
SESSION 1	• Fundamentals and origin of electricity, • Voltage, current, resistance, power, • Concept of electrical earthing, • Steps to do electrical earthing • Basics of ac and dc, • Difference between ac & dc, • Series and parallel connections, • Open circuit and closed circuit, • Ohms law, Kirchhoff law	• Draw electrical diagram of electrical connections, • Identify the symbols of voltage, current, resistance, power from circuit diagram, • Draw the circuit showing voltage, current, resistance, power, • Identify the Live, Neutral and Earth on power socket, • Prepare the circuit to glow the lamp, • Construct a test lamp and use it to mains, • Build the series and parallel connections of resistors and calculate the resistance, • Verify ohm's law in the given electrical circuit.	**• Energy consumption of appliances.**	Theory= 14 Hours, Practical = 25 Hours For study in upper level.

SESSION 2	• Basic electronic components – resistor, capacitor, inductor, transformer, diode, transistor, LED, ICs • Resistor – definition, types, construction & specific use, color-coding, power rating, • Capacitor – specifications and applications, • Inductors – specifications and applications, • Transformer – Working principle, Specifications • Diode – Definition, construction, specific use, • Transistor – Definition, construction, specific use, • LED – Definition, construction, specific use, • IC – Definition, construction, specific use.	• Identify and name the various electronic components. • Identify the different types of resistors, • Measure the resistor values using colour code and verify it by measuring using multi- meter • Identify different inductors and list its parameters, • Identify different capacitors and list its parameters, • Identify different parts of transformers, • Identify different types of transformer, • Identify the primary and secondary winding of transformer, • Measure the primary and secondary voltage of step down transformer used in power supply.		No reduction in this lession
SESSION 3	• General tools – screw driver, pliers, wire stripper, wire cutter, phase tester, Pipe wrench, wire lugs, drill machine and drill bits. • Multi-meter, • Clamp meter, • TDS meter, • Soldering iron and wire, • Soldering and desoldering,	• Identify and name the various tools and its parts, • Use the general tools for given task, • Use multi-meter to measure the various electrical quantity for the given task, • Demonstrate the soldering and desoldering techniques, • Identify P and N terminal of diode, • Identify the PNP and NPN transistor using multi-meter, • Measure the current using clamp meter.		No reduction in this lession
unit 2:	**Installation of Water purifier**			

SESSION 1	• Installation requirements (structural requirements, plumbing etc.), • Water flow diagram and electrical circuit diagram of the appliance, • Water purification process and different layers of filter present within the unit, • Different technologies in water purification, • Different features and functionalities of various models of water purifier.	• Identify the place for installation of water purifier, • List the structural requirements for installation of water purifier, • Carry out pre-installations/ masonry/electrical work for of adequate water pressure at the inlet source, • Make necessary markings for placement of the water purifier unit. • Demonstrate the complete process of site inspection and preparation.		Theory= 06 Hours, Practical = 14 Hours
SESSION 2	• Unpacking process, • Safety precautions to be taken while installing.	• Demonstrate to remove the packaging of water purifier, • Check the product specifications and other supporting accessories, • Arrange tools and fitments required for the installation,	disposal procedures • Other products of the company, • Dispose the packaging material waste as per norms	It is not necessory now to study manage packaging weste material for EH trade.
SESSION 3	• Manual-based procedure of installing water purifier, • Fixing procedure of water purifier.	• Check the pre-installation requirements are met, • Make measurements and drill holes without damage internal wiring, • Demonstrate to fix the water purifier as per the standard procedure – mount the filter and fasten the screws, Drain the inlet line, Connect the outlet pipe to the drain, Connect the purifier to the power supply point.	• Tools required for fixing the water purifier,	This topic has been reduced due to short time.
SESSION 4	• Check water purifier's functioning after fixing Post fixing check up process, • Functioning of water purifier, • Precautions and regular maintenance procedures.	• Check the filter is aligned as per instructions in the installation manual, • Demonstrate to check the functioning of water purifier as per the desired standard, • Demonstrate regular maintenance procedures to be followed while using water purifier.		No reduction in this lession

SESSION 5	Complete the documentation		Documentation process of installation of water purifier • Customer acknowledgment form, • Call center number. • Fill in the customer acknowledgment form, • Complete documentation process of installation, • Call customer care and inform about job completed.	Not important for this class.
UNIT 3:	**pair and Maintenance of Water purifier**			
SESSION 8	• Customer interaction, • Symptoms related to common faults, • Parameters such as production rate, water chemistry, drain rate, input water pressure/ temperature etc.	• Diagnose the fault based on customer interaction and initial inspection, • Check the water pressure as per company standards, • Carry out basic inspection of feed water valve, tank valve, tubing, housing etc. • Separate and inspect every part of the unit if the fault is not identified through basic inspection,		Theory= 07 Hours, Practical = 13 Hours No reduction in this lession
SESSION 9	• Components of water purifier – valves or wearing out of membrane or filter • Troubleshooting knowledge with respect to water purifier • Reassembly process.	• Dismantle the water purifier, • Demonstrate to replace the damaged components – valves or wearing out of membrane or filter, • Demonstrate to remove and replace the faulty module with a functional one, • Demonstrate to reassemble the water purifier.	• Frequently occurring faults such as low/no water production, leaks, bad tasting water etc.	Not important for this class.
SESSION 10	• Testing process of water purifier for proper functioning, • Cleaning procedures and other best practices,	• Check the functioning of all the units after reassembly, • Demonstrate to test the functionality of the unit, • Demonstrate the cleaning procedures and other best practices,	• Customer feedback procedure. • Record the customer feedback.	This topic has been reduced due to short time.
UNIT 4:	**Maintain Health and Safety**			

SESSION 11	• Exposure to hazardous substances, • Work related accident, • Possible errors during cleaning the filters. • Electric shock and its cause, • Environmental factors : annoying noise, water splashing, odours, high humidity, etc.	• List the safety precautions to be observed while installing, repair and maintenance, • List the safety rules, policies and procedures, • Demonstrate the packaging waste and its disposal, • List the hazards during repairs, • Use the tools and materials properly to avoid hazard.		Theory= 05 Hours, Practical = 05 Hours No reduction in this lession