GOVERNMENT OF TAMILNADU

DIRECTORATE OF TECHNICAL EDUCATION, CHENNAI-25

STATE PROJECT COORDINATION UNIT

(Established under Canada India Institutional Cooperation Project)

CURRICULUM

Course Name	**REPAIR AND MAINTENANCE OF ELECTRICAL DOMESTIC APPLIANCES**
Course Code	**EE/2020/002**
Course Duration	50 Hours
Minimum Eligibility Criteria and	8th/10th/+2 /ITI/Diploma/Graduates
Pre-requisites (if any)	-
Course Objectives	Training module has been designed for the participants to • Understand the basics of Electricity and Earthing • Understand the functions of parts of Electrical Domestic Appliances. • Provide the Repair and Maintenance procedure of appliances • Practice the standard troubleshooting procedures as suggested in the product manuals
Course Outcomes	At the end of training, the trainees will be able to • Explain the parts of domestic appliances • Repair and Maintenance of Electrical Domestic appliances. • Identify parts/components, front panel controls, install, service, troubleshoot and repair of domestic electrical appliances.
Expected Job Roles	Domestic Appliances Service Technician

TEACHING AND SCHEME OF EXAMINATION						
Course Code	Course Name	Hours		Assessment Marks		Duration of Examination
				Min	Max	
EE/2020/002	REPAIR AND MAINTENANCE OF ELECTRICAL DOMESTICAPPLIANCES	Theory	20	10	20	3 Hours
		Practical	30	40	80	
		Total	50	50	100	

EE/2020/002- REPAIR AND MAINTENANCE OF ELECTRICAL DOMESTIC APPLIANCES

DETAILED SYLLABUS

Unit No	Modules	No.of.Hours	
		Theory	Practical
I	**Introduction To Electricity:**	**20 Hours**	
1.1	Fundamentals of Electricity - Serial and Parallel Circuit	15	05
1.2	Electric shock – Uses of Fuse and MCBs		
1.3	Necessity of Earthing - Testing of Earth Leakage Circuit Breaker		
1.4	**Practical:**Testing of Relays - Active and Passive Components		
1.5	**Practical:**Handling of Multimeter		
1.6	Identification, types and application of Semiconducting Devices such as Diodes		
1.7	**Practical:**Transistors - Soldering and De-soldering techniques		
1.8	**Practical:**Zero defect soldering - handling of De-soldering pump		
1.9	Temperature controlled soldering station		
1.10	Tools and Equipments required for repairing and Maintenance of domestic appliances works		
II	**Fault Identification, Repair And Maintenance:**	**30 Hours**	
2.1	Main parts of appliances and their functionalities	05	25
2.2	Identify the problem based on customer's information		
2.3	**Practical:**Testing & identification of the faulty block on the basis of symptom, rectifying common faults by replacing the damage components		
2.4	Testing of the damage block after repair		
2.5	**Practical:**Step by step re-assembly of following appliances :Iron Box – Water Heater – Kettle – Ceiling Fan - Table Fan – Emergency Lamp – Wet Grinder – Mixer Grinder – Water purifier - Washing machine – Microwave oven – Air Cooler – Induction stove		
	Total Theory and Practical Hours	**20**	**30**
	Total hours	**50**	

HARDWARE REQUIREMENT

S.NO	LIST OF TOOLS /EQUIPMENTS
1	Iron Box, Kettle, Water Heater
2	Mixi, Grinder, Ceiling Fan and Table Fan
3	Water purifier, Washing machine
4	Microwave oven, Air Cooler, Induction stove

SOFTWARE REQUIREMENT

NIL

REFERENCE BOOKS

S.NO	NAME OF THE BOOK	AUTHOR	PUBLISHER
1	Electrical Appliances: The Complete Guide to the Maintenance and Repair of Domestic Electrical Appliances	Graham Dixon	Haynes, 1995
2	Troubleshooting and Repairing Major Appliances	Eric Kleinert	McGraw Hill Professional, 1995
3	Electric Appliance Repair and Servicing: Trouble Shooting, Adjustment, Repair, and Maintenance of Household Appliances	Harold Phillips Manly	F. J. Drake, 1955

ASSESSMENT AND CERTIFICATION

S.No	Criteria for assessment
1.	A trainee will be assessed based on the performance in End Examination for Theory and Practical conducted internally in the CIICP Project Polytechnic College for a duration of 3 hours
2.	A trainee must have 75% of attendance to appear for End examination in Theory and Practical.
3.	The assessment for theory part will be based on the marks scored in the end examination on the knowledge bank of questions (1 word/objective type questions)
4.	The assessment for practical part will be based on the marks scored in the end examination conducted by the CIICP Project Polytechnic and assessed by the Examiners approved by Strategic Plan Implementation Committee (SPIC) of the project polytechnic.
5.	The passing criteria for successful completion of training is every trainee should score 50% of marks in theory and practical examination.
6.	On successful completion of training, Certificate will be issued to the participants by the Directorate of Technical Education through the Project Polytechnics.

END EXAMINATION

ALLOCATION OF MARKS

S.NO	Description	Max. Marks
1.	Theory Examination	20
2.	Practical Examination	
	a)Objective and Circuit Diagram	20
	b)Procedure and Connections / Execution	20
	c)Result and Viva	20
	d) Record	20
	Total Marks	**100**

THEORY MODEL QUESTION PAPER

EE/2020/002- REPAIR AND MAINTENANCE OF ELECTRICAL DOMESTIC APPLIANCES

(Maximum Marks: 20)

(N.B: Answer Any Twenty Questions) **(20 X 1 = 20 Marks)**

1. How the capacity of AC ceiling fan is expressed?
2. What is the advantage of electronic fan regulator?
3. Which type of motor used in table fan?
4. Which type of motor used in food mixer?
5. What is the difference between conventional oven and microwave oven?
6. What are the common problems occurred in RO water Purifier?
7. What is the advantage of air cooler compared to air conditioning?
8. What is Electric shock?
9. Write the Expansion of ELCB.
10. What is the use of Relay?
11. What is the use of Mutimeter ?
12. Write the material used for soldering.
13. What are type of electric iron?
14. What is the use of thermostat in electric iron?
15. What is geyser?
16. What is the necessity of earthing?
17. Write the two examples of passive components.
18. What are the two types of electric kettle?
19. Which range of capacitor used in ceiling fan?
20. What are the causes of wet grinder motor is noisy?
21. What are the causes of food mixer runs but becomes hot?
22. What are the causes of oven does not go into cook cycle when cook switch is activated?
23. What are the causes of jamming in ceiling fan?
24. How to find discontinuity in wire using multimeter?
25. What is the application of clamp meter?