

Department of Physics and Electronics

CERTIFICATE COURSE

“Electrical Home Appliances”

2023-2024

DEPARTMENTAL MINUTES

(ACADEMIC YEAR 2023-2024)

The faculty members of the Physics & Electronics Department met in the Principal's chamber to discuss to conduct a Certificate Course in Physics, titled "Electrical Home Appliances" under the chairmanship of the Principal and the faculty of the department on 16/06/23


AGENDA:

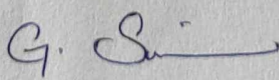
Starting of certificate course for II nd B.Sc (Physics and Electronics) Students.

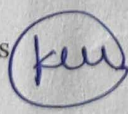
RESOLUTIONS:

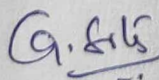
- 1) It is resolved to start the certificate course titled "Electrical Home Appliances" from 23/06/23 to 12/07/23 (30 hours) for the academic year 2023-2024.
- 2) It is also resolved to frame the syllabus, regulations for the successful completion of the Certificate course titled "Electrical Home Appliances".
- 3) Resolved to Enroll 30 Students to this course.
- 4) Resolved to conduct classes daily from 1:00 to 1:30 pm and 5:00 to 6:00 Pm
- 5) Resolved to conduct exam after completion of the course and issue certificates to qualified candidates.
- 6) Qualifying Marks is 40%.

Members Present:

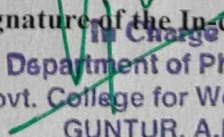
1. Dr M Manjula Bharathi, Lecturer in Physics 

2. G Sirisha, Lecturer in Physics 

3. K Nikitha , Lecturer in Physics 

4. G Sita 

5. M Srikanth


Signature of the In-charge
Department of Physics
Govt. College for Women (A)
GUNTUR. A.P.

From
The In-Charge
Department of Physics & Electronics
Government College for Women (A),

To
The Principal,
Government College for Women (A),
GUNTUR

Respected Madam,

Sub: Regarding to start certificate course on "~~Intra to Physics~~" 'Electrical Home Appliances'

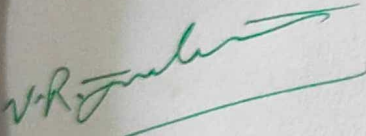
It is to submit for your consideration that we are going to conduct subject related certificate course namely "Electrical Home appliances" for the benefit student in our department. The course duration should be 30 hours. We are going to start this course in the academic year 2023-2024 i.e. from 23.06.2023 to 12.07.2023. Hence, I request you to permit us for the establishment of the above course.

Thanking you Sir,

Yours sincerely,


(D. V. Jaye Sri)
In Charge

22/6/23
Department of Physics
Govt. College for Women (A)
GUNTUR. A.P.


PRINCIPAL
SKBR Govt. Degree College
MACHERLA.

Government College for Women (A) GUNTUR

DEPARTMENT OF PHYSICS & ELECTRONICS

Name of the certificate course: "Electrical Home appliances"

INTRODUCTION:

Electrical home appliances in Physics involves a deep understanding of fundamentals principles such as electricity, Magnetism, electromagnetic induction, energy conversion, thermo-dynamics and heat transfer. These principles collectively enable the development, functioning and safe operation of diverse range of electrical appliances that become integral to modern homes.

OBJECTIVE OF THE COURSE:

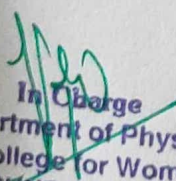
The objective of this certificate course in "**Electrical home appliances**" is to provide participants with a practical and theoretical foundation in the field of household appliances, enabling them to confidently operate, maintain, and troubleshoot various electrical devices while prioritizing safety and energy efficiency.

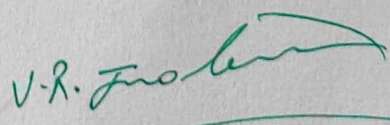
COURSE DURATION: 30 Hours (1 hour Theory and 1:30 hour Practical daily)

LEVEL: UG

COURSE TYPE: Scheduled

CERTIFICATION: Certification will be given on the Continuous Comprehensive and practical evaluation of student performance in the learning activities.

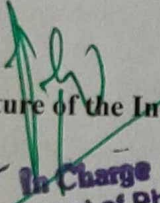

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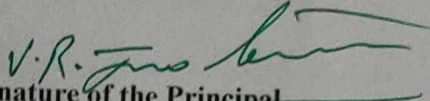
Circular

All the students are hereby informed that the Department of Physics & Electronics is going to organize a 30 hours practical related Add on course / Certificate course namely "Electrical Home appliances" for IInd B.Sc Students to complement their knowledge and skills in the subject. All the interested students are instructed to enroll their names with K. Nikitha, Lecturer in Physics, Department of Physics and obtain the syllabus on or before 20-06-2023. The classes will be commenced from 23-06-2023.

Signature of the In-charge

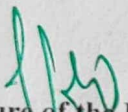

In Charge
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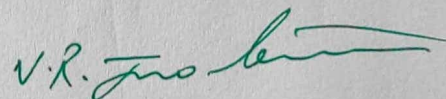
Signature of the Principal


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REPORT

As a part of academic activity, the department of Physics & Electronics has conducted certificate course, namely "Electrical Home appliances" from 23-06-2023 to 12-07-2023 for the academic year 2023-2024. The important objective of the course is to improve basic knowledge in repairing of Home appliances among the Degree students. As per the instructions given by the Principal during the minutes of the meeting, 33 numbers of both Physics and Electronics students are enrolled into the certificate course for IInd B.Sc. To enrich the Basics in repairing of Home appliances, Resource person from faculty of ITI Technical College, GUNTUR, have engaged classes for 30 hours and dealt the root level concepts of the subject. At the end of the course, an external examination with multiple choice questions along with Practical exam has conducted for the assessment of learners understanding levels of knowledge. The minimum qualifying marks for the award of certification is 40%. All the Students completed the course successfully and got certificates during the academic year 2023-2024.


Signature of the In-charge
In Charge
Department of Physics
Govt. College for Women (A)
GUNTUR. A.P.


Signature of the Principal
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GOVERNMENT COLLEGE FOR WOMEN (A) GUNTUR

Certificate course: Electrical Home Appliances

COURSE FEED BACK FORM

Student name:

Group/course:

Hall ticket no:

Design of course:

1. Is the objectives of the course was clear. Y/N
2. The 30 days period of the course is sufficient . Y/N
3. Is this course useful for entrepreneur. Y/N
4. Is this course helped to develop your skill . Y/N
5. The contents of the course is ,
(1) too theoretical (2) too practical
6. The course exposed you to new knowledge and practices.
(1) strongly agree (2) strongly disagree
7. The level of course was.
(1) too low (2) too high
8. The contents were illustrated with
(1) few examples (2) adequate examples
9. Is the lecture sequence was well planned
(1) strongly agree (2) strongly disagree
10. Will you recommend this course to your friends
(1) very strongly (2) Not at all

Conduct of course and resource person:

11. The lectures were clear and easy to understand
(1) strongly agree (2) strongly disagree

GOVERNMENT COLLEGE FOR WOMEN (A) GUNTUR

Certificate course: Electrical Home Appliances

COURSE FEED BACK FORM

Student name: N. vijayakumari

Group/course: II B-sc (M.E.CS) A-6

Hall ticket no: 21305023

Design of course:

1. Is the objectives of the course was clear.
2. The 30 days period of the course is sufficient .
3. Is this course useful for entrepreneur.
4. Is this course helped to develop your skill .
5. The contents of the course is ,

(1) too theoretical (2) too practical

6. The course exposed you to new knowledge and practices.

(1) strongly agree (2) strongly disagree

7. The level of course was.

(1) too low (2) too high

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9. Is the lecture sequence was well planned ✓

(1) strongly agree (2) strongly disagree

10. Will you recommend this course to your friends

(1) very strongly (2) Not at all

Conduct of course and resource person:

11. The lectures were clear and easy to understand

(1) strongly agree (2) strongly disagree

Y/N
 Y/N
 Y/N
 Y/N

GOVERNMENT COLLEGE FOR WOMEN (A) GUNTUR

Certificate course: Electrical Home Appliances

COURSE FEED BACK FORM

Student name: N. vjayakumari

Group/course: II B-sc [M.E.(CS)] AG

Hall ticket no: 21305023

Design of course:

1. Is the objectives of the course was clear. Y/N
2. The 30 days period of the course is sufficient. Y/N
3. Is this course useful for entrepreneur. Y/N
4. Is this course helped to develop your skill. Y/N
5. The contents of the course is ,
(1) too theoretical (2) too practical
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Conduct of course and resource person:

11. The lectures were clear and easy to understand
 (1) strongly agree (2) strongly disagree

Service and repair of electric iron, electric kettle, cooking range and geyser

- Objectives: At the end of this exercise you shall be able to
- connect and test the given automatic iron for its working
 - dismantle the automatic iron and reassemble it
 - trace and identify (or) locate the faults in an automatic iron
 - replace the faulty parts with good one
 - test the electric kettle element and identify the defect
 - replace the old element with a new one
 - assemble the kettle and test for its working
 - dismantle the suspected parts of the cooking range
 - test the continuity of heating element
 - replace the burn out heating element and worn out selector switch
 - reassemble, connect and test the cooking range
 - test the line cord for continuity
 - dismantle a geyser
 - trace identify and locate faults in a geyser
 - replace faulty parts with good ones
 - assemble the geyser and test for its working.

Requirements

Tools/Instruments

- Screwdriver 150mm - 1 No.
- Spanner set 6 to 22mm (6 Nos) - 1 Set
- Megger 500 V - 1 No.
- Multimeter - 1 No.
- Electrician tool kit - 1 Set
- Cutting plier 150mm - 1 No.
- Tester 500 V - 1 No.
- Nose plier 150 mm - 1 No.

Equipment/Machines

- Automatic electric iron box 750W 250 V - 1 No.
- kettle (sauce pan type) 500W/ 250V - 1 No.
- Electric cooking range 1500W/250 V - 1 No.
- Geyser 1500W 250V 25 liters - 1 No.
- Megger 500 V - 1 No.

Materials

- Kettle Element 500W/250V - 1 No.
- Asbestos sheet and fibre washers - as reqd.
- Test lamp 100W/240V - 1 No.
- Element suitable for available Cooking range 1500W, 250V - 1 No.
- Geyser heating element 1500W, 240V - 1 No.
- Geyser thermostat - 1 No.
- 3- core flexible cord (48/0.2 with 15A, 3 pin plug) - 1 No.
- Insulating material such as asbestos and mica sheets Suitable for electric Iron - as reqd.

TASK 1 : Service and repair of electric iron

- 1 Conduct a visual examination of the power cord and plug, after interpreting the name plate details
- 2 Conduct preliminary test for
 - short circuit, continuity & insulation
 - earth fault
 - defective element circuit
- 3 Replace the cord, if necessary
- 4 Check for the insulation resistance between line terminal of the iron and the body of the iron (Fig 1) and record in Table 1.

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15/3/23

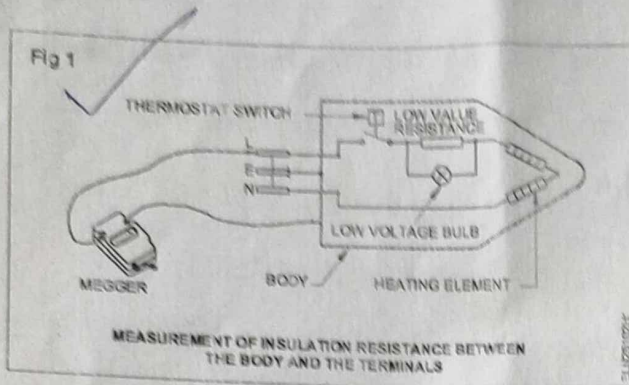


Table - 1

Terminals	Value in Megohms
L & Body	
N & Body	
E & Body	
Plug pin L & Body	
Plug pin N & Body	
Plug pin E & Body	

Disconnect the indicator bulb if any before the short, open and IR test.

Always disconnect the iron from supply while testing with insulation tester / Megger.

- 5 Check for insulation resistance between the neutral terminal and earth.
- 6 Connect the electric iron to the mains and check for its working
- 7 Check the presence of dangerous voltage existing between the body and earth of the supply with a neon tester or voltmeter.

In case of earth fault

- 8 Disconnect the electric iron from the supply, dismantle it. Visually inspect and test with a multi-meter/megger for any contact of live wire with the body

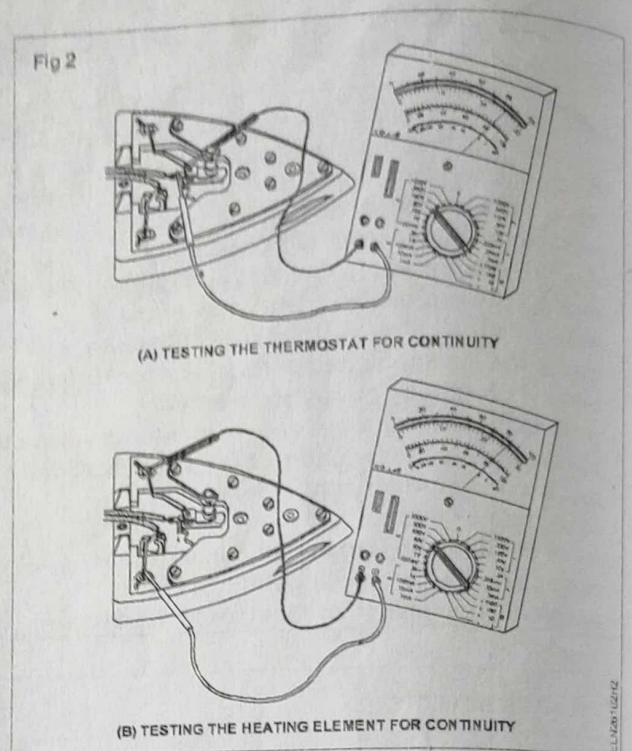
- insulation failure
- broken parts
- damaged thermostat/actuating leaf porcelain
- switch actuator.
- Check for continuity of thermostat and heating element.

- 9 Rectify the fault by replacing the defective part (element, thermostat etc.) Fig 2 (A & B).

In case of open in element circuit

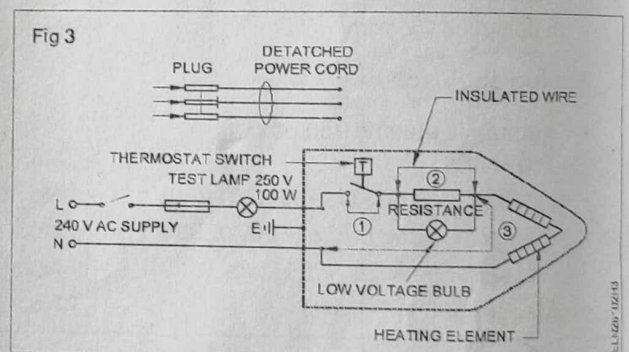
- 10 Remove the cover to check the thermostat, indicator bulb circuit and element

- Connect the series test lamp to the element circuit shorting the contacts of the thermostat indicated



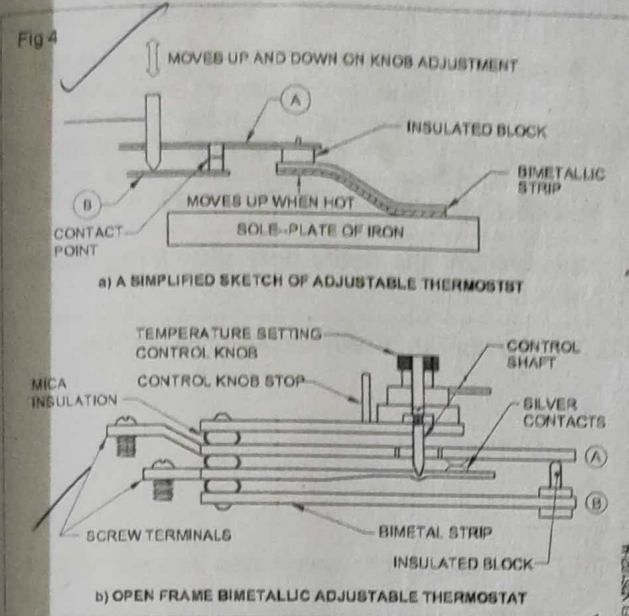
by 1 in Fig 3. If the test lamp glows the thermostat is defective.

- Connect the terminals of the indicating bulb by a piece of insulating wire, shown by 2 in Fig 3. If the test lamp glows the trouble is in this section.
- Short the terminals of the element shown by 3 in Fig 3. If the lamp glows the element is open. Replace the element.



Failure of temperature setting controller

- 11 Check the adjusting knob for proper fixing and actuation of shaft. (Fig 4)
- 12 Open the contacts of the thermostat and inspect them visually.
- 13 Clean the pitted or burnt out contacts.
- 14 Check for the actuating mechanism. (Heat the thermostat by a suitable external heating device.)
- 15 Assemble the iron and test for good working.



TASK 2 : Service and repair of a Kettle

- Record the name-plate details of the appliance.

Name-plate Details

- Disconnect the power cord and check the power cord for continuity of the cable, soundness of the terminal connection and insulation resistance between the line, neutral and earth terminals.

If found defective, either repair or replace the power cord.

- Check the continuity of the kettle heating element either by using a test lamp or a Megger without opening the kettle.

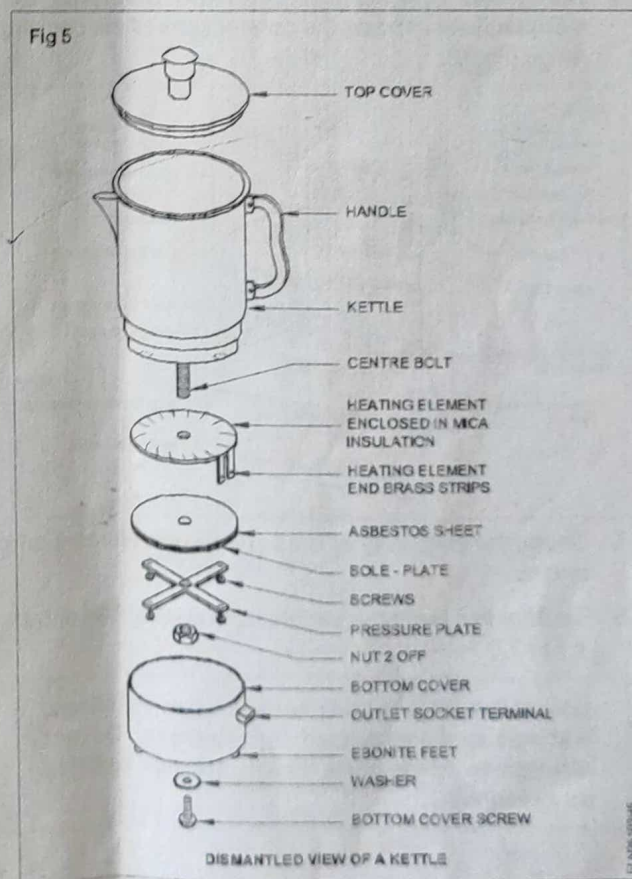
If there is no continuity, the element is assumed to be open and it has to be replaced

- Check the insulation resistance between the appliance socket terminals and the body of the kettle.

If the insulation resistance is less than one Megohm, the kettle element needs to be replaced.

- Read the assembly diagram in the instruction book of the kettle and dismantle the parts in the sequence recommended by the manufacturer.

- In the absence of the manufacturer's recommended sequence diagram of the assembly, the following parts may be removed observing the correct procedure as shown in the exploded Fig 5.



- Bottom cover
- Pressure plate
- Sole-plate with asbestos insulation
- Element

Name:- Amasthaluri Shiny

Class:- II B.Sc

Section:- M.P.E (A9)

Roll No:- 21309001

19
20

1. Which material is used to make heating element?

- A) silver B) copper C) nichrome D) aluminum

2. Which type of A.C single phase motor is used in food mixer?

- A) Universal motor B) repulsion motor C) capacitor motor D) Shaded pole motor

3. What is the function of neutral path in AC supply system for appliances?

- A) Provides current return path B) Provides voltage constant
 C) Provides voltage different D) none of the above

4. Which type of motor is used in the wet grinder?

- A) universal motor B) repulsion motor C) capacitor start motor D) 3 Phase motor

5. Which device converts sunlight into electrical energy?

- A) Photo voltaic cell B) Liquid crystal diode
C) Light emitting diode D) Light dependent resistor

6. Which device converts sunlight into electrical energy?

- A) Photo voltaic cell B) Liquid crystal diode C) Light emitting diode D) Light dependent resistor

7. Which material is used as a filament in incandescent lamp?

- A) Nichrome B) Tungstone C) copper D) Aluminium

8. Which instrument is used to find phase supply is available or not by the electrician

- A) neon tester B) screw driver C) cutting pliers D) none othe above

9. Which one is the good conductor of electricity

- A) copper B) silver C) iron D) gold

10. Which instrument is used to find continuity of the conductor?

- A) tester B) continuity tester C) earth tester D) megger

S.No	Name of the Student	24/6/23	26/6/23	27/6/23	28/6/23	30/6/23	1/7/23	3/7/23	4/7/23	5/7/23	6/7/23	7/7/23	10/7/23	11/7/23	12/7/23	13/7/23	14/7/23
19.	V. Seavani	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
20.	N. Manesha	a	a	X	X	X	X	X	X	X	X	X	X	X	X	X	X
21.	P. Pallavi	a	a	a	X	X	X	X	X	X	X	X	X	X	X	X	X
22.	M. Pragathi	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
23.	K. Syamala	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
24.	A. Deepthi Sri	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
25.	SK. Shahena	a	a	X	X	X	X	X	a	a	a	X	X	X	X	X	X
26.	G. Anusha	X	X	X	X	X	X	X	X	X	X	X	a	X	X	X	X
27.	M. Lokeswari	a	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
28.	M. Beer Bhargavi	a	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
29.	S. Parani	a	X	a	a	X	X	X	X	X	X	X	X	X	X	X	X
30.	S. Sudha Rani	a	X	X	X	X	X	X	X	X	X	X	a	a	X	a	X
31.	G. Naga Malleswari	a	X	X	X	X	X	X	a	X	X	X	X	X	X	X	X
32.	A. Shiny	a	a	a	a	X	X	X	a	X	X	X	X	X	X	X	X
33.	P. Parvitra	a	a	a	a	X	X	X	a	X	a	a	a	a	a	a	X
34.	B. Lakshmi	a	a	X	X	X	X	X	a	X	a	X	X	X	X	X	X

RESUME

ANIL KUMAR A

E-mail Id: anilarchan01@gmail.com

Contact No: +91 9491383201, 7013349935

Career Objective:

To attain a challenging position in the area of Electrical where my experience & enthusiasm are put to test and my abilities to interact, Logical skills are proven to be truth.

Educational Qualification:

- 1 M-TECH in **Power systems** from **chebrolu engineering college , chebrolu. Guntur**
- 2 B. Tech in **Electrical & Electronics Engineering** from **LORDS COLLEGE OF ENGINEERING AND TECHNOLOGY, JNTU Hyderabad, A.P.** Completed in 2009. (62.63 %)
- 3 Diploma in **Electrical & Electronics Engineering** from **LOYOLA POLYTECHNIC (YSRR) Pulivendla, A.P.** Completed in 2006. (81.12 %)

Experience:

I have 8 years of experience in both teaching and practical's in **DON BOSCO I.T.I** as a **Electrician Instructor**

Software Exposer:

Operating Systems : Windows ME, XP, 2003, 2008
Packages : MS- Office

Personal Skills:

- 1 Knowledge on computer Technology
- 2 I am a quick learner who has a confident approach to work & life.
- 3 I am very efficient and flexible.
- 4 Good leadership qualities and highly self-motivated and confident.

Personal Details:

Name : A. Anil Kumar
Date of Birth : 24th June 1984
Father's Name : A. Shourl raju
Residential Address : Dno:136-5-140,Anjaneya colony 1st line
Reddypalem, Guntur Dt. (A.P)
E-Mail : anilarchan01@gmail.com
Language Known : English, Telugu and Hindi.
Nationality : India
Gender : Male.
Marital Status : Married.

Declaration:

I hereby declare that the information furnished above is true to the best of my knowledge.

Place: Guntur

Date:

A. Anil Kumar
(A.ANIL KUMAR)

List of Experiments:

1. Basic electrical practice and safety
2. House wiring practice
3. Staircase wiring
4. Iron box
5. Immersion rod(water heater)
6. Electric kettle
7. Food mixer(mixey)
8. Wet grinder
9. Ceiling fan

10. Bridge rectifier

11. Earthing

12. Geysers

Government College for Women (A) GUNTUR
Department of Physics & Electronics
Certificate Course-Electrical Home Appliances
Duration -23/06/2023 to 12/07/2023 (30 Hours)

S.No.	Regd. No.	Name of the Student	Course	Marks awarded for 20 Marks
1.	21309001	A Shiny	B.Sc (MPE)	19
2.	21309003	B Lakshmi	B.Sc (MPE)	17
3.	21309005	G Naga Malleswari	B.Sc (MPE)	17
4.	21309007	M Bhargavi	B.Sc (MPE)	18
5.	21309008	M Lokeswari	B.Sc (MPE)	16
6.	21309010	N Maneesha	B.Sc (MPE)	17
7.	21309011	P Pavithra	B.Sc (MPE)	15
8.	21309012	P Naga Pallavi	B.Sc (MPE)	17
9.	21309013	S Pavani	B.Sc (MPE)	16
10.	21309014	S Sudha Rani	B.Sc (MPE)	17
11.	21305001	A Sandhya	B.Sc (MECs)	14
12.	21305002	A Pravallika	B.Sc (MECs)	16
13.	21305003	A Deepthi sri	B.Sc (MECs)	16
14.	21305004	B Sheha	B.Sc (MECs)	16
15.	21305005	CH Suneetha	B.Sc (MECs)	14
16.	21305007	D SriHarshitha	B.Sc (MECs)	19
17.	21305010	E Supriya	B.Sc (MECs)	17
18.	21305013	G Anusha	B.Sc (MECs)	15
19.	21305016	K Sirisha	B.Sc (MECs)	16
20.	21305017	K Syamala	B.Sc (MECs)	14
21.	21305021	M Pragathi	B.Sc (MECs)	18
22.	21305029	P Sangeetha	B.Sc (MECs)	17
23.	21305032	Sk Baji moon	B.Sc (MECs)	17
24.	21305037	Sk Sajida	B.Sc (MECs)	13
25.	21305039	Sk Shaheena	B.Sc (MECs)	15
26.	21305040	S Navya Sri	B.Sc (MECs)	14
27.	21305045	V Sravani	B.Sc (MECs)	16
28.	21305046	V Jagadeswari	B.Sc (MECs)	13
29.	21305047	V Nagalakshmi	B.Sc (MECs)	16
30.	21305048	V Ribka	B.Sc (MECs)	14
31.	21305049	Y Vinuthi	B.Sc (MECs)	16
32.	21305006	Ch Aruna	B.Sc (MECs)	14
33.	21305018	K Pujitha	B.Sc (MECs)	13
34.	21305042	T Sahithi	B.Sc (MECs)	19

Signature of the In-Charge
 Department of Physics
 Government College for Women (A)
 GUNTUR, A.P.

Signature of the Principal
 PRINCIPAL
 GOVT. COLLEGE FOR WOMEN (A)
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