BVRIT HYDERABAD College of Engineering for Women
Department of Electrical and Electronics Engineering

Activity on "Visual learning: A Detailed Look at Demonstration of DC Machine and Starter"

Faculty Name: Dr. Chava Sunil Kumar   **Class: II – I / EEE**

Academic Year: 2023-24

Subject Name: Electrical Machines - I (EM - I)

Topic: DC Machines construction, operation, Commutator action and Starter

Date: 22 and 23, September 2023

Brief Write-up

Visual learning plays a crucial role in understanding the intricate workings of DC machines and starters. Demonstrating these components visually can significantly enhance comprehension and retention of theoretical concepts. By observing a DC machine and starter in action, learners can gain a clearer understanding of how electrical energy is converted into mechanical energy and how starters facilitate the safe and efficient operation of DC machines.

A detailed demonstration provides a step-by-step visual guide to the internal components of a DC machine, such as the armature, commutator, field windings, and brushes. Seeing these parts in motion and understanding their interactions demystifies complex electrical principles, making them more accessible to learners. This hands-on approach not only reinforces theoretical knowledge but also prepares individuals for practical applications, ensuring they can confidently handle and troubleshoot DC machines in real-world scenarios.

Additionally, visual demonstrations of starters highlight their role in controlling the initial surge of current, protecting the DC machine from potential damage.

Learning Outcomes:

1. Visual demonstrations break down complex concepts, making them more digestible and easier to grasp.

2. Visual demonstrations break down complex concepts, making them more digestible and easier to grasp.

2.Visual presentations provide a clear and tangible representation of theoretical concepts, making it easier to understand the function and interaction of each component within the DC machine and starter.

4. Visual and interactive learning methods capture and maintain students' interest more effectively than traditional lecture-based approaches. This increased engagement can lead to a deeper interest in the subject and a greater motivation to learn.
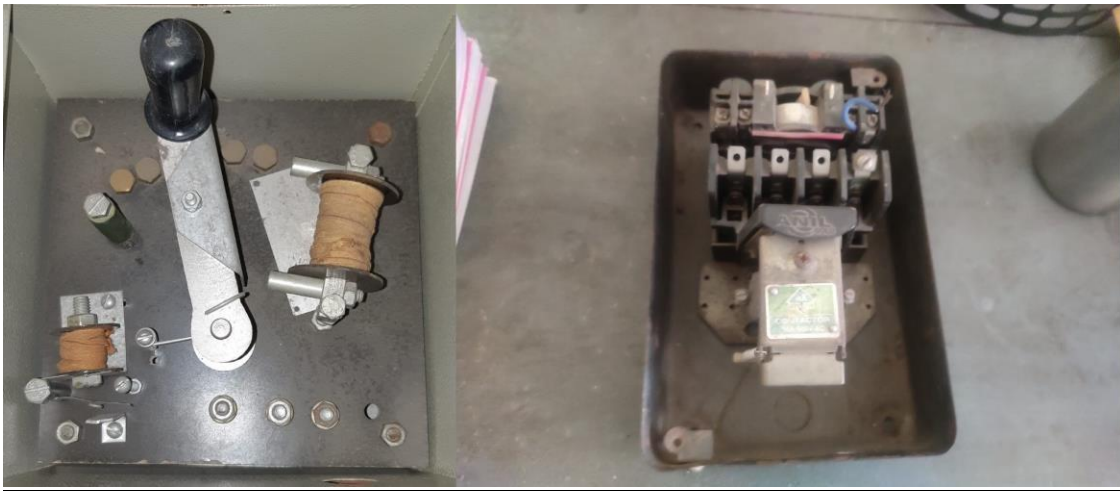
5. By incorporating visual demonstrations into the learning process, faculty can significantly enhance the effectiveness of their teaching, leading to better educational outcomes for students studying DC machines and starters.
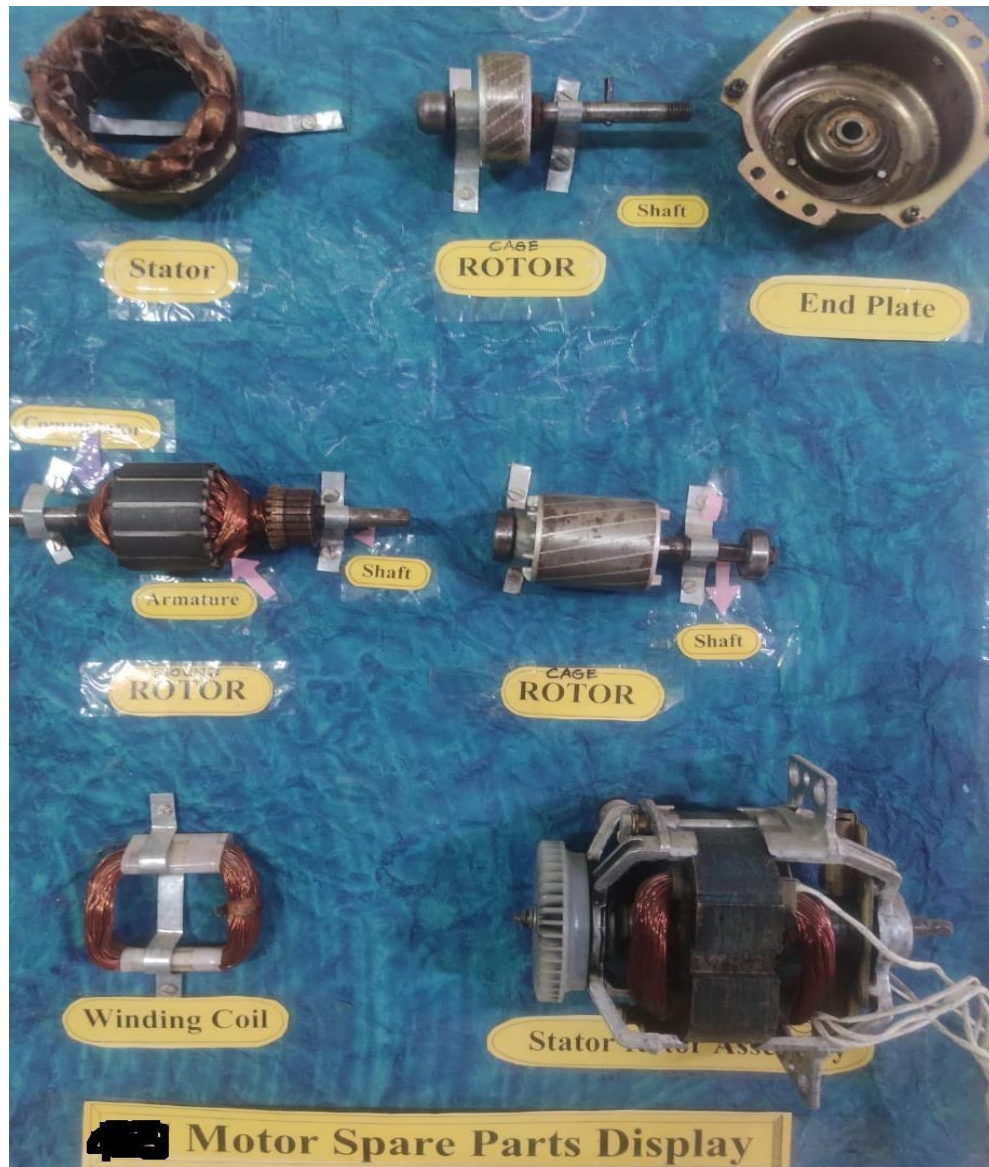
No. of Students participated: 52, 62 and 65
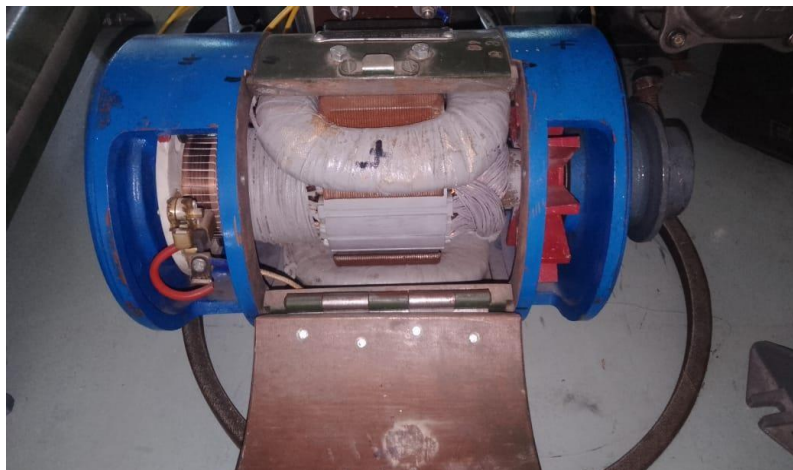
Motor Cut-section

Inside the Starter

Motor Spare Parts Display

Dr.Ch.Sunil Kumar

Professor, EEE Department

BVRIT HYDERABAD College of Engineering for Women
Department of Electrical and Electronics Engineering

Activity on "Visual learning: A Detailed Look at Transformer Assembly and Demonstration"

Faculty Name: Dr. Chava Sunil Kumar   **Class: II – I / EEE**

Academic Year: 2023-24

Subject Name: Electrical Machines - I (EM - I)
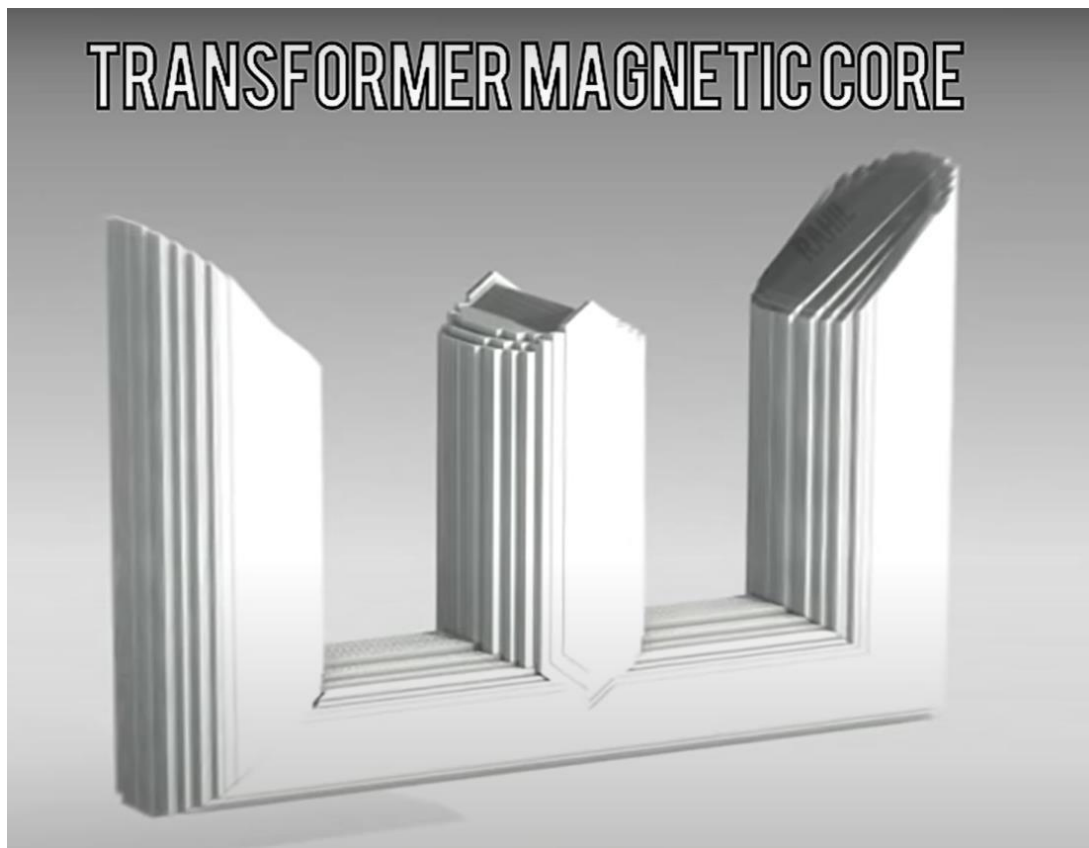
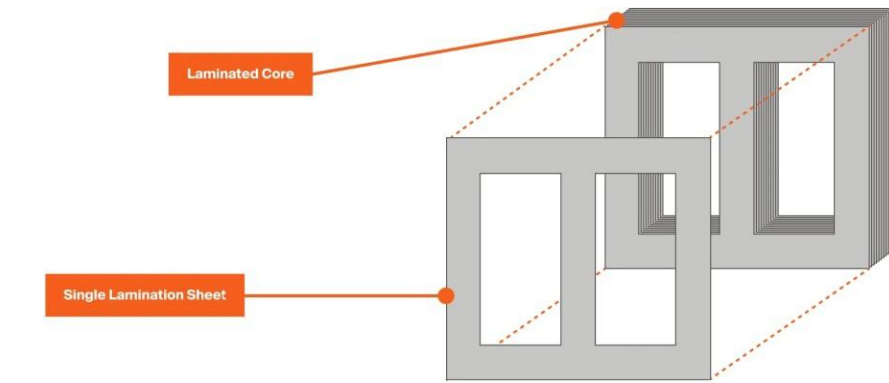**Topic:** Transformers construction

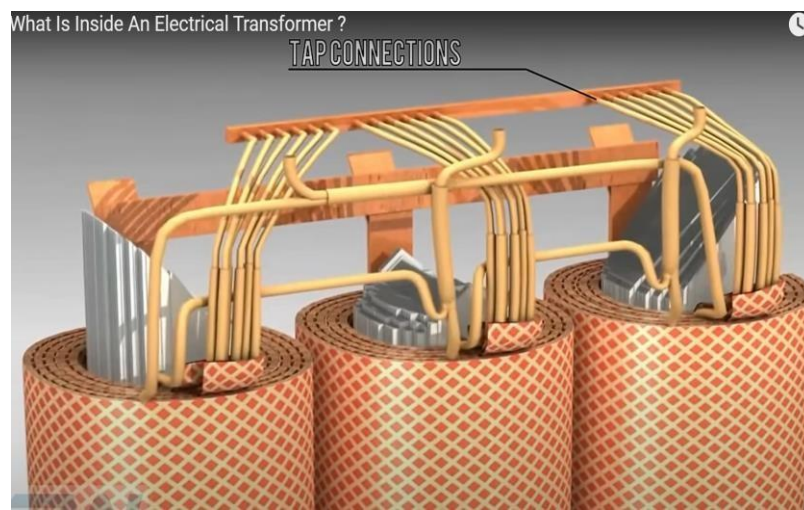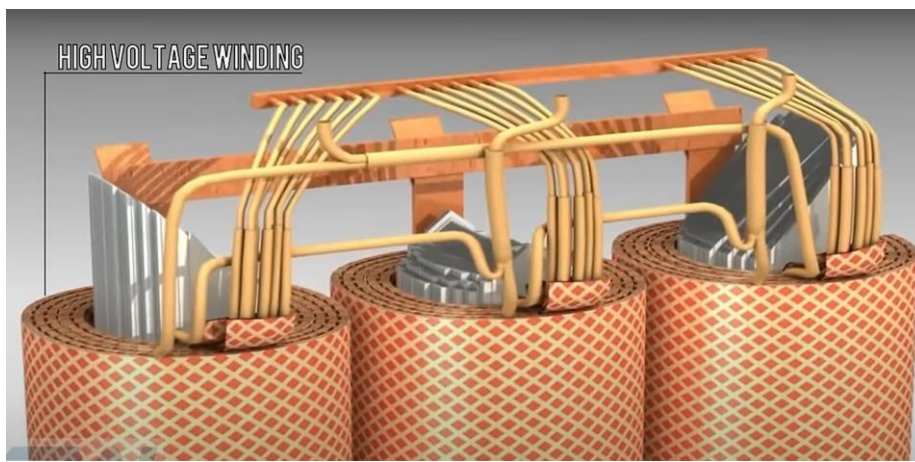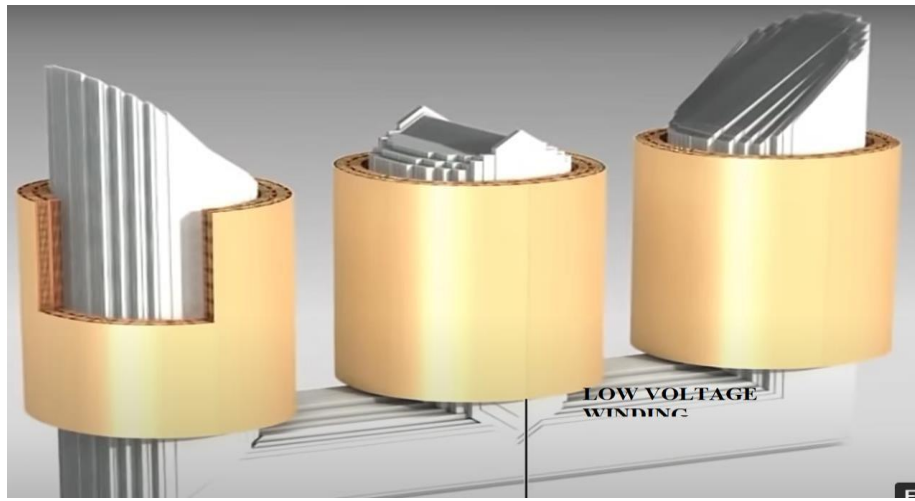**Date:** 21 December 2023

Brief Write-up

Visual learning is often more memorable than reading text or listening to lectures alone. Students are able to acquire a comprehensive comprehension of the various physical components that make up a transformer, including the core, windings, insulation, and so on. Having a visual representation of how these components are assembled helps in understanding how they contribute to the transformer's function. The operation of electromagnetic induction within the transformer can be better understood by seeing it demonstrated with assembled pieces. This involves demonstrating the transformation of voltage and current between the main and secondary windings.
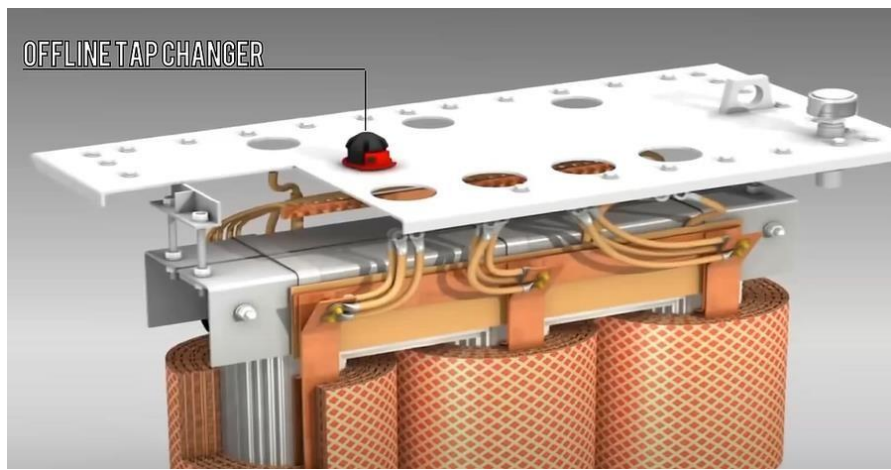
Learning Outcomes:

1. Hands-on demonstrations not only enhance learning but also inspire a deeper interest and curiosity in analysis of transformer operation.

2. Visual presentations provide a clear and tangible representation of theoretical concepts, making it easier to understand the function and interaction of each component within the transformer.

3. It bridges theoretical knowledge with practical application.

4. Complex electrical principles and interactions within a transformer are often easier to grasp when visualized, aiding in demystifying intricate topics.

5. Faculty can analyze the students understanding levels quickly.

No. of Students participated: 65
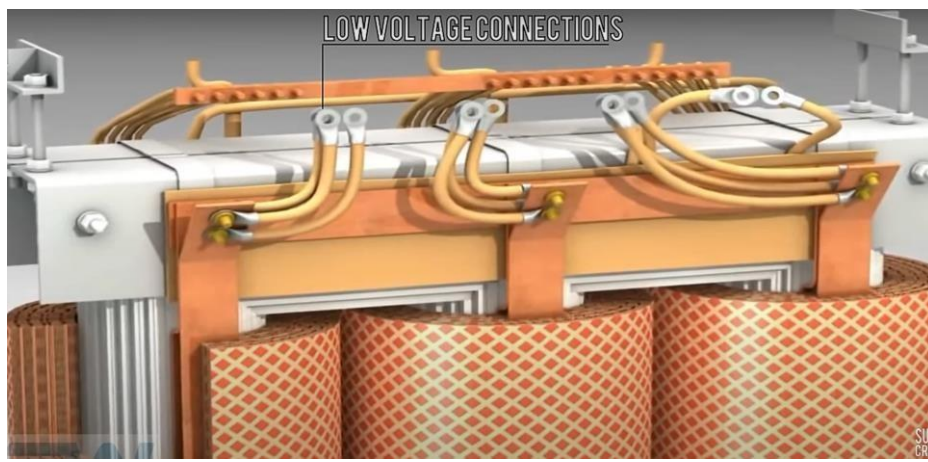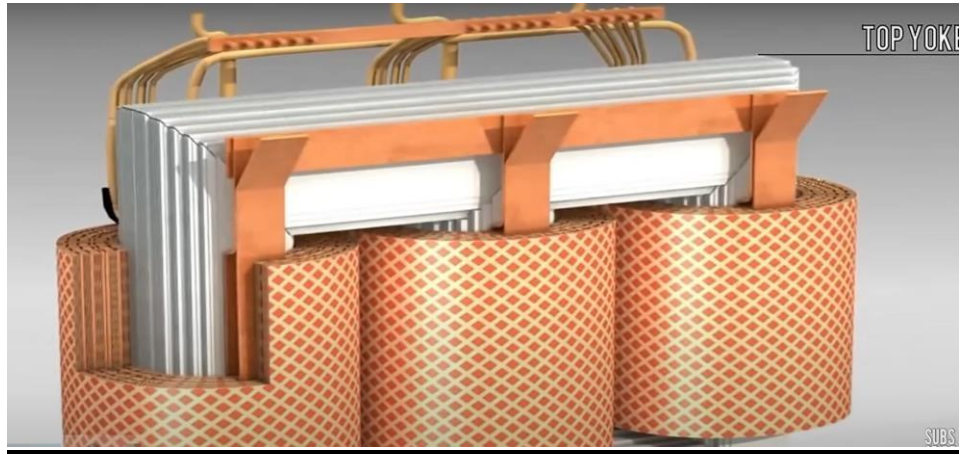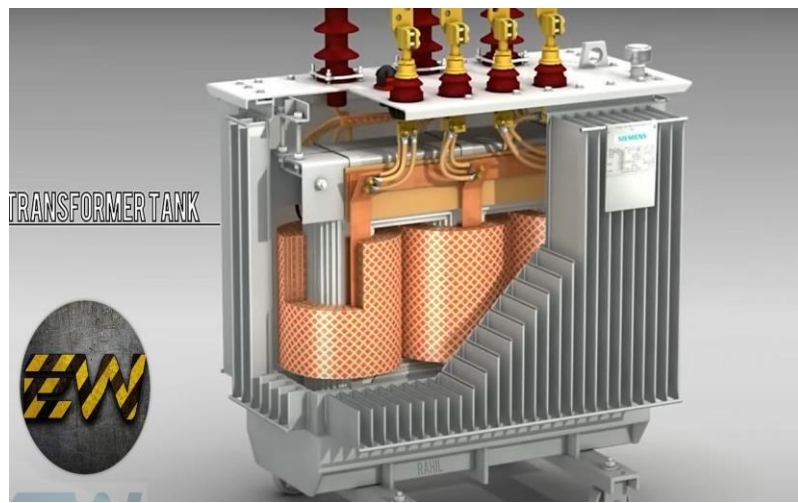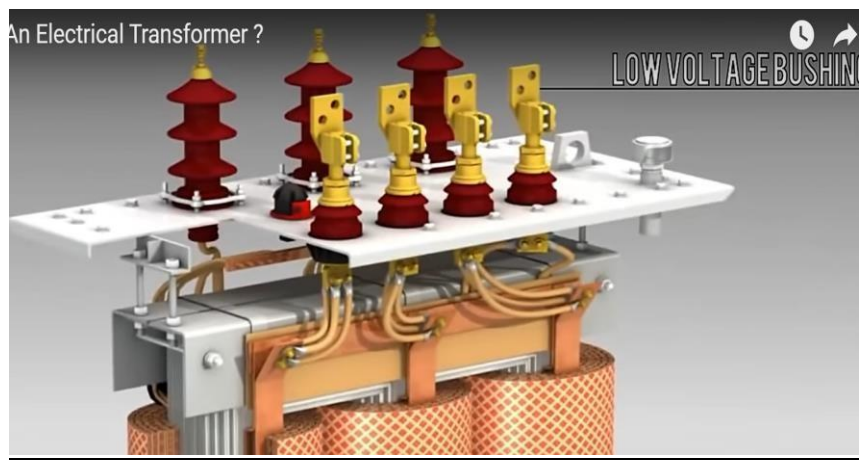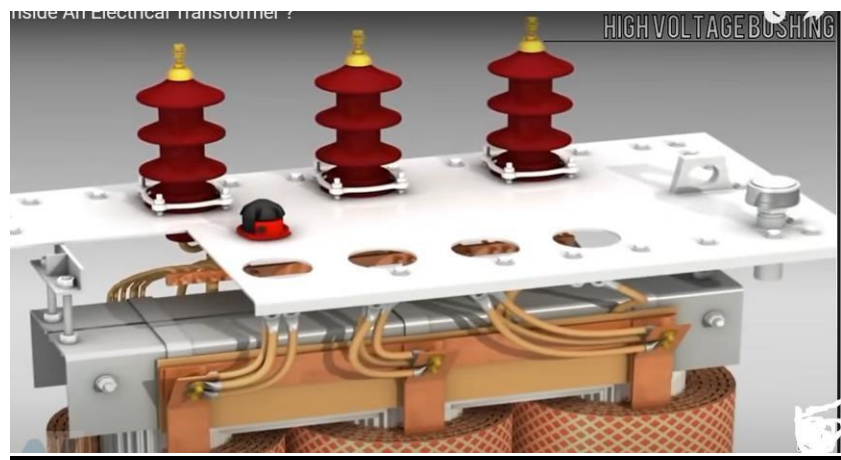
LOW VOLTAGE WINDING

HIGH VOLTAGE WINDING

What Is Inside An Electrical Transformer ?

TAP CONNECTIONS

HIGH VOLTAGE BUSHING

An Electrical Transformer ?
LOW VOLTAGE BUSHING

TRANSFORMER TANK

9V-0-9V Transformer

TRANSFORMER DISPLAY BOARD

Bobbin with Winding

Transformer - 230V/115V

Laminations

Core

9V-0-9V Transformer

Dr.Ch.Sunil Kumar

Professor, EEE Department

BVRIT HYDERABAD College of Engineering for Women
Department of Electrical and Electronics Engineering

Name of the Activity: Pick, Pursue and Present

Faculty Name: Mr.R.Guruswamy
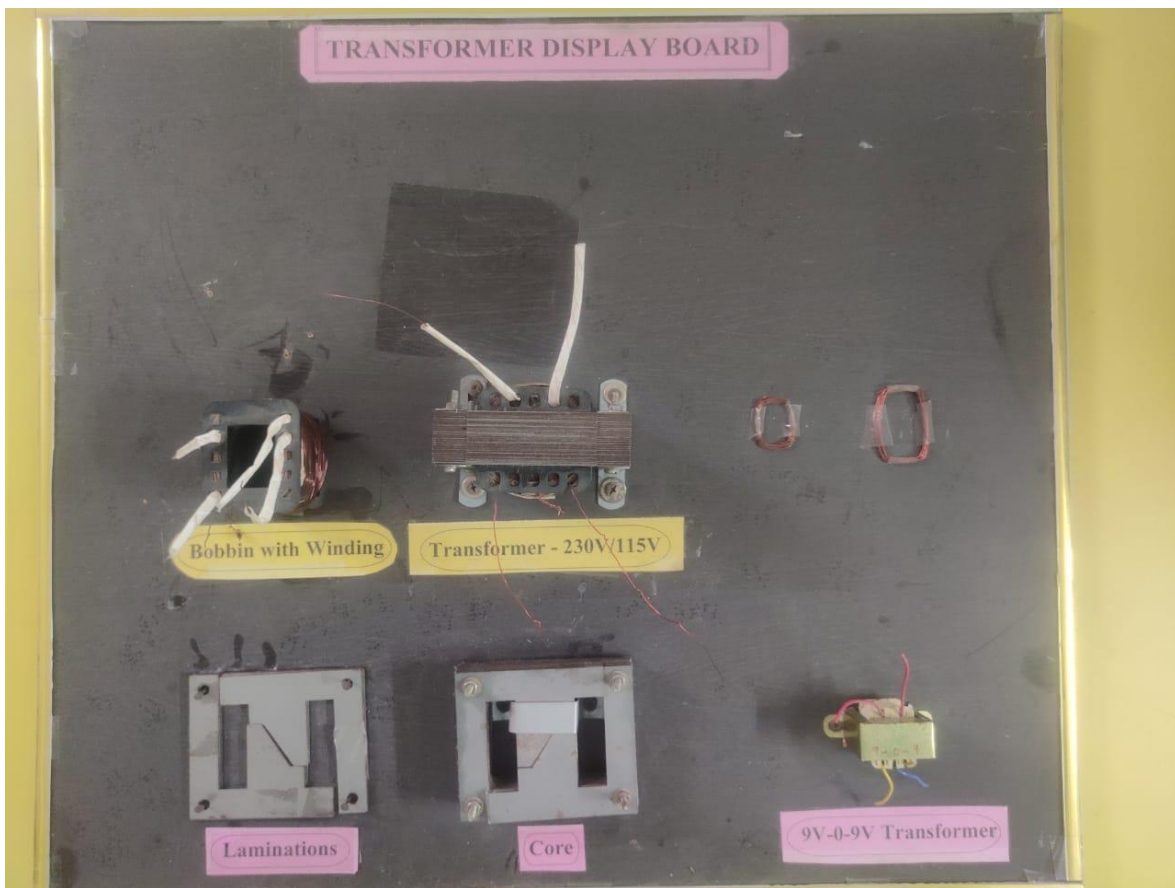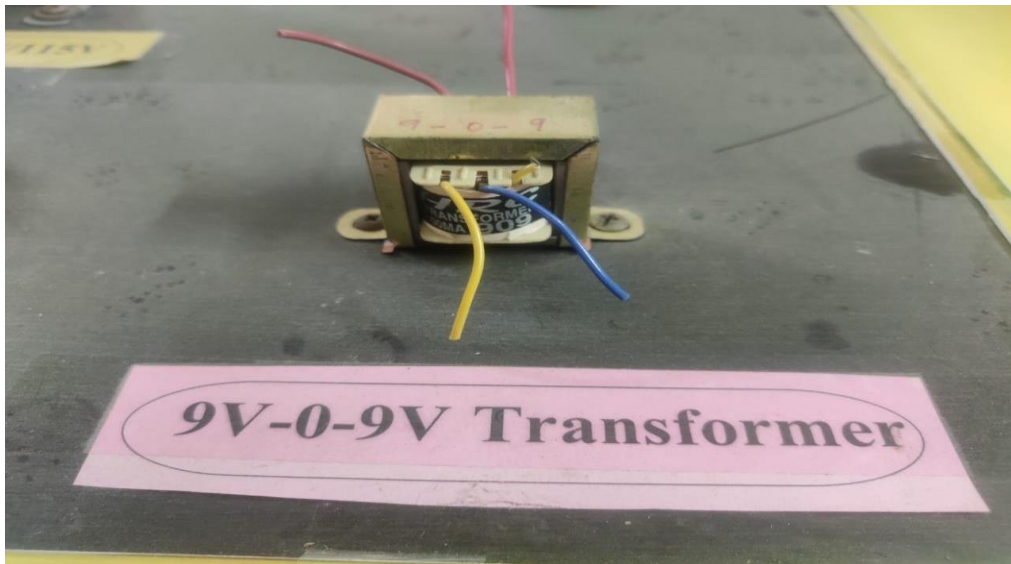
Class: III – II / EEE

Academic Year: 2023-24

Subject Name: Fundamentals of Internet of Things

Topic: IoT Applications in numerous sectors

Brief Write – Up:

The Pick, Pursue, and Present activity on the topic "Applications of IoT in Different Sectors" encapsulates an exploration into how the Internet of Things (IoT) revolutionizes various industries. Through this initiative, participants delve into diverse sectors, identifying innovative applications of IoT that enhance efficiency, connectivity, and data-driven decision-making.

In healthcare, IoT's integration is profound, with smart devices monitoring patient vitals in real-time, enabling remote care and timely interventions. Wearable sensors and connected devices streamline patient management, improving outcomes and reducing healthcare costs.

The industrial sector leverages IoT for predictive maintenance, optimizing machinery performance and minimizing downtime. Smart factories utilize IoT for real-time monitoring and automation, enhancing productivity and operational efficiency.

In agriculture, IoT applications include precision farming, where sensors monitor soil conditions, weather patterns, and crop health. This data-driven approach enables farmers to make informed decisions, increasing yield and resource efficiency.

Smart cities exemplify IoT's impact on urban living, with connected infrastructure managing traffic, reducing energy consumption, and enhancing public safety. IoT-enabled streetlights, waste management systems, and transportation networks contribute to more sustainable and efficient cityscapes.

In retail, IoT transforms customer experiences through smart shelves and inventory management systems. Connected devices track stock levels, streamline supply chains, and personalize shopping experiences, driving customer satisfaction and loyalty.

The Pick, Pursue, and Present activity thus highlights IoT's transformative potential across various sectors, showcasing its role in fostering innovation and improving quality of life through enhanced connectivity and intelligent systems.

Date: 27-06-2024

No. of Students Participated: 58

Photos:

"Post an Image on IoT & Explain"
Mention Your Name
Roll No

IOT Healthcare System Architecture

- Product Infrastructure
- Sensors
- Application Platform
- Analytics
  - Descriptive
  - Diagnostic
  - Event Based Action
  - Predictive
- Connectivity
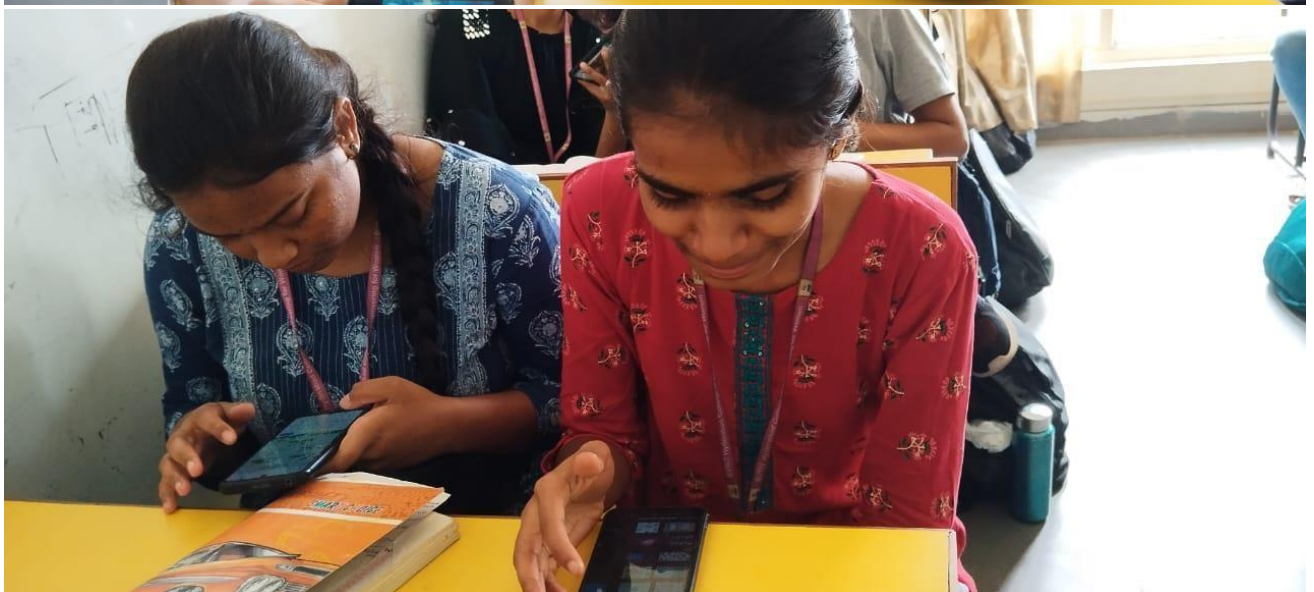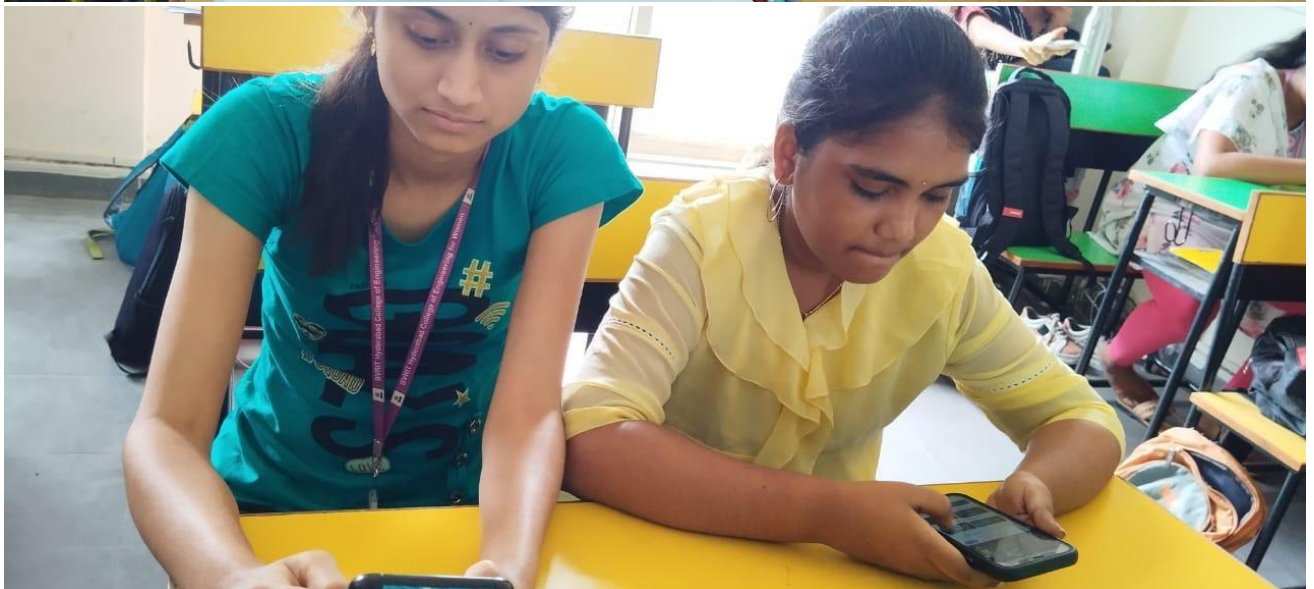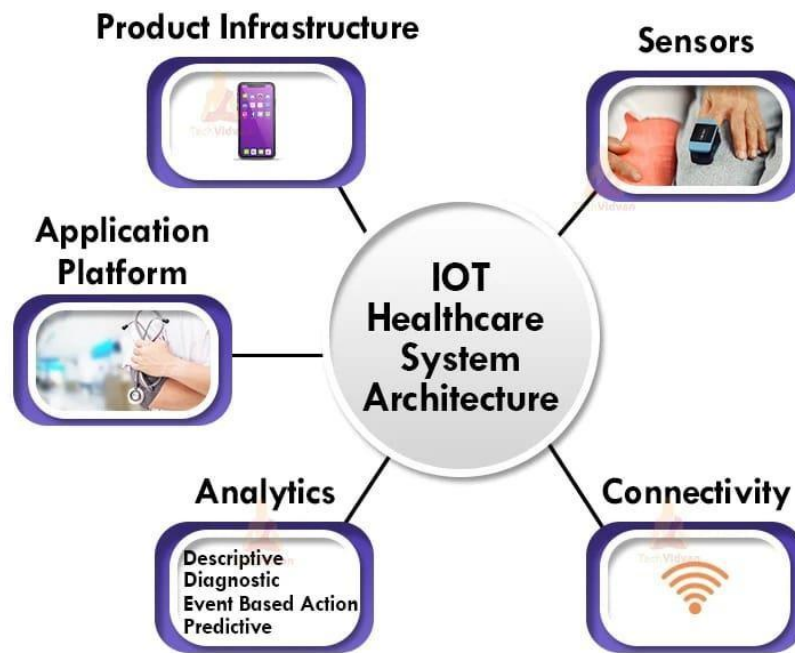
The Different Types Of Actuators In IoT

ACTUATORS

- **Motion**
  - Linear
  - Rotary
- **Source Of Energy**

- Hydraulic
- Pneumatic
- Thermal
- Magnetic

- Mechanical
- Electric
- Supercoiled Polymer

- Electromechanical
- Electrohydraulic

Applications of IoT in Healthcare

Hearables

Smart Video Pills

Ingestible Sensors

Applications of
IoT
in Healthcare

Insulin Pens & Smart CGM

Moodables

Healthcare Charting

Computer Vision Technology

peerbits
Your Digital Envisioneers

www.peerbits.com

Smart Building

Smart Home

Smart Transportation

Smart Energy

Smart Agriculture

Smart City

Smart Infrastructure

Smart Health

Smart Education

Smart Industries

IoT in Smart Home

The slide highlights IoT in Smart Home

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This slide is 100% editable. Adapt it to your needs and capture your audience's attention.

IoT Applications in Agriculture

Cropin

Precision Farming

Livestock Monitoring

Smart Greenhouses

Agricultural Drones

Monitoring of Climatic Conditions

INTERNET OF THINGS

Faculty Signature

BVRIT HYDERABAD College of Engineering for Women

Department of Electrical and Electronics Engineering

Name of the Activity: Real-time Problem based Learning
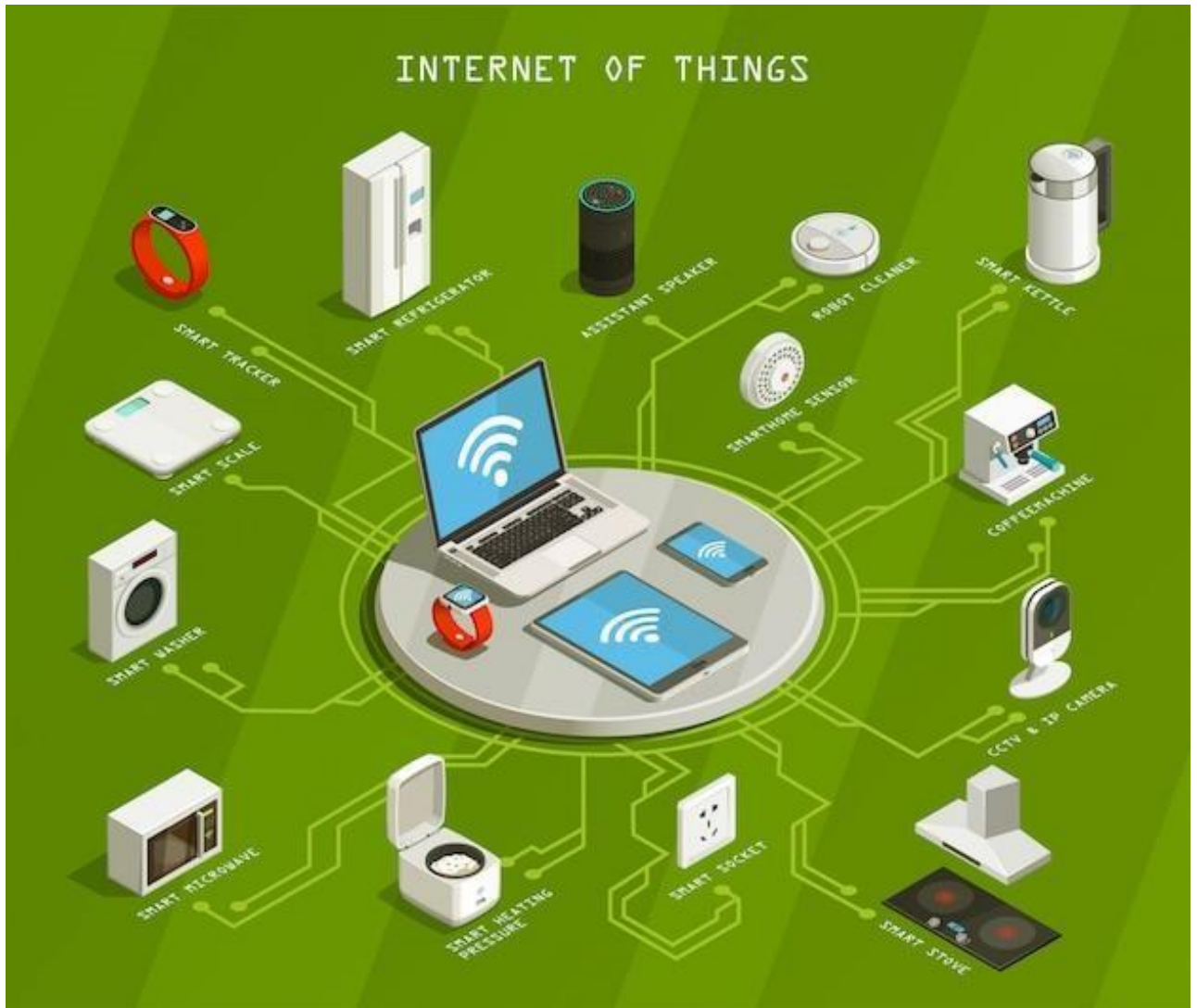
Faculty Name: Dr. R. Manojkumar

Class: I – II / CSE-C

Academic Year: 2023-24

Subject Name: Basic Electrical Engineering

Topic: Monthly Energy Consumption Calculation of Home with Week Day and Holiday Variation

Date: 23/5/24

Write-up: In this activity, the students aim to analyze the electricity consumption of a household for a recent month, denoted as month "m". The number of units consumed during month "m", referred to as "E1" kWh, is obtained from the electricity bill. To further analyze the energy usage, students categorized the energy consumption of each household appliance based on their usage over a typical working day (Case 1) and a holiday (Case 2) within the same month. By assuming a uniform energy profile throughout the month for week day and holiday seperately, students filled in the data sheet with the daily energy consumption of each appliance for both working days and holidays.

Next, students calculated the total energy consumed by each appliance over the entire month, considering the number of working days and holidays, and denoted these values as Ea1, Ea2, Ea3, etc. The sum of these values gives the total energy consumption for the month, denoted as "E2" kWh. This calculated total, E2, is compared to the actual total energy consumption, E1, from the electricity bill to validate the accuracy of our data and assumptions.

Furthermore, students visualized the data through various plots. The first plot displays the energy consumption of each appliance over a day for both working days and holidays, showing variations in usage patterns. The second plot aggregates the energy consumption of all appliances over a day for both scenarios, providing an overall daily energy profile of the household. The third plot is a bar graph representing the monthly energy consumption of each appliance, highlighting the contribution of each appliance to the total monthly energy usage.

These visualizations and calculations help in understanding the energy consumption patterns of the household, identifying the major contributors to the electricity bill, and potentially finding areas where energy savings can be implemented.

No. of Students Participated: 58

Photos:

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Keep your bill here and E1=104KWH(104*1000 Watts) = 104000

TSSPDCL
ELECTRICITY
BILL-CUM NOTICE
Dt:04/05/2024 Time:17:38
Bill No:0517 ERONo:925
ERO: HUZURNAGAR(925)
Sec: GARIDEPALLY

SC No.4331601654
USC No.106124590
Name:K NARASIMHARAO
Addr:PONUGUDU
     PONUGUDU

Cat:1B(i) DOMESTIC
Contracted Load   0.18 KW
Meter No.03629749(IR)
MF: 1.00 Ph:1
          Date   Sts   Rdg(KWH)

Hour of the day	Appliance 1 (Motor)	
	Working day	Holiday
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	0	0
7	750	0
8	0	750
9	0	0
10	0	0
11	0	0
12	0	0
13	0	0
14	0	0
15	0	0
16	0	0
17	0	0
18	750	0
19	0	0
20	0	750
21	0	0

Appliance 2 (Fridge)	
Working day	Holiday
100	100
100	100
100	100
0	0
100	100
100	100
100	100
0	0
100	100
100	100
100	100
100	100
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R. Manojkum

Faculty Sign

BVRIT HYDERABAD College of Engineering for Women
Department of Electrical and Electronics Engineering

Name of the Activity: Think-Pair-Share

Faculty Name: Mr.R.Guruswamy

Class: III – II / EEE

Academic Year: 2023-24

Subject Name: Fundamentals of Internet of Things

Topic: Merits of Internet of Things (IoT)

Brief Write – Up:

The Think-Pair-Share activity on the topic "Merits of IoT" unfolded as an engaging and insightful session, encouraging participants to delve deeply into the subject matter. Initially, individuals were given time to contemplate the diverse advantages that the Internet of Things (IoT) offers, fostering an environment of focused introspection. This phase allowed participants to gather their thoughts and form preliminary ideas on the transformative potential of IoT across various sectors.

Following the individual thinking stage, participants paired up to discuss their reflections. This collaborative step was pivotal in expanding their understanding, as each pair exchanged perspectives and insights. The dialogue revealed a broad spectrum of merits associated with IoT, ranging from enhanced efficiency in industrial processes to improved quality of life through smart home technologies. The pairs highlighted how IoT facilitates real-time monitoring and data collection, leading to more informed decision-making and optimized resource management. This exchange of ideas enriched the participants' comprehension and sparked further curiosity about the subject.

In the final phase, the pairs shared their collective insights with the larger group. This stage was particularly enlightening, as it synthesized the diverse viewpoints and examples discussed in pairs into a comprehensive overview of IoT's benefits. Participants noted how IoT contributes to predictive maintenance in industries, thereby reducing downtime and operational costs. They also discussed the role of IoT in healthcare, where it enables remote patient monitoring and timely medical interventions. The conversation extended to the environmental benefits of IoT, such as smart grids and efficient energy consumption, underscoring its potential in fostering sustainability.

Overall, the Think-Pair-Share activity on the merits of IoT not only facilitated a deeper understanding of the topic but also fostered a collaborative learning environment. Participants left with a richer appreciation of how IoT can revolutionize various aspects of life and industry, driven by the collective exploration and shared knowledge from the session.

Date: 08-05-2024

No. of Students Participated: 61

Photos:

Faculty Signature

BVRIT HYDERABAD College of Engineering for Women
Department of Electrical and Electronics Engineering

Name of the Activity: Chart Preparation

Faculty Name: Mr.R.Guruswamy

Class: I – II / EEE

Academic Year: 2023-24

Subject Name: Electrical Circuit Analysis

Topic: Pictorial representation of various concepts of the subject

Brief Write – Up:

The process of creating a chart for Electrical Circuit Analysis II involves transforming complex theoretical concepts into visually engaging and easily comprehensible representations. This approach not only aids in better understanding but also enhances the retention of intricate details through visual learning techniques.

The chart begins with the concept of DC and AC Transients, illustrating how circuits respond to changes over time, particularly when a switch is flipped or a sudden change in voltage or current occurs. This is depicted through time-domain graphs showcasing the exponential rise or decay of current and voltage in inductors and capacitors. The visual representation highlights the significance of initial conditions and the effect of circuit parameters like resistance, inductance, and capacitance on the transient response.

Moving to Laplace Transforms Applications in Transients, the chart shifts to a more mathematical perspective, showing the transformation of time-domain circuit equations into the s-domain. This section includes diagrams of circuit elements with their Laplace equivalents, making it easier to analyze complex circuits by converting differential equations into algebraic ones. The visual flow seamlessly transitions from the time domain to the s-domain, demonstrating the simplification of solving circuit problems.

Two Port Networks are illustrated next, focusing on the representation and analysis of networks with two pairs of terminals. The chart presents the different parameters used to describe these networks, such as Z-parameters, Y-parameters, H-parameters, and ABCD parameters. Each parameter set is represented through block diagrams and equivalent circuits, emphasizing the interrelationship between input and output voltages and currents. The pictorial approach elucidates how these parameters can be used to model and analyze complex interconnected systems.

The section on Passive Filters depicts various filter configurations such as low-pass, high-pass, band-pass, and band-stop filters. These are represented through circuit diagrams that show the arrangement of resistors, inductors, and capacitors to achieve the desired frequency response. Bode plots accompany these diagrams, visually demonstrating how different filter designs affect the amplitude and phase of signals across different frequencies. This part of the chart highlights the practical applications of filters in signal processing and communication systems.

Finally, Network Topology is visually represented by showcasing different types of network configurations, including series, parallel, and more complex mesh and nodal structures. Graph theory concepts are introduced, with diagrams showing how nodes and branches interconnect to form a network. The chart illustrates the application of fundamental theorems like Kirchhoff's Current and Voltage Laws, providing a clear understanding of how to analyze and simplify complex circuits.

In conclusion, this chart serves as a comprehensive visual tool, encapsulating the essence of Electrical Circuit Analysis II. It transforms abstract concepts into tangible visuals, facilitating a deeper and more intuitive understanding of the subject.

Date: 02-05-2024

No. of Students Participated: 59
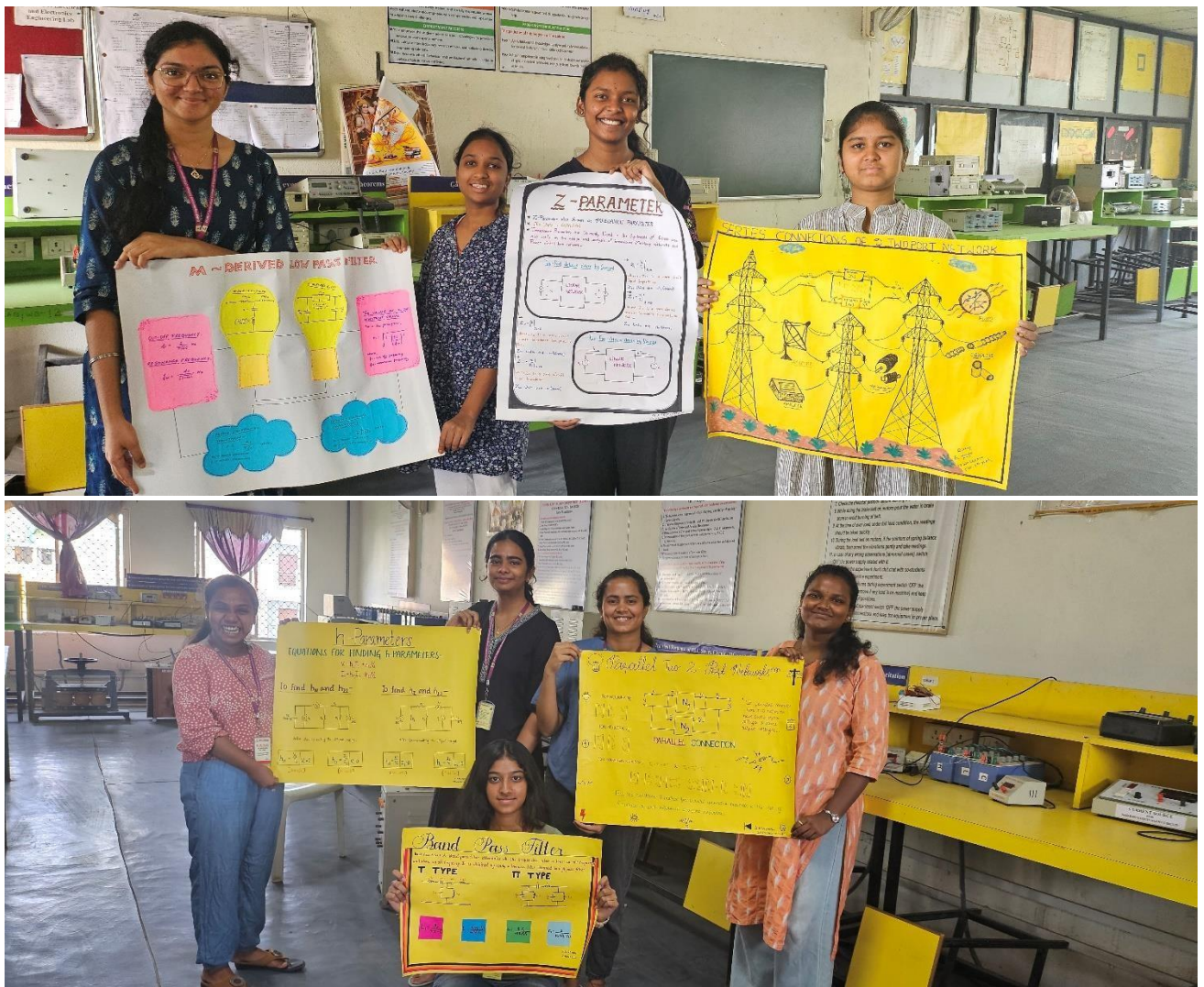
Photos:

Faculty Signature

BVRIT HYDERABAD College of Engineering for Women

Department of Electrical & Electronics Engineering

Name of the Activity: Peer to Peer Learning

Faculty Name: Mr. M Rupesh

Academic Year: 2023-24

Subject Name: Control Systems

Topic: Finding Transfer function for Mechanical, Electrical & Block diagram Technique and Signal Flow graph

Date: Brief Write – Up

Peer learning is basically a cognitive relationship between an expert and a novice as the apprentice. According to the learning situation and nature of the learning it can be divided into 5.

1. Same age peer tutoring.
2. Cross age peer tutoring.
3. Class wide peer tutoring.
4. Incidental peer tutoring.
5. Structured peer tutoring.

The students are given with following guidelines

1. All the Students Are given a unique question as assignment to solve.
2. Students are given instruction that they can use any sources to solve the problem.
3. After completing the problem they should upload the problem in a given google drive.
4. Some of the students are asked to teach/explain the problem on board to their friends in the presence and absence of the Course coordinator.

No. of Students Participated: 120

Photos:
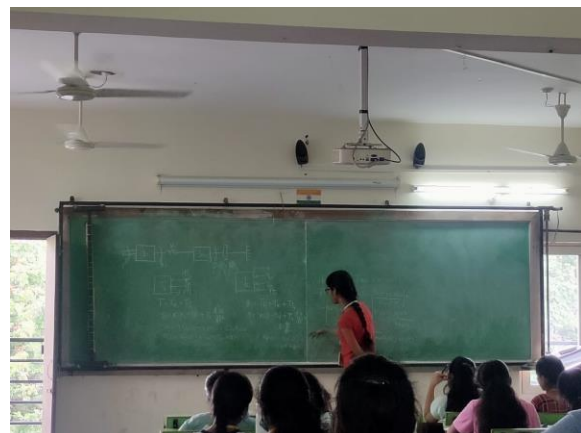
M Rupesh
Assistant Professor

BVRIT HYDERABAD College of Engineering for Women
Department of Electronics and Communication Engineering
Name of the Activity: Problem Based Learning

Faculty Name: Ms.Babita Gupta

Class: I – II / CSE-B

Academic Year: 2023-24

Subject Name: BEE

Topic: D.C. & A.C Circuit & Transformer

Date: 26.04.24

Write-up: The Topic-Based Problem Solving activity conducted stands as a testament to our commitment to equipping students with the essential skills. By engaging students in collaborative problem- solving exercises, this activity aims to not only deepen their understanding of core topics but also cultivate critical thinking, teamwork, and communication abilities.

No. of Students Participated: 62

Photos:
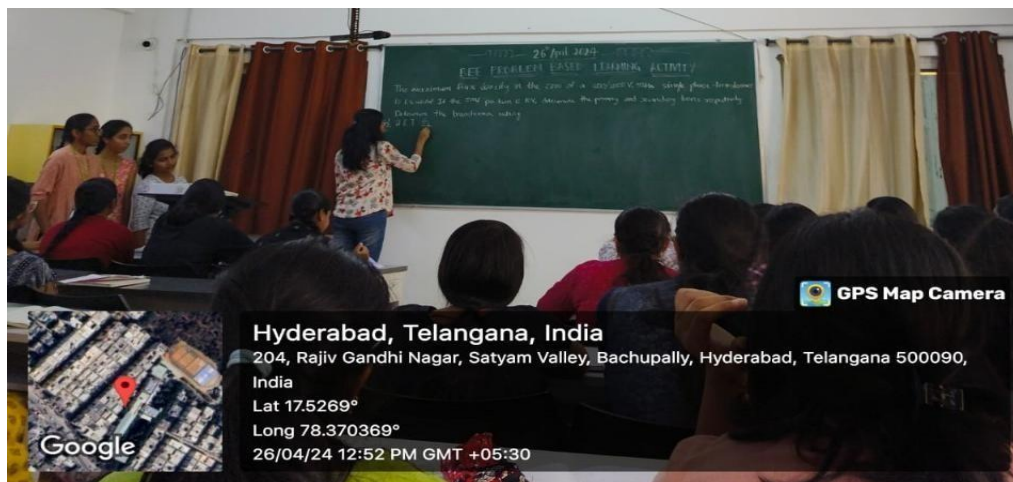
Faculty Sign

BVRIT HYDERABAD College of Engineering for Women
Department of Electrical and Electronics Engineering

Name of the Activity: Mind Mapping

Faculty Name: Mr.R.Guruswamy

Class: I – II / EEE

Academic Year: 2023-24

Subject Name: Electrical Circuit Analysis

Topic: Unit wise mind Mapping

Brief Write – Up:

A mind map activity for Unit-I on Transient Analysis would cover the transient response of R, L, and C circuits. It would involve the formulation of integral and differential equations and determining initial conditions. The transient response of RL, RC, and RLC (both series and parallel) networks would be analyzed, particularly focusing on the response to internal energy and different types of excitations such as impulse, step, ramp, exponential, and sinusoidal.

In Unit-II, the mind map would delve into Electrical Circuit Analysis using Laplace Transforms. It would explore the application of Laplace Transforms to RL, RC, and RLC (series and parallel) networks. This unit would emphasize analyzing network responses to various excitations including impulse, step, ramp, exponential, and sinusoidal, through the use of Laplace Transforms.

For Unit-III, the focus would shift to Two-Port Network Parameters. The mind map would include open circuit impedance and short-circuit admittance parameters, transmission and hybrid parameters, and their inter-relationships. It would also cover the series, parallel, and cascade connection of two-port networks, as well as the system function and impedance and admittance functions.

Unit-IV would cover Fourier Series and Integral. The mind map would illustrate the Fourier series representation of periodic functions, including symmetry conditions and exponential Fourier series. It would address the discrete spectrum and Fourier integral and its properties, highlighting the continuous spectrum and its application to simple networks.

Finally, Unit-V would focus on Filters. The mind map would classify different types of filters including low pass, high pass, band pass, and band elimination filters. It would detail constant-k and M-derived filters, discussing their applications in low pass, high pass, band pass, and band elimination filters.
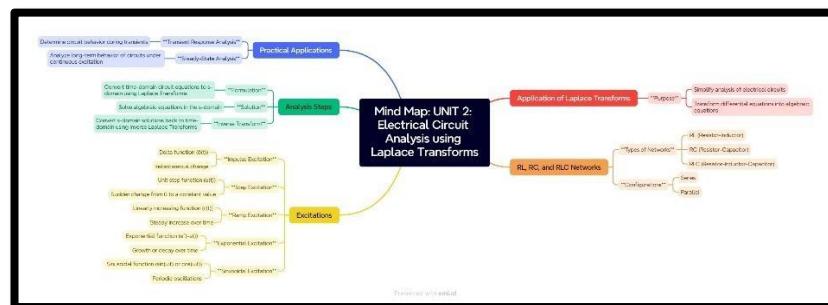
Date: 20-04-2024

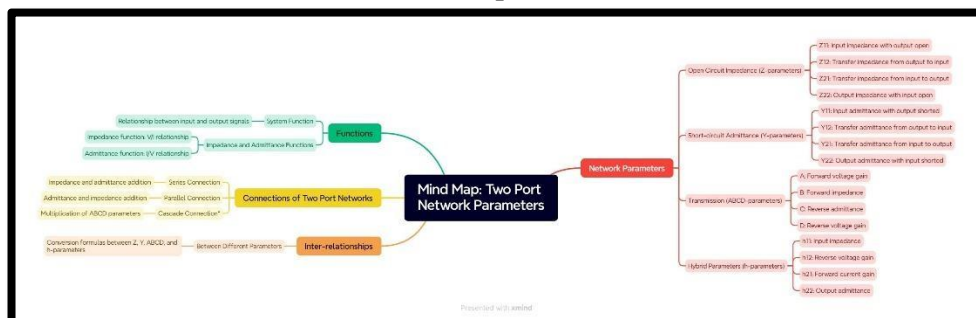**No. of Students Participated**: 59

Photos:
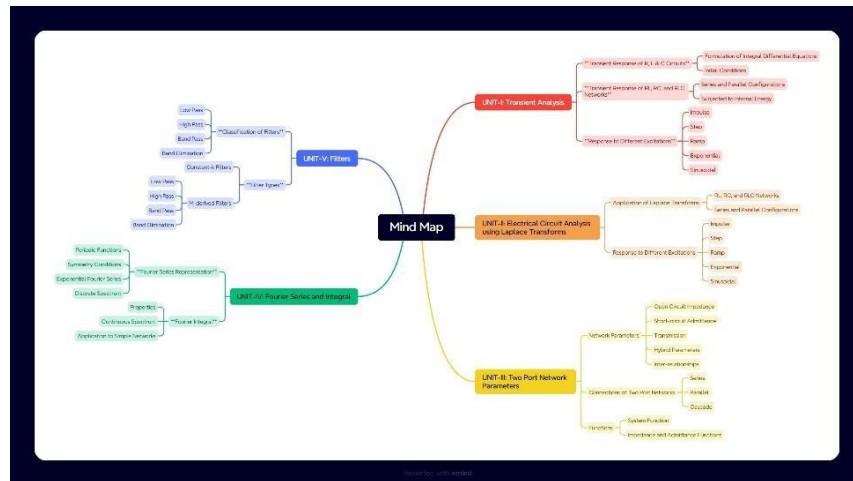
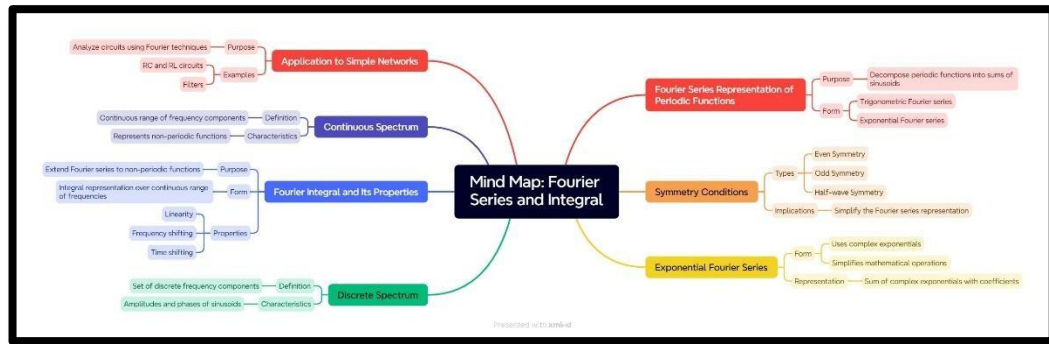**Mind Map of complete ECA – II Syllabus**
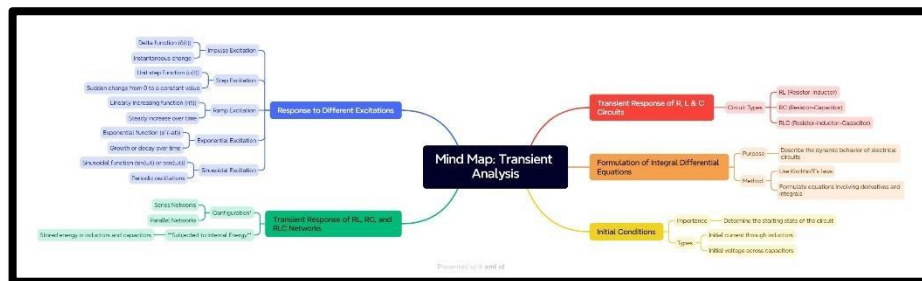
Mind Map of Unit 1

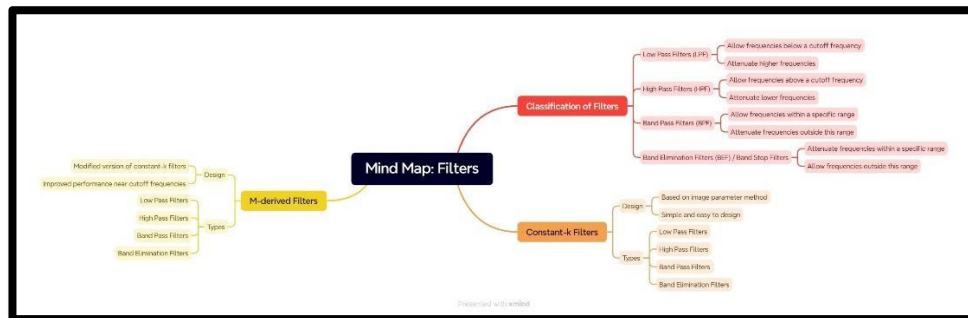**Mind Map of Unit 2**

Mind Map of Unit 3

Mind Map of Unit 4

Mind Map of Unit 5

Faculty Signature

BVRIT HYDERABAD College of Engineering for Women
Department of Electronics and Communication Engineering

Name of the Activity: Live Quiz

Faculty Name: Dr. Prasanta Kumar Jena

Class: II – II / EEE

Academic Year: 2023-24

Subject Name: Measurements and Instrumentation

Topic: Different types of measuring instruments

Brief Write – Up: All the students have been assigned to prepare a poster on chart paper elaborating working principle, advantages and disadvantages of the measuring instruments

Date: 15/04/2024

No. of Students Participated: 54

Photos: A live quiz was conducted to make fun and create curiosity among students to know about the subject and analyze their knowledge regarding the subject.
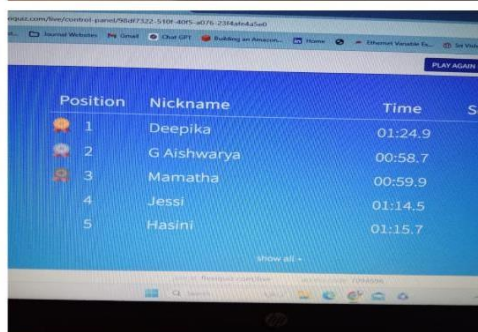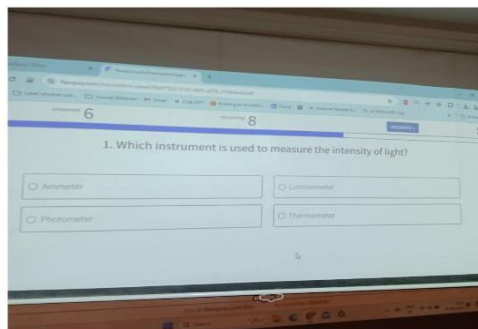
Prasanta Kumar Jena

Faculty Sign

BVRIT HYDERABAD College of Engineering for Women
Department of Electrical and Electronics Engineering

Name of the Activity: Quiz

Faculty Name: Dr. Chava Sunil Kumar   **Class: IV – II / CSE A**

Academic Year: 2023-24

Subject Name: Basics of Power Plant Engineering (BPPE)

Topic: Unit-I, Unit-II, Unit-III, Unit-IV, Unit-V

Date: 14-03- 2024.

Brief Write-up

Moodle is one of the Learning Management System (LMS) where we can incorporate required additional tools which are used for teaching learning activities. Quiz is one of the powerful tool to monitor and diagnose the student performance with certain types of knowledge. Using this tool effectively can boost your course's effectiveness, and promote student performance. The quiz is scheduled in the Moodle with time limits and informed the same who students who were added in the Moodle course and the quiz is consisting of Multiple-choice questions with easy, moderate and hard levels.

The advantages of Online Quiz in Moodle are as follows.

1. Students can be engaged remotely in an attractive mode
2. At the same time large number of students can take the test.
3. The questions and options are randomized.
4. Results and summary of quiz with correct options can be displayed immediately after completing the quiz.
5. Faculty can analyze the students understanding levels with the results immediately.

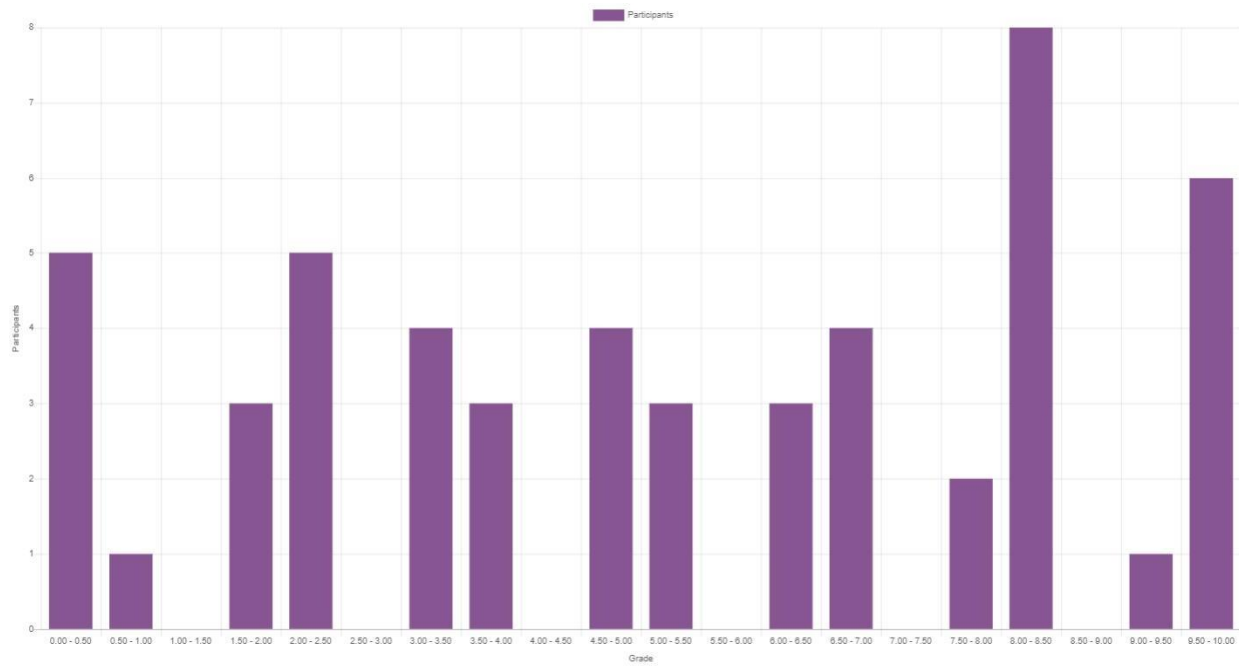### Unit – I Quiz, No. of Students participated: 40
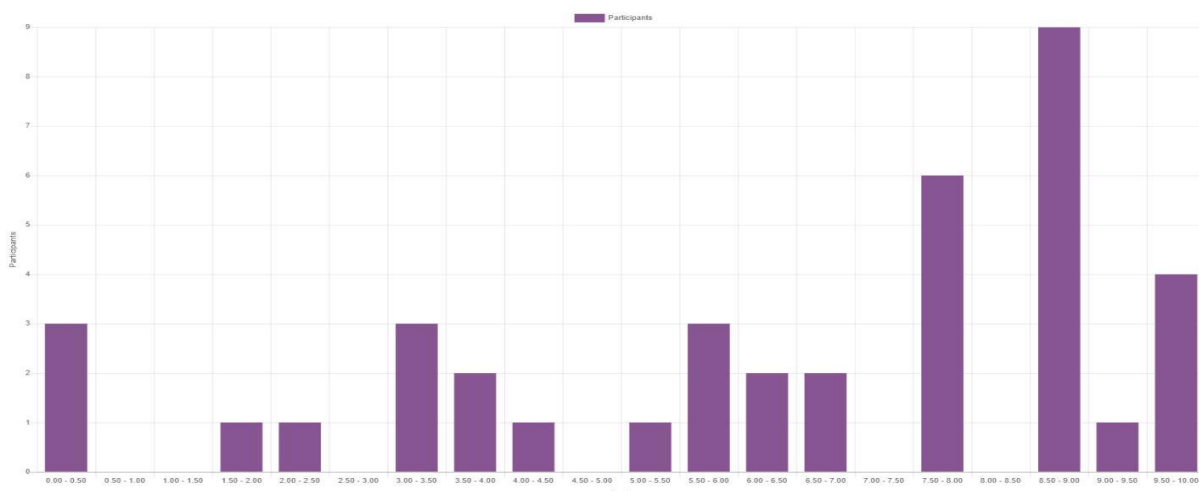
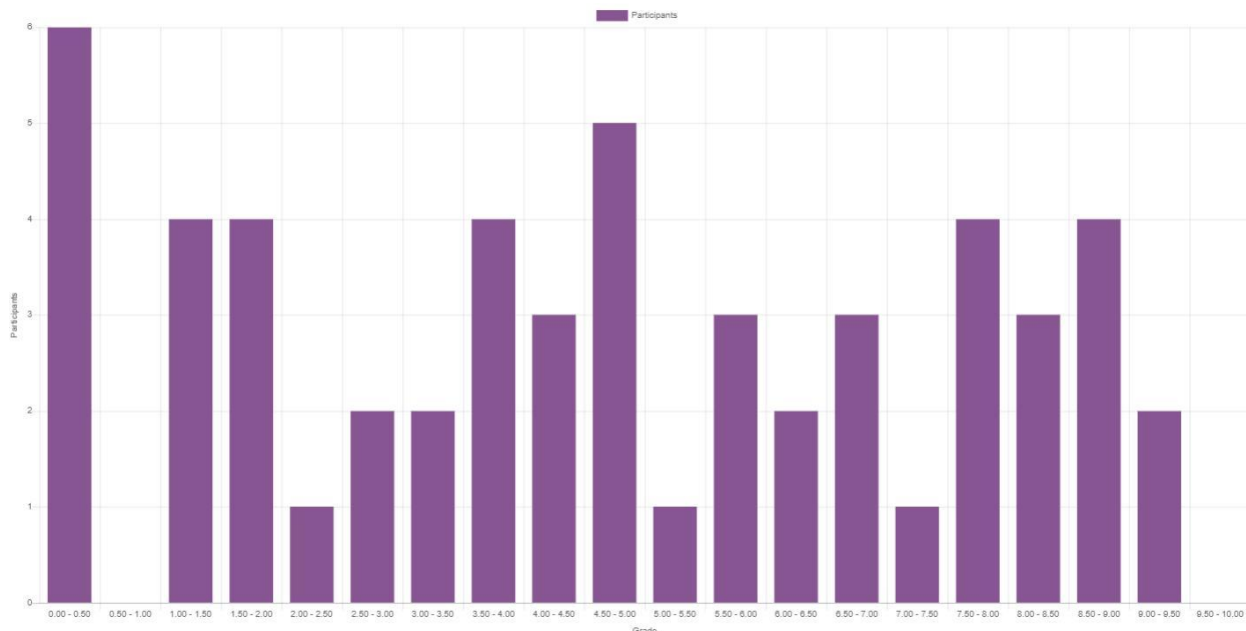## Unit-II Quiz, No. of Students participated: 24
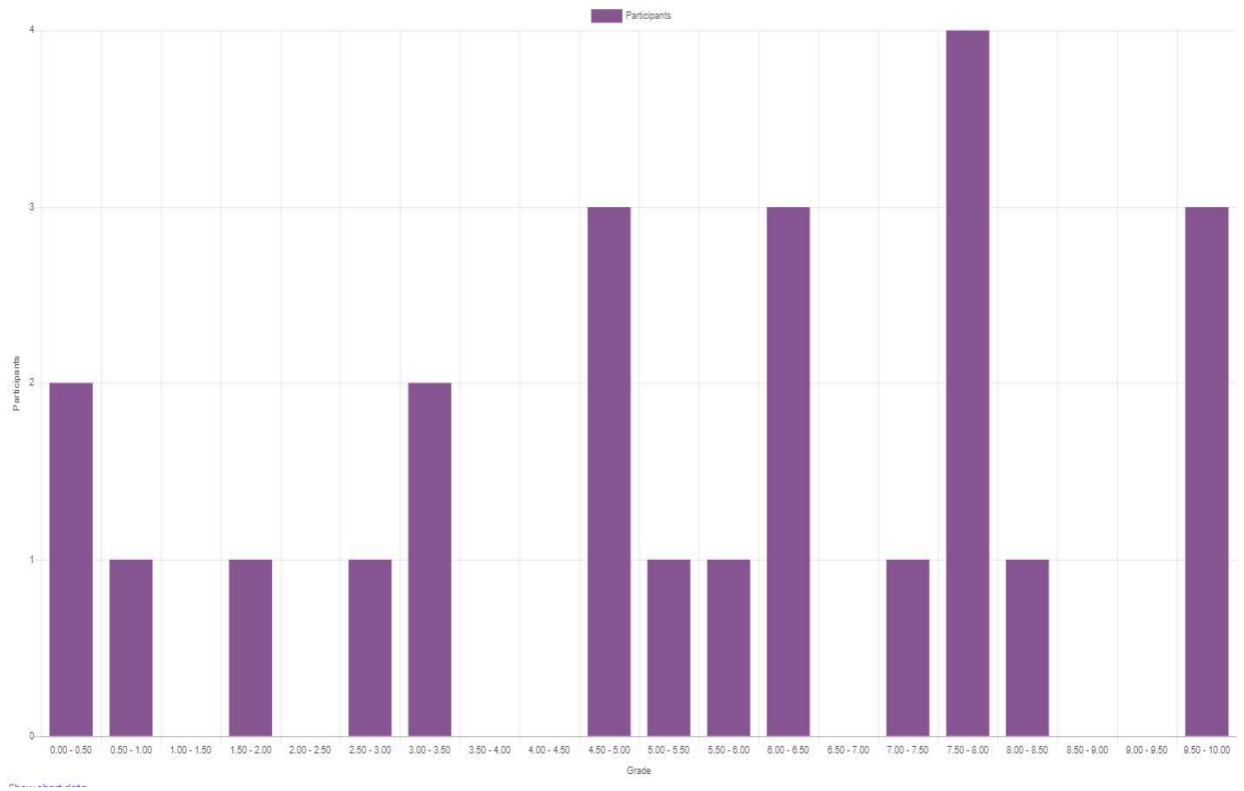
Unit-III Quiz, No. of Students participated: 51
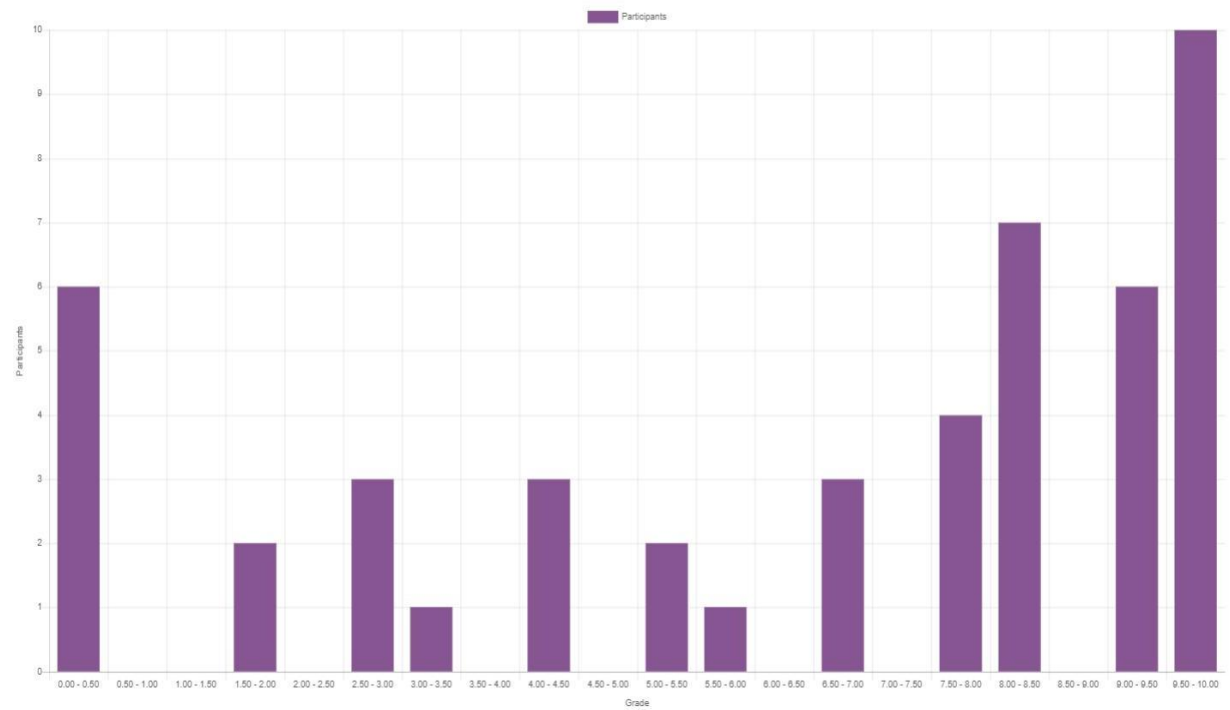
Unit-IV Quiz, No. of Students participated: 54

Unit-V Quiz, No. of Students participated: 56

Dr. Chava Sunil Kumar
Professor, EEE Department

BVRIT HYDERABAD College of Engineering for Women

Department of Electrical and Electronics Engineering

Name of the Activity: Doubts Clearing Session

Faculty Name: Dr. R. Manojkumar

Class: I – II / CSE-C

Academic Year: 2023-24

Subject Name: Basic Electrical Engineering

Topic: Electrical Circuit Theorems

Date: 28.02.24

Write-up: A doubt clearing session on electrical circuit theorems was conducted to help students consolidate their understanding and address any uncertainties related to key theorems such as Ohm's Law, Kirchhoff's Laws, Thevenin's Theorem, Norton's Theorem, and Superposition Theorem. This interactive session aimed to provide a platform for students to ask questions, discuss problems, and receive clarifications in a collaborative environment.

No. of Students Participated: 64

Photos:
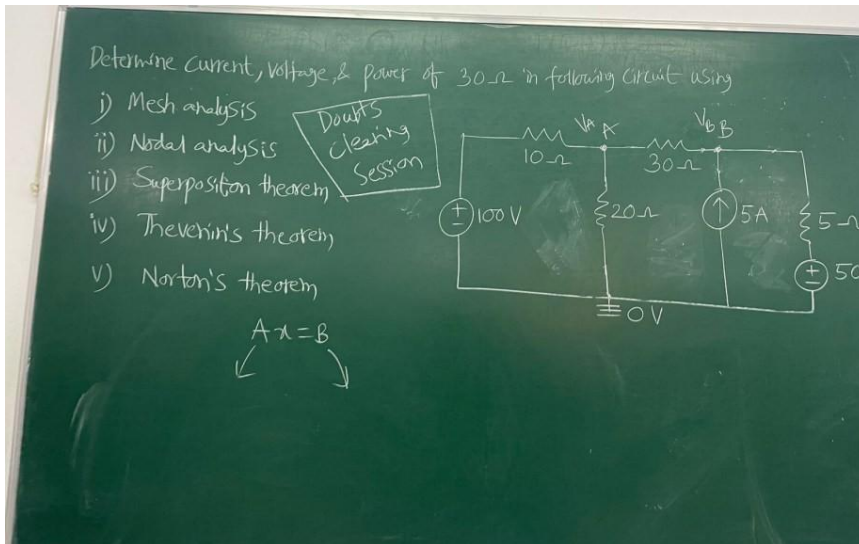
R. Manojkum

Faculty Sign

BVRIT HYDERABAD College of Engineering for Women
Department of Electrical and Electronics Engineering

Activity on "Power Up: A Practical Session on Transformer Making"

Faculty Name: Dr. Chava Sunil Kumar ,Ms.B.Sujatha, Mr.M.Rupesh

Class: II – I / EEE

Academic Year: 2023-24

Subject Name: Electrical Machines - I Lab (EM – I Lab)

Topic: Transformers construction

Date: 20th to 27th Jan 2024

Brief Write-up

Transformers are essential components in electrical systems, enabling the efficient transfer of electrical energy between circuits through electromagnetic induction. The process of making a transformer involves meticulous planning and precision to ensure optimal performance and safety. This report details the hands-on session conducted for assembling the winding and core of a transformer. The session aimed to provide practical experience in the construction of transformer components, reinforcing theoretical knowledge with real-world application. Students are able to acquire a comprehensive comprehension of the various physical components that make up a transformer, including the core, windings, insulation, and so on. The operation of electromagnetic induction within the transformer can be better understood by seeing it demonstrated with assembled pieces. This involves demonstrating the transformation of voltage and current between the main and secondary windings.

Learning Outcomes:

1.Hands-on session not only enhance learning but also inspire a deeper interest and curiosity in analysis of transformer operation.

2. Gained hands-on experience in assembling transformer components.

3. Students can share insights, ask questions, and learn from each other, fostering a sense of community and teamwork.

.4. This hands-on knowledge is invaluable for troubleshooting and maintenance tasks.

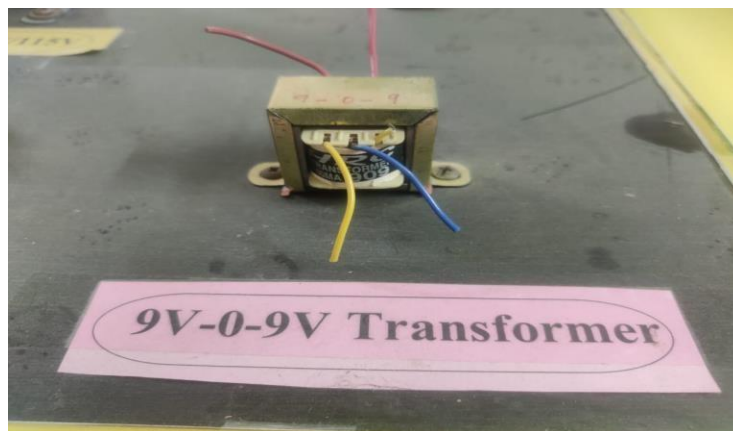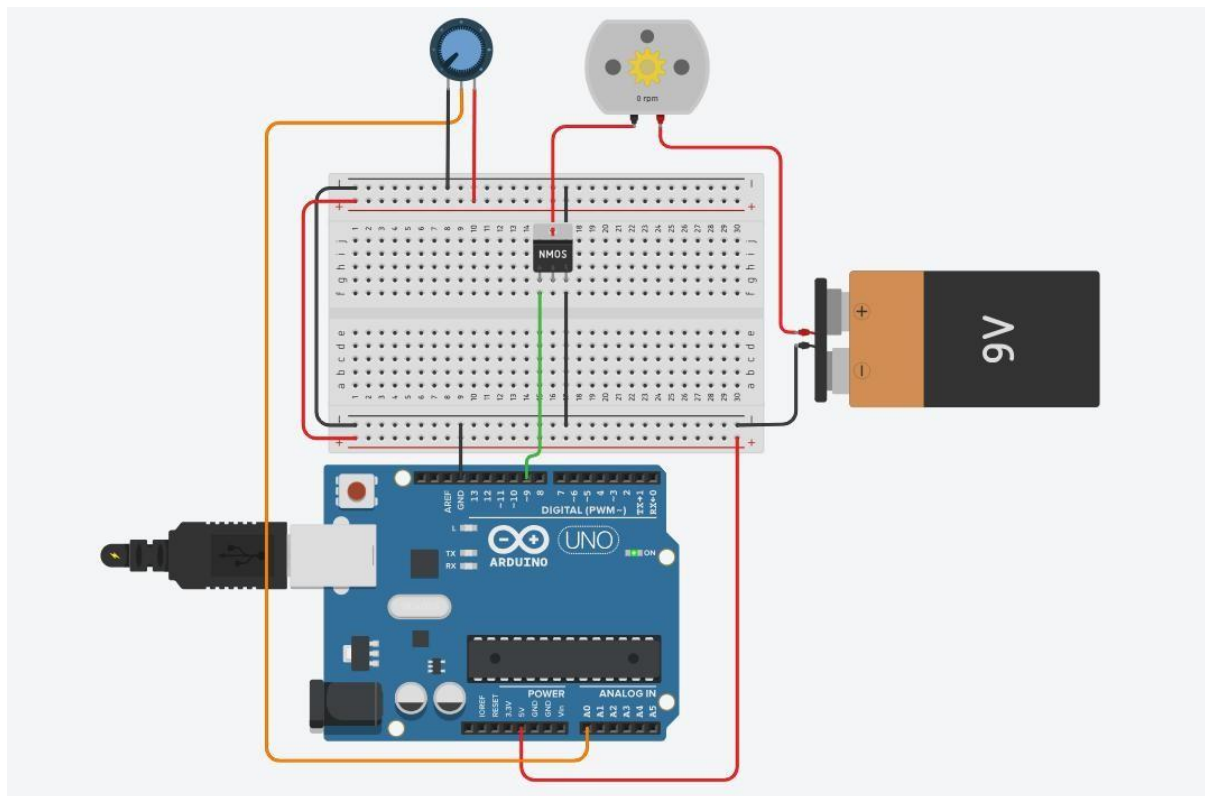5.It bridges theoretical knowledge with practical application.

No. of Students participated: 65

Final Prototype model of the Transformer and Transformer placed on PCB

9V-0-9V Transformer

Dr.Ch.Sunil Kumar
Professor, EEE Department

Ms.B.Sujatha
Associate Professor, EEE Department

Mr.M.Rupesh
Assistant Professor, EEE Department

BVRIT HYDERABAD College of Engineering for Women
Department of Electrical and Electronics Engineering

Name of the Activity : "Virtual Prototyping: Concept to Creation with Tinkercad"

Faculty Name: Dr. Chava Sunil Kumar , Ms.B.Sujatha , Dr.M.Rupesh

Class: II-I / EEE

Academic Year: 2023-2024 I Sem

Lab Name: Electrical Machines - I Lab (EM – I Lab)

Date: 08/01/2024 & 09/01/2024

Topics:

Brief Write – Up:
In the activity "Virtual Prototyping: Concept to Creation with Tinkercad," participants will explore the process of designing and simulating machine components using the Tinkercad online simulator. This hands-on session will guide learners through the creation of detailed virtual prototypes, allowing them to visualize and refine their designs in a risk-free environment. By leveraging Tinkercad's intuitive tools, participants will gain practical skills in digital prototyping, enhancing their understanding of complex electri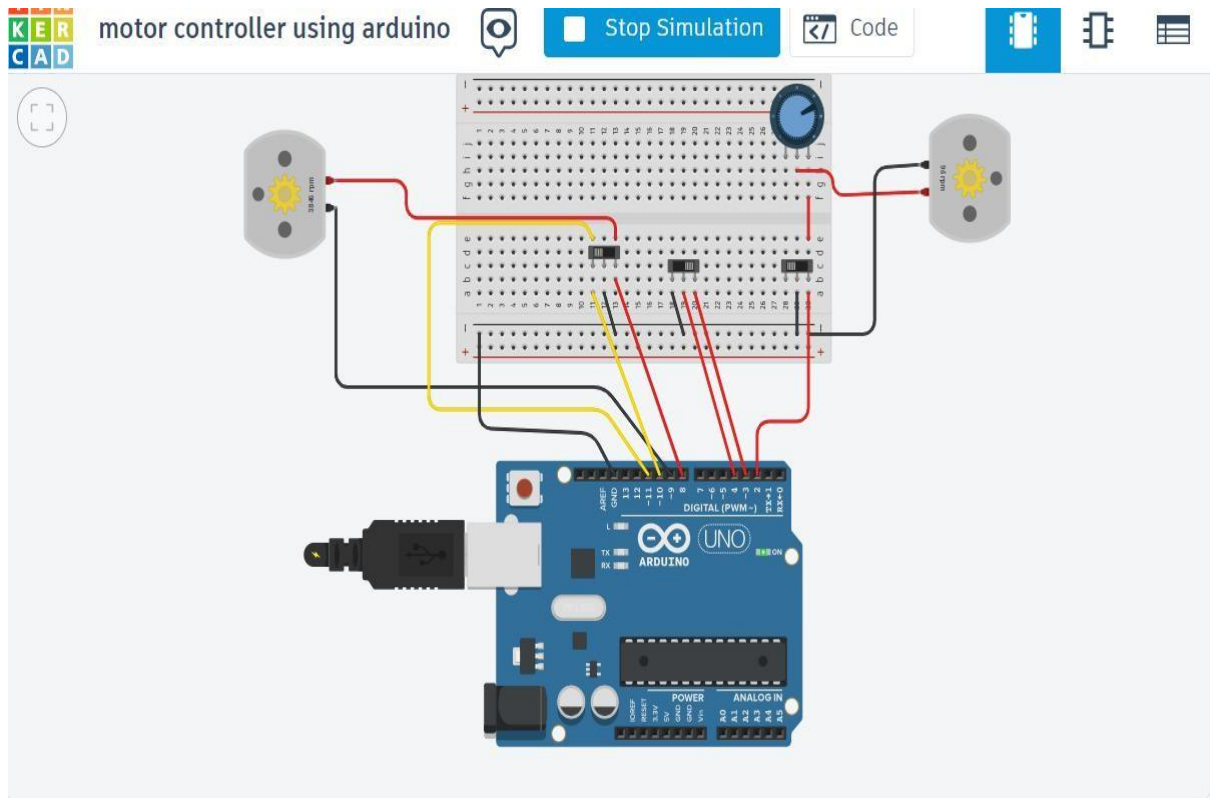cal and mechanical systems. This activity bridges the gap between theoretical concepts and real-world applications, preparing individuals for innovative engineering challenges.

Through guided exercises, participants will learn to create schematic diagrams, simulate circuit behavior, and iterate on their designs for optimal performance. The session emphasizes the importance of precision and accuracy in engineering, demonstrating how virtual prototyping can save time and resources in the development process.

 Tinkercad plays a crucial role in machine simulation by providing a comprehensive, accessible, and efficient platform for designing, testing, and refining machine components and systems

Learning Outcomes:

1. Collaboration within teams enhances problem-solving abilities and creativity, often resulting in innovative solutions.
2. Students will understand the importance of iterative design, using simulation to refine and improve their prototypes continuously.
3. Engaging with the Tinkercad simulator will stimulate creativity, encouraging participants to explore innovative solutions and design ideas.
4. Students will develop hands-on skills in creating virtual prototypes, allowing them to experiment with designs without needing physical components.

No. of Students Participated: 55

https://www.tinkercad.com/embed/2XI5zFAC02d

https://www.tinkercad.com/things/da5VeKYKW8B-simple-motor-control-arduino-and-l293d

https://www.tinkercad.com/things/9dUueSQJ3js-motor-controller-using-arduino

Photos:

View the PWM output to the motor driv

Adjust the speed of the motor, right to left (slow to fast).

ON LED indicates motor is activated.

Push button to start motor.

RPM ca

0RPM

L293D

Dr.Ch.Sunil Kumar

Professor, EEE Department

Ms.B.Sujatha
Associate Professor
EEE Department

Assistant Professor
EEE Department

BVRIT HYDERABAD College of Engineering for Women

Department of Electrical and Electronics Engineering

Name of the Activity: Experiential Learning

Faculty Name: Dr. R. Manojkumar

Class: II – I / ECE –A

Academic Year: 2023-24

Subject Name: Network Analysis and Synthesis

Topic: Analysis and Simulation of Series RLC Circuits

Date: 10.12.23

Write-up: This experiential learning activity focuses on designing, simulating, and analyzing underdamped, overdamped, and critically damped series RLC circuits using specified component values. The activity will be conducted in three main parts: circuit design based on roll number, simulation using LTspice, and resonance analysis using MATLAB.

No. of Students Participated: 72

Photos:
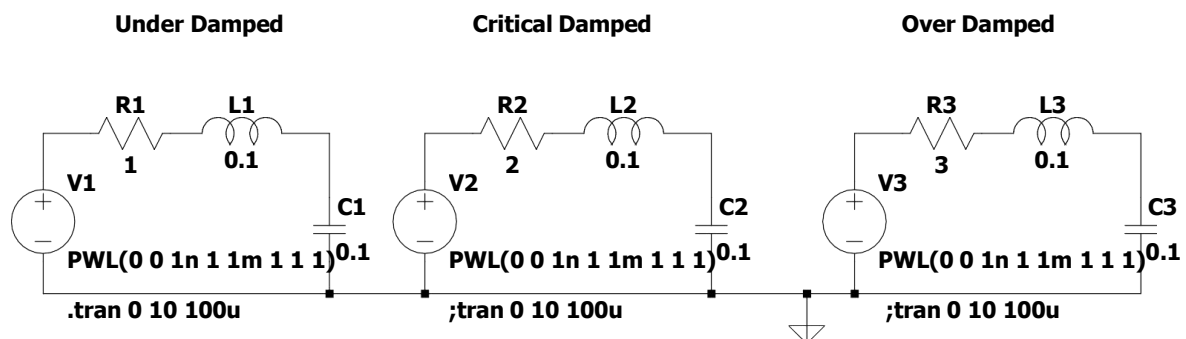
```
clc;
close all;
clear all;
r = 5;
l = 0.1;
c = 0.10;
f1 = 0:0.01:3;
f2 = 0:0.1:4;
frs = (1/(2*pi*sqrt(l*c)))
```

frs = 1.5915

```
zs= sqrt((r.^2)+((2*pi*f1*l)-(1./(2*pi*f1*c))).^2)%series impedance
```

zs = 1×301
       Inf   159.2272   79.7219   53.2680   40.0767   32.1903   26.9559   23.2368 ...

```
plot(f1,zs)
xlabel("frequency");
ylabel("Impedance");
title("Series RLC Circuit");
```
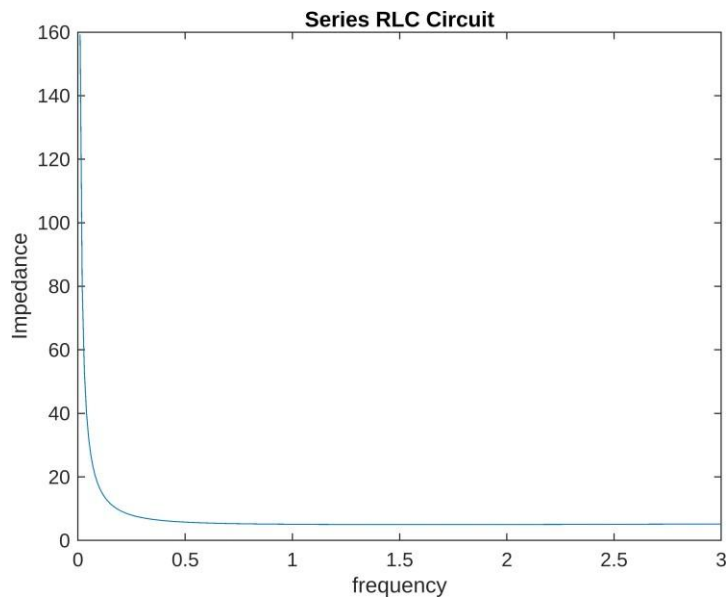


```
y=sqrt((r.^2)+((2*pi*f2*c)-(1./(2*pi*f2*l))).^2)
```

y = 1×41
       Inf   16.6225   9.2920   7.1540   6.2366   5.7646   5.4935   5.3257 ...

1

Faculty Sign

BVRIT HYDERABAD College of Engineering for Women
Department of Electrical and Electronics Engineering

Name of the Activity: Quiz

Faculty Name: Dr. Chava Sunil Kumar   **Class: II – I / EEE**

Academic Year: 2023-24

Subject Name: Electrical Machines - I (EM - I)

Topic: Pre-Requisites, Unit-I, Unit-II, Unit-IV, Unit-V of EM-I

Date: 13-11- 2023

Brief Write-up

Moodle is one of the Learning Management System (LMS) where we can incorporate required additional tools which are used for teaching learning activities. Quiz is one of the powerful tool to monitor and diagnose the student performance with certain types of knowledge. Using this tool effectively can boost your course's effectiveness, and promote student performance. The quiz is scheduled in the Moodle with time limits and informed the same who students who were added in the Moodle course and the quiz is consisting of Multiple-choice questions with easy, moderate and hard levels.

The advantages of Online Quiz in Moodle are as follows.

1. Students can be engaged remotely in an attractive mode
2. At the same time large number of students can take the test.
3. The questions and options are randomized.
4. Results and summary of quiz with correct options can be displayed immediately after completing the quiz.
5. Faculty can analyze the students understanding levels with the results immediately.
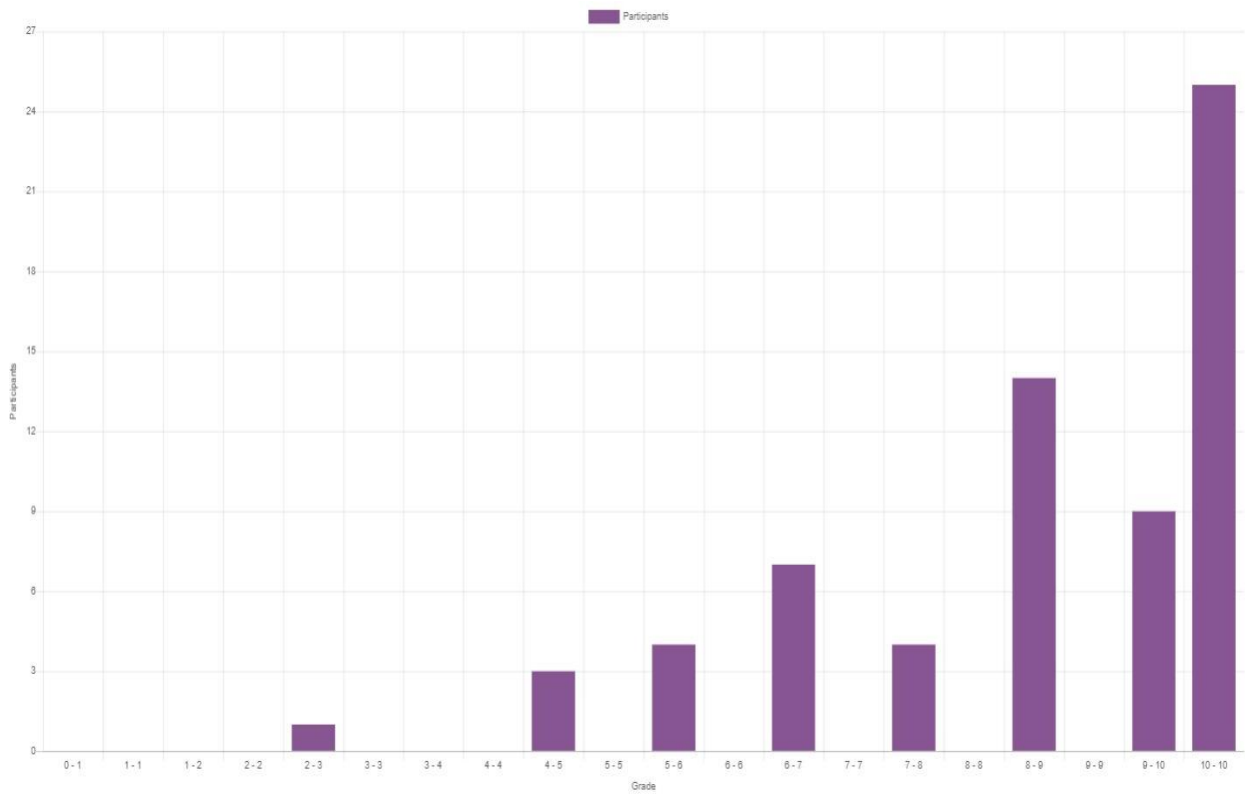
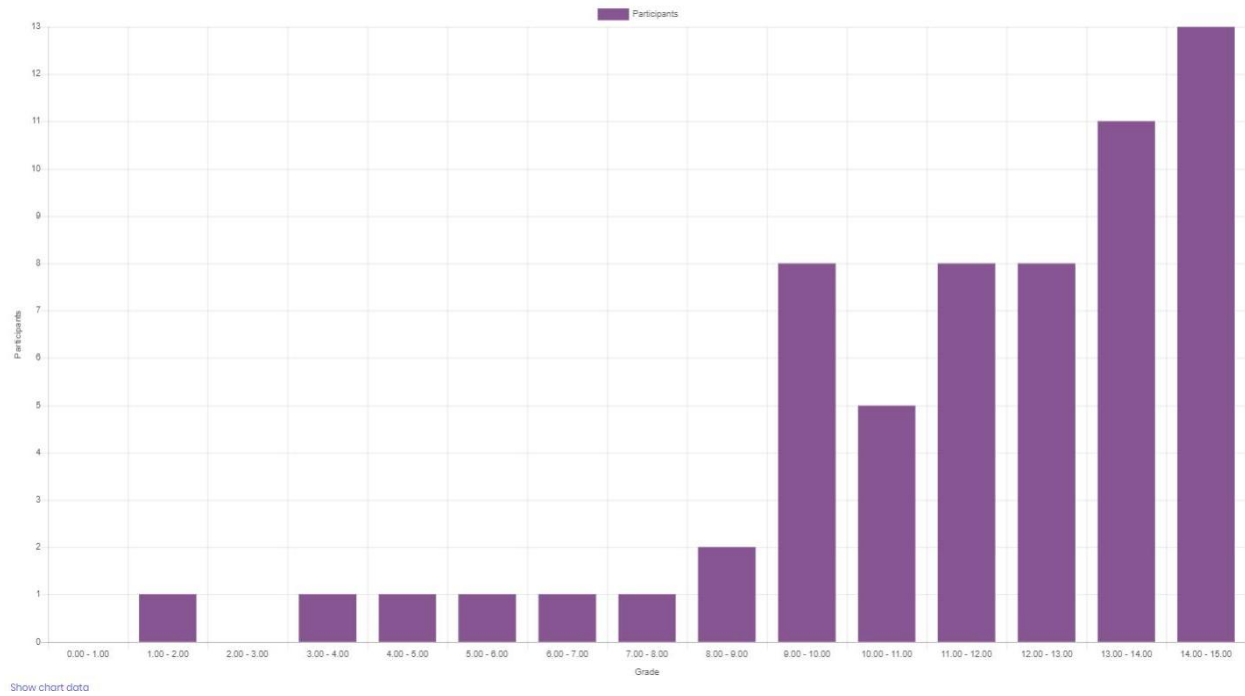### Prerequisites Quiz, No. of Students participated: 67
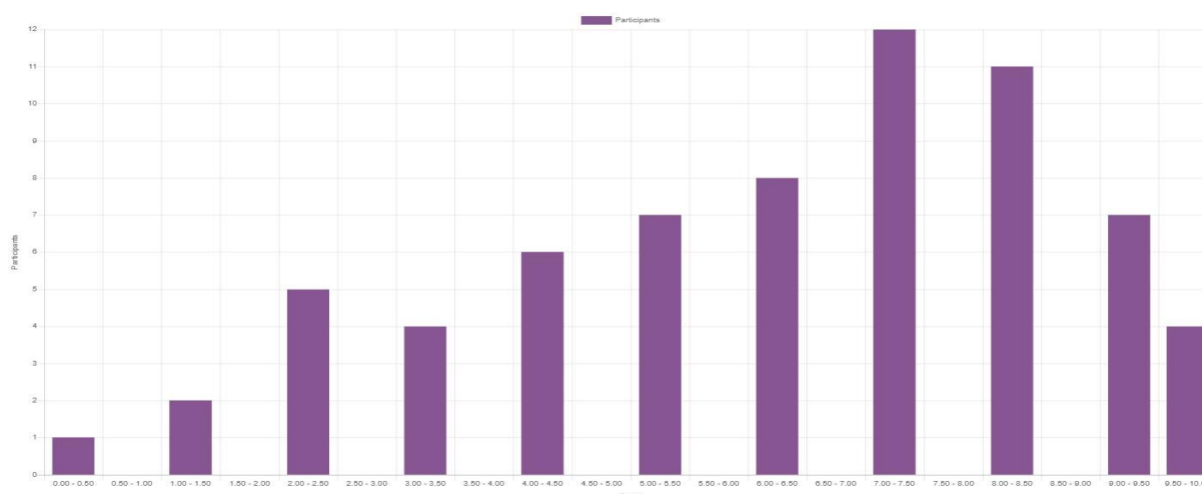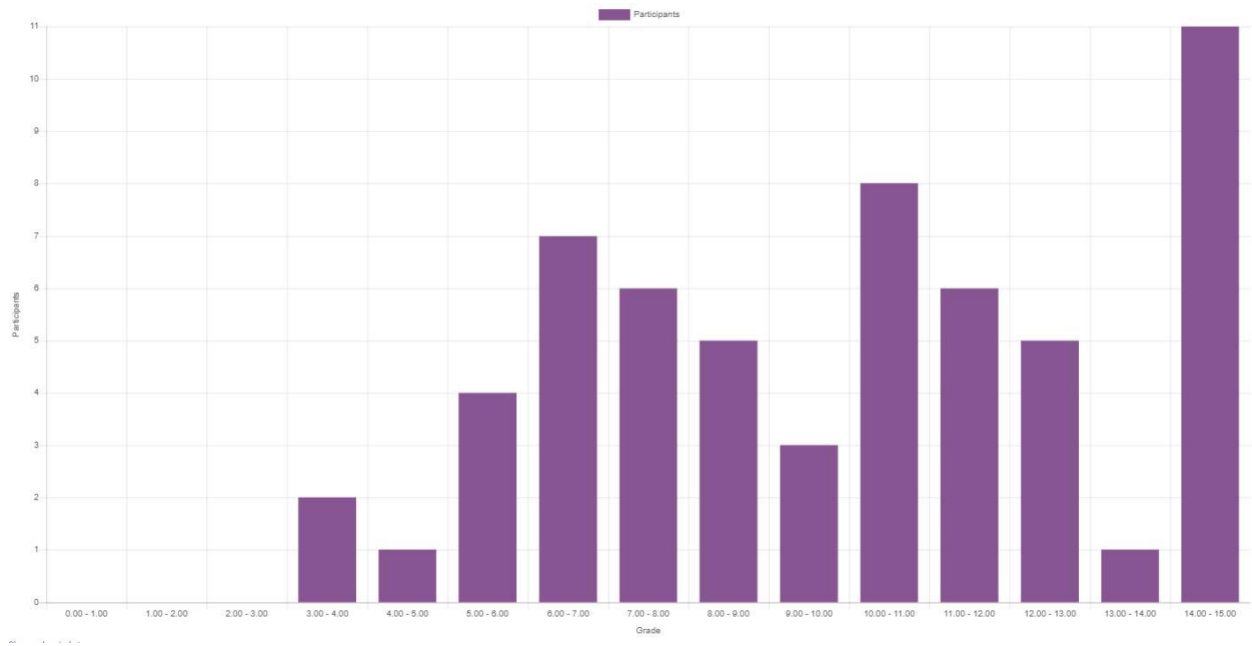
Unit-I Quiz, No. of Students participated: 68
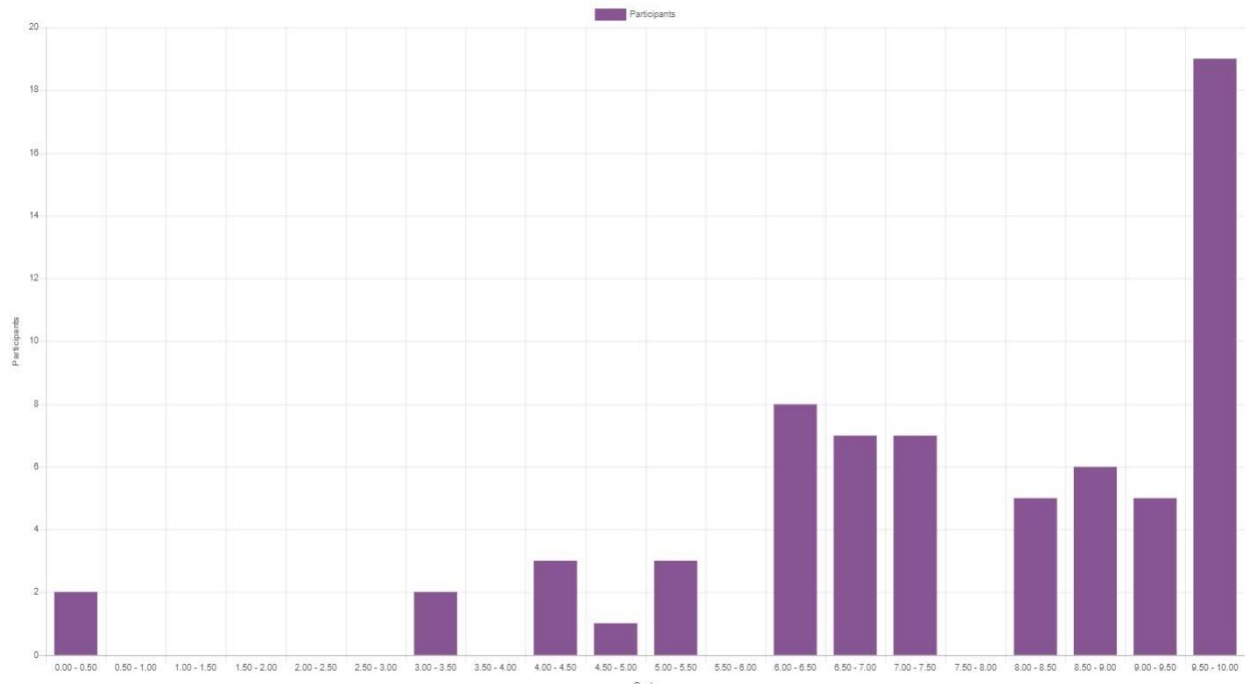
Unit-II Quiz, No. of Students participated: 61

Unit-IV Quiz, No. of Students participated: 67

Unit-V Quiz, No. of Students participated: 67

Dr. Chava Sunil Kumar
Professor, EEE Department

BVRIT HYDERABAD College of Engineering for Women
Department of Electrical and Electronics Engineering

Name of the Activity: Open space Learning

Faculty Name: Mr.R.Guruswamy

Class: I – I / IT B

Academic Year: 2023-24

Subject Name: Basic Electrical Engineering

Topic: Three Phase Circuits

Brief Write – Up:

Open Space Learning (OSL) is an innovative pedagogical approach that leverages open, flexible learning environments to enhance student engagement and comprehension. In the context of the Basic Electrical Engineering subject, particularly on the topic of three-phase circuits, OSL fosters collaborative learning, critical thinking, and practical application of theoretical concepts. The main objective of the OSL is to provide an immersive learning experience for understanding three-phase circuits and encourage active participation and collaborative problem-solving among students. Classes are conducted in open, flexible spaces that can be rearranged to suit different activities, encouraging free movement and interaction.

Open Space Learning (OSL) offers a dynamic and effective approach to teaching three-phase circuits in Basic Electrical Engineering. By creating an engaging, collaborative, and practical learning environment, OSL helps students not only grasp complex concepts but also develop essential skills for their future careers. Integrating OSL into the curriculum can significantly enhance the learning experence and outcomes for engineering students.

Date: 21-11-2023

No. of Students Participated: 61

Photos:

Faculty Signature

BVRIT HYDERABAD College of Engineering for Women
Department of Electrical and Electronics Engineering
Name of the Activity: Flipped Class Room Activity

Faculty Name: Dr. R. Manojkumar

Class: II – I / ECE –A

Academic Year: 2023-24

Subject Name: Network Analysis and Synthesis

Topic: Transient and Steady State Response

Date: 06.11.23

Write-up: The flipped classroom model proved to be highly effective for this problem-solving session. Students came prepared, having already engaged with the theoretical aspects of the problems, which enabled them to dive straight into practical application. This active learning strategy not only enhanced their problem-solving skills but also fostered a supportive and interactive learning environment.

No. of Students Participated: 72

Photos:

BVRIT HYDERABAD College of Engineering for Women
Department of Electronics and Communication Engineering
Name of the Activity: Real-time Problem based Learning

Faculty Name: Dr. R. Manojkumar

Class: I – II / ECE –B

Academic Year: 2022-23

Subject Name: Basic Electrical Engineering

Topic: Monthly Energy Consumption Calculation of Home

Date: 18/5/23

Write-up: In this activity, the students aim to analyze the electricity consumption of a household for a recent month, denoted as month "m". The number of units consumed during month "m", referred to as "E1" kWh, is obtained from the electricity bill. To further analyze the energy usage, students categorized the energy consumption of each household appliance based on their usage over a typical working day (Case 1) and a holiday (Case 2) within the same month. By assuming a uniform energy profile throughout the month, students filled in the data sheet with the daily energy consumption of each appliance for both working days and holidays.

Next, students calculated the total energy consumed by each appliance over the entire month, considering the number of working days and holidays, and denoted these values as Ea1, Ea2, Ea3, etc. The sum of these values gives the total energy consumption for the month, denoted as "E2" kWh. This calculated total, E2, is compared to the actual total energy consumption, E1, from the electricity bill to validate the accuracy of our data and assumptions.

Furthermore, students visualized the data through various plots. The first plot displays the energy consumption of each appliance over a day for both working days and holidays, showing variations in usage patterns. The second plot aggregates the energy consumption of all appliances over a day for both scenarios, providing an overall daily energy profile of the household. The third plot is a bar graph representing the monthly energy consumption of each appliance, highlighting the contribution of each appliance to the total monthly energy usage.

These visualizations and calculations help in understanding the energy consumption patterns of the household, identifying the major contributors to the electricity bill, and potentially finding areas where energy savings can be implemented.

No. of Students Participated: 64

Photos:

Plot of energy consumption of all appliances of home over a day

Time	Energy Consumption
1	4.89
2	4.89
3	3.27
4	5.295
5	6.135
6	3.27
7	1.02
8	3.27
9	5.52
10	3.27
11	3.27
12	3.27
13	3.27
14	7.32
15	9.57
16	3.27
17	3.27
18	12.174
19	12.174
20	12.174
21	12.174
22	17.404
23	19.674
24	7.32

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
FAN	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.04	0	0.04	0.04	0.08	0.08	0.04	0.04	0.08	0.08
GREASER	0	0	0	0	0.22	0	0	0.22	0	0.22	0	0	0	0	0	0	0.22	
LIGHTS	0	0	0	0	0.0416	0.125	0.125	0	0	0	0	0	0	0	0	0	0.125	
WASHING MACHIN	0	0	0	0	0	0	0	0	0	0.09	0	0	0	0	0.09	0	0	
FRIDGE	0.012		0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	

ENERGY CONSUMED BY THIS ACTIVITY APPROXIMATELY 123 UNITS

R. Manojkumar

Faculty Sign

BVRIT HYDERABAD College of Engineering for Women
Department of Electrical and Electronics Engineering
Name of the Activity: Experiential Learning

Faculty Name: Dr. R. Manojkumar

Class: II – I / EEE

Academic Year: 2023-24

Subject Name: Electrical Simulation Tools Laboratory

Topic: Electric Vehicles Poster Preparation

Date: 15.12.23

Write-up: As part of our experiential learning activity, students engaged in the preparation of informative and visually appealing posters on Electric Vehicles (EVs). This activity aimed to enhance students' understanding of EV technology, benefits, and challenges, while also developing their skills in research, design, and communication.

No. of Students Participated: 50

Photos:

Induction motor

What is an Induction Motor?

An induction motor or asynchronous motor is an **AC** electric motor in which the electric current in the rotor that produces torque is obtained by electromagnetic induction from the magnetic field of the stator winding.
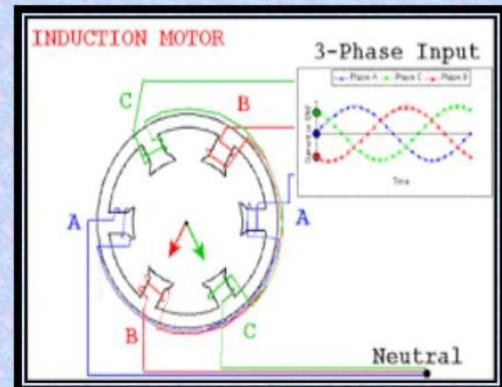
Working Principle of Induction Motor

Faculty Sign

BVRIT HYDERABAD College of Engineering for Women
Department of Electrical and Electronics Engineering

Name of the Activity: From Concept to Implementation with Prototype Models
Faculty Name: Ms.B.Sujatha, Associate Professor , Ms.K.Bhavya ,Assistant Professor, EEE Department
Class: IV-I/ EEE
Academic Year: 2023-2024 I Sem
Lab Name: Electrical & Electronics Design Lab Date:
15/11/2023 & 18/11/2023
Topics:

Team No	Roll No	Name of the student	Prototype Model
1	20WH1A0207	Ms.J.Divya	Water level detector using float sensor
	20WH1A0227	Ms.P.Kavya Sri	
	20WH1A0239	Ms.Sneha Manoharan	
	20WH1A0243	Ms.R.Likitha	
	20WH1A0246	Ms.G.Ramya Naidu	
	20WH1A0221	Ms.V.K.Pravallika	
2	20WH1A0212	Ms.S. Keerthana	Detector for fire alarm
	20WH1A0213	Ms.Boddupalli Ankitha	
	20WH1A0214	Ms.Appala Prathyusha	
	20WH1A0215	Ms. Muddam Nikshiptha	
	20WH1A0216	Ms.G.Swetha	
	20WH1A0228	Ms.K Rathnamma	
	20WH1A0229	Ms.P.Anusha	
	20WH1A0233	Ms. M Niteesha	
	20WH1A0242	Ms.K.S.Deekshitha	
3	20WH1A0234	Ms.Arroju Asritha	Rain detector alarm at

	21WH5A0202	Ms.Nabieha	home
	21WH5A0204	Ms.B.Mahaveen	
	21WH5A0206	Ms. Sudhamalla Sai Meghana	
	21WH5A0216	Ms. U. Devi Sri Naga Pavanika	
	21WH5A0217	Ms.G.Sahithi	
	21WH5A0218	Ms.M.Divya	
	21WH5A0211	Ms. Ponnaganti Sri Bhargavi	
	21WH5A0205	Ms.R.Shivani	
	21WH5A0207	Ms. Enikepally Tejaswi	
	21WH5A0208	Ms. Edigi Akshitha Goud	
4	20WH1A0201	Ms.A.Sony	Simple door security alarm
	20WH1A0204	Ms. Gadde Vidyadhari	
	20W1HA0205	Ms.N.Harini	
	20WH1A0206	Ms.B.Geethavani	
	20WH1A0235	Ms.K.Jahnavi	
	20WH1A0244	Ms.B.Samatha	
	21WH5A0201	Ms.G.Aashritha	
	21WH5A0203	Ms.Ch.Bhavana Reddy	
5	20WH1A0203	Ms. Kariveda Sahithya	Short circuit protection Using Sensors
	20W1HA0208	Ms. Challa Nethra	
	20WH1A0209	Ms.D.Hema	
	20WH1A0223	Ms.K.Supriya	
	20WH1A0230	Ms. Naredla Sai Nithya Reddy	
	20WH1A0231	Ms. Thallapally Swetha	
	20WH1A0232	Ms.Ritu Kumari	
	20WH1A0241	Ms.A.Navya	

6	20WH1A0202	Ms.K.Deekshitha	Automatic Street lights
	20WH1A0211	Ms. B. Pragnya Angel	
	20WH1A0217	Ms.Burra Sanjana	
	20WH1A0219	Ms.V.Saipriya	
	20WH1A0222	Ms.K.Vasavi	
	20WH1A0224	Ms.V.Priya	
	20WH1A0238	Ms.Ch.Preethi	
	20WH1A0245	Ms.N.Dharani	
	21WH5A0209	Ms. Alluri Pavani Reddy	
7	20WH1A0220	Ms.Boda Sravanthi	An LED Circuit for Musical Reactions
	20W1HA0225	Ms.K.Renuka	
	20WH1A0226	Ms. Rapelly Chandana	
	20WH1A0237	Ms. P.Aruna	
	21WH5A0213	Dandu Srinidhi	
	21WH5A0215	Ms. Begari Rasagyna	
	21WH5A0220	Ms.Kundeti Aarthi	

Brief Write – Up:

The activity on "From Concept to Implementation with Prototype Models " Engaging in hardware projects with hands-on prototype building involves practical application of theoretical concepts in electronics and engineering. In addition to assisting in the implementation of small projects that contribute to project-based learning, the purpose of the activity was to find solutions to challenges that were presented in competitive tests.

It typically includes designing circuitry, selecting components, soldering, and assembling physical prototypes. This hands-on approach fosters deep understanding of technical concepts, troubleshooting skills, and iterative improvement. Building prototypes allows for testing and validation of ideas in real-world conditions, ensuring functionality and reliability. Seven teams are used to organize the students. For the purpose of gaining expertise, each team was given a hardware project to complete and then presented their results to their juniors.

Learning Outcomes:

1. Familiarize with hardware skills such as soldering, building circuits on PCBs, etc.

2. Exposure on debugging skills.

3. It functions as an invaluable tool for the dissemination of knowledge.

4. Collaboration within teams enhances problem-solving abilities and creativity, often resulting in innovative solutions.

5. bridging the gap between theory and practical implementation, preparing individuals for careers in technology development and engineering.

No. of Students Participated: 65

Photos:
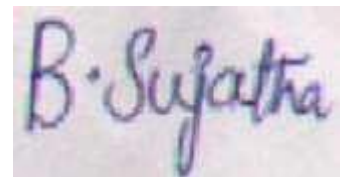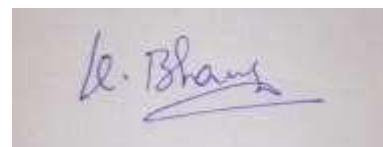
Ms.B.Sujatha

Associate Professor

EEE Department

Ms.K.Bhavya

Assistant Professor

EEE Department

BVRIT HYDERABAD College of Engineering for Women
Department of Electronics and Communication Engineering
Name of the Activity: Think Pair Share

Faculty Name: Ms.Babita Gupta

Class: I – II / ECE-B

Academic Year: 2023-24

Subject Name: BEE

Topic: Unit-1,Unit-2& Unit-3

Date: 20.12.23

Write-up: Think-Pair-Share is an interactive teaching strategy designed to enhance student engagement, critical thinking, and communication skills. In this activity, students are first given a thought-provoking question or problem and asked to think about it individually. After a few minutes, they **pair** up with a partner to discuss their thoughts and responses. Finally, each pair **shares** their ideas with the larger group or class, encouraging broader discussion and diverse viewpoints

No. of Students Participated: 60

Photos:

Faculty Sign

BVRIT HYDERABAD College of Engineering for Women
Department of Electrical and Electronics Engineering

Name of the Activity: Case Study on Energy Consumption in your Home

Faculty Name: M Sandeep Kumar

Class: I – II / CSE(AI&ML)

Academic Year: 2023-24

Subject Name: Basic Electrical Engineering

Topic: Energy Consumption in your home

Brief Write – Up

Many students are more inductive than deductive reasoners, which means that they learn better from examples than from logical development starting with basic principles. The use of case studies can therefore be a very effective classroom technique. Case assignments can be done individually or in teams so that the students can brainstorm solutions and share the work load. Students were asked to do activity on Energy consumption in your home i.e. each and every students has to observe the number of hours for which appliance in use in their houses so that they have an idea about usage of appliance and their ratings in order to calculate their energy consumption in their houses. By conducting this activity, they gained knowledge and how to calculate number units consumed by the appliances per day. Based on that they know about electricity bill calculations. Announced the activity in the class on 23.05.2024. Students were asked to prepare a table and calculate the number units consumed by the appliances per day in their home.

Date: 26.05.2024

No. of Students Participated: 60

Energy Consumption at Home

1. Name :- K. Mahima
2. Roll Number :- 23WH1A6616
3. Branch :- CSE (AIML)
4. Section :- -
5. Area / locality :- Bachupally

Appliance usage between 8AM to 8PM (26-05-2024)

Name of the Appliance	Quantity	capacity of the appliance (w)	No. of hours used (hr)	Total energy consumption (w × hr)
Refrigerator	1	800W	12	9600 kwh
WIFI Router	1	10W	12	120 kwh
Washing machine	1	1400W	1/2	700 kwh
Geyser	1	1500W	1/2	750 kwh
Mobile charger	2	5W	1	(5×2) kwh
Laptop charger	1	45W	4	180 kwh
Ceiling fan	3	75W	11	(3×825) kwh
LED tube light	4	20W	5	4×(100) kwh

14.235 kWh

Total Energy Consumption KWh/day = 28.47 KWh

Total Energy Consumption KWh/month = 882.57 KWh

Total Energy Consumption KWh/year = 10,391.55 KWh

Cost of Energy consumption per month if 1 unit -
Rs 1.50/- = 1323.855/-

Faculty Sign

BVRIT HYDERABAD College of Engineering for Women
Department of Electrical and Electronics Engineering

Name of the Activity: Experimental based learning- Analysing Electrical Circuits using Tinkercad

Faculty Name: M Sandeep Kumar

Class: I – II / CSE(AI&ML)

Academic Year: 2023-24

Subject Name: Basic Electrical Engineering Lab

Topic: Analysing Electrical Circuits using Tinkercad

Brief Write – Up

Tinkercad is a tool used to build circuits and control devices, and it also has a built-in Arduino simulator that allows users to program and test their circuits in a virtual environment. This makes it easy to prototype and test new ideas before building them in the real world. As a part of Circculum, Students need to build/develop the circuits either with hardware/software.

Date: 25.05.2024

No. of Students Participated: 60
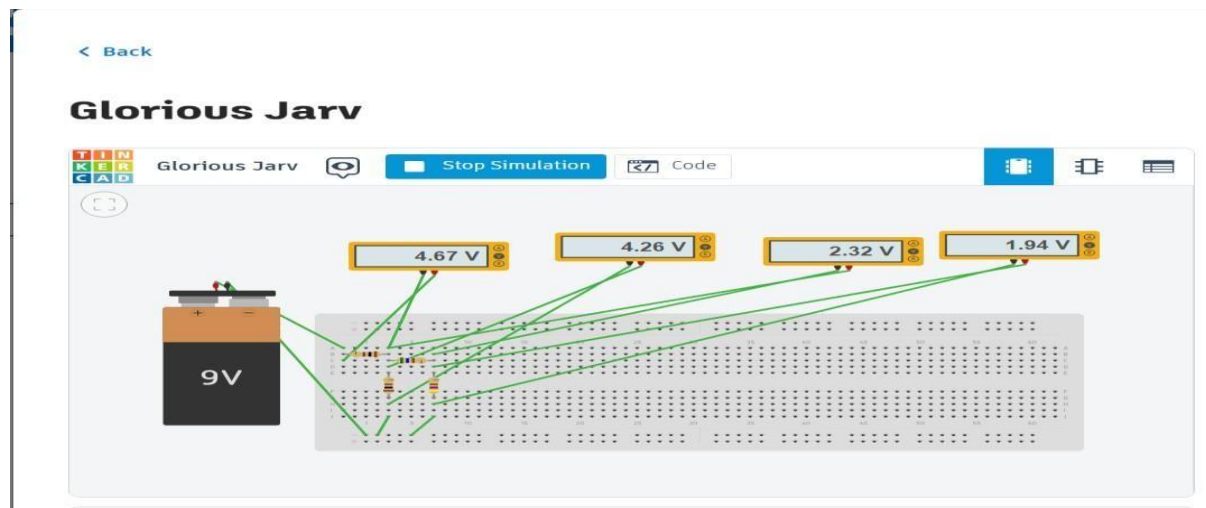
Photos:

Faculty Sign

BVRIT HYDERABAD College of Engineering for Women
Department of Electrical and Electronics Engineering

Name of the Activity: **"Innovate and Simulate: Using Wokwi for Prototype Development"**
Faculty Name: Ms.B.Sujatha, Associate Professor , Dr.Prasanta Kumar Jena,Assistant Professor, EEE Department
Class: II-II / EEE
Academic Year: 2023-2024 II Sem
Lab Name: Measurements &Instrumentation Lab
Date: 18/06/2024 &19/06/2024
Topics:

Batch No	Roll No	STUDENT NAME	Title of the Project
1	22WH1A0201	POLKAM LAHARI	Digital clock using DHT sensor
	23WH5A0217	G SAI KEERTHANA	
	22WH1A0219	SADANAVENI RISHITHA	
	22WH1A0206	D.APARANJANI REDDY	
2	23WH5A0212	C AISHWARYA	Raspberry pi pico Interfacing with Ultrasonic Sensor
	23WH5A0208	KATAKAM SRIVANI	
	23WH5A0221	S HARINI	
	22WH1A0228	VADDE SASHUSHMA	
3	23WH5A0216	CHIPPA MANASA	Acceleration detection using MPU6050 sensor
	22WH1A0241	ALUSA SRIJA	
	22WH1A0202	RATHOD KEERTHI	
	22WH1A0212	J.BHAVYA SREE	
4	22WH1A0238	KOTTE SADHVI SREE	Arduino based Digital temperature monitoring system using DHT 11 sensor
	22WH1A0211	R.GAYATHRI	
	22WH1A0204	BUDUTHA MAMATHA	

Batch No	Roll No	STUDENT NAME	Title of the Project
	22WH1A0224	SIPANI PRATHUSHA	
5	22WH1A0234	KADARLA AISHWARYA	Coal stoker flame size detector using flame sensor
	23WH5A0206	VANKUDOTHI JAYASRI	
	22WH1A0245	S.HASINI	
	22WH1A0214	LAKAVATH SHAILU	
6	23WH5A0205	BODIGE MEGHANA	Alarm clock with RTC sensor
	22WH1A0233	LANDE NIHARIKA	
	23WH5A0215	NERELLA CHANDHANA	
	22WH1A0227	P.CHARISHMA	
7	22WH1A0205	SRI PRIYA RATHOD	Motion Detector using PIR Sensor
	22WH1A0218	N.JANANI	
	22WH1A0215	SANAGA JESSI ELINA	
	22WH1A0209	SRIGIRI ADVAITHA	
8	23WH5A0213	REGULA ANJALI	Light detection using LDR Sensor
	22WH1A0221	N.S.D. HARSHITHA	
	22WH1A0222	JONNANA POOJITHA	
	22WH1A0239	CH. SUSHMITHA	
9	22WH1A0237	MADDUR NIKHITHA	Automatic water level controller using ultra Sonic sensor
	22WH1A0247	R.AVANTHI	
	22WH1A0203	M.CHATURYA CHOWDARY	
	22WH1A0220	AJMEERA VIKSHITHA	
10	23WH5A0214	BAIRI CHANDANA	Weather Monitoring Station Using DHT11 Sensor
	23WH5A0218	KUDIKALA JOSHIKA	
	22WH1A0236	CH.NAVYA SRI	
	22WH1A0246	RANGU SRIVANI	
11	23WH5A0203	ADLA ABHINAYA	Gas detector using gas sensor
	22WH1A0249	GUNDU TRIVENI	
	23WH5A0210	RAMAGIRI GREESHMA	
	22WH1A0242	MACHA SHIVA DEEPIKA	
12	23WH5A0204	NERELLA SNEHALATHA	Soil moisture Testing device using

Batch No	Roll No	STUDENT NAME	Title of the Project
	23WH5A0207	KANAKAM VAHINI	capacitive soil moisture sensor
	22WH1A0248	LINGAMPETA NISHITHA	
	22WH1A0213	NASREEN FATHIMA	
13	22WH1A0225	CH.KEERTHANA	Weather monitoring station using DHT22 sensor
	22WH1A0229	GORIGE AISHWARYA	
	22WH1A0232	K. MAHIMA	
	22WH1A0208	GUNDE SREEJA	
14	23WH5A0202	CHINDE AISHWARYA	Direction control of servo motor using ultrasonic sensor
	22WH1A0207	B.LAXMI PRASANNA	
	22WH1A0216	DUBBA VANI	
	22WH1A0231	UPPALA BRINDA	
15	22WH1A0243	TEJAVATH MANASA	Car parking Using Ultrasonic sensor
	23WH5A0201	ALLURI AKSHITHA	
	23WH5A0220	PALLE SHRUTHI	
	22WH1A0240	DIBBA MOUNIKA	
16	22WH1A0235	BANOTHU DEEPIKA	Measurement of distance using HC SR04 distance sensor with Arduino nano
	22WH1A0217	R ABHINAYA	
	23WH5A0209	KORRA HARSHINI	
	22WH1A0230	S.SAI AKSHITHA	
17	23WH5A0211	TOPIYARA BHAVANA	Soil detection using soil moisture sensor
	22WH1A0210	G.BHAVANA	
	22WH1A0223	POLEPALLY LOHITHA	
	23WH5A0219	NOMULA SATHWIKA	
	22WH1A0244	REDDY HASWITHA	

Brief Write – Up:

The activity "Innovate and Simulate: Using Wokwi for Prototype Development" offers a hands-on experience in transforming conceptual ideas into functional prototypes using the Wokwi online simulator. Studnets will learn to design and simulate electronic circuits and embedded systems in a virtual environment, gaining practical skills without the need for physical components. This activity bridges the gap between theory and practice, allowing for

rapid prototyping and iterative design. By the end of the session, participants will have a working prototype model and a deeper understanding of how to utilize simulation tools for innovative development.

This hands-on approach fosters deep understanding of technical concepts, troubleshooting skills, and iterative improvement. Building prototypes allows for testing and validation of ideas in real-world conditions, ensuring functionality and reliability. Seventeen teams are used to organize the students. For the purpose of gaining expertise, each team was given a hardware project to complete and then presented their results.

Learning Outcomes:

1.Collaboration within teams enhances problem-solving abilities and creativity, often resulting in innovative solutions.
2. Students will understand the importance of iterative design, using simulation to refine and improve their prototypes continuously.
3. Engaging with the Wokwi simulator will stimulate creativity, encouraging participants to explore innovative solutions and design ideas.
4. Students will develop hands-on skills in creating virtual prototypes, allowing them to experiment with designs without needing physical components.
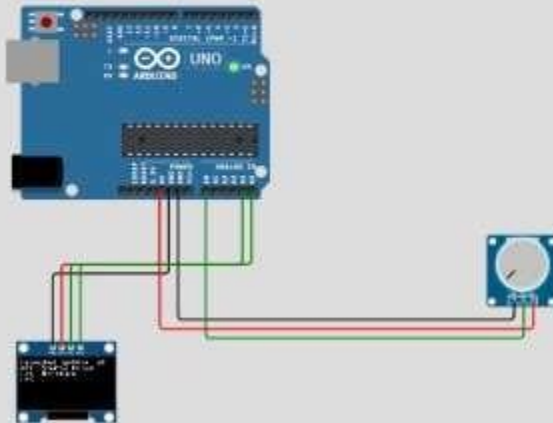
No. of Students Participated: 55

Photos:

⏱ 00:12.044 🕑100%

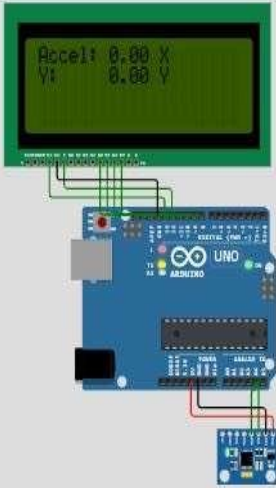```
3   #include <Adafruit_GFX.h>
4   #include <Adafruit_SSD1306.h>
5   #define OLED_RESET 4
6   #define sensor A0
7   Adafruit_SSD1306 display(OLED_RESET);
8   void setup()
9   {
0   display.begin(SSD1306_SWITCHCAPVCC,0x3c);
1   display.clearDisplay();
2   }
3   void loop()
4   {
5   int value = analogRead(sensor);
6   int percent = map(value, 1024, 0, 0, 25);--
7   display.setTextSize(0.5);
8   display.setTextColor(WHITE);
9   display.setCursor(0,0);
0   display.println("Embedded Systems Lab");
1   display.println("Araf Sourov Mahid");
2   display.println("Soil Moisture");
3   display.print(percent);
4   display.print("%");
5   display.display();
6   display.clearDisplay();
7   }
8
```

```
Simulation
⏱ 00:05.480  ⏲ 78%

[LCD display showing:]
Accel: 0.00 X
Y:     0.00 Y
```

Initializing MPU6050...

MPU6050 initialized.

Acceleration: X=0.00 Y=0.00 Z=9.81

Acceleration: X=0.00 Y=0.00 Z=9.81

Acceleration: X=0.00 Y=0.00 Z=9.81

Ms.B.Sujatha
Associate Professor
EEE Department

Assistant Professor
EEE Department

BVRIT HYDERABAD College of Engineering for Women

Department of Electrical and Electronics Engineering

Name of the Activity: Doubts Clearing Session-2

Faculty Name: Dr. R. Manojkumar

Class: I – II / CSE-C

Academic Year: 2023-24

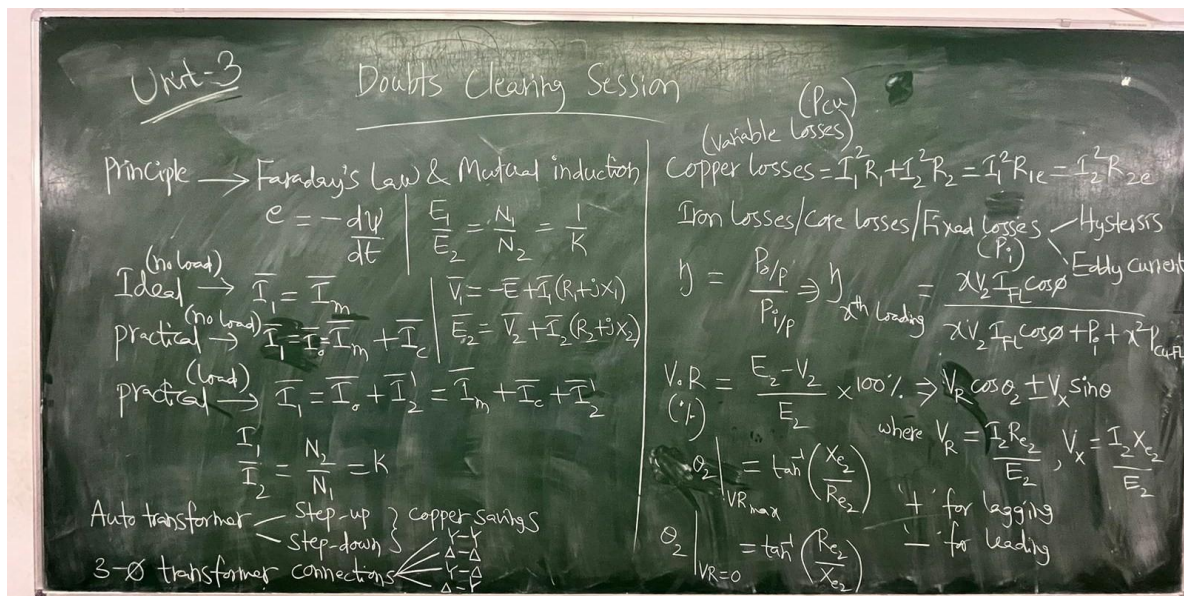**Subject Name: Basic Electrical Engineering**

Topic: Transformers

Date: 27.03.24

Write-up: A doubt clearing session on transformers was conducted to help students consolidate their understanding and address any uncertainties related to key concepts such as the working principle of transformers, types of transformers, equivalent circuit model, efficiency, voltage regulation, and applications. This interactive session aimed to provide a platform for students to ask questions, discuss problems, and receive clarifications in a collaborative environment.

No. of Students Participated: 64

Photos:

R. Manojkum

Faculty Sign

BVRIT HYDERABAD College of Engineering for Women
Department of Electrical and Electronics Engineering

Name of the Activity : "Virtual Prototyping: Concept to Creation with Tinkercad"

Faculty Name: Dr. Chava Sunil Kumar , Ms.B.Sujatha , Mr.M.Rupesh

Class: II-I / EEE

Academic Year: 2023-2024 I Sem

Lab Name: Electrical Machines - I Lab (EM – I Lab)

Date: 08/01/2024 & 09/01/2024

Topics:

Brief Write – Up:
In the activity "Virtual Prototyping: Concept to Creation with Tinkercad," participants will explore the process of designing and simulating machine components using the Tinkercad online simulator. This hands-on session will guide learners through the creation of detailed virtual prototypes, allowing them to visualize and refine their designs in a risk-free environment. By leveraging Tinkercad's intuitive tools, participants will gain practical skills in digital prototyping, enhancing their understanding of complex electrical and mechanical systems. This activity bridges the gap between theoretical concepts and real-world applications, preparing individuals for innovative engineering challenges**.**

Through guided exercises, participants will learn to create schematic diagrams, simulate circuit behavior, and iterate on their designs for optimal performance. The session emphasizes the importance of precision and accuracy in engineering, demonstrating how virtual prototyping can save time and resources in the development process.

 Tinkercad plays a crucial role in machine simulation by providing a comprehensive, accessible, and efficient platform for designing, testing, and refining machine components and systems

Learning Outcomes:

1. Collaboration within teams enhances problem-solving abilities and creativity, often resulting in innovative solutions.
2. Students will understand the importance of iterative design, using simulation to refine and improve their prototypes continuously.
3. Engaging with the Tinkercad simulator will stimulate creativity, encouraging participants to explore innovative solutions and design ideas.
4. Students will develop hands-on skills in creating virtual prototypes, allowing them to experiment with designs without needing physical components.
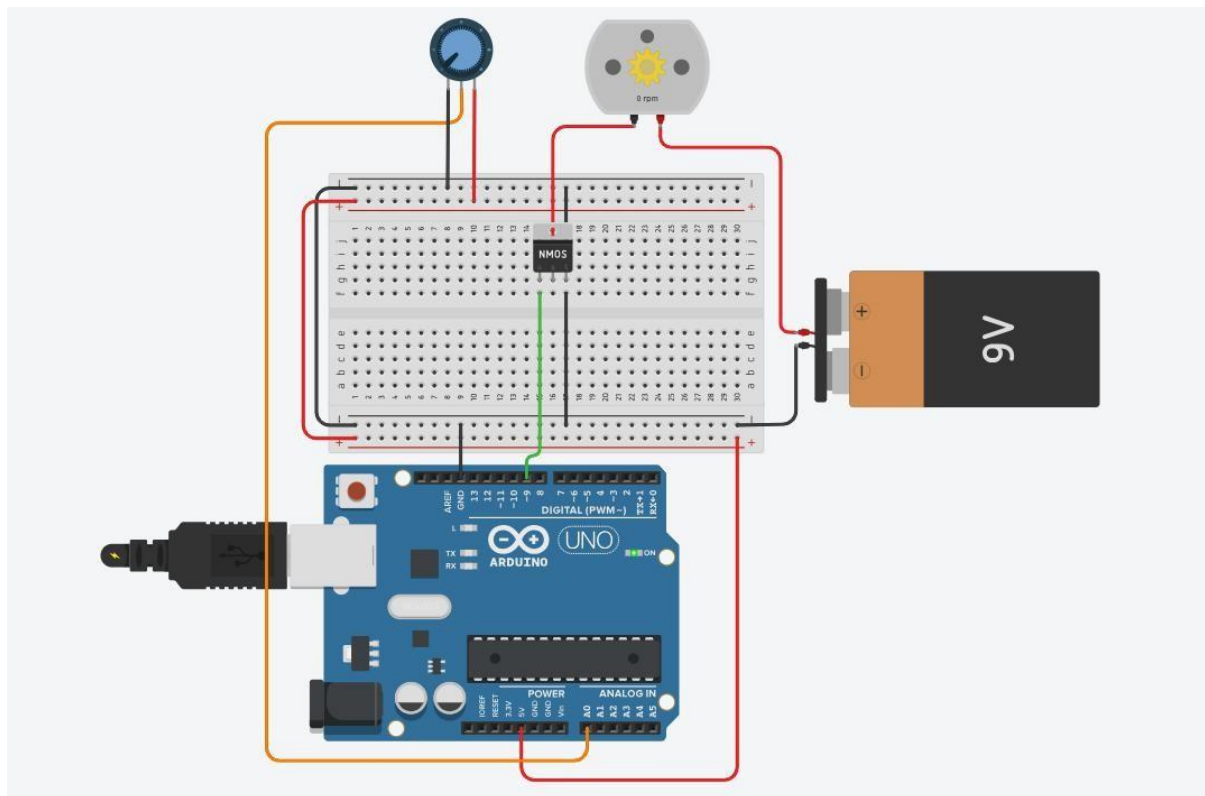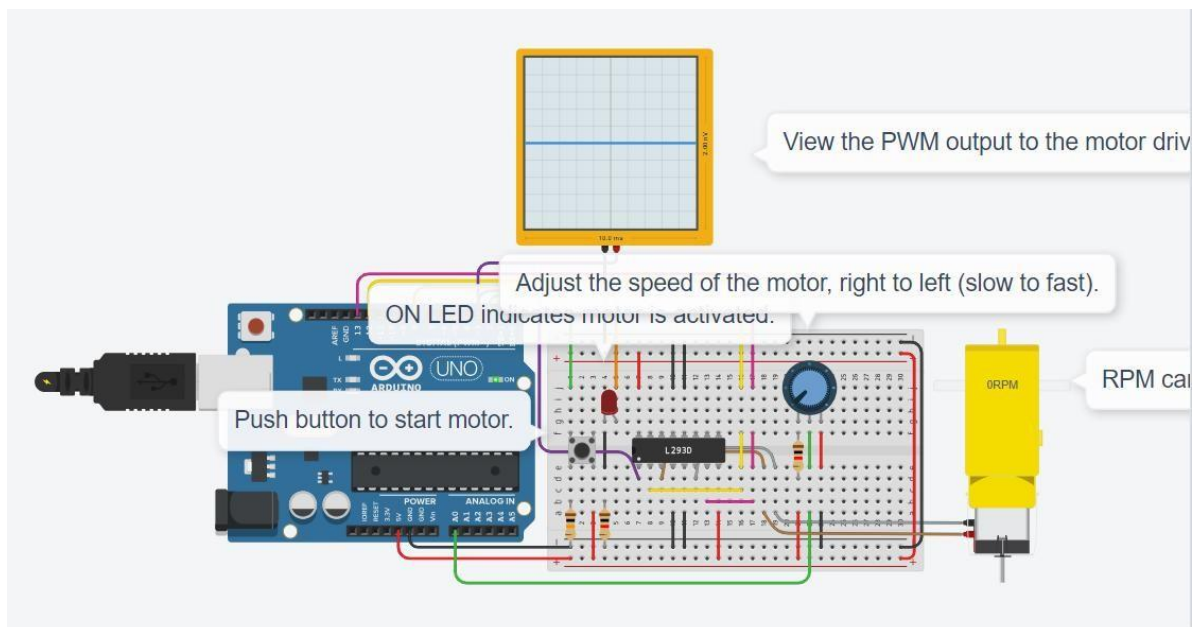
No. of Students Participated: 55

https://www.tinkercad.com/embed/2XI5zFAC02d

https://www.tinkercad.com/things/da5VeKYKW8B-simple-motor-control-arduino-and-l293d

https://www.tinkercad.com/things/9dUueSQJ3js-motor-controller-using-arduino

Photos:

View the PWM output to the motor driv

Adjust the speed of the motor, right to left (slow to fast).

ON LED indicates motor is activated.

Push button to start motor.

RPM ca

0RPM

Dr.Ch.Sunil Kumar

Professor, EEE Department

Ms.B.Sujatha
Associate Professor
EEE Department

Assistant Professor
EEE Department

BVRIT HYDERABAD College of Engineering for Women

Department of Electrical and Electronics Engineering

Name of the Activity: Preparing Posters for Electrical Circuit Analysis

Faculty Name: Dr. B. Srinivasa Rao

Class: I B.Tech (EEE), I-Semester

Academic Year: 2023-24

Activity for B.Tech (EEE), I-Semester students, A.Y. 2023-24

Overview: Activity-based learning leverages interactive and hands-on experiences to facilitate deeper understanding and retention of concepts. Using posters for circuit analysis provides a visual and collaborative way for students to grasp the fundamentals of electrical circuits, components, and their relationships. The main objective of this activity is to enhance understanding of electrical circuits through collaborative poster creation. The material required**:** Poster boards, Markers, Pens, Pencils, Circuit images, Glue or tape. The following steps involved in this activity.

1. **Introduction:** Briefly explain circuit components and laws.
2. **Group Work:** Students form small groups.
3. **Problem Assignment:** Each group receives a circuit problem.
4. **Poster Creation:** Groups draw and label circuit diagrams, showing their analysis.
5. **Presentation:** Groups present their posters and explain their findings.
6. **Discussion:** Class discusses different solutions and clarifies concepts.

Benefits:

- Visual learning aids comprehension
- Encourages teamwork and engagement
- Develops critical thinking and problem-solving skills

BVRIT HYDERABAD College of Engineering for Women
(UGC Autonomous Institution | Approved by ACITE | Affiliated to JNTUH)
(NAAC Accredited – A Grade | NBA Accredited B.Tech. (EEE, ECE, CSE and IT))
Bachupally, Hyderabad – 500090

COURSE: ELECTRICAL CIRCUIT ANALYSIS-I (ECA-I)

Activity for B.Tech (EEE), I-Semester students , A.Y. 2023-24

Last date for submission: 30-12-2023

S. No	Batch Number – Roll Nos	Task – Prepare a drawing sheet (White/Color) with multiple colors
1.	I – 23WH1A0201, 23WH1A0202, 23WH1A0203	Describe all circuit elements (Active and Passive Elements)
2.	II – 23WH1A0204, 23WH1A0205, 23WH1A0206	Illustrate KCL, KVL and Ohms Law with example
3.	III – 23WH1A0207, 23WH1A0208, 23WH1A0209	Illustrate Concept Mesh analysis and Super mesh analysis
4.	IV – 23WH1A0210, 23WH1A0211, 23WH1A0212	Generation of Single phase AC voltage with diagram
5.	V – 23WH1A0213, 23WH1A0214, 23WH1A0215	Concept of RL, RC & RLC series circuits with Phasor diagrams
6.	VI – 23WH1A0216, 23WH1A0217, 23WH1A0218	RL Locus diagrams with a) R as Variable , b) L as variable
7.	VII – 23WH1A0219, 23WH1A0220, 23WH1A0221	Superposition and Maximum power transfer theorems
8.	VIII – 23WH1A0222, 23WH1A0223, 23WH1A0224	Reciprocity theorem and Tellegen's theorem for DC circuits
9.	IX – 23WH1A0225, 23WH1A0226, 23WH1A0227	Concept of Coupled circuits and series aiding and opposing.
10.	X – 23WH1A0228, 23WH1A0229, 23WH1A0230	Concept of duality and dual networks
11.	XI – 23WH1A0231, 23WH1A0232, 23WH1A0233	Color coding of Resistors
12.	XII – 23WH1A0234, 23WH1A0235, 23WH1A0236	Concept of Star – Delta and Delta – Star transformations
13.	XIII – 23WH1A0237, 23WH1A0238, 23WH1A0239	Illustrate Concept Nodal analysis and Super node analysis
14.	XIV – 23WH1A0240, 23WH1A0241, 23WH1A0242	Periodic wave forms RMS value, average value, form factor & peak factor
15.	XV – 23WH1A0243, 23WH1A0244, 23WH1A0245	Concept of RL, RC and RLC parallel circuits(Admittance) with Phasor diagrams.
16.	XVI – 23WH1A0246, 23WH1A0247, 23WH1A0248	Describe the concept of Series and Parallel resonance circuits
17.	XVII – 23WH1A0249, 23WH1A0250, 23WH1A0251	Thevenin's and Norton's Theorem for AC circuits
18.	XVIII – 23WH1A0252, 23WH1A0253, 23WH1A0254	Poly phase circuits introduction and interconnections in Three phase balanced circuits.
19.	XIX – 23WH1A0255, 23WH1A0256	Measurement of 3 phase power in Balanced and unbalanced Circuits with 2 wattmeter method
20.	XX – 23WH1A0257, 23WH1A0258, 22WH1A0226	Illustrate Coupled Circuits Principle with Transformer

Few samples of the posters prepared during the activity:
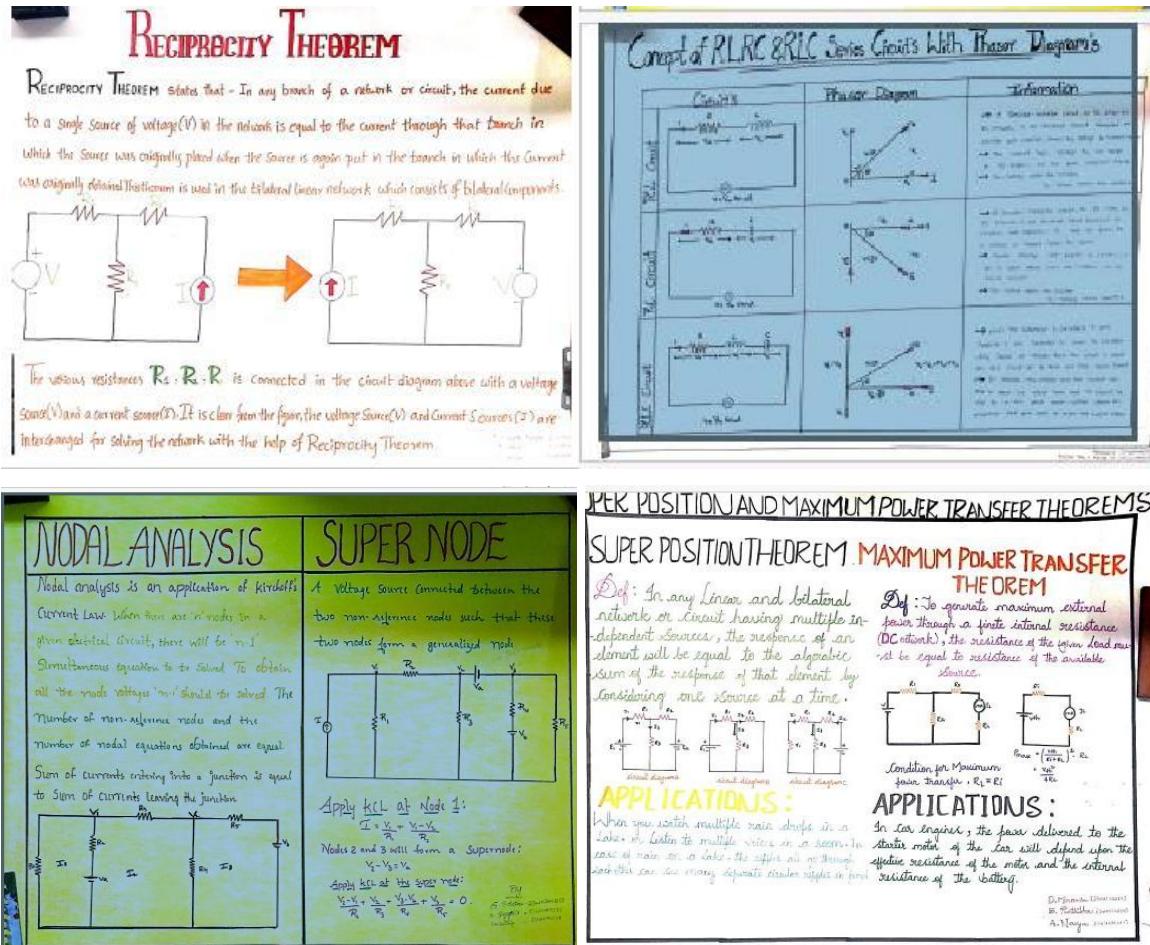
Conclusion: Creating posters for circuit analysis makes learning interactive and helps students grasp complex concepts effectively.

Dr. B. Srinivasa Rao

Professor, EEE Department