CMR COLLEGE OF ENGINEERING & TECHNOLOGY

(AUTONOMOUS)

Kandlakoya, Medachal,Hyderabad 501401

Events Planned to conduct under Naipunya Club during AY 2021-22

S. No	Name of the Event/Activity	Date	Venue
1	Introduction to Ardiuno Programing	23-10-2021	Bachupally
2	Training session on soldering	30-10-2021	Medchal
3	3 Day workshop on sensors	06-11-2021	Hasmadhpet
4	Introduction to Ardiuno Programing with motors	13-11-2021	Uppal
5	Academic training on Physics	20-11-2021	Medchal
6	Academic training on Mathematics in linear algebra	27-11-2021	Pudur
7	Academic training on chemistry	04-12-2021	Ravalkole
8	Academic training on Mathematics in probability	18-12-2021	Muneerabad
9	Academic training on Physics in light theory	08-01-2022	Yellampet
10	Academic training on Mathematics in trigonometry	12-02-2022	Raja Bollaram
11	Atal Thinkering	22-10-2021	Hasmadhpet
12	Atal Thinkering	29-10-2021	Bachupally
13	Atal Thinkering	05-11-2021	Uppal
14	Atal Thinkering	10-12-2021	Medchal

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HOD-CEER

HOD, CEER
Center of Engineering Education Research
CMR College of Engineering & Technology
Hyderabad, Telangana - 501 401.

Date: 20-10-2021
Hyderabad.

To
The Principal,
CMR College of Engineering & Technology,
Hyderabad.

Through: Coordinator, IQAC- CMRCET.

Respected sir,

Subject: Approval for organizing a guest lecture on "Introduction to Ardiuno programming" for IX Standard students, ZPHS, Bachupally – Reg.

As Per the personal discussion held with the Headmaster of Bachupally, there is a one day session on Introduction **to Ardiuno programming** is planned for the IX Standard students under NAIPUNYA Club. The session will be held at ZPHS School on 23-10-2021(Saturday). All the students of IX class will attend the session from 10.00 AM to 3.00 PM. The topic is interesting to discuss and we also organize a 45-minute discussion where active participation will make the students more clear about the topic.

S.NO	Name of Faculty and Student	Course	Year
01	B.Suresh Ram, Assoc prof.	ECE	-
02	K. Ravi Kiran, Asst.Prof	ECE	-
03	G.Karthik Reddy, Asst.Prof	ECE	-
04	M Ganesh	ECE	IV
05	k.ROHITH	ECE	IV
06	R.Sankeeth Ram	ECE	IV

In this regard we need your Permission to proceed further.

Thank you for your time.

Coordinator
Internal Quality Assurance Cell
CMR College of Engineering & Technology
Kandlakoya (V), Medchal Road,
Hyderabad - 501 401.

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B Suresh Ram,
Convener,
Naipunya Club,
CMRCET.

HOD, CEER
Center of Engineering Education Research
CMR College of Engineering & Technology
Hyderabad, Telangana - 501 401.

22-10-2021
Hyderabad.

To
Head Master,
ZPHS BACHUPALLY,
MEDCHAL.

Sir,

Sub: Request to provide amenities for Smooth conduction of Introduction to Ardiuno programming Session

As per our discussion held with the convener of NAIPUNYA CLUB regarding conduction of a Session to the students for better understanding of the content, I bring to your kind notice that students of ECE are interested in conducting a one day session to IX class students. As we all know that exposure and hands-on sessions are very important for understanding the subject in a vivid manner, our students are interested in teaching a concept of **Arduino** for IX class students. **Arduino** enables students to do various innovations and give creative ideas to students. It may enhance learning by providing a better understanding and comprehension of the subjects. In this regard of concern, I request you to provide the required amenities for smooth conduction of events.

Thank you

Dr.V.A.Narayana
Principal
CMRCET

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Kandlakoya, Medchal, Hyderabad-501401

Report on Hands on "Introduction to Arduino programming"

Under

NAIPUNYA CLUB

Date: 23-10-2021

Time: 10 am to 12.00 pm

Venue: CMR COLLEGE OF ENGINEERING AND TECHNOLOGY.

Resource Person: B. Suresh ram, K.Ravi kiran.

Topic: Introduction to Ardiuno Programming.

Event report: IQAC have organized a community development program for Unemployed youth of **Bachupally** village and as a part of it Arduino Programimg was taught to them.

The entire hands on was scheduled on one day session conducted by **B. Suresh ram, K. Ravi kiran**. They divided the session into two parts.

Topics:
1. Basics of Ardiuno
2. Features
3. Microcontroller

No. of Student attended the session 9

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INTRODUCTION TO ARDUINO PROGRAMMING

Arduino:-

Arduino is a project, open-source hardware, and software platform used to design and build electronic devices. It designs and manufactures microcontroller kits and single-board interfaces for building electronics projects.

The Arduino boards were initially created to help the students with the non-technical background.

The designs of Arduino boards use a variety of controllers and microprocessors.

The Arduino board consists of sets of analog and digital I/O (Input / Output) pins, which are further interfaced to **breadboard, expansion boards,** and other **circuits**. Such boards feature the model, Universal Serial Bus (**USB**), and **serial communication interfaces**, which are used for loading programs from the computers.

It also provides an **IDE** (Integrated Development Environment) project, which is based on the Processing Language to upload the code to the physical board.

The projects are authorized under the **GPL** and **LGPL**. The **GPL** is named **as GNU General Public License.** The licensed **LGPL** is named as **GNU Lesser General Public License.** It allows the use of Arduino boards, it's software distribution, and can be manufactured by anyone.

It is also available in the form of self practicing kits.

The Arduino is used for various purposes, such as:

- Finger button
- Button for motor activation
- Light as a sensors
- LED button
- Designing
- The Building of electronic devices

What is Arduino?

Arduino is a software as well as hardware platform that helps in making electronic projects. It is an open source platform and has a variety of controllers and microprocessors. There are various types of Arduino boards used for various purposes.

The Arduino is a single circuit board, which consists of different interfaces or parts. The board consists of the set of digital and analog pins that are used to connect various devices and components, which we want to use for the functioning of the electronic devices.

Most of the Arduino consists of 14 digital I/O pins.

The analog pins in Arduino are mostly useful for fine-grained control. The pins in the Arduino board are arranged in a specific pattern. The other devices on the Arduino board are USB port, small components (voltage regulator or oscillator), microcontroller, power connector, etc.

Features

The features of Arduino are listed below:

- Arduino programming is a simplified version of C++, which makes the learning process easy.
- The Arduino IDE is used to control the functions of boards. It further sends the set of specifications to the microcontroller.
- Arduino does not need an extra board or piece to load new code.
- Arduino can read analog and digital input signals.
- The hardware and software platform is easy to use and implement.

History

The project began in the Interaction Design Institute in Ivrea, Italy. Under the supervision of Casey Reas and Massimo Banzi, the Hernando Bar in 2003 created the **Wiring** (a development platform). It was considered as the master thesis project at IDII. The Wiring platform includes the PCB (Printed Circuit Board). The PCB is operated with the **ATmega168 Microcontroller.**

The ATmega168 Microcontroller was an IDE. It was based on the library and processing functions, which are used to easily program the microcontroller.

In 2005, Massimo Banzi, David Cuartielles, David Mellis, and another IDII student supported the ATmega168 to the Wiring platform. They further named the project as Arduino.

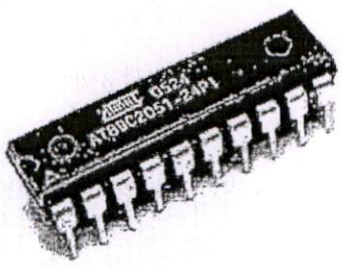
The project of Arduino was started in 2005 for students in Ivrea, Italy. It aimed to provide an easy and low-cost method for hobbyists and professionals to interact with the environment using the actuators and the sensors. The beginner devices were simple motion detectors, robots, and thermostats.

In mid-2011, the estimated production of Arduino commercially was 300,000. In 2013, the Arduino boards in use were about 700,000.

Around April 2017, Massimo Banzi introduced the foundation of Arduino as the "new beginning for Arduino". In July 2017, Musto continued to pull many Open Source licenses and the code from the websites of the Arduino. In October 2017, Arduino introduced its collaboration with the ARM Holdings. The Arduino continues to work with architectures and technology vendors.

Microcontroller

The most essential part of the Arduino is the Microcontroller, which is shown below:



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- Microcontroller is small and low power computer. Most of the microcontrollers have a RAM (Random Access Memory), CPU (Central Processing Unit), and a memory storage like other computer systems.
- It has very small memory of 2KB (two Kilobytes). Due to less memory, some microcontrollers are capable of running only one program at a time.
- It is a single chip that includes memory, Input/output (I/O) peripherals, and a processor.
- The GPIO (General Purpose Input Output) pins present on the chip help us to control other electronics or circuitry from the program.

Electronic devices around Us

We have many electronic devices around us. Most of the appliance consists of the microcontroller for its functioning. Let's discuss some of the examples.

- Microcontroller present in Microwave Oven accepts the user input and controls the magnet run that generate microwave rays to cook the food and displays the output timer.
- Modern cars also contain dozens of microcontrollers working in tandem (one after another) to control functions like lighting, radio interface, etc.

Projects

Let's consider a simple project of LED blink.

We need a software to install our sketch or code to the Arduino board. The LED will blink after the successful uploading of code. The software is called as Arduino IDE (Integrated Development Environment).

There are various projects created with the help of the Arduino. Some of the projects are listed below:

- Home Automation System using IOT (Internet of Things).
- Solar Power water trash collector.
- Fire Detector, etc.

Some projects require a list of components. So, for easy convenience and hands-on projects, the Arduino kits are available easily in market.

Arduino Kits

We can easily start with our electronics projects using the complete kit. It also helps us to create hand-on and engaging projects.

Some of the popular Arduino kits are listed below:

- Arduino Starter kit
- Robot Linking UNO kit for learning
- Arduino UNO 3 Ultimate starter kit
- UNO Super starter kit
- Mega 2560 Starter Kit

Arduino IDE

The IDE makes the traditional projects even easier and simpler. The USB cable is used to load the program or sketch on the specific Arduino board.

The IDE application is suitable for Windows, Mac OS X, and Linux. It supports the programming language C and C++. We need to connect the Genuino and Arduino board with the IDE to upload the sketch written in the Arduino IDE software.

Many other companies including Sparkfun Electronics, also make their own boards that are compatible with Arduino IDE.

Arduino Boards

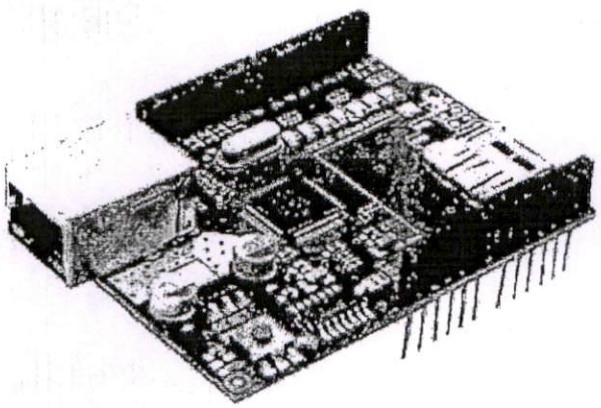
There are variety of Arduino board used for different purposes. The board varies in I/O pins, size, etc. The various components present on the Arduino boards are Microcontroller, Digital Input/output pins, USB Interface and Connector, Analog Pins, Reset Button, Power button, LED's, Crystal Oscillator, and Voltage Regulator. Some components may differ depending on the type of board.

Let's discuss some of the popular Arduino boards.

- Arduino UNO
- Arduino Nano
- Arduino Mega
- Arduino Due
- Arduino Bluetooth

Shields

- Shields are defined as the hardware device that can be mounted over the board to increase the capabilities of the projects.
- The shield is shown below:



- The shield together with Arduino can make the projects even smarter and simpler. For example, Ethernet shields are used to connect the Arduino board to the Internet.
- The shields can be easily attached and detached from the Arduino board. It does not require any complex wiring.

Prerequisite

The requirement to learn Arduino is the basic knowledge of **C** and **C++** programming language. A basic understanding of **circuits**, **Microcontrollers**, and **Electronics** is also essential.

(1)

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Student's attendance sheet

S.No	Name	Signature
1	B Akhila	
2	P Raghavi	
3	K Prathiba	
4	N Padma	
5	B Aarthi	
6	C Keerthi	
7	K Sathish	
8	B. Balakrishna	
9	K. Kavya	
10	Y. Prathiba	
11	M. Mahish	
12	K. Kavya	
13	Y. Saikumar	
15	MD. Abdul Shahid	
16	SK. R. Sharif	
17.	K. Pushpavalli	
18.	P. Pavan kumar	
19.	A. Ravi Shenkar	
20.	B. Basker Reddy	
21.	Ch. Kavaya Lakshmi	
22.	R. Nikitha Chowdary	
23	V. Vardhan Babu	
24	B. Suresh pavan	
25	S. Nithin	
26	M. Mohan	
27	P. Parashara	
28	S. Ravi Sankar	
29	D. Dorathi	
30	B. Yasi Parveen	

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Kandlakoya, Hyderabad – 501 401

FEEDBACK FORM

Name of the Presenter: B. Suresh ram
Date: 23-10-2021 Title:
Introduction to Arduino Programming

S.NO	Description	Excellent అద్భుతం	Good బాగుంది	Satisfactory పర్వాలేదు	Poor బాగాలేదు
01	The training content was relevant to me ట్రైనింగ్ కి సంబంధిత విషయాలు మీకు సంబంధించినవేన ?	✓			
02	The amount of material was covered was sufficient మీకు ఇచ్చిన మెటీరియల్ ఉపయోగపడిందా ?		✓		
03	Instructional methods & media were used appropriately which made learning easy స్పీకర్ గారు చెప్పిన విధానం మీకు సులువు గా అనిపించిందా ?		✓		
04	I am confident of using concepts covered మీరు నేర్చుకున్నవి వినియోగిస్తారా??			✓	
05	Duration of training was appropriate మీకు ట్రైనింగ్ సమయం సరిపడా ఉందనిపించిందా ?		✓		
06	Training met my expectations ట్రైనింగ్ మీరు అనుకున్న స్థాయి లో ఉందా			✓	
07	Faculty involved all participants స్పీకర్ గారు అందరిని కలుపుకుని చెప్పారా ?			✓	
08	My questions were answered adequately మీరు అడిగిన ప్రశ్నలకి జవాబు చెప్పిన విధానం ఎలా ఉంది ?		✓		

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FEEDBACK FORM

Name of the Presenter: B. Suresh ram
Date: 23/10/2021 Title:
Introduction to Arduino programming

S.NO	Description	Excellent అద్భుతం	Good బాగుంది	Satisfactory పర్వాలేదు	Poor బాగాలేదు
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02	The amount of material was covered was sufficient మీకు ఇచ్చిన మెటీరియల్ ఉపయోగపడిందా ?		✓		
03	Instructional methods & media were used appropriately which made learning easy స్పీకర్ గారు చెప్పిన విధానం మీకు సులువు గా అనిపించిందా ?		✓		
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05	Duration of training was appropriate మీకు ట్రైనింగ్ సమయం సరిపడా ఉందనిపించిందా ?		✓		
06	Training met my expectations ట్రైనింగ్ మీరు అనుకున్న స్థాయి లో ఉందా			✓	
07	Faculty involved all participants స్పీకర్ గారు అందరిని కలుపుకుని చెప్పారా ?			✓	
08	My questions were answered adequately మీరు అడిగిన ప్రశ్నలకి జవాబు చెప్పిన విధానం ఎలా ఉంది ?		✓		

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FEEDBACK FORM

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Date: 23/10/2021 Title:
Introduction to Arduino programming.

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02	The amount of material was covered was sufficient మీకు ఇచ్చిన మెటీరియల్ ఉపయోగపడిందా ?		✓		
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04	I am confident of using concepts covered మీరు నేర్చుకున్నవి వినియోగిస్తారా??			✓	
05	Duration of training was appropriate మీకు ట్రైనింగ్ సమయం సరిపడా ఉందనిపించిందా ?	✓			
06	Training met my expectations ట్రైనింగ్ మీరు అనుకున్న స్థాయి లో ఉందా		✓		
07	Faculty involved all participants స్పీకర్ గారు అందరిని కలుపుకుని చెప్పారా ?	✓			
08	My questions were answered adequately మీరు అడిగిన ప్రశ్నలకి జవాబు చెప్పిన విధానం ఎలా ఉంది ?		✓		

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Kandlakoya (V), Medchal Road,
Hyderabad-501401.

Date: 27-10-2021
Hyderabad

To
The Principal,
CMR College of Engineering & Technology,
Hyderabad.

Through: Coordinator, IQAC- CMRCET.

Respected sir,

Subject: Approval for organizing a training session on **"Soldering"** for X class students, ZPHS, MEDCHAL – Reg..

As Per the personal discussion held with the Head master of MEDCHAL, there is a training session on **Soldering** is planned for the students of X class under NAIPUNYA Club. The seminar will be held at ZPHS School on 30-10-2021(Saturday). All the students of class X will attend the session from 10.00 AM to 12.00 PM. The topic is interesting to discuss and we also organize 45-minute discussion where active participation will make the students more clear about the topic.

S.NO	Name of Faculty and Student	Course	Year
01	P. Mahesh Babu, Asst.Prof	MECH	-
02	K. Satish, Asst.Prof	MECH	-
03	K. Raju , Asst.Prof	ECE	-
04	T.Meghanath	ECE	IV
05	A.Vinay	MECH	IV
06	R. Ranjeeth	MECH	IV
07	B. Akash	MECH	IV

In this regard we need your Permission to proceed further.

Thank you for your time.

Recommended

Coordinator
Internal Quality Assurance Cell
CMR College of Engineering & Technology
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B Suresh Ram,
Convener,
Naipunya Club
Center of Engineering Education Research
CMR College of Engineering & Technology
Hyderabad, Telangana - 501 401.

29-10-2021
Hyderabad

To
Head Master,
ZPHS Medchal,
MEDCHAL.

Sir,

Sub: Request to provide amenities for Smooth conduction of training session on **Soldering**

As per our discussion held with the convener of NAIPUNYA CLUB regarding conduction of a training session to the students for better understanding of the content, I bring to your kind notice that students of Electronics are interested in conducting a guest lecture session to X class students. As we all know that exposure and hands-on sessions are very important for understanding the subject in a vivid manner, our students are interested in teaching a concept for Tenth class students. It may enhance learning by providing a better understanding and comprehension of the subjects as well as by providing different methods, ways, and techniques within the same slide. Using PowerPoint presentations may encourage students and improve their achievement.

In this regard of concern, I request you to provide the required amenities for smooth conduction of event.

Thank you

Dr. V. A. Narayana
Principal
CMRCET

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Kandlakoya, Medchal, Hyderabad-501401

Report on Hands on "Training session on soldering "

Under

NAIPUNYA CLUB

Date: 30-10-2021

Time: 10 am to 12.00 pm

Venue: CMR COLLEGE OF ENGINEERING AND TECHNOLOGY.

Resource Person :K. Satish, P.Mahesh babu.

Topic: Soldering

Event report: IQAC have organized a community development program for IX class Students of **MEDCHAL** village and as a part of it soldering was taught to them.

The entire hands on was scheduled on one day session conducted by **P.Mahesh Babu , K.Satish.** They divided the session into two parts.

Topics:

1. INTRODUCTION TO SOLDERING
2. IMPORTANCE OF SOLDERING
3. ADVANTAGES AND DISADVANTAGES OF SOLDERING

Here's a summary of how to make the perfect solder joint.

- All parts must be clean and free from dirt and grease.
- Try to secure the work firmly.
- "Tin" the iron tip with a small amount of solder. Do this immediately, with new tips being used for the first time.
- Clean the tip of the hot soldering iron on a damp sponge.
- Many people then add a tiny amount of fresh solder to the cleansed tip..
- Heat all parts of the joint with the iron for under a second or so.
- Continue heating, then apply sufficient solder only, to form an adequate joint.
- Remove and return the iron safely to its stand.
- It only takes two or three seconds at most, to solder the average p.c.b. joint.
- Do not move parts until the solder has cooled.

No. of Student attended the session 11

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(Autonomous)
Kandlakoya, Medchal, Hyderabad-501401

Training session on soldering

This course provides all the skills necessary to work on modern electronic printed circuit boards. It is intended for candidates who have an understanding of electronics principles, but have little or no experience of workingon modern electronic systems or equipment down to component level. It complements the Electronics Fault.

PARTICIPANTS

This course is essential for anyone involved in repair and maintenance of electronic systems and equipment, including those who are responsible for supervising the repair and quality of electronic systems and equipment.

COURSE PRESENTATION

The course is presented throughout by reference to best practice (such as IPC610) and generous amounts of practical work. Comprehensive notes are provided along with all the necessary soldering and rework equipment.

COURSE OBJECTIVES

On completion of the course, participants will have a thorough understanding of the requirements involved in therepair and maintenance of printed circuit boards to the IPC-A-610 Standard. Candidates will:

- apply safe working practices
- understand the problems of electrical over stress (EOS) and electrostatic discharge (ESD)
- identify the various types of components used: Through-hole, SMT QFP DIL LCC Gull-Wing etc
- determine component values from case markings
- prepare wires for soldering
- select the correct grades of solder
- understand the hazards and use of fluxes and cleaning solvents
- correctly solder unsupported and supported through-hole PCB components
- correctly solder surface mount devices (SMD), including QFP, DIL, LCC, Gull-Wing etc to PCBs
- remove and replace solder joints and components on PCBs using: solder wick, soldering irons, heated tweezers and hot air rework stations
- inspect PCBs to ensure compliance with industry standards.

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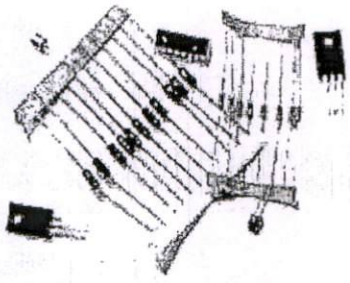
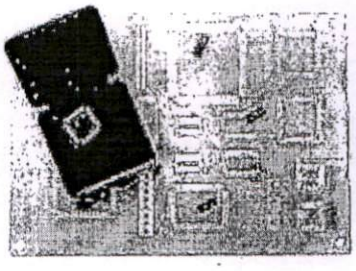
What do candidates on the Soldering course actually do?

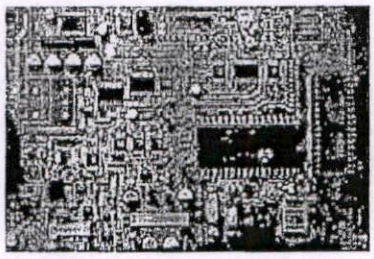
We begin the course with a review of the components used in industrial, commercial and military electronics. Then an overview of the substrate materials used to produce the circuit boards. The main emphasis is on the most common material – fibre reinforced (FR4), but others such as ceramic and metal clad poly-imide are alsodiscussed.



Some of the leaded components usedon the soldering course



Some of the Surface Mount (SMD / SMT) components used on the soldering course



One of our demonstration PCB boards, illustrating examples of surface mount and leaded components on a modern PCB

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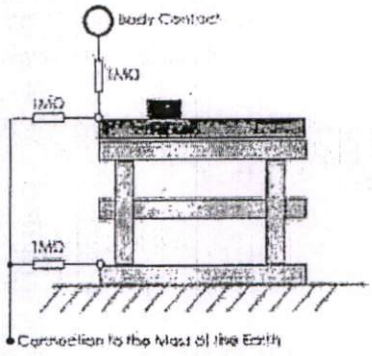
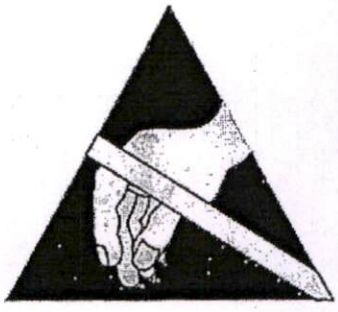
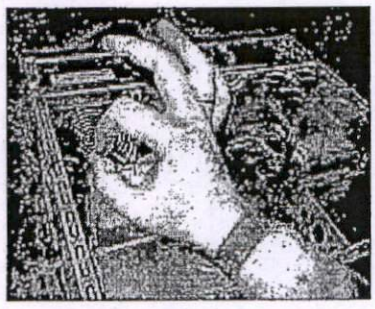
The management of static electricity (ESD) and thermal shock is demonstrated, and candidates are provided with the necessary tools to enable best practice to be used. Work where ESD could present a problem is done at an ESD workstation. The candidate's notes contain details on how such a workstation can be constructed at theirown place of work.





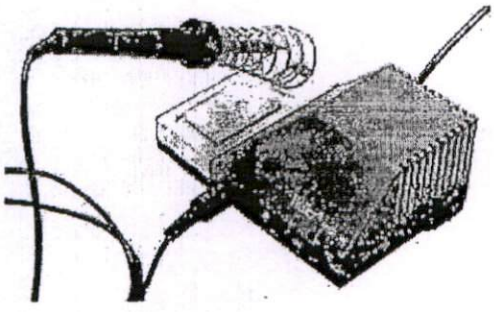


An illustration taken from the soldering course notes, helping to explain how ant-static workstationsare configured.

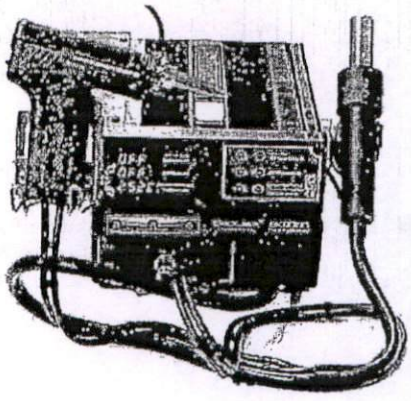
The candidates are reminded aboutthe anti-static precautions that should be taken throughout the course.

Explanations are provided on how wrist straps, heel straps and ant- static testing stations work on the soldering course

The various methods of minimizing exposure to noxious fumes is studied and proper fume extraction is usedwhilst soldering on the rework station. A variety of industry-standard soldering irons and rework stations areused on the course, allowing candidates to gain practice using a range of different standards of iron.

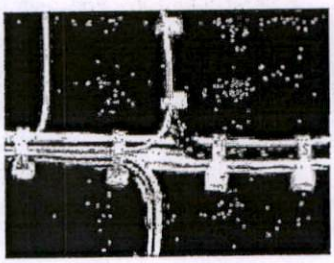


One of the soldering stations used on the soldering course

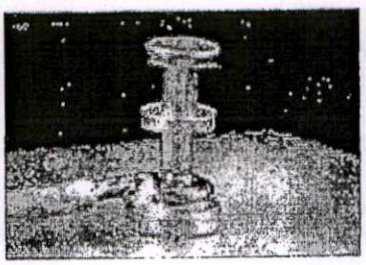


One of the soldering rework stations used on the soldering course

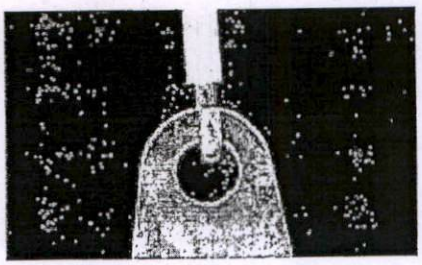
Candidates practice making solder joints of wires to terminal pins in accordance with best practice. We look at how cables should be formed and laced for proper mechanical support with respect to the IPC610 requirements.



Examples of how cables should be formed are provided on the soldering course



Examples of how terminal pins should be soldered to the IPC610Standard are provided on the soldering course.



The candidates have a soldering to wire hooks exercise to complete to the IPC610Standard.

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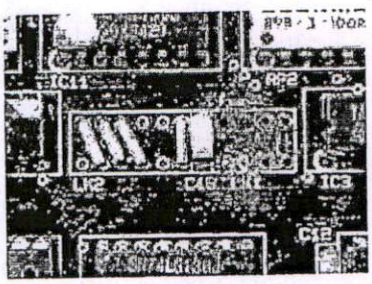
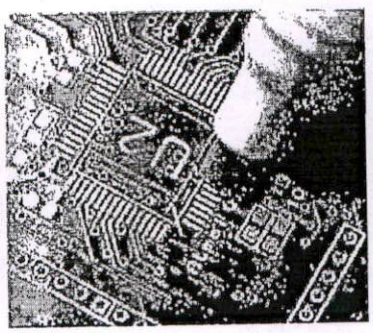
We then practice pre-forming component leads to minimise stress from vibration during the operational life ofthe circuit board. Vertical and horizontal mounting of components is discussed and practiced.

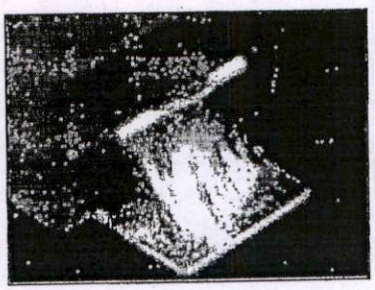
Excessive heat can seriously damage circuit boards, especially flexible mylar film and multi-layer circuit boards, therefore the importance of temperature control and limiting heat exposure is stressed throughout the course.



Candidates are shown examples of how excessive heat can damage PCBs



We apply flux in various ways on thecourse, including using a flux pen

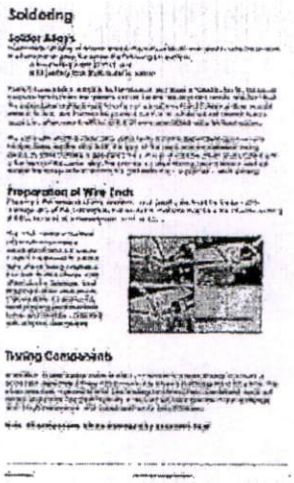


Candidates are shown examples ofgood and bad solder joints in a variety of situations with all the components they are likely to see.

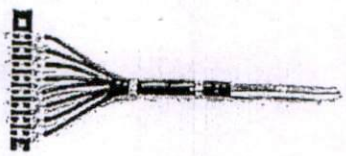
Candidates spend time applying flux, aligning components and making solder joints to a range of leaded components before moving on to SMT devices. Emphasis is placed upon the quality of each joint - candidates aregiven examples of good / bad joints and how to inspect work to the Standards.

A range of SMT components are reviewed and the merits of the various connection methods are discussed, e.g. flat ribbon, gull wing, J-lead and ball-grid-arrays etc. Candidates spend time attaching all of the component types except the BGAs (these require specialist equipment and are beyond the scope of this course).

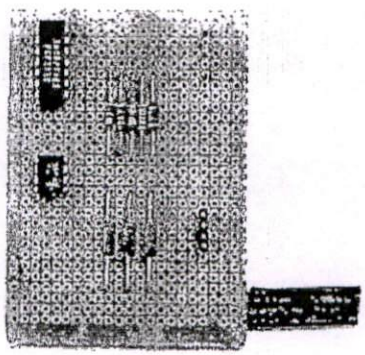
Throughout the course we refer to the course notes which provide lots of useful information about soldering and desoldering as well as the candidates' instructions for all the practical exercises that we do. The following are some example pages from the soldering course notes:



We then proceed to a series of practical exercises, where the candidates have to individually produce a set oftest pieces using various soldering techniques:



An example of one of the candidates' practical exercises: Tinning multi- strand wires and then making hook joints.



An example of one of the candidates' practical exercises: Single-sided basic component soldering.

An example of one of the candidates' practical exercises: Cupped termination that requires care and accuracy.

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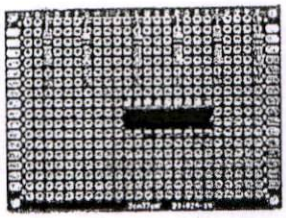
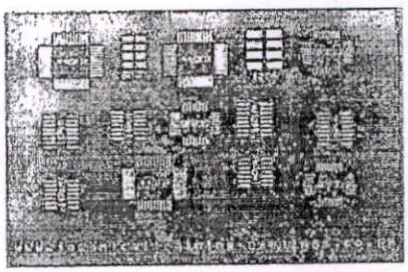
As the practical exercises progress they become more demanding and the next set of exercises require them toassemble through hole devices, surface mount components and a working test piece that they can take away with them. These exercises test the candidates' soldering skills to the full:

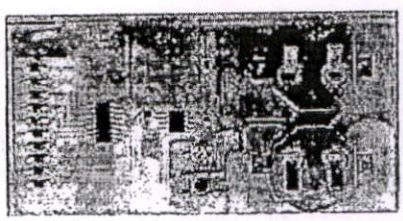


An example of one of the candidates' practical exercises: Practicing soldering and removal of through hole technology (akasupported hole).



An example of one of the candidates' practical exercises: The practice board for0805, 1205, Dual In Line (DIL) and Quad Flat Pack (QFP) Surface Mount Devices (SMD). Candidates populate this board with these devices and then practice removal of them (simulating the removal of faulty components) without damaging the board.

This is the final test project:

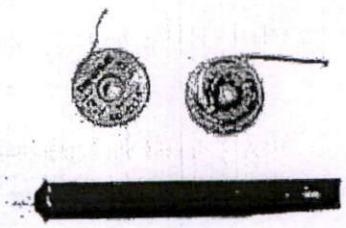


The candidates have to assemble all the components (and orientate the components properly) and we then test itfor correct functionality. We're also keen to ensure that the candidates are producing high quality soldered joints at this stage of the course

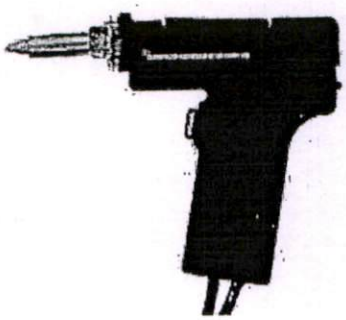
Flux and debris removal is an important part of the inspection process, and requires the use of solvents. Best practice and health and Safety is fundamental to all Technical Training Solutions' courses, therefore the correct solvents are used to minimise the personnel and environmental risks.

The repair of circuit boards is also given serious consideration, as the PCB is often the most expensive part of the system. Candidates are shown several ways to remove components while minimising damage to delicate circuit board tracks.

Solder removal is practiced where solder bridges occur, or excessive solder has been used.



Some of the desoldering wicks and desoldering tools used on the soldering course



One of the suction irons used on the soldering course

The heated tweezers used on the soldering course

Where track damage in unavoidable, the methods of repair are practiced. This part of the course is also valuable to those who may have to modify circuit boards because of errors or obsolete components.

The handling and application of epoxy resins and silicone based elastomers with regard to PCB repair is covered in some depth along with the application of conformal coatings.

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Student's attendance sheet

S.No	Name	Signature
1	K. Aleena	Aleena.
2	Sk. Reshma	Reshma.
3	M. Mahesh	Mahesh.
4	P. Keerthana	Keerthana
5	K. Ajitha	Ajitha
6	M. Akash	Akash
7	D. Akhil	akhila
8	D Adhil	Adil
9	K. Rafi	Rafi
10	Sk. Khaleel	Khaleel
11	Md. Sameer	Sameer
12.	G. Harini	Harini
13	G. Dharani	G. Dharani
14.	R. Vani Priya	R. Vanipriya
15.	J. Harshitha	Harshitha
16.	Jeshwanth. G.	Jashu
17.	G. Shiva Prasad	G. Shankar
18.	M. Surya	Surya.
19.	S. Ayushtha	Ayush.
20.	Sandhya.	Sandhya
21.	Manisha.	Manisha.
22.	Yashwika Reddy.	Yashwi.
23.	Vasantha.	Vasantha.
24.	Ramadevi	Ramadevi.
25.	D. Varsha	varsha
26.	Rohith	Rohith
27.	Revathi	Revathi.
28.	Nikhil	Nikhil
29.	Manikumar	Manikumar.

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Kandlakoya, Hyderabad – 501 401

FEEDBACK FORM

Name of the Presenter: K.Sathish
Date: 30/10/2021 Title:
Soldering

S.NO	Description	Excellent అద్భుతం	Good బాగుంది	Satisfactory పర్వాలేదు	Poor బాగాలేదు
01	The training content was relevant to me ట్రైనింగ్ కి సంబంధిత విషయాలు మీకు సంబంధించినవేన ?		✓		
02	The amount of material was covered was sufficient మీకు ఇచ్చిన మెటీరియల్ ఉపయోగపడిందా ?			✓	
03	Instructional methods & media were used appropriately which made learning easy స్పీకర్ గారు చెప్పిన విధానం మీకు సులువు గా అనిపించిందా ?		✓		
04	I am confident of using concepts covered మీరు నేర్చుకున్నవి వినియోగిస్తారా??			✓	
05	Duration of training was appropriate మీకు ట్రైనింగ్ సమయం సరిపడా ఉందనిపించిందా ?		✓		
06	Training met my expectations ట్రైనింగ్ మీరు అనుకున్న స్థాయి లో ఉందా	✓			
07	Faculty involved all participants స్పీకర్ గారు అందరిని కలుపుకుని చెప్పారా ?		✓		
08	My questions were answered adequately మీరు అడిగిన ప్రశ్నలకి జవాబు చెప్పిన విధానం ఎలా ఉంది ?	✓			

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Date: 03-11-2021
Hyderabad.

To

The Principal,
CMR College of Engineering & Technology,
Hyderabad.

Through: Coordinator, IQAC- CMRCET.

Respected sir,

Subject: Approval for organizing a guest lecture on "3 Day workshop on Sensors" for IX Standard students, ZPHS, Hasmadhpet – Reg.

As Per the personal discussion held with the Headmaster of Hasmadpet ,there is a 3 day Workshop on **Sensors** is planned for the IX Standard students under NAIPUNYA Club. The session will be held at ZPHS School on 06-11-2021(Saturday). All the students of IX class will attend the session from 10.00 AM to 3.00 PM. The topic is interesting to discuss and we also organize a 45-minute discussion where active participation will make the students more clear about the topic.

S.NO	Name of Faculty and Student	Course	Year
01	B. Venkateshwar rao, Asst. prof	ECE	-
02	K. Raju, Asst. prof	ECE	-
03	G.Karthik Reddy, Asst. prof	ECE	-
04	B. Vinay Kumar	ECE	IV
05	P. Arvind	ECE	IV
06	R. Pavan Reddy	ECE	IV

In this regard we need your Permission to proceed further.

Thank you for your time.

Recommended

B Suresh Ram,
HOD, CEER
Convener,
Naipunya Club,
CMRCET.

Center of Engineering Education Research
CMR College of Engineering & Technology
Hyderabad, Telangana - 501 401.

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CMR COLLEGE OF ENGG. & TECH.
Kandlakoya (V), Medchal Road,
Hyderabad-501401.

Coordinator
Internal Quality Assurance Cell
CMR College of Engineering & Technology
Kandlakoya (V), Medchal Road,
Hyderabad - 501 401.

CMR COLLEGE OF ENGINEERING & TECHNOLOGY

(UGC AUTONOMOUS)

(Affiliated to JNTU, Hyderabad and Approved by AICTE New Delhi)

05-11-2021
Hyderabad.

To
Head Master,
ZPHS BACHUPALLY,
HASMADHPET.

Sir,

Sub: Request to provide amenities for Smooth conduction of "3 Day workshop on Sensors".

As per our discussion held with the convener of NAIPUNYA CLUB regarding conduction of a Session to the students for better understanding of the content, I bring to your kind notice that students of ECE are interested in conducting a one day session to IX class students. As we all know that exposure and hands-on sessions are very important for understanding the subject in a vivid manner, our students are interested in teaching a concept of **Sensors** for IX class students. **Sensors** enables students to do various innovations and give creative ideas to students. It may enhance learning by providing a better understanding and comprehension of the subjects. In this regard of concern, I request you to provide the required amenities for smooth conduction of events.

Thank you

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Kandlakoya, Medchal, Hyderabad-501401

Report on "Sensors"

Under

NAIPUNYA CLUB

Date: 06-11-2021

Time: 10 am to 12.00 pm

Venue: ZPHS HASMADHPET.

Resource Person:B.Venkateshwar Rao,K.Raju.

Topic: Introduction to Sensors

Event report: IQAC have organized a community development program for Unemployed youth ofHasmadhpet village and as a part of it various types of sensors was taught to them.

The entire hands on was scheduled on one day session conducted by **B. VenkateshwarRao,K.Raju**.They divided the session into two parts.

Topics:

1. Basics
2. Introduction
3. Need for Sensors
4. Applications
5. Drawbacks

No. of Student attended the session 25

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3 Day workshop on sensors

BASICS – MEASUREMENT DEVICES

Measurement devices perform a complete measuring function, from initial detection to final indication. The important aspects of measurement system are

i) Sensor – Primary sensing element

ii) Transducer – changes one form of energy to another form energy

iii) Transmitter – Contains the transducer and produces an amplified, standardized energy signal.

INTRODUCTION – SENSORS

- A device which provides a usable output in response to a specified measured.
- Sensor is a device that detects and responds to some type of input from the physical environment
- Input could be light, heat, motion, moisture, force, pressure, displacement, etc.
- It produces a proportional output signal (electrical, mechanical, magnetic, etc.).
- Human beings are equipped with 5 different types of sensors.
- Eyes detect light energy, ears detect acoustic energy, a tongue and a nose detect certain chemicals, and skin detects pressures and temperatures. The eyes, ears, tongue, nose, and skin receive these signals then send messages to the brain which outputs a response.
- For example, when you touch a hot plate, it is your brain that tells you it is hot, not your skin.

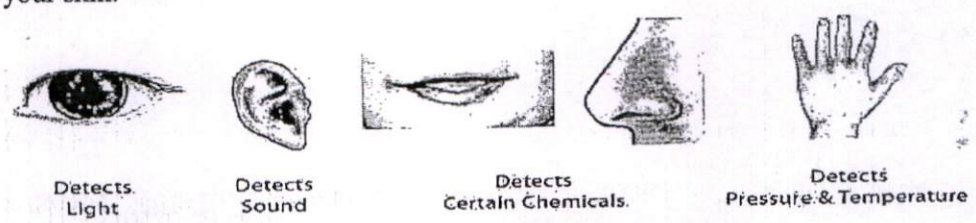

Fig. 1. Sensors of human beings.

THE BASIC BIOLOGICAL SENSING PROCESS

- A stimulus is received at the receptor where the dendrites of the neurons convert the energy of the stimulus into electromechanical impulses in the dendrites of the neurons.
- The action potentials interpreted by the brain to create the corresponding sensory perception

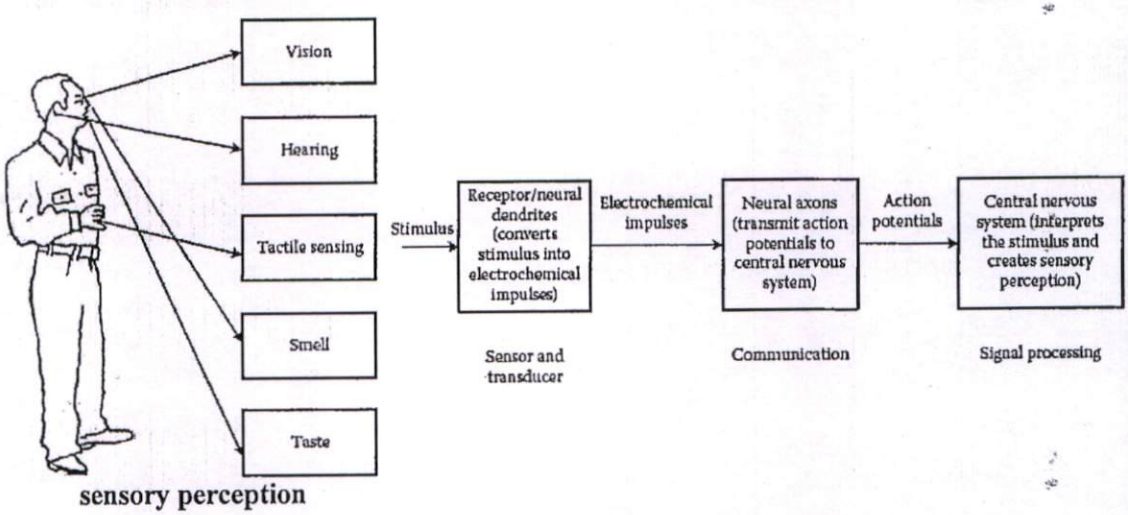

Fig.2. Sensing Process

NEED FOR SENSORS

- Sensors are omnipresent. They embedded in our bodies, automobiles, airplanes, cellular telephones, radios, chemical plants, industrial plants and countless other applications.
- Sensors in industrial applications being used for process control, monitoring, and safety, and in medicine being used for diagnostics, There monitoring, critical care, and public health.
- Sensors can improve the world through diagnostics in medical applications; improved performance of energy sources like fuel cells and batteries and solar power; improved health and safety and security for people; sensors for

exploring space and improved environmental monitoring.

- Without the use of sensors, there would be no automation!
- We live in the World of Sensors.
- In our day-to-day life we frequently use different types of sensors in several applications
- We can find different types of Sensors in our homes, offices, cars etc. Working to make our lives easier by turning on the lights by detecting our presence, adjusting the room temperature, detect smoke or fire, make us delicious coffee and open garage doors as soon as our car is near the door and many other tasks.

APPLICATIONS OF SENSORS

Sensors are used in many industrial and home appliances :

- Wireless Sensor Network
- Water level Indicator
- Laser Security Alarm
- Firing Alarm sensor
- Automatic braking & Speed Control Mechanism
- Smart Phone Touch Screen
- Railway Gate Control Mechanism
- Fully Automation Control System, etc.

DRAWBACKS OF SENSORS

- Some of the drawbacks occur in sensors while it is in working condition:
- Life time becomes less due to over usages
- Easily affected by external source such as noise, magnetic interference, etc.,
- Due to noise and any other interference, low stability & sensitivity may leadsto system

failure.

- Some sensor may face complexity while contact with some physicalquantities.
- More expensive in RTD sensor than Thermocouples.

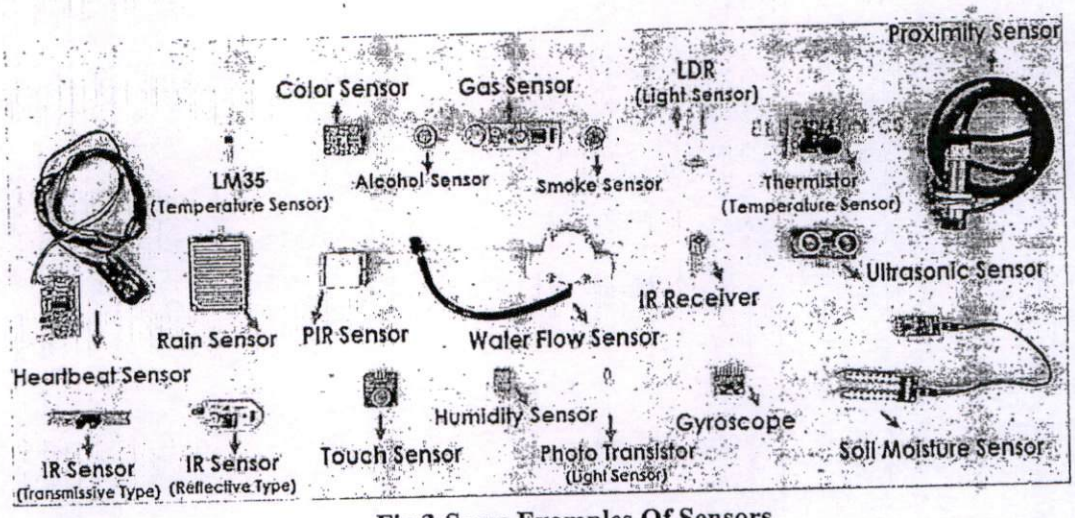

Fig 3:Some Examples Of Sensors

RESISTIVE SENSORS

PRINCIPLE OF RESISTIVE SENSORS

- A resistive sensor is a electromechanical device that converts a mechanical change such as displacement into an electrical signal that can be monitored.
- Resistance = (Resistivity * Length)/Area; $R = \rho L / A$
- The resistance of a material depends on four factors:
- Composition
- Temperature
- Length
- Cross Sectional Area

- Changes in composition and temperature do not change the resistivity of a material in such a simple way.
- Major types of Resistive sensors

  Potentiometers
  - Strain Gauges
  - Resistance temperature detector(RTD)
  - Thermistors
  - Light Dependent Resistor (LDR).

3

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Student's attendance sheet

S.No	Name	Signature
1	N. Vikitha	
2	D. Shava	
3	M. Srinidh	
4	Ch. Komala	
5	M. Janhvi	
6	A. Harsha	
7	G. Akhil	
8	B. Gnapika	
9	CH. Keshav	
10	B. Anudeep	
11	A. Poorvika	
12	A. Stephen	
13	Tarun	
14	L. Preeti	
15	K. Sruthi	
16	C. Srinitya	
17	B. Sameer	
18	Bhaskara	
19	Anvesh	
20	S. Ravi	
21	Manasa	
22	L. Steven	
23	Ch. Pranay	
24	Vinay	
25	K. Sruthi	
26	Teesham	
27	Mohith	
28	Prabhas	
29	Aniruddh	

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Kandlakoya, Hyderabad – 501 401

FEEDBACK FORM

Name of the Presenter: P. Mahesh babu
Date: 06/11/2021 Title: Sensors

S.NO	Description	Excellent అద్భుతం	Good బాగుంది	Satisfactory పర్వాలేదు	Poor బాగాలేదు
01	The training content was relevant to me ట్రైనింగ్ కి సంబంధిత విషయాలు మీకు సంబంధించినవేన ?	✓			
02	The amount of material was covered was sufficient మీకు ఇచ్చిన మెటీరియల్ ఉపయోగపడిందా ?			✓	
03	Instructional methods & media were used appropriately which made learning easy స్పీకర్ గారు చెప్పిన విధానం మీకు సులువు గా అనిపించిందా ?		✓		
04	I am confident of using concepts covered మీరు నేర్చుకున్నవి వినియోగిస్తారా??	✓			
05	Duration of training was appropriate మీకు ట్రైనింగ్ సమయం సరిపడా ఉందనిపించిందా ?		✓		
06	Training met my expectations ట్రైనింగ్ మీరు అనుకున్న స్థాయి లో ఉందా		✓		
07	Faculty involved all participants స్పీకర్ గారు అందరిని కలుపుకుని చెప్పారా ?	✓			
08	My questions were answered adequately మీరు అడిగిన ప్రశ్నలకి జవాబు చెప్పిన విధానం ఎలా ఉంది ?	✓			

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Kandlakoya, Hyderabad – 501 401

FEEDBACK FORM

Name of the Presenter: P. Maheshbabu
Date: 06/11/2021 Title:
Sensors

S.NO	Description	Excellent అద్భుతం	Good బాగుంది	Satisfactory పర్వాలేదు	Poor బాగాలేదు
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FEEDBACK FORM

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Date: 06/11/2021 Title: Sensors

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07	Faculty involved all participants స్పీకర్ గారు అందరిని కలుపుకుని చెప్పారా ?		✓		
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CMR COLLEGE OF ENGG. & TECH.
Kandlakoya (V), Medchal Road,
Hyderabad-501401.

Date: 10-11-2021
Hyderabad.

To

The Principal,
CMR College of Engineering & Technology,
Hyderabad.

Through: Coordinator, IQAC- CMRCET.

Respected sir,

Subject: Approval for organizing a guest lecture on "Introduction to Ardiuno programming with Motors" for X Standard students, ZPHS, Uppal – Reg.

As Per the personal discussion held with the Headmaster of Uppal ,there is a one day session on **Introduction to Ardiuno programming with Motors** is planned for the X Standard students under NAIPUNYA Club. The session will be held at ZPHS School on 13-11-2021(Saturday). All the students of IX class will attend the session from 10.00 AM to 3.00 PM. The topic is interesting to discuss and we also organize a 45-minute discussion where active participation will make the students more clear about the topic.

S.NO	Name of Faculty and Student	Course	Year
01	G.Karthik Reddy, Asst. prof	ECE	-
02	K. Ravi Kiran, Asst. prof	ECE	-
03	K. Raju, Asst. prof	ECE	-
04	B. Venkateshwar rao, Asst. prof	ECE	-
05	G.sankeetha	ECE	IV
06	R.chaithra	ECE	IV

In this regard we need your Permission to proceed further.

Thank you for your time.

Coordinator
Internal Quality Assurance Cell
CMR College of Engineering & Technology
Kandlakoya (V), Medchal Road,
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B Suresh Ram,
Convener,
Naipunya Club,
Center of Engineering Education Research
CMR College of Engineering & Technology
Hyderabad, Telangana - 501 401.

HOD, CEER
CMRCET

12-11-2021
Hyderabad.

To
Head Master,
ZPHS UPPAL,
MEDCHAL.

Sir,

Sub: Request to provide amenities for Smooth conduction of Introduction to **"Ardiuno programming with Motors "**Session

As per our discussion held with the convener of NAIPUNYA CLUB regarding conduction of a Session to the students for better understanding of the content, I bring to your kind notice that students of ECE are interested in conducting a one day session to X class students. As we all know that exposure and hands-on sessions are very important for understanding the subject in a vivid manner, our students are interested in teaching a concept of **Ardiuno** for X class students. **Ardiuno** enables students to do various innovations and give creative ideas to students. It may enhance learning by providing a better understanding and comprehension of the subjects. In this regard of concern, I request you to provide the required amenities for smooth conduction of events.

Thank you

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Kandlakoya, Medchal, Hyderabad-501401

Report on "Training session on Arduino Programming with motors"

Under

NAIPUNYA CLUB

Date: 13-11-2021

Time: 10 am to 12.00 pm

Venue: UPPAL ZPHS.

Resource Person: G. Karthik Reddy, K.Ravi Kiran.

Topic: Arduino Programming with Motors

Event report: IQAC have organized a community development program for X class Students of **UPPAL** village and as a part of it different types of motors was taught to them.

The entire hands on was scheduled on one day session conducted **G. Karthik Reddy, K.Ravi Kiran**. They divided the session into two parts.

Topics:

1. Different Type of Motors with Arduino
2. Example To describe the Motor Function

Summary:

- All Types of motors
- Arduino Programming with motors
- L293D Based Arduino Motor Shield
- Procedure
- Example Program.

No. of Student attended the session 6

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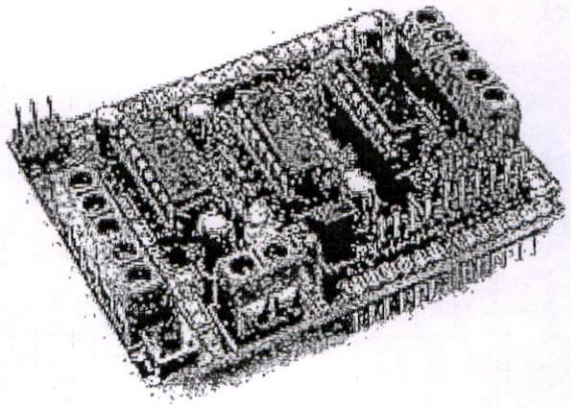
L293D Based Arduino Motor Shield:



Features:

- 2 connections for 5V 'hobby' servos connected to the Arduino's high-resolution dedicated timer - no jitter!
- Up to 4 bi-directional DC motors with individual 8-bit speed selection (so, about 0.5% resolution)
- Up to 2 stepper motors (unipolar or bipolar) with single coil, double coil, interleaved or micro-stepping.
- 4 H-Bridges: L293D chipset provides 0.6A per bridge (1.2A peak) with thermal shutdown protection, 4.5V to12V • Pull down resistors keep motors disabled during power-up
- Big terminal block connectors to easily hook up wires (10-22AWG) and power
- Arduino reset button brought up top
- 2-pin terminal block to connect external power, for separate logic/motor supplies
- Tested compatible with Mega, UNO & Duemilanove
- Dimensions: 69mm x 53mm x 14.3mm (2.7in x 2.1in x 0.6in)

The L293D is a dedicated module to fit in Arduino UNO R3 Board, and Arduino MEGA. It is actually a motor driver shield that has full featured Arduino Shield can be used to drive 2 to 6 DC motor and 4 wire Stepper motor and it has 2 set of pins to drive a SERVO.

L203D is a monolithic integrated that has a feature to adopt high voltage, high current at four channel motor driver designed to accept load such as relays solenoids, DC Motors and Stepper Motors and switching power transistor. To simplify to used as two bridges on each pair of channels and equipped with an enable input. A separate supply input is provided for the logic, allowing operation at a lower voltage and internal clamp diodes are included.

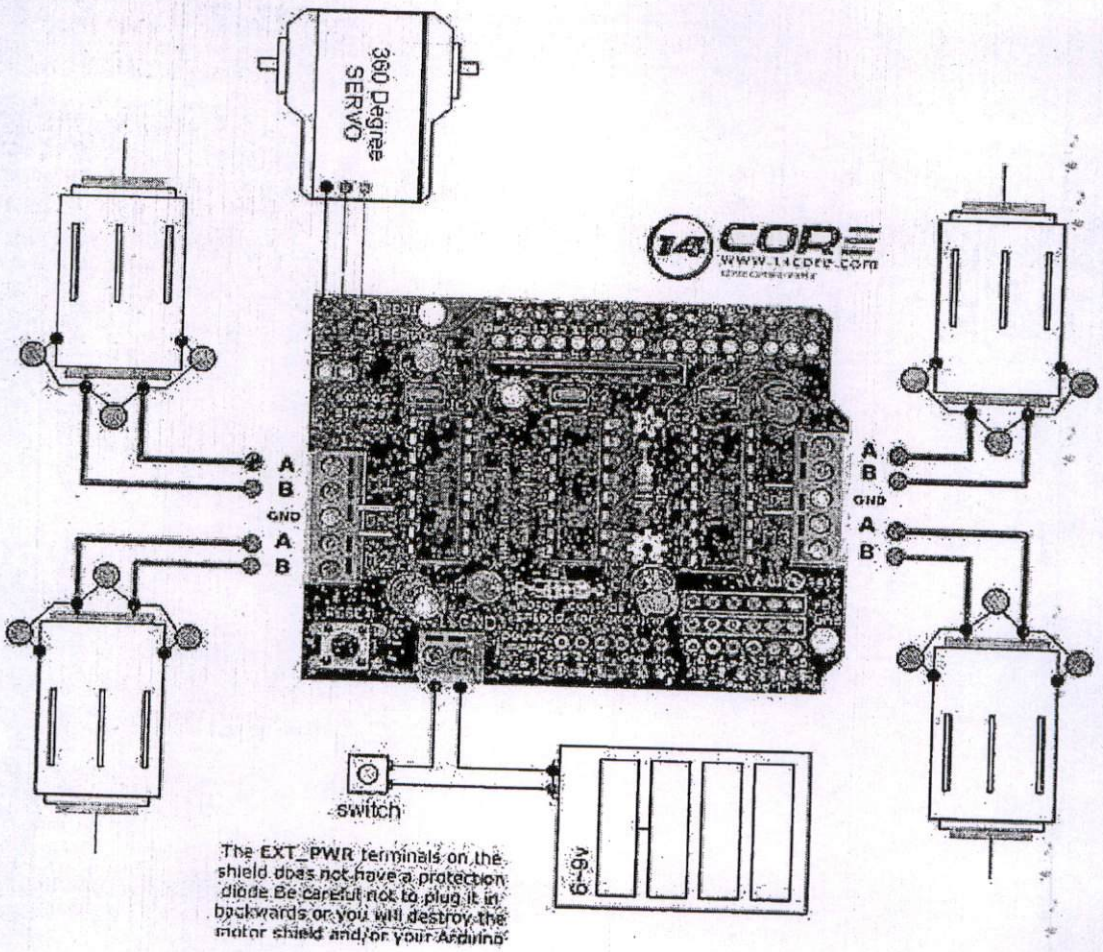
The device is suitable for use in switching applications at frequencies up to 5kHz. The L293D is assembled in a 16 lead plastic package which has 4 centre pins connected together and used for heat sinking. The L293D is assembled in a 20 lead surface mount which has 8 centre pins connected together and used for heat shrinking.

Items	Min	Typical	Max	Unit
Control Voltage	4.5	5	5.5	V
Driver Voltage	6	9	15	V
Output Current			1.2	A
Dimensions				cm
Weight				gm

Control up to 4 DC motors.

- Control 2 Servos.
- Logic Control Voltage VSS: 4.5 ~ 5.5 V
- Motor Supply Voltage VSS: 15v
- Drive operating current IO: 1.2A
- 8 Stage Serial Shift Registers

Wiring a DC Motor



Motor requires more energy specially cheap motors since chip motors less efficient. The important thing you need is find out what voltage require your going to use. some small motors are only intended to run at 1.5 volts but it is just a common to have 6 ~ 12v motors. The motor controller on L294D shield is design to run at 4.5v to 25v. most 1.5 ~ 3 volts motor will not works on this shield. another thing you need is to figure it out how much current the motor will support? The L293D chip support up to 600 mA per motor, with 1.2A peak current. Note ones you head towards 1A you'll probably want to put a heat sink on the chip, otherwise it will get thermal failure or burning out the chip.

Note:

Do not connect the motor to 5v line on the board. There are two places you can get your motor high voltage supply.

Wiring and Installation the DC Motor to the l293D Shield

The DC motor are used for all sort of robotics projects. The motor shield can drive up to 4 or 6 DC motors bi directional, it means that they can be driven forward and backward. The speed can also be varied at 0.5% increments using PWM(Pulse with Modulation) this means that speed can be controlled.

Note:

The H-Bridge Chip is not supported for driving load over 0.6A over 1.2A so this it means that this chip is for small motors. Check the datasheet below to learn more. To connect simply place the 2 wires to the terminal with screw and then connect them to either M1, M2, M3, or M4 follow the example diagram above.

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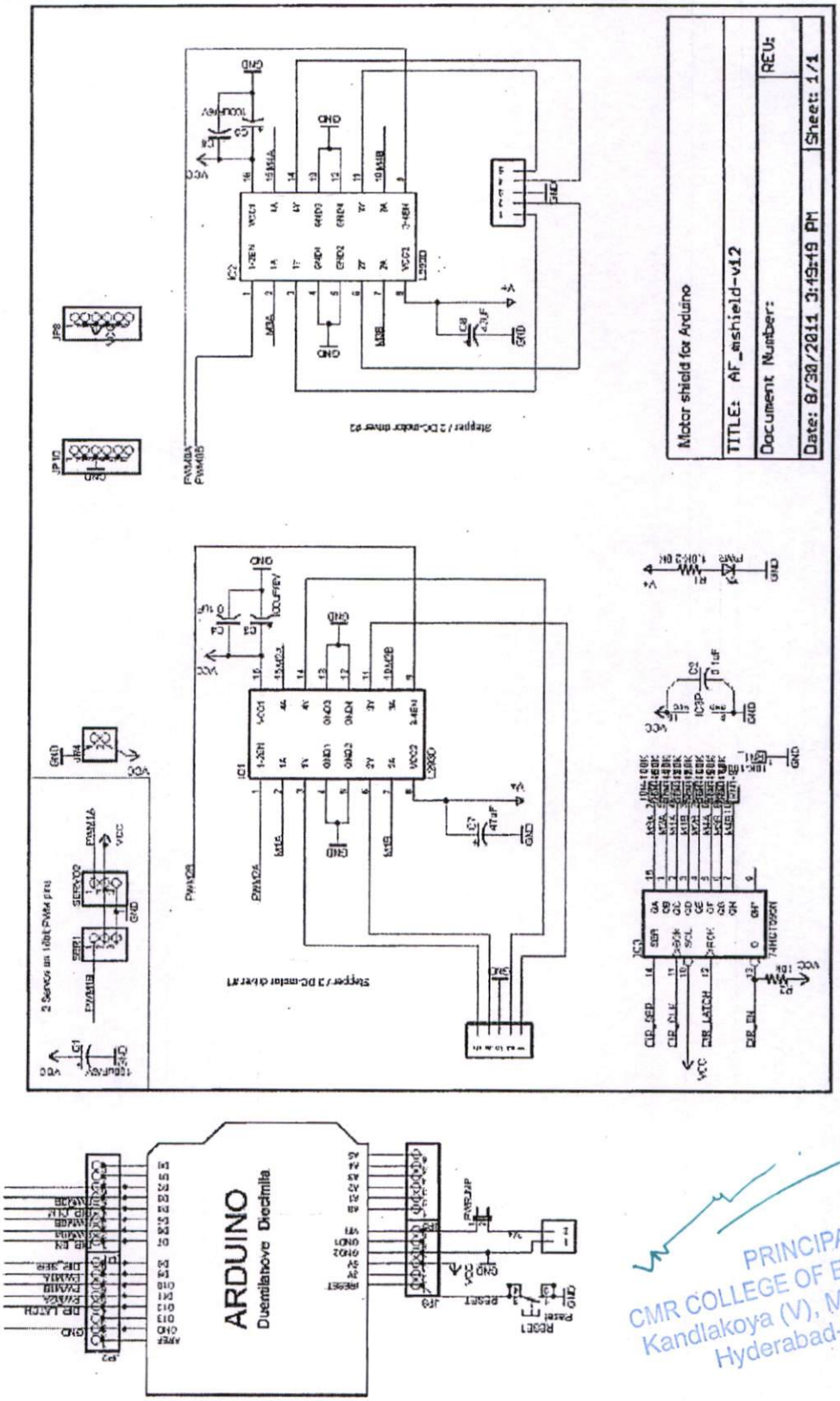
Schematic :



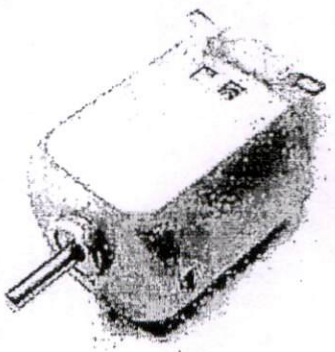
Example:

In this chapter, we will interface different types of motors with the Arduino board (UNO) and show you how to connect the motor and drive it from your board.

There are three different type of motors –

- DC motor
- Servo motor
- Stepper motor

A DC motor (Direct Current motor) is the most common type of motor. DC motors normally have just two leads, one positive and one negative. If you connect these two leads directly to a battery, the motor will rotate. If you switch the leads, the motor will rotate in the opposite direction.



Warning – Do not drive the motor directly from Arduino board pins. This may damage the board. Use a driver Circuit or an IC.

We will divide this chapter into three parts –

- Just make your motor spin
- Control motor speed
- Control the direction of the spin of DC motor

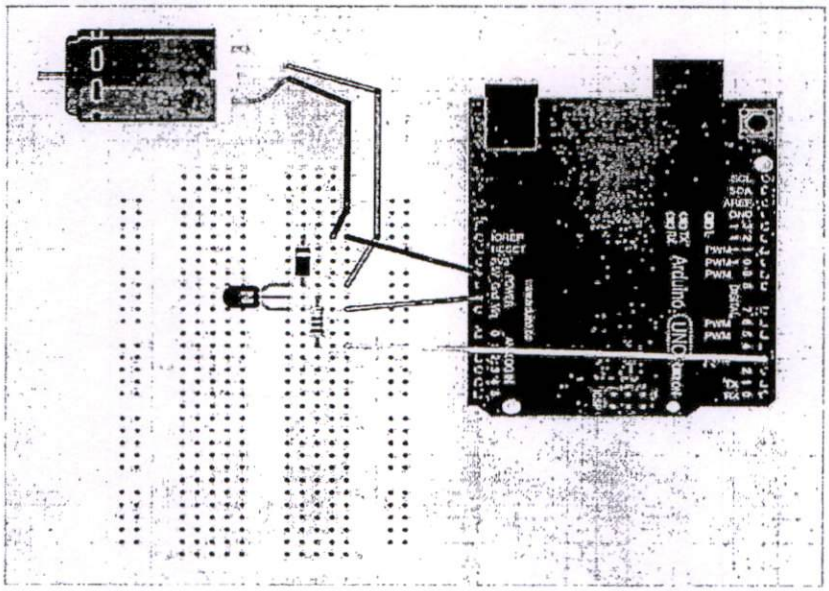
Components Required

You will need the following components –

- 1x Arduino UNO board
- 1x PN2222 Transistor
- 1x Small 6V DC Motor
- 1x 1N4001 diode
- 1x 270 Ω Resistor

Procedure

Follow the circuit diagram and make the connections as shown in the image given below.



Precautions

Take the following precautions while making the connections.

- First, make sure that the transistor is connected in the right way. The flat side of the transistor should face the Arduino board as shown in the arrangement.
- Second, the striped end of the diode should be towards the +5V power line according to the arrangement shown in the image.

Spin ControlArduino Code

```
int motorPin = 3;

void setup() {

}

void loop() {
  digitalWrite(motorPin, HIGH);
}
```

Code to Note

The transistor acts like a switch, controlling the power to the motor. Arduino pin 3 is used to turn the transistor on and off and is given the name 'motorPin' in the sketch.

Result

Motor will spin in full speed when the Arduino pin number 3 goes high.

4

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Kandlakoya, Medchal, Hyderabad-501401

Student's attendance sheet

S.No	Name	Signature
1	B. Meerab.	Meerab.
2	D. Aila	Aila
3	MD. Farhad	Farhad
4	K. Akhil	Akhil
5	L. Zeenat	Zeenat
6	C. Tarun	Tarun
7.	M. Hemasri	Hemasri
8.	V. Vijay	Vijay
9.	P. KAVITHA	KAVITHA
10.	G. Ganesh	Ganesh
11.	K. Arjun	Arjun
12.	D. Bharath	Bharath
13.	L. Laxman	Laxman
14.	N. Vijaya	Vijaya
15.	K. Jai sai	Jai sai
16.	Z. Leela Daggupathi	Leela Daggupathi
17.	P. Balak Tharun	Balak Tharun
18.	A. Adharsh	Adharsh
19.	B. Jahnavi	Jahnavi
20.	C. Ranbir	Ranbir
21.	F. Mahesh	Mahesh
22.	G. Disha	Disha
23.	D. Ami Prabhu	Ami Prabhu
24.	H. Deepa	Deepa
25.	G. KRITHI	KRITHI
26.	J. Karthik	Karthik
27.	F. Pallavi	Pallavi
28.	K. Arya	Arya
29.	G. Nagarjuna	Nagarjuna

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Kandlakoya, Hyderabad – 501 401

FEEDBACK FORM

Name of the Presenter: K. Ravi Kiran.
Date: 13/11/2021 Title: Auradino programing with motors.

S.NO	Description	Excellent అద్భుతం	Good బాగుంది	Satisfactory పర్వాలేదు	Poor బాగాలేదు
01	The training content was relevant to me ట్రైనింగ్ కి సంబంధిత విషయాలు మీకు సంబంధించినవేన ?		✓		
02	The amount of material was covered was sufficient మీకు ఇచ్చిన మెటీరియల్ ఉపయోగపడిందా ?	✓			
03	Instructional methods & media were used appropriately which made learning easy స్పీకర్ గారు చెప్పిన విధానం మీకు సులువు గా అనిపించిందా ?		✓		
04	I am confident of using concepts covered మీరు నేర్చుకున్నవి వినియోగిస్తారా??			✓	
05	Duration of training was appropriate మీకు ట్రైనింగ్ సమయం సరిపడా ఉందనిపించిందా ?	✓			
06	Training met my expectations ట్రైనింగ్ మీరు అనుకున్న స్థాయి లో ఉందా	✓			
07	Faculty involved all participants స్పీకర్ గారు అందరిని కలుపుకుని చెప్పారా ?		✓		
08	My questions were answered adequately మీరు అడిగిన ప్రశ్నలకి జవాబు చెప్పిన విధానం ఎలా ఉంది ?	✓			

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FEEDBACK FORM

Name of the Presenter: K. Ravi Kiran.
Date: 13/11/2021 Title: Arduino programing with motors.

S.NO	Description	Excellent అద్భుతం	Good బాగుంది	Satisfactory పర్వాలేదు	Poor బాగాలేదు
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Date: 15-11-2021
Hyderabad

To

The Principal,
CMR College of Engineering & Technology,
Hyderabad.

Through: Coordinator, IQAC- CMRCET.

Respected sir,

Subject: Approval for organizing a Academic training on **"Concepts of Physics"** for X class students, ZPHS, MEDCHAL – Reg.

As Per the personal discussion held with the Head master of MEDCHAL, there is a Academic training on **Concepts of Physics** is planned for the students of X class under NAIPUNYA Club. The seminar will be held at ZPHS School on 20-11-2021(Saturday). All the students of class X will attend the session from 10.00 AM to 12.00 PM. we also organize 45-minute discussion where students can clear doubts about the topic.

S.NO	Name of Faculty and Student	Course	Year
01	CH.Neelima,Asst.Prof	ECE	-
02	B. Archana	CSE	-
03	R.Shilpa Rani	CSE	-
04	T.Meghanath	ME	IV
05	A.Ashiritharao	ECE	IV
06	CH.Praneth	CSE	IV
07	Pavan Venkata Ramana	ECE	IV

In this regard we need your Permission to proceed further.

Thank you for your time.

Recommended

Coordinator
Internal Quality Assurance Cell
CMR College of Engineering & Technology
Kandlakoya (V), Medchal Road,
Hyderabad - 501 401.

B Suresh Rao,
Convener,
Naipunya Club,
CMRCET

HOD, CEER
Center of Engineering Education Research
CMR College of Engineering & Technology
Hyderabad, Telangana - 501 401.

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(Affiliated to JNTU, Hyderabad and Approved by AICTE New Delhi)

19-10-2021
Hyderabad

To
Head Master,
ZPHS Medchal,
MEDCHAL.

Sir,

Sub: Request to provide amenities for Smooth conduction of Academic training on **Concepts of Physics**

As per our discussion held with the convener of NAIPUNYA CLUB regarding conduction of Academic training on **Concepts of Physics** to the students for better understanding of the content, I bring to your kind notice that students of Electronics are interested in conducting a session to X class students. As we all know that exposure and hands-on sessions are very important for understanding the subject in a vivid manner, our students are interested in teaching a concept for Tenth class students. It may enhance learning by providing a better understanding and comprehension of the subjects as well as by providing different methods, ways, and techniques within the same slide. Using PowerPoint presentations may encourage students and improve their achievement.

In this regard of concern, I request you to provide the required amenities for smooth conduction of event.

Thank you

Dr. V.A.Narayana
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Hyderabad-501401.

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Kandlakoya, Medchal, Hyderabad-501401

Report on Hands on "Concepts of Physics"

Under

NAIPUNYA CLUB

Date: 15-11-2021

Time: 10 am to 12.00 pm

Venue: MEDCHAL ZPHS.

Resource Person: CH. Neelima, B.Archana.

Topic: Concepts of Physics

Event report: IQAC have organized a community development program for X class Students of **MEDCHAL** village and as a part of its **Atomic theory** was taught to them.

The entire hands on was scheduled on one day session **CH.Neelima, B.Archana** They divided the session into two parts.

Topics:

1. Basic Atomic Theory, The Structure of Matter
2. Example of Like charges repel and opposite charges attract, Electron shells

summary

3. Basic Atomic Theory, The Structure of Matter
4. Atomic Structure
5. Atomic Forces
6. Like charges repel and opposite charges attract.
7. Electron shells

No. of Student attended the session 7

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Basic Atomic Theory, The Structure of Matter

The field of study we call **electricity** is the investigation of the forces created by **charged** particles, especially electrons, and the motion and interactions of those particles. The **electron** is a fundamental component of matter and is considered to have the smallest possible unit of **negative** charge. In comparison to ordinary visible objects in our environment, the electron is an extremely small particle, having a mass of only $9.109 \square 10^{-31}$ kg.

Atomic Structure

All matter is composed of **atoms** , each of which has a central **nucleus** and one or more electrons that travel in orbits around the nucleus, like satellites around the earth. The nucleus contains one or more **positively** charged particles called **protons**. The positive charge of a proton is 'opposite' to the negative charge of an electron, in the sense that the total, or net, charge of the combination is zero. Thus, an atom that has the same number of electrons in orbit as it has protons in its nucleus is **electrically neutral**. The nucleus of every atom except that of hydrogen also contains one or more **neutrons**, which carry no electrical charge. The number of protons and neutrons in the nucleus of an atom uniquely determines the element it represents - iron, copper, oxygen, and so on - and all the atoms of a given element have identical nuclei.

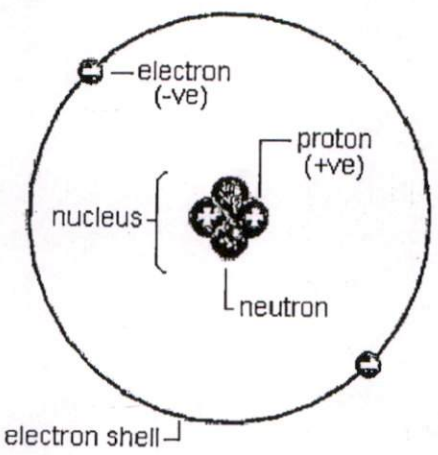

figure:1

Figure.1 is a diagram of the structure of the helium atom. Noticethat the nucleus is a cluster of two protons and two neutrons and that there are two electrons in an orbit, called an **electron shell**, around the nucleus. The atom is electrically neutral because the two positively charged protons neutralize the two negatively charged electrons.

Atomic Forces

A very important fact that accounts for many of the electrical phenomena we will study in this site is that *there is a force of attraction between oppositely charged particles* and a *force of repulsion between similarly charged particles.* For example, two electrons in the vicinity of one another will each experience a forcethat drives them apart. An electron and a proton will each experience a force that draws them together. The following statement summarizes this behavior:

Like charges repel and opposite charges attract.

The magnitude of the force is inversely proportional to the square of the distance separating the charged particles. In short, the force increases dramatically when the particles are brought closer together. We can see in Figure 741.1.1 that there is a strong force of attraction between the orbiting electrons and the positive nucleus of the helium atom. The **dynamic** forces resulting from the orbital motion of the electrons counteract the attractive force of the nucleus and prevent the electrons from falling into the nucleus. This phenomenon is similarto that which keeps an earth satellite from falling out of orbit due to gravitational attraction.

Electron shells

The atoms of other elements contain additional electron shells that are farther removed from the nucleus than the electron shell shown in Figure 1. Figure2 shows the electron shells that surroundthe nucleus of the copper atom. Each shell is designated by a letter (k, l, m, and n) and there is an upper limit on the number of electrons, which each shell can contain. If we regard the innermost (k) shell as shell number 1, the next (l) as shell number 2, and so on, the maximum number, M, of electrons that the nth shell can contain is given by the formula:

$$M = 2n^2 \text{ electrons}$$

(eqn 741.1.1)

Thus, the innermost shell can contain at most 2 electrons, the next shell, 8 electrons, the next shell, 18 electrons, and the fourth shell, 32 electrons. Equation 741.1.1 is valid for determining the number of electrons in any of the *first four* shells of an atom, but is not generally applicable for complex atoms containing additional shells.

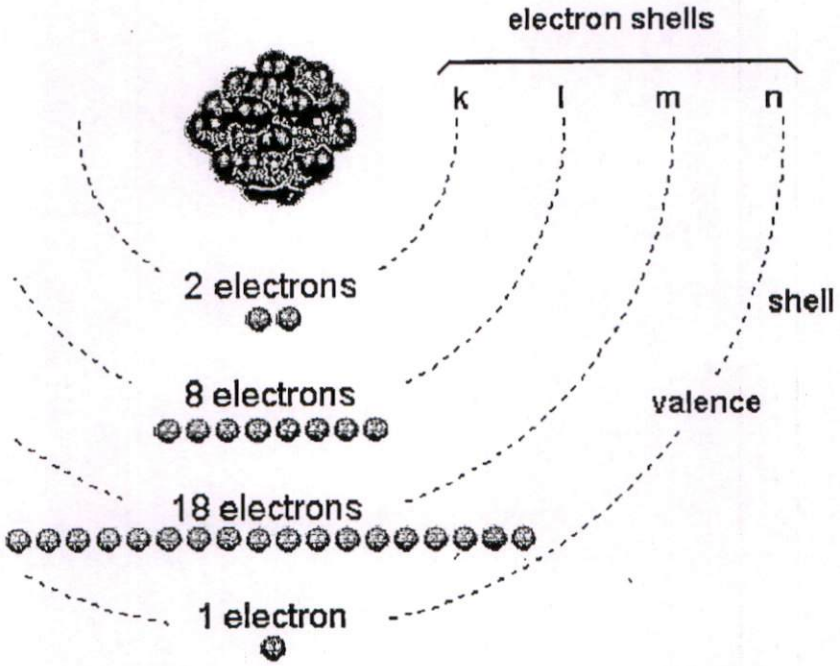

figure:2

SUMMARY:

- **Electricity** is the forces that arises from the motion of **electrons**
- All matter is composed of **atoms**
- An atom consists of a **nucleus** (containing **protons** and **neutrons**) orbited byelectrons
- An electron is a **negatively** chargedA proton is **positively** charged
- A neutron has **no** charge
- Like charges repel and opposite charges attract
- All atoms in an element (eg. oxygen, copper) contain an identical number ofprotons
- Atoms with an identical number of protons and electrons are electrically neutralElectrons in an atom arrange themselves into **shells** around the nucleus

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Kandlakoya, Medchal, Hyderabad-501401

Student's attendance sheet

S.No	Name	Signature
1	P. Ranjith	
2	B. ~~Vanantha~~ Vasantha.	Vasantha
3	K Varun	
4	Bindu	
5	Sindhu	
6	SRAVAN	
7	Sravani	
8.	Bomma Soujanya	
9.	R. Harshith	
10.	Rohith	
11.	Keerthi	
12.	Niharika	
13.	Vinesh	
14.	Vamshi	
15.	Balaji	
16.	L. Mesi	
17	M. Vijay	
18.	Ramulu	
19.	Ganesh.	Ganesh.
20.	M. Kamlesh	
21.	Neha.	Neha
22.	Sana	
23.	KOLLI, RAGA, SUDHA	
24.	Madhu Sudha.	
25	Sweety	
26	Gomasham ~~Sindhu~~ Sindha	
27	Avinash	
28.	Ch. Sathvika	
29.	M. VEEKSHIT	

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FEEDBACK FORM

Name of the Presenter: CH. Neelima
Date: 20/11/2021 Title: Physics

S.NO	Description	Excellent అద్భుతం	Good బాగుంది	Satisfactory పర్వాలేదు	Poor బాగాలేదు
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02	The amount of material was covered was sufficient మీకు ఇచ్చిన మెటీరియల్ ఉపయోగపడిందా ?			✓	
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08	My questions were answered adequately మీరు అడిగిన ప్రశ్నలకి జవాబు చెప్పిన విధానం ఎలా ఉంది ?	✓			

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04	I am confident of using concepts covered మీరు నేర్చుకున్నవి వినియోగిస్తారా??		✓		
05	Duration of training was appropriate మీకు ట్రైనింగ్ సమయం సరిపడా ఉందనిపించిందా ?	✓			
06	Training met my expectations ట్రైనింగ్ మీరు అనుకున్న స్థాయి లో ఉందా		✓		
07	Faculty involved all participants స్పీకర్ గారు అందరిని కలుపుకుని చెప్పారా ?		✓		
08	My questions were answered adequately మీరు అడిగిన ప్రశ్నలకి జవాబు చెప్పిన విధానం ఎలా ఉంది ?	✓			

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Kandlakoya, Hyderabad – 501 401

FEEDBACK FORM

Name of the Presenter: Ch. Neelima
Date: 20/11/2021 Title: Physics

S.NO	Description	Excellent అద్భుతం	Good బాగుంది	Satisfactory పర్వాలేదు	Poor బాగాలేదు
01	The training content was relevant to me ట్రైనింగ్ కి సంబంధిత విషయాలు మీకు సంబంధించినవేన ?	✓			
02	The amount of material was covered was sufficient మీకు ఇచ్చిన మెటీరియల్ ఉపయోగపడిందా ?		✓		
03	Instructional methods & media were used appropriately which made learning easy స్పీకర్ గారు చెప్పిన విధానం మీకు సులువు గా అనిపించిందా ?		✓		
04	I am confident of using concepts covered మీరు నేర్చుకున్నవి వినియోగిస్తారా??		✓		
05	Duration of training was appropriate మీకు ట్రైనింగ్ సమయం సరిపడా ఉందనిపించిందా ?	✓			
06	Training met my expectations ట్రైనింగ్ మీరు అనుకున్న స్థాయి లో ఉందా		✓		
07	Faculty involved all participants స్పీకర్ గారు అందరిని కలుపుకుని చెప్పారా ?	✓			
08	My questions were answered adequately మీరు అడిగిన ప్రశ్నలకి జవాబు చెప్పిన విధానం ఎలా ఉంది ?		✓		

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Hyderabad-501401.

Date: 23-11-2021
Hyderabad

To

The Principal,
CMR College of Engineering & Technology,
Hyderabad.

Through: Coordinator, IQAC- CMRCET.

Respected sir,

Subject: Approval for organizing a Academic training on **"Concepts of Mathematics"** for X class students, ZPHS, PUDUR – Reg.

As Per the personal discussion held with the Head master of PUDUR, there is a Academic training on **Concepts of Mathematics in Linear Algebra** is planned for the students of X class under NAIPUNYA Club. The seminar will be held at ZPHS School on 27-11-2021(Saturday). All the students of class X will attend the session from 10.00 AM to 12.00 PM. we also organize 45-minute discussion where students can clear doubts about the topic.

S.NO	Name of Faculty and Student	Course	Year
01	B.Archana ,Asst.Prof	CSE	-
02	Md. Asma	CSE	-
03	CH. Neelima	ECE	-
04	T.Meghanath	ECE	IV
05	A.Ashiritharao	ECE	IV
06	CH.Praneth	ECE	IV
07	Pavan Venkata Ramana	CSE	IV

In this regard we need your Permission to proceed further.

Thank you for your time.

Recommended

Coordinator
Internal Quality Assurance Cell
CMR College of Engineering & Technology
Kandlakoya (V), Medchal Road,
Hyderabad - 501 401.

PRINCIPAL
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Hyderabad-501401.

B Suresh Ram,
Convener,
Naipunya Club,
HOD, CEER,
Center of Engineering Education Research
CMR College of Engineering & Technology
Hyderabad, Telangana - 501 401.

26-11-2021
Hyderabad

To
Head Master,
ZPHS Pudur,
MEDCHAL.

Sir,

Sub: Request to provide amenities for Smooth conduction of Academic training on **Concepts of Mathematics**

As per our discussion held with the convener of NAIPUNYA CLUB regarding conduction of Academic training on **Concepts of Mathematics** to the students for better understanding of the content, I bring to your kind notice that students of Electronics are interested in conducting a session to X class students. As we all know that exposure and hands-on sessions are very important for understanding the subject in a vivid manner, our students are interested in teaching a concept for Tenth class students. It may enhance learning by providing a better understanding and comprehension of the subjects as well as by providing different methods, ways, and techniques within the same slide.

In this regard of concern, I request you to provide the required amenities for smooth conduction of event.

Thank you

Dr. V. A. Narayana
Principal
CMRCET

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Kandlakoya, Medchal, Hyderabad-501401

"Training session on Mathematics in Linear Algebra "

Under

NAIPUNYA CLUB

Date: 27-11-2021

Time: 10 am to 12.00 pm

Venue: ZPHS PUDUR.

Resource Person:B Archana, Md Asma

Topic: Academic training on Mathematics in linear algebra

Event report: IQAC have organized a community development program for Unemployed youth of PUDUR village and as a part of it Academic Training was taught to them.

The entire hands on was scheduled on one day session conducted by**B.Archana, Md Asma.** They divided the session into two parts.

Topics:

1. What is linear Algebra
2. Linear Algebra Definition
3. Branches of Linear Algebra
4. Elementary Linear Algebra
5. Linear Equations

No. of Student attended the session 18

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Hyderabad-501401.

Linear Algebra

Linear algebra is a branch of mathematics that deals with linear equations and their representations in the vector space using matrices. In other words, linear algebra is the study of linear functions and vectors. It is one of the most central topics of mathematics. Most modern geometrical concepts are based on linear algebra.

Linear algebra facilitates the modeling of many natural phenomena and hence, is an integral part of engineering and physics. Linear equations, matrices, and vector spaces are the most important components of this subject. In this article, we will learn more about linear algebra and the various associated topics.

What is Linear Algebra?

Linear algebra can be defined as a branch of mathematics that deals with the study of linear functions in vector spaces. When information related to linear functions is presented in an organized form then it results in a matrix. Thus, linear algebra is concerned with vector spaces, vectors, linear functions, the system of linear equations, and matrices. These concepts are a prerequisite for sister topics such as geometry and functional analysis.

Linear Algebra Definition

The branch of mathematics that deals with vectors, matrics, finite or infinite dimensions as well as a linear mapping between such spaces is defined as linear algebra. It is used in both pure and applied mathematics along with different technical forms such as physics, engineering, natural sciences, etc.

Branches of Linear Algebra

Linear algebra can be categorized into three branches depending upon the level of difficulty and the kind of topics that are encompassed within each. These are elementary, advanced, and applied linear algebra. Each branch covers different aspects of matrices, vectors, and linear functions.

Elementary Linear Algebra

Elementary linear algebra introduces students to the basics of linear algebra. This includes simple matrix operations, various computations that can be done on a system of linear equations, and certain aspects of vectors. Some important terms associated with elementary linear algebra are given below:

Scalars - A scalar is a quantity that only has magnitude and not direction. It is an element that is used to define a vector space. In linear algebra, scalars are usually real numbers.

Vectors - A vector is an element in a vector space. It is a quantity that can describe both the direction and magnitude of an element.

Vector Space - The vector space consists of vectors that may be added together and multiplied by scalars.

Matrix - A matrix is a rectangular array wherein the information is organized in the form of rows and columns. Most linear algebra properties can be expressed in terms of a matrix.

Matrix Operations - These are simple arithmetic operations such as addition, subtraction, and multiplication that can be conducted on matrices.

Advanced Linear Algebra

Once the basics of linear algebra have been introduced to students the focus shifts on more advanced concepts related to linear equations, vectors, and matrices. Certain important terms that are used in advanced linear algebra are as follows:

Linear Transformations - The transformation of a function from one vector space to another by preserving the linear structure of each vector space.

Inverse of a Matrix - When an inverse of a matrix is multiplied with the given original matrix then the resultant will be the identity matrix. Thus, $A^{-1}A = I$.

Eigenvector - An eigenvector is a non-zero vector that changes by a scalar factor (eigenvalue) when a linear transformation is applied to it.

Linear Map - It is a type of mapping that preserves vector addition and vector multiplication.

Applied Linear Algebra

Applied linear algebra is usually introduced to students at a graduate level in fields of applied mathematics, engineering, and physics. This branch of algebra is driven towards integrating the concepts of elementary and advanced linear algebra with their practical implications. Topics such as the norm of a vector, QR factorization, Schur's complement of a matrix, etc., fall under this branch of linear algebra.

Linear Algebra Topics

The topics that come under linear algebra can be classified into three broad categories. These are linear equations, matrices, and vectors. All these three categories are interlinked and need to be understood well in order to master linear algebra. The topics that fall under each category are given below.

Linear Equations

A linear equation is an equation that has the standard form a1x1+a2x2+...+anxnx1x1+x2x2+...+xxx. It is the fundamental component of linear algebra. The topics covered under linear equations are as follows:

- Linear Equations in One variable
- Linear Equations in Two Variables
- Simultaneous Linear Equations
- Solving Linear Equations
- Solutions of a Linear Equation
- Graphing Linear Equations
- Applications of Linear equations
- Straight Line

Vectors

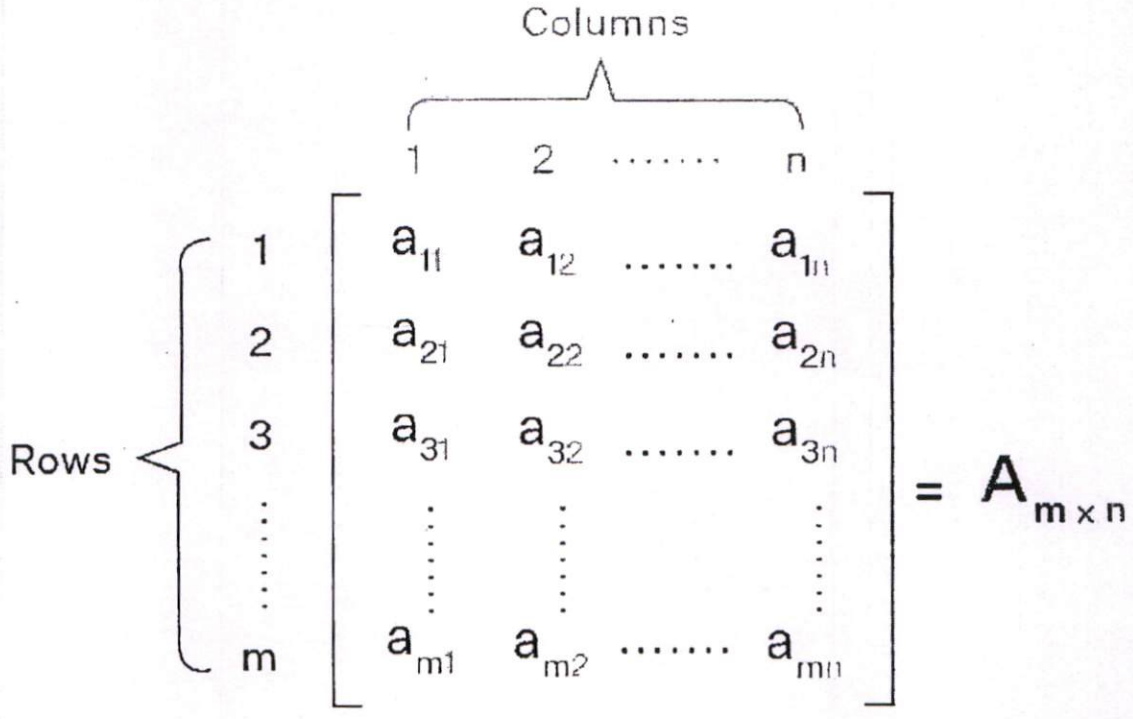
In linear algebra, there can be several operations that can be performed on vectors such as multiplication, addition, etc. Vectors can be used to describe quantities such as the velocity of moving objects. Some crucial topics encompassed under vectors are as follows:

- Types of Vectors
- Dot Product
- Cross Product
- Addition of Vectors

Matrices

A matrix is used to organize data in the form of a rectangular array. It can be represented as Am×n Here, m represents the number of rows and n denotes the number of columns in the matrix. In linear algebra, a matrix can be used to express linear equations in a more compact manner. The topics that are covered under the scope of matrices are as follows:

Matrices in Math



- $A^{-1}A = I$
- $C = A + B$,
- $C = A - B$,
- $kA = kaij$
- $C = AB = \sum nk=1aikbkj\sum$

6

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Student's attendance sheet

S.No	Name	Signature
1	K. Nithin	
2	L. Chandu	
3	P. Tarak	
4	M. Ram	
5	N. priyanka	PRIYANKA
6	R. Spandana	
7	A. Nikitha	
8	K. Varsha	
9	Kashava	
10	B. Karthik	
11	C. Rami	
12	Akshay	
13	VIKRAM	VIKRAM
14	N. Karan	
15	Preethi	
16	B. Rajshekar	
17	Arjuna	
18	T. Suresh	SURESH
19	Vinay	
20	A. Keerthana	
21	Vinay	
22	Arjun	
23	L. Kiran	
24	Raj Kumar	
25	Akhila	
26	P. Murthy	
27	Shiva	
28	S. Ramesh	
29	PRIYA	
30		

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Kandlakoya, Hyderabad – 501 401

FEEDBACK FORM

Name of the Presenter: B. Archana
Date: 27/11/2021 Title:
Maths in A Linear Algebra

S.NO	Description	Excellent అద్భుతం	Good బాగుంది	Satisfactory పర్వాలేదు	Poor బాగాలేదు
01	The training content was relevant to me ట్రైనింగ్ కి సంబంధిత విషయాలు మీకు సంబంధించినవేన ?		✓		
02	The amount of material was covered was sufficient మీకు ఇచ్చిన మెటీరియల్ ఉపయోగపడిందా ?			✓	
03	Instructional methods & media were used appropriately which made learning easy స్పీకర్ గారు చెప్పిన విధానం మీకు సులువు గా అనిపించిందా ?	✓			
04	I am confident of using concepts covered మీరు నేర్చుకున్నవి వినియోగిస్తారా??		✓		
05	Duration of training was appropriate మీకు ట్రైనింగ్ సమయం సరిపడా ఉందనిపించిందా ?	✓			
06	Training met my expectations ట్రైనింగ్ మీరు అనుకున్న స్థాయి లో ఉందా		✓		
07	Faculty involved all participants స్పీకర్ గారు అందరిని కలుపుకుని చెప్పారా ?		✓		
08	My questions were answered adequately మీరు అడిగిన ప్రశ్నలకి జవాబు చెప్పిన విధానం ఎలా ఉంది ?		✓		

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FEEDBACK FORM

Name of the Presenter: B. Archana
Date: 27/11/2021 Title:
Maths in Linear Algebra

S.NO	Description	Excellent అద్భుతం	Good బాగుంది	Satisfactory పర్వాలేదు	Poor బాగాలేదు
01	The training content was relevant to me ట్రైనింగ్ కి సంబందిత విషయాలు మీకు సంబందించినవేన ?	✓			
02	The amount of material was covered was sufficient మీకు ఇచ్చిన మెటీరియల్ ఉపయోగపడిందా ?		✓		
03	Instructional methods & media were used appropriately which made learning easy స్పీకర్ గారు చెప్పిన విధానం మీకు సులువు గా అనిపించిందా ?		✓		
04	I am confident of using concepts covered మీరు నేర్చుకున్నవి వినియోగిస్తారా??	✓			
05	Duration of training was appropriate మీకు ట్రైనింగ్ సమయం సరిపడా ఉందనిపించిందా ?	✓			
06	Training met my expectations ట్రైనింగ్ మీరు అనుకున్న స్థాయి లో ఉందా		✓		
07	Faculty involved all participants స్పీకర్ గారు అందరిని కలుపుకుని చెప్పారా ?		✓		
08	My questions were answered adequately మీరు అడిగిన ప్రశ్నలకి జవాబు చెప్పిన విధానం ఎలా ఉంది ?	✓			

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Kandlakoya, Hyderabad – 501 401

FEEDBACK FORM

Name of the Presenter: B. Archana
Date: 27/11/2021 Title: Maths in Linear Algebra

S.NO	Description	Excellent అద్భుతం	Good బాగుంది	Satisfactory పర్వాలేదు	Poor బాగాలేదు
01	The training content was relevant to me ట్రైనింగ్ కి సంబంధిత విషయాలు మీకు సంబంధించినవేన ?		✓		
02	The amount of material was covered was sufficient మీకు ఇచ్చిన మెటీరియల్ ఉపయోగపడిందా ?		✓		
03	Instructional methods & media were used appropriately which made learning easy స్పీకర్ గారు చెప్పిన విధానం మీకు సులువు గా అనిపించిందా ?		✓		
04	I am confident of using concepts covered మీరు నేర్చుకున్నవి వినియోగిస్తారా??	✓			
05	Duration of training was appropriate మీకు ట్రైనింగ్ సమయం సరిపడా ఉందనిపించిందా ?	✓			
06	Training met my expectations ట్రైనింగ్ మీరు అనుకున్న స్థాయి లో ఉందా		✓		
07	Faculty involved all participants స్పీకర్ గారు అందరిని కలుపుకుని చెప్పారా ?	✓			
08	My questions were answered adequately మీరు అడిగిన ప్రశ్నలకి జవాబు చెప్పిన విధానం ఎలా ఉంది ?		✓		

PRINCIPAL
CMR COLLEGE OF ENGG. & TECH.
Kandlakoya (V), Medchal Road,
Hyderabad-501401.

Date: 01-12-2021
Hyderabad

To

The Principal,
CMR College of Engineering & Technology,
Hyderabad.

Through: Coordinator, IQAC- CMRCET.

Respected sir,

Subject: Approval for organizing a Academic training on **"Concepts of Chemistry"** for X class students, ZPHS, RAVALKOVLE – Reg.

As Per the personal discussion held with the Head master of RAVALKOLE, there is a Academic training on **Concepts of Chemistry** is planned for the students of X class under NAIPUNYA Club. The seminar will be held at ZPHS School on 04-12-2021(Saturday). All the students of class X will attend the session from 10.00 AM to 12.00 PM. we also organize 45-minute discussion where students can clear doubts about the topic.

S.NO	Name of Faculty and Student	Course	Year
01	B.Archana ,Asst.Prof	CSE	-
02	k.Ramani. Asst.Proff	EEE	-
03	Md. Asma, Asst.Proff	CSE	-
04	K.Monika	CSE	IV
05	K. Asha	ME	IV
06	R . Amrutha	CSE	IV
07	P. Anvash	EEE	IV

In this regard we need your Permission to proceed further.

Thank you for your time.

Recommended

Coordinator
Internal Quality Assurance Cell
CMR College of Engineering & Technology
Kandlakoya (V), Medchal Road,
Hyderabad - 501 401.

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Kandlakoya (V), Medchal Road,
Hyderabad-501401.

B Suresh Ram,
Convener,
Naipunya Club,
CMRCET.
HOD, CEER
Center of Engineering Education Research
CMR College of Engineering & Technology
Hyderabad, Telangana - 501 401.

CMR COLLEGE OF ENGINEERING & TECHNOLOGY

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(Affiliated to JNTU, Hyderabad and Approved by AICTE New Delhi)

03-12-2021
Hyderabad

To
Head Master,
ZPHS Ravalkole,
MEDCHAL.

Sir,

Sub: Request to provide amenities for Smooth conduction of Academic training on **Concepts of Chemistry**

As per our discussion held with the convener of NAIPUNYA CLUB regarding conduction of Academic training on **Concepts of Chemistry** the students for better understanding of the content, I bring to your kind notice that students of Electronics are interested in conducting a session to X class students. As we all know that exposure and hands-on sessions are very important for understanding the subject in a vivid manner, our students are interested in teaching a concept for Tenth class students. It may enhance learning by providing a better understanding and comprehension of the subjects as well as by providing different methods, ways, and techniques within the same slide.

In this regard of concern, I request you to provide the required amenities for smooth conduction of event.

Thank you

Dr.V.Annapurna
PRINCIPAL
CMR COLLEGE OF ENGG. & TECH.
Kandlakoya (V), Medchal Road,
Hyderabad-501401.

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Kandlakoya, Medchal, Hyderabad-501401

"Training session on Basics Concepts of Chemistry"

Under

NAIPUNYA CLUB

Date: 04-12-2021

Time: 10 am to 12.00 pm

Venue: ZPHS RAVALKOLE

Resource Person: B. Archana, K.Ramani

Topic: Concepts of Chemistry

Event report: IQAC has organized a community development program for Unemployed youth of Ravalkole, village and as a part of it Academic Training was taught to them.

The entire hands-on was scheduled on a one-day session conducted by**B. Archana, K.Ramani.** Theydivided the session into two parts.

Topics:

1. Introduction
2. Classification of Acid & Bases
3. Details about acids & Bases
4. Chemical Equations

No. of Student attended session 5

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A salt is formed when hydrogen ions are replaced by a metal or an ammonium ion in an acid. A base is a material that reacts with an acid to produce just water and salt. When an acid reacts with a base, it produces a salt.

Bases are commonly found in household cleansers that are used to remove oil from windows and floors, as well as soaps, toothpaste, egg whites, dishwashing liquids, and household ammonia.

Introduction to Acids, Bases and Salts

A substance that tastes sour in water, turns blue litmus red, and neutralises the bases is known as an acid. If a substance's aqueous solution tastes bitter, turns red litmus blue, or neutralises acids, it's called a base. Salt is a neutral material that has no effect on litmus in an aqueous solution.

Classification of Matter

On the basis of
a) Composition – elements, compounds and mixtures
b) State – solids, liquids and gases
c) Solubility – suspensions, colloids and solutions

Types of mixtures – homogeneous and heterogeneous
Types of compounds – covalent and ionic

What Is an Acid and a Base?

Ionisable and Non-Ionisable Compounds

An ionisable compound, when dissolved in water or in its molten state, dissociates into ions almost entirely. Examples: NaCl, HCl, KOH, etc.
A non-ionisable compound does not dissociate into ions when dissolved in water or in its molten state. Examples: glucose, acetone, etc.

Acids and Bases

An acid is any hydrogen-containing substance that is capable of donating a proton (hydrogen ion) to another substance. A base is a molecule or ion able to accept a hydrogen ion from an acid. Acidic substances are usually identified by their sour taste.

Arrhenius' Theory of Acids and Bases

Arrhenius acid – when dissolved in water, dissociates to give H^+ (aq) or H_3O^+ ion.
Arrhenius base – when dissolved in water, dissociates to give OH^- ion.

Examples

Acids

- Hydrochloric acid (HCl)
- Sulphuric acid (H_2SO_4)
- Nitric acid (HNO_3)

Bases

- Sodium hydroxide (NaOH)
- Potassium hydroxide (KOH)
- Calcium hydroxide ($Ca(OH)_2$)

Bronsted Lowry Theory

A Bronsted acid is an H^+ (aq) ion donor.
A Bronsted base is an H^+ (aq) ion acceptor.

Example

In the reaction: $HCl\ (aq) + NH_3\ (aq) \rightarrow NH^+_4(aq) + Cl^-\ (aq)$
HCl – Bronsted acid and Cl^- : its conjugate acid
NH_3 – Bronsted base and NH^+_4 : its conjugate acid

Physical Test

Given are two possible physical tests to identify an acid or a base.

a. Taste

An acid tastes sour, whereas a base tastes bitter. The method of taste is not advised, as an acid or a base could be contaminated or corrosive.

Example: The flavours of curd, lemon juice, orange juice, and vinegar are all sour. Because they contain acids, these compounds have a sour flavour. Baking soda has a sour flavour. It's an example of a foundation.

b. Effect on Indicators by Acids and Bases

An indicator is a chemical substance which shows a change in its physical properties, mainly colour or odour, when brought in contact with an acid or a base.
Below mentioned are commonly used indicators and the different colours they exhibit:

a) Litmus
In a neutral solution – purple
In an acidic solution – red
In a basic solution – blue

Litmus is also available as strips of paper in two variants – red litmus and blue litmus.
An acid turns a moist blue litmus paper to red.
A base turns a moist red litmus paper to blue.

b) Methyl orange
In a neutral solution – orange
In an acidic solution – red
In a basic solution – yellow

c) Phenolphthalein
In a neutral solution – colourless
In an acidic solution – remains colourless
In a basic solution – pink

Acid-Base Reactions

A neutralisation reaction occurs when an acid reacts with a base. Salt and water are the end products of this reaction. An acid–base neutralisation reaction is formulated as a double-replacement reaction in this standard approach.

Reactions of Acids and Bases

a) Reaction of acids and bases with metals

Acids, in general, react with metals to produce salt and hydrogen gas. Bases, in general, do not react with metals and do not produce hydrogen gas.

Acid + active metal → salt + hydrogen + heat

$2HCl + Mg \rightarrow MgCl_2 + H_2 (\uparrow)$

Hydrochloric acid + Magnesium → Magnesium chloride + Hydrogen

Base + metal → salt + hydrogen + heat

$2NaOH + Zn \rightarrow Na_2ZnO_2 + H_2 (\uparrow)$

Sodium hydroxide + Zinc → Sodium zincate + Hydrogen

A more reactive metal displaces the less reactive metal from its base.

$2Na + Mg(OH)_2 \rightarrow 2NaOH + Mg$

Sodium + Magnesium hydroxide → Sodium hydroxide + Magnesium

b) Reaction of acids with metal carbonates and bicarbonates

Acids produce carbon dioxide, as well as metal salts and water, when they react with metal carbonates or metal bicarbonates. Sodium chloride, carbon dioxide, and water are formed when sodium carbonate interacts with hydrochloric acid. Allowing carbon dioxide gas to travel through lime water turns it milky.

Acid + metal carbonate or bicarbonate → salt + water + carbon dioxide.

$2HCl + CaCO_3 \rightarrow CaCl_2 + H_2O + CO_2$
$H_2SO_4 + Mg(HCO_3)_2 \rightarrow MgSO_4 + 2H_2O + 2CO_2$

Effervescence indicates the liberation of CO_2 gas.

c) Reaction of Acid with Base

1. Reaction of metal oxides and hydroxides with acids
Metal oxides or metal hydroxides are basic in nature.
Acid + base → salt + water + heat

$H_2SO_4 + MgO \rightarrow MgSO_4 + H_2O$
$2HCl + Mg(OH)_2 \rightarrow MgCl_2 + 2H_2O$

2. Reaction of non-metal oxides with bases

Non-metal oxides are acidic in nature
Base + Nonmetal oxide → salt + water + heat

$2NaOH + CO_2 \rightarrow Na_2CO_3 + H_2O$

3. Reaction of acids and base

A very common acid is hydrochloric acid. The reaction between strong acid, says hydrochloric acid and strong base say sodium hydroxide, forms salt and water. The complete chemical equation is shown below.

HCl (strong acid) + NaOH (strong base) → NaCl (salt) + H2O (water)

Water

Acids and Bases in Water

When added to water, acids and bases dissociate into their respective ions and help in conducting electricity.

Difference between a Base and an Alkali

Base:

- Bases undergo a neutralisation reaction with acids.
- They are comprised of metal oxides, metal hydroxides, metal carbonates and metal bicarbonates.
- Most of them are insoluble in water.

Alkali:

- An alkali is an aqueous solution of a base, (mainly metallic hydroxides).
- It dissolves in water and dissociates to give OH^- ion.
- All alkalis are bases, but not all bases are alkalis.

Hydronium Ion

Hydronium ion is formed when a hydrogen ion accepts a lone pair of electrons from the oxygen atom of a water molecule, forming a coordinate covalent bond.

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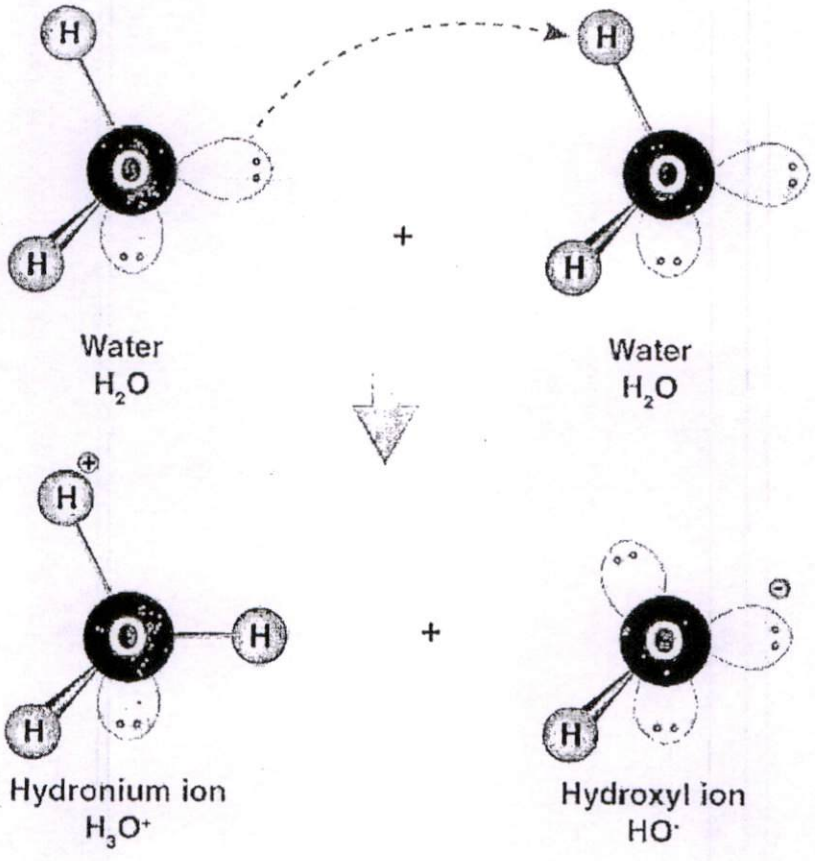


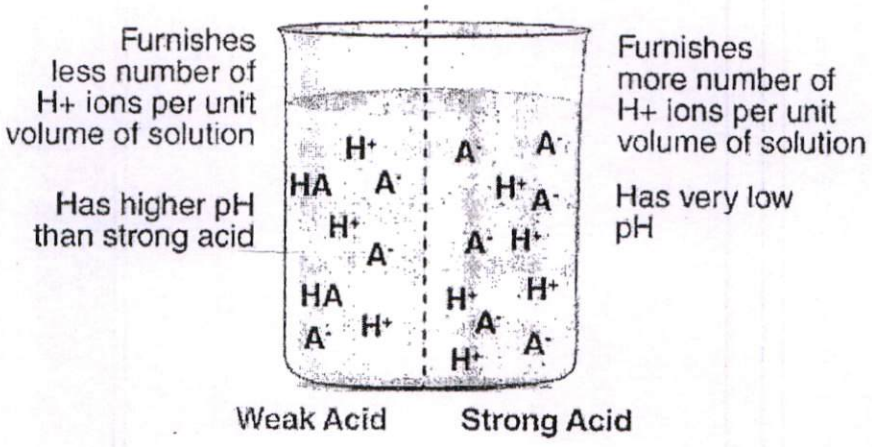
Formation of a hydronium ion

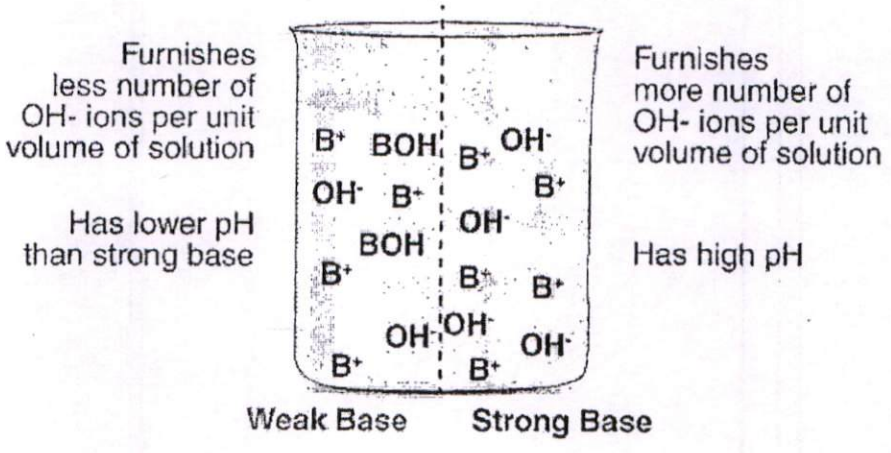
Dilution

Dilution is the process of reducing the concentration of a solution by adding more solvent (usually water) to it.
It is a highly exothermic process.
To dilute acid, the acid must be added to water and not the other way round.

Strength of Acids and Bases

Strong acid or base: When all molecules of a given amount of an acid or a base dissociate completely in water to furnish their respective ions, $H^+(aq)$ for acid and $OH^-(aq)$ for base).
Weak acid or base: When only a few of the molecules of a given amount of an acid or a base dissociate in water to furnish their respective ions, $H^+(aq)$ for acid and $OH^-(aq)$ for base).





Dilute acid: contains less number of $H^+(aq)$ ions per unit volume.
Concentrated acid: contains more number of $H^+(aq)$ ions per unit volume.

Universal Indicator

A universal indicator has a pH range from 0 to 14 that indicates the acidity or alkalinity of a solution.
A neutral solution has pH=7

pH

$pH=-log_{10}[H^+]$
In pure water, $[H^+]=[OH^-]=10^{-7}$ mol/L. Hence, the pH of pure water is 7.
The pH scale ranges from 0 to 14.

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Student's attendance sheet

S.No	Name	Signature
1	T. Nandini	Nandini
2	K. Priya sudha	Priya
3	D. Aniruddh	Aniruddh
4	V. Balraju	Balu
5	N. Chandu	
6	T. Sudharsan	
7	K. Jeffersathi	
8	S. Geetha	Geeta.
9	N. Harshini	Harsh
10	S. Rama raju	
11	K. Mallesh	Mallesh
12	D. Durga ram	
13	T. Anjali	Anjali
14	A. Jyothish	
15	E. Dhanush	
16	K. Tharun	
17	P. Rahul	Rahul
18	B. Ashwith	
19	M. Moulika	Moulika
20	D. Harshitha	Harshitha
21	V. Harshitha	Harshitha
22	T. Keerthi	
23	G. Akhila	
24	N. Bhavya	
25	P. Deekshitha	Deeksh
26	B. Shivasankar	
27	S. Soumya	
28	V. Dhanusha	
29	K. Adhithi	K. Adhithi

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FEEDBACK FORM

Name of the Presenter: B. Archana
Date: 04/12/2021 Title:
Chemistry

S.NO	Description	Excellent అద్భుతం	Good బాగుంది	Satisfactory పర్వాలేదు	Poor బాగాలేదు
01	The training content was relevant to me ట్రైనింగ్ కి సంబంధిత విషయాలు మీకు సంబంధించినవేన ?		✓		
02	The amount of material was covered was sufficient మీకు ఇచ్చిన మెటీరియల్ ఉపయోగపడిందా ?	✓			
03	Instructional methods & media were used appropriately which made learning easy స్పీకర్ గారు చెప్పిన విధానం మీకు సులువు గా అనిపించిందా ?		✓		
04	I am confident of using concepts covered మీరు నేర్చుకున్నవి వినియోగిస్తారా??			✓	
05	Duration of training was appropriate మీకు ట్రైనింగ్ సమయం సరిపడా ఉందనిపించిందా ?	✓			
06	Training met my expectations ట్రైనింగ్ మీరు అనుకున్న స్థాయి లో ఉందా		✓		
07	Faculty involved all participants స్పీకర్ గారు అందరిని కలుపుకుని చెప్పారా ?	✓			
08	My questions were answered adequately మీరు అడిగిన ప్రశ్నలకి జవాబు చెప్పిన విధానం ఎలా ఉంది ?		✓		

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06	Training met my expectations ట్రైనింగ్ మీరు అనుకున్న స్థాయి లో ఉందా	✓			
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Date: 16-12-2021
Hyderabad

To

The Principal,
CMR College of Engineering & Technology,
Hyderabad.

Through: Coordinator, IQAC- CMRCET.

Respected sir,

Subject: Approval for organizing a Academic training on **"Concepts of Mathematics (Probability)"** for X class students, ZPHS, Muneerabad– Reg.

As Per the personal discussion held with the Head master of MUNEERABAD, there is a Academic training on **Concepts of Mathematics in Probability** is planned for the students of X class under NAIPUNYA Club. The seminar will be held at ZPHS School on 18-12-2021(Saturday). All the students of class X will attend the session from 10.00 AM to 12.00 PM. we also organize 45-minute discussion where students can clear doubts about the topic.

S.NO	Name of Faculty and Student	Course	Year
01	k. Sathish, Asst.Prof	MECH	-
02	P.Mahesh Babu ,Asst.Prof	MECH	-
03	B. Bala krishna ,Asst.Prof	EEE	-
04	T.Meghanath	ECE	IV
05	A.Ashiritharao	ECE	IV
06	CH.Praneth	ECE	IV
07	Pavan Venkata Ramana	ECE	IV

In this regard we need your Permission to proceed further.

Thank you for your time.

Recommended

Coordinator
Internal Quality Assurance Cell
CMR College of Engineering & Technology
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B Suresh Ram,
HOD, Director,
Center of Engineering Education Research
CMR College of Engineering & Technology
Hyderabad, Telangana - 501 401.

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(Affiliated to JNTU, Hyderabad and Approved by AICTE New Delhi)

15-12-2021
Hyderabad

To
Head Master,
ZPHS Muneerabad,
MEDCHAL.

Sir,

Sub: Request to provide amenities for Smooth conduction of Academic training on **Concepts of Mathematics**

As per our discussion held with the convener of NAIPUNYA CLUB regarding conduction of Academic training on **Concepts of Mathematics in Probability** to the students for better understanding of the content, I bring to your kind notice that students of Electronics are interested in conducting a session to X class students. As we all know that exposure and hands-on sessions are very important for understanding the subject in a vivid manner, our students are interested in teaching a concept for Tenth class students. It may enhance learning by providing a better understanding and comprehension of the subjects as well as by providing different methods, ways, and techniques within the same slide.

In this regard of concern, I request you to provide the required amenities for smooth conduction of event.

Thank you

Dr.V.A.Narayana
Principal
CMRCET

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"Training session on Mathematics in probability"

Under

NAIPUNYA CLUB

Date: 18-12-2021

Time: 10 am to 12.00 pm

Venue: ZPHS MUNEERABAD.

Resource Person: K.Satish, P.Mahesh babu.

Topic: Academic training on Mathematics inprobability

Event report: IQAC have organized a community development program for Unemployed youth of MUNEERABAD, village and as a part of it Academic Training was taught to them.

The entire hands on was scheduled on one day session conducted by **K.Sathish, P.Mahesh babu.** They divided the session into two parts.

Topics:

1. What is Probability
2. Definition
3. Branches of Probability
4. Equations
5. Linear Equations

No. of Student attended the session 5

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Basic ideas

In this chapter, we don't really answer the question 'What is probability?'No-body has a really good answer to this question. We take a mathematical approach,writing down some basic axioms which probability must satisfy, and making de-ductions from these.We also look at different kinds of sampling, and examinewhatitmeansforeventstobeindependent.

1.1 Samplespace,events

The general setting is: We perform an experiment which can have a number ofdifferent outcomes. The *sample space* is the set of all possible outcomes of theexperiment.Weusuallycallit$S$.

It is important to be able to list the outcomes clearly. For example, if I planttenbeanseedsandcountthenumberthatgerminate,thesamplespaceis

$$S=\{0,1,2,3,4,5,6,7,8,9,10\}.$$

IfItossacointhreetimesandrecordtheresult,thesamplespaceis

$$S=\{HHH,HHT,HTH,HTT,THH,THT,TTH,TTT\},$$

where (for example) HTH means 'heads on the first toss, then tails, then headsagain'.

Sometimes we can assume that *all the outcomes are equally likely*.(Don'tassume this unless either you are told to, or there is some physical reason forassuming it. In the beans example, it is most unlikely. In the coins example,the assumption will hold if the coin is 'fair': this means that there is no physicalreasonforittofavouronesideovertheother.)Ifalloutcomesareequallylikely,then each has probability $1/S$. (Remember that$S$is the number of elements inthset$S$).

On this point, Albert Einstein wrote, in his 1905 paper *Onaheuristicpointof view concerning the production and transformation of light* (for which he wasawardedtheNobelPrize),

Incalculatingentropybymolecular-theoreticmethods,theword"probability"isoftenusedinasensedifferingfromthewaythewordisdefined in probability theory.In particular, "cases of equal probability"areoftenhypotheticallystipulatedwhenthetheoreticalmethodsemployed are definite enough to permit a deduction rather than a stip-ulation.

Inotherwords:Don'tjustassumethatalloutcomesareequallylikely,*especially* whenyouaregivenenoughinformationtocalculatetheirprobabilities!

An *event* is a subset of S. We can specify an event by listing all the outcomesthat make it up. In the above example, let A be the event 'more heads than tails'and$B$theevent'headsonlastthrow'.Then

$A=\{HHH,HHT,HTH,THH\}$,
$B=\{HHH,HTH,THH,TTH\}$.

The probability of an event is calculated by adding up the probabilities of allthe outcomes comprising that event.So, *if all outcomes are equally likely*, wehave

$P(A)=\frac{|A|}{|S|}$.

Inour example, both $A$and Bhave probability 4/8=1/2.

An event is *simple* if it consists of just a single outcome, and is *compound*otherwise. In the example, A and B are compound events, while the event 'headson every throw' is simple (as a set, it is$\{HHH\}$). If $A=\{a\}$ is a simple event,then the probability of A is just the probability of the outcome a, and we usuallywrite $P(a)$,which is simpler to write than $P(\{a\})$.(Note that a is an *outcome*,while$\{a\}$isan*event*,indeedasimpleevent.)

We can build new events from old ones:

- $A\cup B$(read'Aunion$B$')consistsofalltheoutcomesin$A$orin$B$(orboth!)
- $A\cap B$(read'Aintersection$B$')consistsofalltheoutcomesinboth$A$and$B$;
- $A\setminus B$(read 'Aminus$B$') consistsofalltheoutcomesin Abutnotin$B$;
- $A^{\prime}$(read'Acomplement')consistsof alloutcomesnot in$A$(that is,$S\setminus A$);

- 0/(read'emptyset')fortheeventwhichdoesn'tcontainanyoutcomes.

1.2. WHATIS PROBABILITY?

Note the backward-sloping slash; this is not the same as either a vertical slashoraforwardslash/.

Intheexample,A'istheevent'moretailsthanheads',and$A \cap B$istheevent $H\sharp HH, THH, HT\ H$ .Nptethat$P(A\ \ B)$=3⁄8;thisisnotequalto$P(A)P(B)$, despitewhatyoureadinsomebooks!

1.2 Whatisprobability?

Thereisreallynoanswertothisquestion.

Somepeoplethinkofitas'limitingfrequency'.Thatis,tosaythattheprobability ofgettingheadswhenacoinistossedmeansthat,ifthecoinistossedmanytimes, it is likely to come down heads about half the time. But if you toss a coin1000 times, you are not likely to get exactly 500 heads.You wouldn't be surprisedtogetonly495.Butwhatabout450,or100?

Some people would say that you can work out probability by physical argu-ments, like the one we used for a fair coin. But this argument doesn't work in allcases,anditdoesn'texplainwhatprobabilitymeans.

Some people say it is subjective.You say that the probability of heads in acointossis1/2becauseyouhavenoreasonforthinkingeitherheadsortailsmorelikely; you might change your view if you knew that the owner of the coin was amagicianoraconman.

Butwecan'tbuildatheoryonsomethingsubjective.

Weregardprobabilityasamathematicalconstructionsatisfyingsomeaxioms(devisedbytheRussianmathematicianA.N.Kolmogorov).Wedevelopwaysofdoing calculations with probability, so that (for example) we can calculate howunlikely it is to get 480 or fewer heads in 1000 tosses of a fair coin. The answeragreeswellwithexperiment.

1.3 Kolmogorov'sAxioms

Rememberthataneventisasubsetofthesamplespace$S$.Anumberofevents,say $A_1, A_2, \ldots$, are called *mutually disjoint* or *pairwise disjoint* if $A_iA_j = 0/$ foranytwooftheevents$A_i$andA_j;thatis,notwooftheeventsoverlap.

According to Kolmogorov's axioms, each event A has a probability

$P(A)$,whichisanumber.Thesenumberssatisfythreeaxioms:

Axiom 1: For any event A, wehave$P(A)\geq 0$.

Axiom2:$P(S)=1$.

Axiom3: Iftheevents$A_1,A_2,\ldots$arepairwisedisjoint,then

for $P(A_1)+P(A_2)+\cdots+P(A_n)$.

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Student's attendance sheet

S.No	Name	Signature
1	Sandhya · P	Sandhya
2	SHIVAKUMAR·G	
3	Narayana Sai	Narayana
4	Sidharth	Sidharth
5	Manisha	manisha
6	Niharika	Niharika
7	Zeeba	Zeeba
8	K·Nikhila	Nikhila
9	Pushpa Pandey	Pushpa
10	Sai Tej	Sai Tej
11	Sahithi Priya	Sahithi
12	P·Rohith	Rohith
13	Vishnuak	Vishnuak
14	Krishna	Krishna
15	AARYA	Arya
16	Zubair	Zubair
17	K. Sathvik	Sathvik
18	Mohith	Mohith
19	Anukthanalamalgatha	Anu
20	chaitanya	Chaitanya
21	Zain	Zain
22	Rahul Kumar	Rahul
23	Rotherine	Roth
24	Sheeya Reddy	Sheeya
25	Chandrashekhar	Chandra
26	Srinika Rao	Srinika
27	Samyukhta	Samyukhta
28	Shivanath	
29	Akshitha	Akshitha

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Student's attendance sheet

S.No	Name	Signature
1	Karunya.	
2	Varshitha.	
3	Ravi	
4	V. Venkat Bharadwaj	
5	Arun	
6	Vicky	
7	geeta	
8	Anuhya	
9	Rahul	
10.	Naveen	
11.	Aviksha	
12.	Sanjana	
13.	Ruchitha	
14.	Ananya	
15.	Suhas	
16.	Kalyan	Kalyan.
17.	Rakesh	
18.	jayasri	jayasri
19.	Kumar	Kumar.
20	Shruthi	
21.	Jasmine	Jasmine
22.	Anand	
23.	Muskan	
24.	Abhinav	
25.	Hasini	Hasini
26.	Teja	
27.	Ayeesha	
28.	Krishna.	
29.	Bhanu.	

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Kandlakoya, Hyderabad – 501 401

FEEDBACK FORM

Name of the Presenter: K. Sathish
Date: 18/12/2021 Title:
Maths in probability

S.NO	Description	Excellent అద్భుతం	Good బాగుంది	Satisfactory పర్వాలేదు	Poor బాగాలేదు
01	The training content was relevant to me ట్రైనింగ్ కి సంబంధిత విషయాలు మీకు సంబంధించినవేన ?		✓		
02	The amount of material was covered was sufficient మీకు ఇచ్చిన మెటీరియల్ ఉపయోగపడిందా ?			✓	
03	Instructional methods & media were used appropriately which made learning easy స్పీకర్ గారు చెప్పిన విధానం మీకు సులువు గా అనిపించిందా ?		✓		
04	I am confident of using concepts covered మీరు నేర్చుకున్నవి వినియోగిస్తారా??	✓			
05	Duration of training was appropriate మీకు ట్రైనింగ్ సమయం సరిపడా ఉందనిపించిందా ?		✓		
06	Training met my expectations ట్రైనింగ్ మీరు అనుకున్న స్థాయి లో ఉందా		✓		
07	Faculty involved all participants స్పీకర్ గారు అందరిని కలుపుకుని చెప్పారా ?			✓	
08	My questions were answered adequately మీరు అడిగిన ప్రశ్నలకి జవాబు చెప్పిన విధానం ఎలా ఉంది ?	✓			

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03	Instructional methods & media were used appropriately which made learning easy స్పీకర్ గారు చెప్పిన విధానం మీకు సులువు గా అనిపించిందా ?		✓		
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05	Duration of training was appropriate మీకు ట్రైనింగ్ సమయం సరిపడా ఉందనిపించిందా ?		✓		
06	Training met my expectations ట్రైనింగ్ మీరు అనుకున్న స్థాయి లో ఉందా		✓		
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08	My questions were answered adequately మీరు అడిగిన ప్రశ్నలకి జవాబు చెప్పిన విధానం ఎలా ఉంది ?	✓			

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06	Training met my expectations ట్రైనింగ్ మీరు అనుకున్న స్థాయి లో ఉందా		✓		
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08	My questions were answered adequately మీరు అడిగిన ప్రశ్నలకి జవాబు చెప్పిన విధానం ఎలా ఉంది ?	✓			

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Date: 05-01-2022
Hyderabad

To

The Principal,
CMR College of Engineering & Technology,
Hyderabad.

Through: Coordinator, IQAC- CMRCET.

Respected sir,

Subject: Approval for organizing a Academic training on **"Concepts of Physics(Light Theory)"** for X class students, ZPHS, Yellampet – Reg.

As Per the personal discussion held with the Head master of YELLAMPET, there is a Academic training on **Concepts of Physics(Light Theory)** is planned for the students of X class under NAIPUNYA Club. The seminar will be held at ZPHS School on 08-01-2022(Saturday). All the students of class X will attend the session from 10.00 AM to 12.00 PM. we also organize 45-minute discussion where students can clear doubts about the topic.

S.NO	Name of Faculty and Student	Course	Year
01	CH.Neelima,Asst.Prof	ECE	-
02	B.Archana,Asst.Prof	CSE	-
03	G.Karthik Reddy,Asst.Prof	ECE	-
04	T.Meghanath	ECE	IV
05	A.Ashiritharao	ECE	IV
06	CH.Praneth	ECE	IV
07	Pavan Venkata Ramana	ECE	IV

In this regard we need your Permission to proceed further.

Thank you for your time.

B Suresh Ram,
Convener,
Naipunya Club,
Center of Engineering Education Research
CMR College of Engineering & Technology
Hyderabad, Telangana - 501 401.

Recommended

Coordinator
Internal Quality Assurance Cell
CMR College of Engineering & Technology
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HOD, CEER

07-01-2022
Hyderabad

To
Head Master,
ZPHS Yellampet,
MEDCHAL.

Sir,

Sub: Request to provide amenities for Smooth conduction of Academic training on **Concepts of Physics(Light Theory).**

As per our discussion held with the convener of NAIPUNYA CLUB regarding conduction of Academic training on **Concepts of Physics (Light Theory)** to the students for better understanding of the content, I bring to your kind notice that students of Electronics are interested in conducting a session to X class students. As we all know that exposure and hands-on sessions are very important for understanding the subject in a vivid manner, our students are interested in teaching a concept for Tenth class students. It may enhance learning by providing a better understanding and comprehension of the subjects as well as by providing different methods, ways, and techniques within the same slide. Using PowerPoint presentations may encourage students and improve their achievement.

In this regard of concern, I request you to provide the required amenities for smooth conduction of event.

Thank you

Dr.V.A.Narayana
Principal

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Report on " Concepts of Light Theory"

Under

NAIPUNYA CLUB

Date: 08-01-2022

Time: 10 am to 12.00 pm

Venue: YELLAMPET ZPHS.

Resource Person: CH. Neelima, B.Archana.

Topic: Concepts of Light Theory

Event report: IQAC have organized a community development program for X class Students of YELLAMPET village and as a part of it soldering was taught to them.

The entire hands on was scheduled on one day session **CH.Neelima, B.Archana.** They divided the session into two parts.

Topics:

1. Introduction
2. Electromagnetic field
3. Constructive and destructive interference
4. Diffraction.

Here's a summary of how to make the perfect solder joint.

- Introduction
- Waves versus Photons
- The Electromagnetic Spectrum
- Light and Color
- Coherence
- Diffraction

No. of Student attended the session 12

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Introduction

Vision is the perception of light. To comprehend the nature of human vision, an understanding of the properties of light is necessary. Many of the technologies used for examining the eye and treating ocular disease take advantage of the properties of light to better enable clinicians to perform successful evaluations. For example, the slit lamp uses electricity to generate light and lenses to project light into the eye. It uses more lenses to provide the viewer with a magnified image of the patient's eye, and takes advantage of scatter to help visualize the cornea and crystalline lens, and their respective clarities. This tutorial specifically describes where light comes from, how it interacts with objects, and how can it be used to aid diagnosis and treatment of eye disorders.

Let there be Light

In the classical view of an atom, there is a nucleus with a series of electrons orbiting about it. Typically atoms are in the resting state, which means that the negatively charged electron cloud is in a harmonious balance with its positively charge nucleus. Excited atoms have electrons that have been forced into a higher orbit or energy level. Excited atoms are out of balance and are driven to return to their resting state. In order to do so, excited atoms must give up energy. This energy is released in the form of a photon. A photon is a packet of energy that can propagate through space until it interacts with another object. The photon propagates through space in the form of an electromagnetic wave. Electromagnetic waves have an electric field and a magnetic field, which oscillate as the waves move through space. The electric and magnetic fields vary within planes that are perpendicular to each other, and also perpendicular to the direction in which the wave is traveling. Fig 1 shows a depiction of an electromagnetic wave.

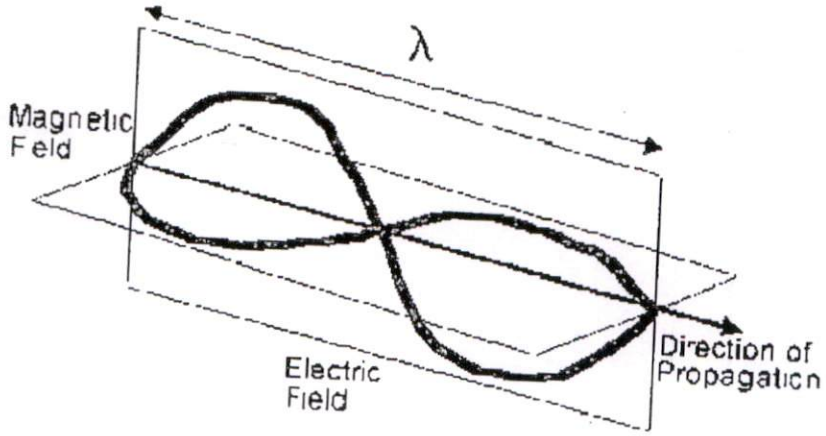

Fig1. Electromagnetic field.

As with all waves, there is a distance between the crests of the waves, known as the wavelength, or l. The wavelength is inversely proportional to the amount of energy the atom gave up. Thus, photons with a short wavelength have high energy and photons with long wavelengths have lower energy. Photons will travel through vacuum at a constant speed. This is called the speed of light, c, and is equal to 300,000,000 meters per second. As photons enter media other than vacuum, they will slow down. The index of refraction, n, of a given media is the ratio of the speed of light in vacuum to the speed of light within the media.

A useful analogy for understanding these concepts is wading into the ocean. As the water waves come into shore, they will strike the wader. The distance between the crests of the waves is the wavelength. How fast the waves come into the shore is the speed of the wave, and how frequently the wader is struck is the frequency of the waves.

Waves versus Photons

In classical physics, wave phenomena such as sound and water waves exhibit certain physical properties and discrete particles such as baseballs and sand grains exhibit different physical

properties. As we move into the quantum world, however, the distinction between waves and particles begins to blur. Photons are discrete quantum particles that exhibit wave-like properties. A full description of these quantum effects is well beyond the scope of this tutorial. For the purposes of this tutorial, light will be considered a wave when dealing with macroscopic entities and as a particle when dealing with atomic or molecular entities.

The Electromagnetic Spectrum

The amount of energy an excited atom gives off determines the wavelength of the photons that it emits. There is a continuum of wavelengths possible and this continuum is known as the electromagnetic spectrum. The shortest wavelengths possible come from gamma rays, which are associated with very violent cosmic events. The wavelengths for gamma rays are smaller than the atomic dimension. The next smallest on the wavelength scale are X-rays. Further along the electromagnetic spectrum is ultraviolet and then visible light. Photons with wavelengths longer than the visible spectrum are infrared. Finally, radio waves make up the longest wavelengths of the spectrum. Each of these individual portions of the spectrum is used for different purposes that depend on their ability to propagate through different media and their energy. For example, X-rays are used to image internal structures in the body, because the rays can penetrate and propagate through biological tissue. Radio waves are used to broadcast radio and television programming because they propagate well through the atmosphere.

Light and Color

To this point, "light" has been used loosely. Technically, light is only electromagnetic waves that fall within the visible spectrum. In other words, light corresponds to photons that can be detected by the human visual system. Photons falling outside of the visible spectrum are technically not light, although the terms ultraviolet light and infrared light are often used. The term visible light is also commonly used, but it is redundant. Light corresponds to wavelengths from

approximately 380 nm to 780 nm, with the shorter wavelengths being perceived as the blue end of the spectrum and the longer wavelengths evoking the perception of the red end of the spectrum. If a person is presented with individual wavelengths ranging from 380 nm to 780 nm, he or she will perceive all the possible colors found in the spectrum. Most light sources, however, do not emit a single wavelength, but simultaneously emit photons of many different wavelengths. Photoreceptors in the retina absorb these photons and convert them into a signal we can perceive.

There are three types of photoreceptors associated with color vision. These are known as the L- (long), M- (middle) and S- (short) cones. The cones control our color vision. The long, middle and short monikers refer to the wavelengths of the visible spectrum. Thus, the S-cones respond predominantly to the blue end of the spectrum. The M-cones respond to the middle, or green, portion of the spectrum, while the L-cones respond to the long wavelengths or the red end of the spectrum. Two light sources can emit drastically different spectrums of photons, yet still appear to be the same color. Although different wavelengths of light for the two sources are entering the eye, the absorption of the photons by the various types of cone receptors can occur in the same proportions. In this manner, the signals sent to the visual cortex from the two light sources are identical. The two light sources in this case are known as metamers. This effect means that the light itself is not colored, but that color is a property of the way the visual system detects light.

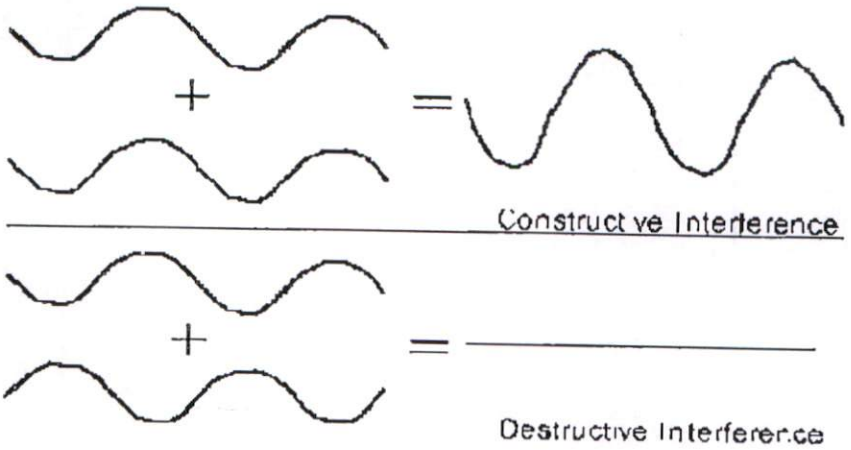

fig 2. Constructive and destructive interference.

One property of wave phenomenon is interference. Interference is the addition of two waves to form a new wave. In places where the crest of one wave meets the crest of a second wave, the crests combine to form an even larger peak in the wave. In places where the trough of one wave meets the trough of a second wave, the waves combine to form an even deeper depression. In places where the crest of one wave meets the trough of another wave, the two cancel each other's effects and there is no peak or trough in the resulting wave. When two waves combine to form a wave with larger amplitude, it is called constructive interference. In cases where the two waves cancel each other, the process is called destructive interference.

An example of this phenomenon in audio is noise-canceling headphones. The offending noise is analyzed and a second sound wave is generated to cause destructive interference and effectively eliminate the noise from being heard. In optics, interference is routinely used to measure the quality and shape of optical surfaces and to bypass the optics of the eye and project contrast sensitivity fringes directly onto the retina. Interference is also seen with laser sources. When a laser spot is shone onto a rough surface, the spot appears granular due to speckle. Speckle is due

to the random interference of the laser light. The dark speckles correspond to regions of destructive interference and the bright speckles correspond to regions of constructive interference. Fig 2 illustrates constructive and destructive interference.

Coherence

Not all light will interfere. Coherence is a description of the ability of two waves to interfere. Incoherent light will not interact to have constructive or destructive interference. Conversely, coherent light will demonstrate these effects. Generally, two coherent waves must have approximately the same wavelength, come from the same source, and have left the source at approximately the same time. Lasers are highly coherent and incandescent and fluorescent lights are higher incoherent.

Diffraction

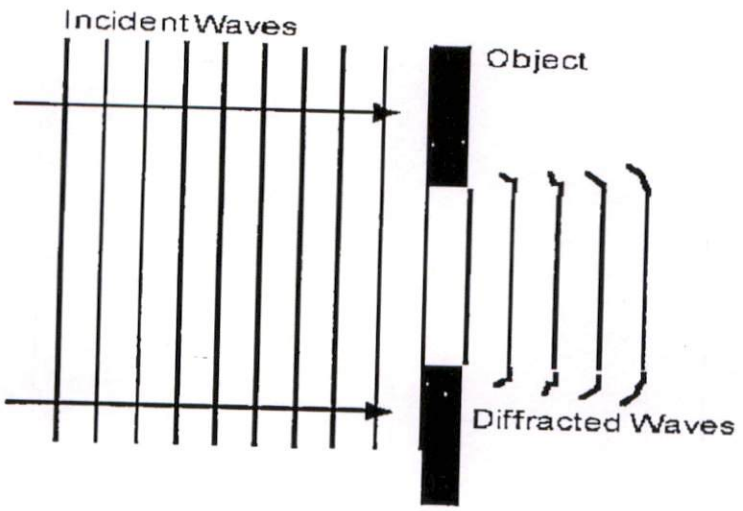

Fig 3. Diffraction.

Diffraction can be seen by viewing a distant street lamp through a window screen. As the light leaves the street lamp, it freely propagates through the atmosphere. In passing through the

screen, the wave front interacts with the atoms making up the screen mesh and the wave becomes distorted. In viewing the street lamp through the screen, the diffraction pattern is projected onto the retina.

The diffraction pattern in this case appears to be a cross. As the light passed through the screen, the horizontal fibers of the mesh caused light to diffract in the up and down direction, while the vertical fibers causes light to diffract left and right. The resulting diffraction pattern is a superposition of the two effects, which appears as a cross. Diffraction causes the boundaries of shadows to be soft. Diffraction also limits how small a spot can be placed onto the retina. As light enters the eye, it interacts with the iris. When viewing a distant point source, if the optics of the eye were perfect, the diffraction pattern caused by the pupil would be seen. Thus, diffraction ultimately limits our acuity because it forces a point of light to have a finite size in the retina. Generally, the smaller the area that the wave is forced through, the larger the diffraction pattern will be. Fig 3 illustrates diffraction.

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Student's attendance sheet

S.No	Name	Signature
1	P. BABU VIVIN	
2	K. Lakshmi Sujatha	
3	M. Jagadabo	
4	B. Akhila	
5	Ch. Alekya	
6	S. Ankitha	
7	M. Pooja	
8	A. Iyara Hebsi	
9	K. Adams	
10	L. Mary Carrola	
11	M. Soniya.	
12	D. Soujanya	
13	T. Venu Gopal	
14		
16		
17		
18		
19		

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FEEDBACK FORM

Name of the Presenter: MD. Asma
Date: 8/1/2022 Title:
Physics in Light Theory

S.NO	Description	Excellent అద్భుతం	Good బాగుంది	Satisfactory పర్వాలేదు	Poor బాగాలేదు
01	The training content was relevant to me ట్రైనింగ్ కి సంబంధిత విషయాలు మీకు సంబంధించినవేన ?		✓		
02	The amount of material was covered was sufficient మీకు ఇచ్చిన మెటీరియల్ ఉపయోగపడిందా ?		✓		
03	Instructional methods & media were used appropriately which made learning easy స్పీకర్ గారు చెప్పిన విధానం మీకు సులువు గా అనిపించిందా ?	✓			
04	I am confident of using concepts covered మీరు నేర్చుకున్నవి వినియోగిస్తారా??	✓			
05	Duration of training was appropriate మీకు ట్రైనింగ్ సమయం సరిపడా ఉందనిపించిందా ?		✓		
06	Training met my expectations ట్రైనింగ్ మీరు అనుకున్న స్థాయి లో ఉందా		✓		
07	Faculty involved all participants స్పీకర్ గారు అందరిని కలుపుకుని చెప్పారా ?		✓		
08	My questions were answered adequately మీరు అడిగిన ప్రశ్నలకి జవాబు చెప్పిన విధానం ఎలా ఉంది ?	✓			

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FEEDBACK FORM

Name of the Presenter: MD. ASMA
Date: 8/1/2022 Title:
Physics in Light Theory

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02	The amount of material was covered was sufficient మీకు ఇచ్చిన మెటీరియల్ ఉపయోగపడిందా ?		✓		
03	Instructional methods & media were used appropriately which made learning easy స్పీకర్ గారు చెప్పిన విధానం మీకు సులువు గా అనిపించిందా ?	✓			
04	I am confident of using concepts covered మీరు నేర్చుకున్నవి వినియోగిస్తారా??	✓			
05	Duration of training was appropriate మీకు ట్రైనింగ్ సమయం సరిపడా ఉందనిపించిందా ?		✓		
06	Training met my expectations ట్రైనింగ్ మీరు అనుకున్న స్థాయి లో ఉందా		✓		
07	Faculty involved all participants స్పీకర్ గారు అందరిని కలుపుకుని చెప్పారా ?		✓		
08	My questions were answered adequately మీరు అడిగిన ప్రశ్నలకి జవాబు చెప్పిన విధానం ఎలా ఉంది ?	✓			

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FEEDBACK FORM

Name of the Presenter: MD. Asma
Date: 8/1/2022 Title:
physics in Light Theory

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04	I am confident of using concepts covered మీరు నేర్చుకున్నవి వినియోగిస్తారా??	✓			
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06	Training met my expectations ట్రైనింగ్ మీరు అనుకున్న స్థాయి లో ఉందా		✓		
07	Faculty involved all participants స్పీకర్ గారు అందరిని కలుపుకుని చెప్పారా ?		✓		
08	My questions were answered adequately మీరు అడిగిన ప్రశ్నలకి జవాబు చెప్పిన విధానం ఎలా ఉంది ?	✓			

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Date: 08-02-2022
Hyderabad

To

The Principal,
CMR College of Engineering & Technology,
Hyderabad.

Through: Coordinator, IQAC- CMRCET.

Respected sir,

Subject: Approval for organizing a Academic training on **"Concepts of Mathematics (Trigonometry)"** for X class students, ZPHS, Rajabollaram– Reg.

As Per the personal discussion held with the Head master of RAJABOLLARAM, there is a Academic training on **Concepts of Mathematics in Trigonometry** is planned for the students of X class under NAIPUNYA Club. The seminar will be held at ZPHS School on 12-02-2022(Saturday). All the students of class X will attend the session from 10.00 AM to 12.00 PM. we also organize 45-minute discussion where students can clear doubts about the topic.

S.NO	Name of Faculty and Student	Course	Year
01	k. Sathish, Asst.Prof	MECH	-
02	P.Mahesh Babu ,Asst.Prof	MECH	-
03	B. Bala krishna ,Asst.Prof	EEE	-
04	E.Eshwar	CSE	IV
05	N.Shankar	CSE	IV
06	S.Shail	CSE	IV
07	N.Divya	CSE	IV

In this regard we need your Permission to proceed further.

Thank you for your time.

Recommended

Coordinator
Internal Quality Assurance Cell
CMR College of Engineering & Technology
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B Suresh Ram,
Convener,
Naipunya Club,
CMRCET.

HOD, CEER
Center of Engineering Education Research
CMR College of Engineering & Technology
Hyderabad, Telangana - 501 401.

11-02-2022
Hyderabad

To
Head Master,
ZPHS Muneerabad,
MEDCHAL.

Sir,

Sub: Request to provide amenities for Smooth conduction of Academic training on **Concepts of Mathematics (Trigonometry)**

As per our discussion held with the convener of NAIPUNYA CLUB regarding conduction of Academic training on **Concepts of Mathematics (Trigonometry)**to the students for better understanding of the content, I bring to your kind notice that students of Electronics are interested in conducting a session to X class students. As we all know that exposure and hands-on sessions are very important for understanding the subject in a vivid manner, our students are interested in teaching a concept for Tenth class students. It may enhance learning by providing a better understanding and comprehension of the subjects as well as by providing different methods, ways, and techniques within the same slide.

In this regard of concern, I request you to provide the required amenities for smooth conduction of event.

Thank you

Dr.V.A.Narayana
Principal
CMR COLLEGE OF ENGG. & TECH.
Kandlakoya (V), Medchal Road,
Hyderabad-501401.

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"Training session on Mathematicsin Trigonometry"

Under

NAIPUNYA CLUB

Date: 12-02-2022

Time: 10 am to 12.00 pm

Venue: RAJA BOLLARAM PUDUR.

Resource Person:K. Satish, P. Mahesh Babu

Topic: Academic training on Mathematics in Trigonometry

Event report: IQAC have organized a community development program for Unemployed youth of RAJA BOLLARAM village and as a part of it Academic Training was taught to them.

The entire hands on was scheduled on one day session conducted **by K. Satish, P. Mahesh Babu** They divided the session into two parts.

Topics:

- What is Trigonometry
- Trigonometry Formulas List
- Basic Trigonometric Function Formulas
- Reciprocal Identities
- Trigonometry Table
- Periodicity Identities (in Radians)

No. of Student attended the session 9

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What is Trigonometry

In Trigonometry, different types of problems can be solved using trigonometry formulas. These problems may include trigonometric ratios (sin, cos, tan, sec, cosec and cot), Pythagorean identities, product identities, etc. Some formulas including the sign of ratios in different quadrants, involving co-function identities (shifting angles), sum & difference identities, double angle identities, half-angle identities, etc., are also given in brief here.

Learning and memorizing these mathematics formulas in trigonometry will help the students of Classes 10, 11, and 12 to score good marks in this concept. They can find the trigonometry table along with inverse trigonometry formulas to solve the problems based on them.

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Learning and memorizing these mathematics formulas in trigonometry will help the students of Classes 10, 11, and 12 to score good marks in this concept. They can find the trigonometry table along with inverse trigonometry formulas to solve the problems based on them.

Trigonometry Formulas List

When we learn about trigonometric formulas, we consider them for right-angled triangles only. In a right-angled triangle, we have 3 sides namely – Hypotenuse, Opposite side (Perpendicular), and Adjacent side (Base). The longest side is known as the hypotenuse, the side opposite to the angle is perpendicular and the side where both hypotenuse and opposite side rests is the adjacent side.

Here is the list of formulas for trigonometry.

- Basic Formulas
- Reciprocal Identities
- Trigonometry Table
- Periodic Identities
- Co-function Identities
- Sum and Difference Identities

Basic Trigonometric Function Formulas

There are basically 6 ratios used for finding the elements in Trigonometry. They are called trigonometric functions. The six trigonometric functions are sine, cosine, secant, cosecant, tangent and cotangent.By using a right-angled triangle as a reference, the trigonometric functions and identities are derived:

- $\sin \theta$ = Opposite Side/Hypotenuse

- cos θ = Adjacent Side/Hypotenuse
- tan θ = Opposite Side/Adjacent Side
- sec θ = Hypotenuse/Adjacent Side
- cosec θ = Hypotenuse/Opposite Side
- cot θ = Adjacent Side/Opposite Side

Reciprocal Identities

The **Reciprocal Identities** are given as:

- cosec θ = 1/sin θ
- sec θ = 1/cos θ
- cot θ = 1/tan θ
- sin θ = 1/cosec θ
- cos θ = 1/sec θ
- tan θ = 1/cot θ

All these are taken from a right-angled triangle. When the height and base side of the right triangle are known, we can find out the sine, cosine, tangent, secant, cosecant, and cotangent values using trigonometric formulas. The reciprocal trigonometric identities are also derived by using the trigonometric functions.

Trigonometry Table

Below is the table for trigonometry formulas for angles that are commonly used for solving problems.

Angles (In Degrees)	**0°**	**30°**	**45°**	**60°**	**90°**	**180°**	**270°**	**360°**
Angles (In Radians)	**0**	**π/6**	**π/4**	**π/3**	**π/2**	**π**	**3π/2**	**2π**
sin	0	1/2	1/√2	√3/2	1	0	-1	0
cos	1	√3/2	1/√2	1/2	0	-1	0	1
tan	0	1/√3	1	√3	∞	0	∞	0
cot	∞	√3	1	1/√3	0	∞	0	∞
cosec	∞	2	√2	2/√3	1	∞	-1	∞
sec	1	2/√3	√2	2	∞	-1	∞	1

Periodicity Identities (in Radians)

These formulas are used to shift the angles by $\pi/2$, π, 2π, etc. They are also called co-function identities.

- $\sin(\pi/2 - A) = \cos A$ & $\cos(\pi/2 - A) = \sin A$
- $\sin(\pi/2 + A) = \cos A$ & $\cos(\pi/2 + A) = -\sin A$
- $\sin(3\pi/2 - A) = -\cos A$ & $\cos(3\pi/2 - A) = -\sin A$
- $\sin(3\pi/2 + A) = -\cos A$ & $\cos(3\pi/2 + A) = \sin A$
- $\sin(\pi - A) = \sin A$ & $\cos(\pi - A) = -\cos A$
- $\sin(\pi + A) = -\sin A$ & $\cos(\pi + A) = -\cos A$
- $\sin(2\pi - A) = -\sin A$ & $\cos(2\pi - A) = \cos A$
- $\sin(2\pi + A) = \sin A$ & $\cos(2\pi + A) = \cos A$

All trigonometric identities are cyclic in nature. They repeat themselves after this periodicity constant. This periodicity constant is different for different trigonometric identities. $\tan 45° = \tan 225°$ but this is true for $\cos 45°$ and $\cos 225°$. Refer to the above trigonometry table to verify the values.

Cofunction Identities (in Degrees)

The co-function or periodic identities can also be represented in degrees as:

- $\sin(90°-x) = \cos x$
- $\cos(90°-x) = \sin x$
- $\tan(90°-x) = \cot x$
- $\cot(90°-x) = \tan x$
- $\sec(90°-x) = \operatorname{cosec} x$
- $\operatorname{cosec}(90°-x) = \sec x$

Sum & Difference Identities

- $\sin(x+y) = \sin(x)\cos(y)+\cos(x)\sin(y)$
- $\cos(x+y) = \cos(x)\cos(y)-\sin(x)\sin(y)$
- $\sin(x-y) = \sin(x)\cos(y)-\cos(x)\sin(y)$
- $\cos(x-y) = \cos(x)\cos(y) + \sin(x)\sin(y)$

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Double Angle Identities

- $\cos(2x) = 2\cos^2(x)-1 = 1-2\sin^2(x)$
- $\cos(2x) = 2\cos^2(x)-1 = 1-2\sin^2(x)$

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Student's attendance sheet

S.No	Name	Signature
1	B. Karthik	
2	M. Hameed	
3	K. Danush	
4	L. Rakesh	
5	Md. Qudeer	
6	M. Fawad Khan	
7	D. Keethana	
8	C. Neelima	
9	M. Munish	

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FEEDBACK FORM

Name of the Presenter: B. Bala krishna
Date: 19/02/2022 Title:
Maths in Trignometry

S.NO	Description	Excellent అద్భుతం	Good బాగుంది	Satisfactory పర్వాలేదు	Poor బాగాలేదు
01	The training content was relevant to me ట్రైనింగ్ కి సంబందిత విషయాలు మీకు సంబంధించినవేన ?	✓			
02	The amount of material was covered was sufficient మీకు ఇచ్చిన మెటీరియల్ ఉపయోగపడిందా ?		✓		
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04	I am confident of using concepts covered మీరు నేర్చుకున్నవి వినియోగిస్తారా??		✓		
05	Duration of training was appropriate మీకు ట్రైనింగ్ సమయం సరిపడా ఉందనిపించిందా ?			✓	
06	Training met my expectations ట్రైనింగ్ మీరు అనుకున్న స్థాయి లో ఉందా		✓		
07	Faculty involved all participants స్పీకర్ గారు అందరిని కలుపుకుని చెప్పారా ?		✓		
08	My questions were answered adequately మీరు అడిగిన ప్రశ్నలకి జవాబు చెప్పిన విధానం ఎలా ఉంది ?			✓	

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FEEDBACK FORM

Name of the Presenter: B. Bala Krishna
Date: 12/02/2022 Title:
Maths in Trigonometry

S.NO	Description	Excellent అద్భుతం	Good బాగుంది	Satisfactory పర్వాలేదు	Poor బాగాలేదు
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07	Faculty involved all participants స్పీకర్ గారు అందరిని కలుపుకుని చెప్పారా ?		✓		
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FEEDBACK FORM

Name of the Presenter: B.Bala krishna
Date: 12/02/2022 Title:
Maths in trigonometry

S.NO	Description	Excellent అద్భుతం	Good బాగుంది	Satisfactory పర్వాలేదు	Poor బాగాలేదు
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02	The amount of material was covered was sufficient మీకు ఇచ్చిన మెటీరియల్ ఉపయోగపడిందా ?		✓		
03	Instructional methods & media were used appropriately which made learning easy స్పీకర్ గారు చెప్పిన విధానం మీకు సులువు గా అనిపించిందా ?		✓		
04	I am confident of using concepts covered మీరు నేర్చుకున్నవి వినియోగిస్తారా??	✓			
05	Duration of training was appropriate మీకు ట్రైనింగ్ సమయం సరిపడా ఉందనిపించిందా ?		✓		
06	Training met my expectations ట్రైనింగ్ మీరు అనుకున్న స్థాయి లో ఉందా		✓		
07	Faculty involved all participants స్పీకర్ గారు అందరిని కలుపుకుని చెప్పారా ?	✓			
08	My questions were answered adequately మీరు అడిగిన ప్రశ్నలకి జవాబు చెప్పిన విధానం ఎలా ఉంది ?		✓		

PRINCIPAL
CMR COLLEGE OF ENGG. & TECH.
Kandlakoya (V), Medchal Road,
Hyderabad-501401.

CMR COLLEGE OF ENGINEERING & TECHNOLOGY

(AUTONOMOUS)

Kandlakoya (V), Medchal Road, Hyderabad -501401

LIST OF STUDENTS ATAL TINKERING LABS

CENTRE FOR ENGINEERING EDUCATION RESEARCH

Date: 22 OCT 2021,

Hyderabad.

To

The Principal,

CMR College of Engineering & Technology.

Respected sir,

Sub: Request to give the attendance to below students- Reg.

This is to bring into your kind notice that **"Centre for Engineering Education Research"** is planning to organize **"ATAL TINKERING LABS"** training for students in primary schools in Community partner Villages on every Saturday from 23rd OCT 2021 to 18thDEC 2021 (Duration of nine weeks).

Hence I request you to kindly approve the attendance.

Roll NO.	Student Name	Phone Number
20H51A05J3	Anusha pulipati	9704805935
20H51A05J4	Rahul sai Ranganathan	8074869024
20H51A0509	Dupathi Shravani	9390119895
20H51A0550	Sreya	7842841661
20H51A05C4	Chitra	9515786606
20H51A05N6	G.Nitin	8074480556
20H51A05L9	S.Manikanta reddy	9182003079

Recommended

Coordinator
Internal Quality Assurance Cell
CMR College of Engineering & Technology
Kandlakoya (V), Medchal Road,
Hyderabad - 501 401.

Thanking you,

HOD (CSE)

PRINCIPAL
CMR COLLEGE OF ENGG. & TECH.
Kandlakoya (V), Medchal Road,
Hyderabad-501401.

Permission granted and during Saturday - please provide attendance

22/10/2021

22/10/21.

HOD-CEER

CMR COLLEGE OF ENGINEERING& TECHNOLOGY
(UGC AUTONOMOUS)
ZPHS-Hasmathpet Bowenpally
Final Report On Training on ATAL Tinkering Lab

Place: ZPHS Hasmathpet,Bowenpally Hyderabad.
Faculty Guide –K.Sathish, Assistant Professor (MECH/CEER)
D.Ajay, Assistant Professor (MECH/CEER)

Student Members:

1. Gopu Chitra Bhanu Reddy-20H51A05C4
2. Galla Nitin-20H51A05N6
3. Harsh Amilpur-20H51A6681

Targeted Students: 9th Class
Students Attended: 20

Activities performed on that Program

Week-1

- Introduction to ATAL labs

Week-2

- Design Thinking

Week-3

- Basics of Electronics

Week-4

- Sensors and Actuators

Week-5

- Soldering practice

Week-6

- All About Arduino operations

Week-7

- Introduction to Project making and selection of projects

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Hyderabad-501401.

Week-8

- Explained about the Projects

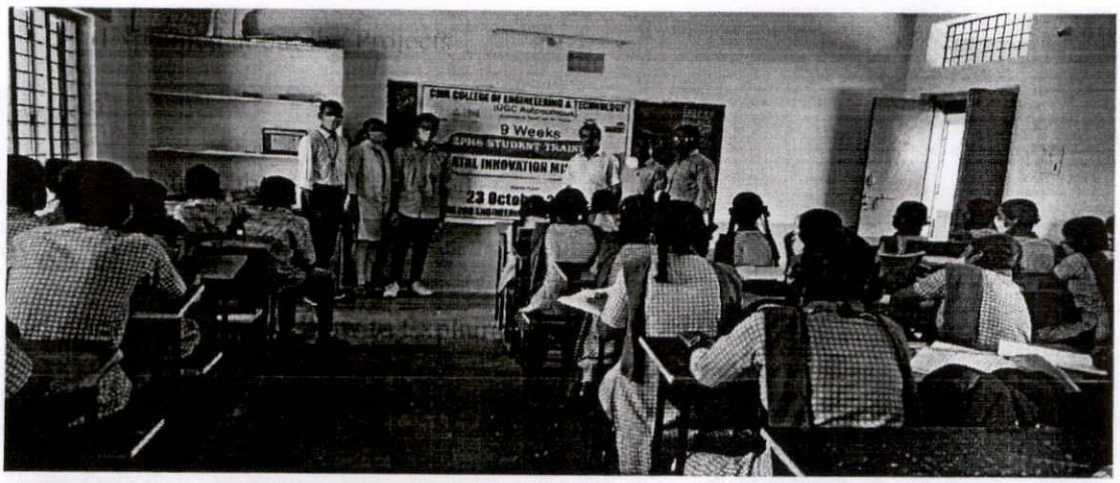
Week-9

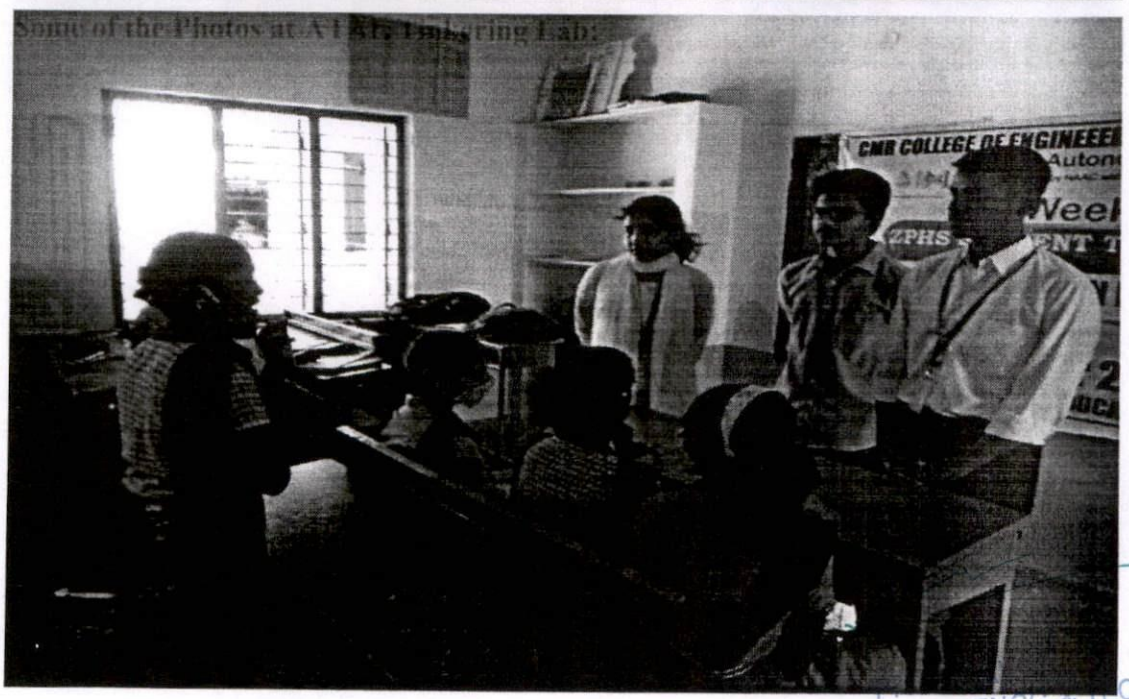
- Explained about the Project

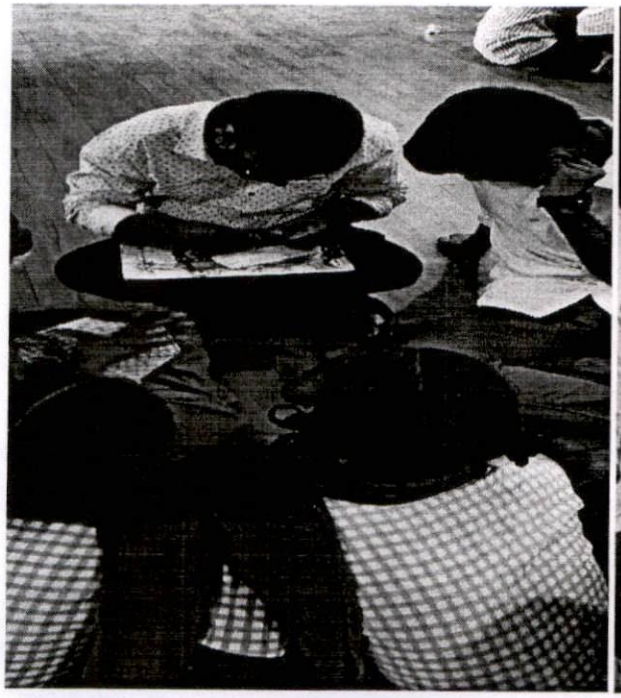
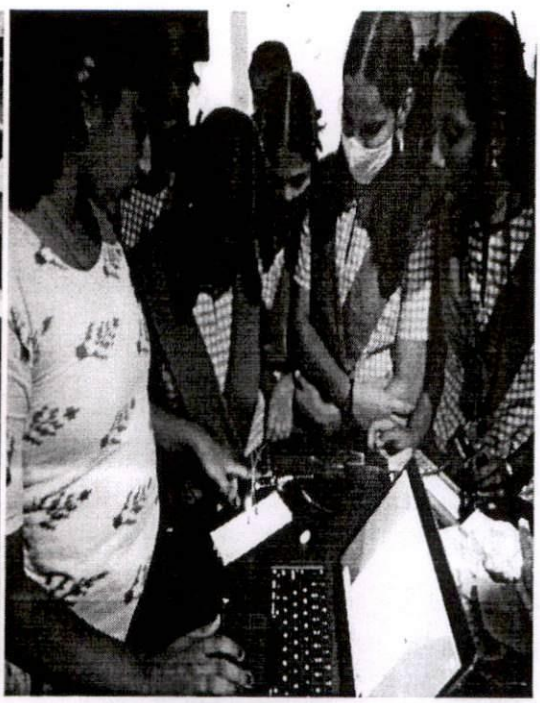
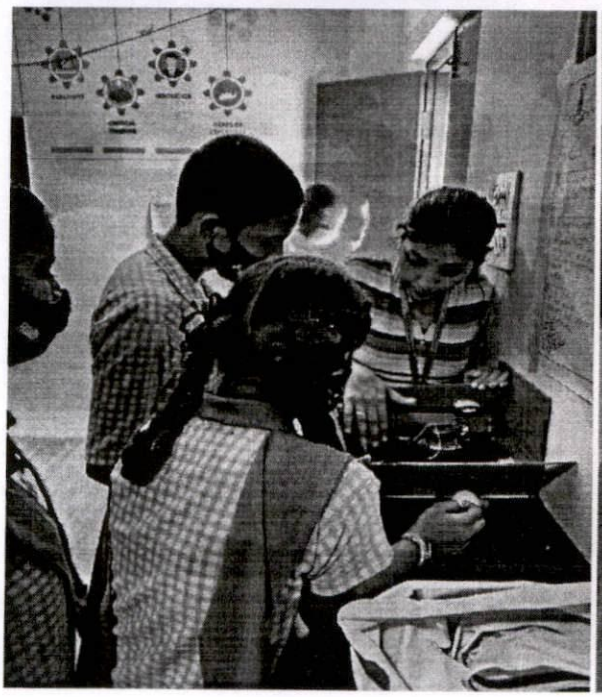
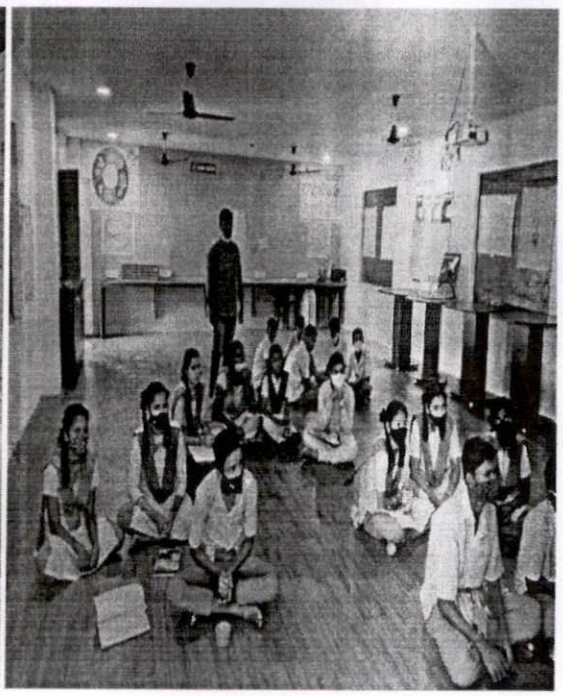
Week-10

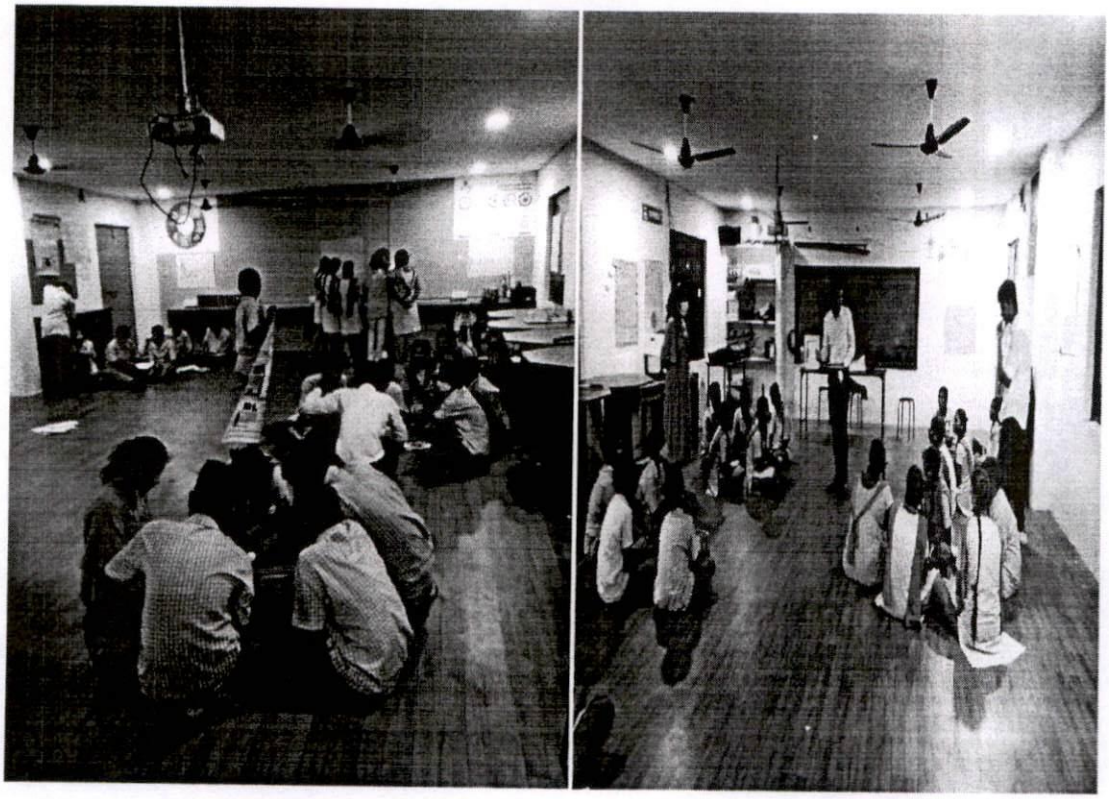
- Students learnt ''how to Explain a Project''
- Students learnt ''how to work in a Team''

Some of the Photos at ATAL Tinkering Lab:







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CMR

CEER
CENTER FOR ENGINEERING EDUCATION RESEARCH

BRAIN RAIN-2K22

A Project Exhibition Competition for School Students

8^{th} - 10^{th} Class Students (Both English and Telugu Medium)

₹5000

₹3000 ₹2000

1 2 3

Venue
CMR College of Engineering & Technology
Kandlakoya(V)
Medchal Road

26 March 2022

Last Date is 22/03/2022

To Register Your Project
9848172046
8985193337

Organized by

CENTRE FOR ENGINEERING EDUCATION RESEARCH

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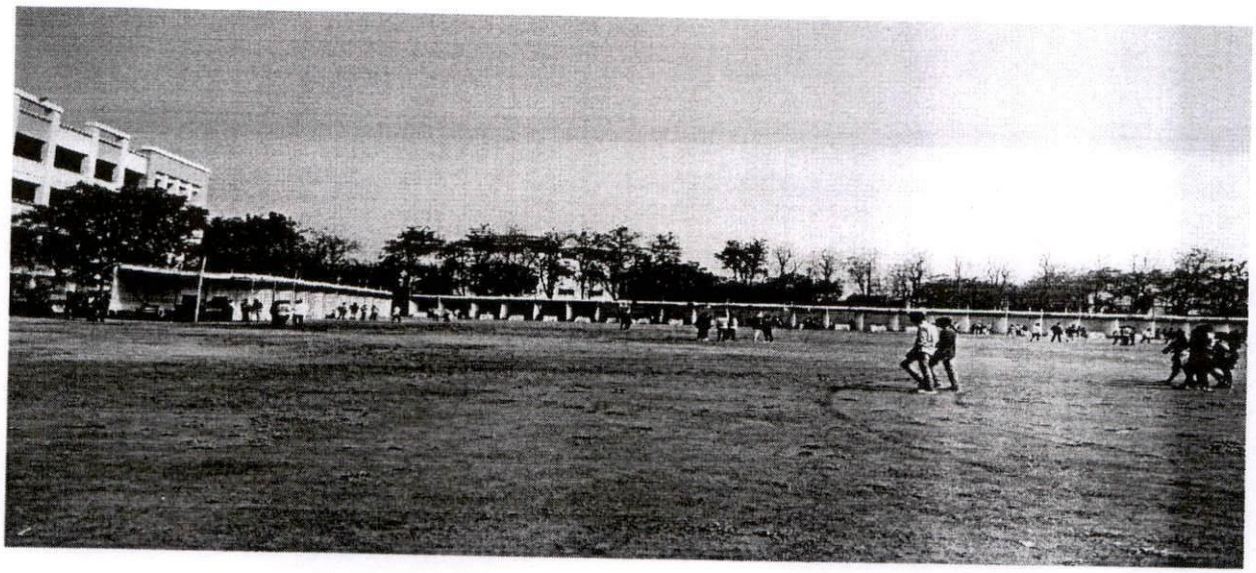

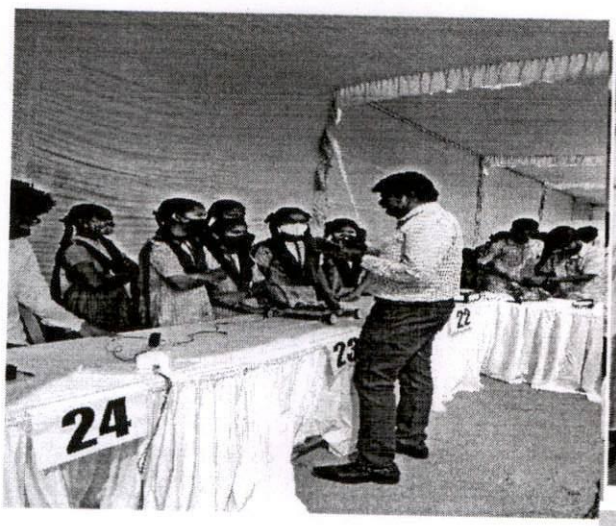

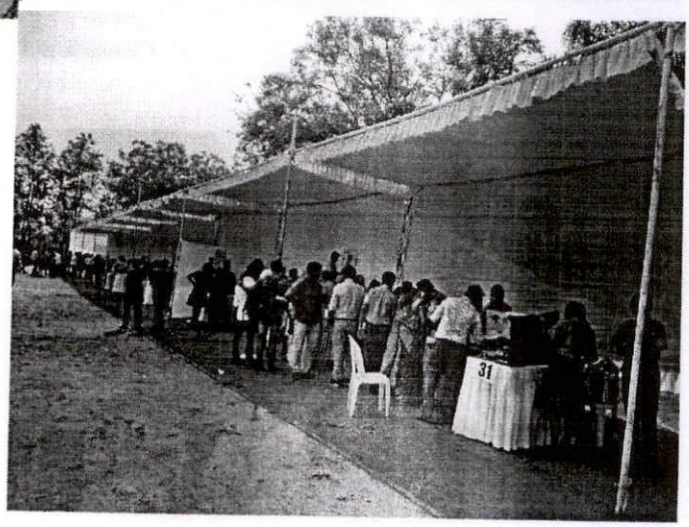

CMR COLLEGE OF ENGINEERING & TECHNOLOGY

(UGC AUTONOMOUS)

KANDLAKOYA , MEDCHAL ROAD, HYDERABAD

LIST OF STUDENTS FOR ATAL TINKERING LABS

Attendance Sheet-ZPHS HASMATHPET

S.No	Faculty and Student Name	Week-1	Week-2	Week-3	Week-4	Week-5	Week-6	Week-7	Week-8	Week-9
		23/10/21	30/10/21	6/11/21	20/11/21	27/11/21	5/3/22	10/3/22	19/3/22	26/3/22
1	D.Ajay									
2	K.Satish									
3	20H51A05N6-G.Nitin									
4	20H51A05C4-Chitra									
5	20H51A6681-Harsh Amilpur									
6	ZPHS HM/Principal									

HOD-CEER

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CMR COLLEGE OF ENGG. & TECH
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Hyderabad-501401.

CMR COLLEGE OF ENGINEERING & TECHNOLOGY

(AUTONOMOUS)

Kandlakoya (V), Medchal Road, Hyderabad -501401

LIST OF STUDENTS ATAL TINKERING LABS

CENTRE FOR ENGINEERING EDUCATION RESEARCH

Date: 22 OCT 2021,

Hyderabad.

To

The Principal,

CMR College of Engineering & Technology.

Respected sir,

Sub: Request to give the attendance to below students- Reg.

This is to bring into your kind notice that **"Centre for Engineering Education Research"** is planning to organize "**ATAL TINKERING LABS"** training for students in primary schools in Community partner Villages on every Saturday from 23rd OCT 2021 to 18thDEC 2021 (Duration of nine weeks).

Hence I request you to kindly approve the attendance.

Roll NO.	Student Name	Phone Number
20H51A6203	B.Sai Sreeja	7993149121

Thanking you,

22/10/21

HOD-CEER

HOD (cybersecurity) and HOD (CREER)

Permission granted and attendance may be

PRINCIPAL
CMR COLLEGE OF ENGG. & TECH.
Kandlakoya (V), Medchal Road,
Hyderabad-501401.

Recommended

Coordinator
Internal Quality Assurance Cell
CMR College of Engineering & Technology
Kandlakoya (V), Medchal Road,
Hyderabad - 501 401.

22/10/21

CMR COLLEGE OF ENGINEERING & TECHNOLOGY
(UGC AUTONOMOUS)
ZPHS- Bachupally
Report On Training on ATAL Tinkering Lab

Date: 23rd October 2021
Place: ZPHS Bachupally, Hyderabad.
Faculty Guide –B.Suresh Ram. Associate Professor (ECE/CEER)

Student Members.

1. 20H51A05J3-Anusha Pulipati
2. 20H51A62B2-S.Sushrutha

Targeted Students: 9th Class (Both English and Telugu)

Activities performed on that day

- Mutual Interaction and Introduction
- Basic View of Technology
- About Engineering Disciplines
- Problems related to Community discussed
- Importance of ATAL Tinkering Lab

Availability of Components and Facilities :

1. LED Lights
2. Push button
3. Resistor
4. LASER Diode
5. Integrated Circuit
6. Pins on Arduino
7. Transistors
8. Gas Sensors
9. Smoke sensors
10. Capacitors
11. Arduino
12. Bread Board
13. Jumper wires
14. LCD Display
15. Potentiometer
16. Actuators
17. 3-D Printing

Report

on

ATAL Tinkering Lab at ZPGHS BAchupally

28th March, 2022

Faculty Mentor: B.Suresh Ram, Associate Professor (ECE/CEER)
R.Venkateswara Reddy, Assistant Professor (CSE/CEER)

Name of the Students:

1. 20H51A05J4 - Rahul Sai Ranganathan
2. 20H51A62B2-S.Sushrutha
3. 20H51A05C2 - GAlipelli Soniya

Discussion/Topic thought for School Students:

Week -1:

- ✓ Introduction to students about our self and themselves
- ✓ Introduction to ATAL Tinkering lab
- ✓ Knowing the Components present in ATAL Lab of ZPHS Bachupally.
- ✓ Discussed about 5 Stages of Design thinking – (Empathies, Define, Ideate, Prototype, Test)
- ✓ Discussed about – Creativity, Critical Thinking, Innovation, Hand on Experience.

Week-2

Discussion on Society Problems

i) Swatch Bharath
ii) National Water
iii) Health
iv) Women safety
v) Education
vi) Disability

Week-3

- Introduction to Basics of Electronics
- Explained about Various components used in Projects.
  i) Arduino
  ii) Jumper Wires
  iii) Bread Board
  iv) LED Bulb
- Discussed about Ohm's Law

Week-4

- Introduction to Soldering
- Hand on Soldering with students and circuit connections.

Week-5

- Introduction to Plat based Software
- Glowing of LED Bulb
- Switch controlled LED Bulb
- Use Of Switch
- Introduction to voltage, current and Resistance

Week-6

- Team division based on self-introduction
- Explained about projects and Project expo.
- Assigning Projects for 4 Teams.
- Project titles:
    - Follow me robot
    - Distance measure using Arduino
    - Sleep detection using eye blink sensor
    - Helmet viper

Week-7

- Explanation about projects.

Week-8

- Selection of final team for Project expo.

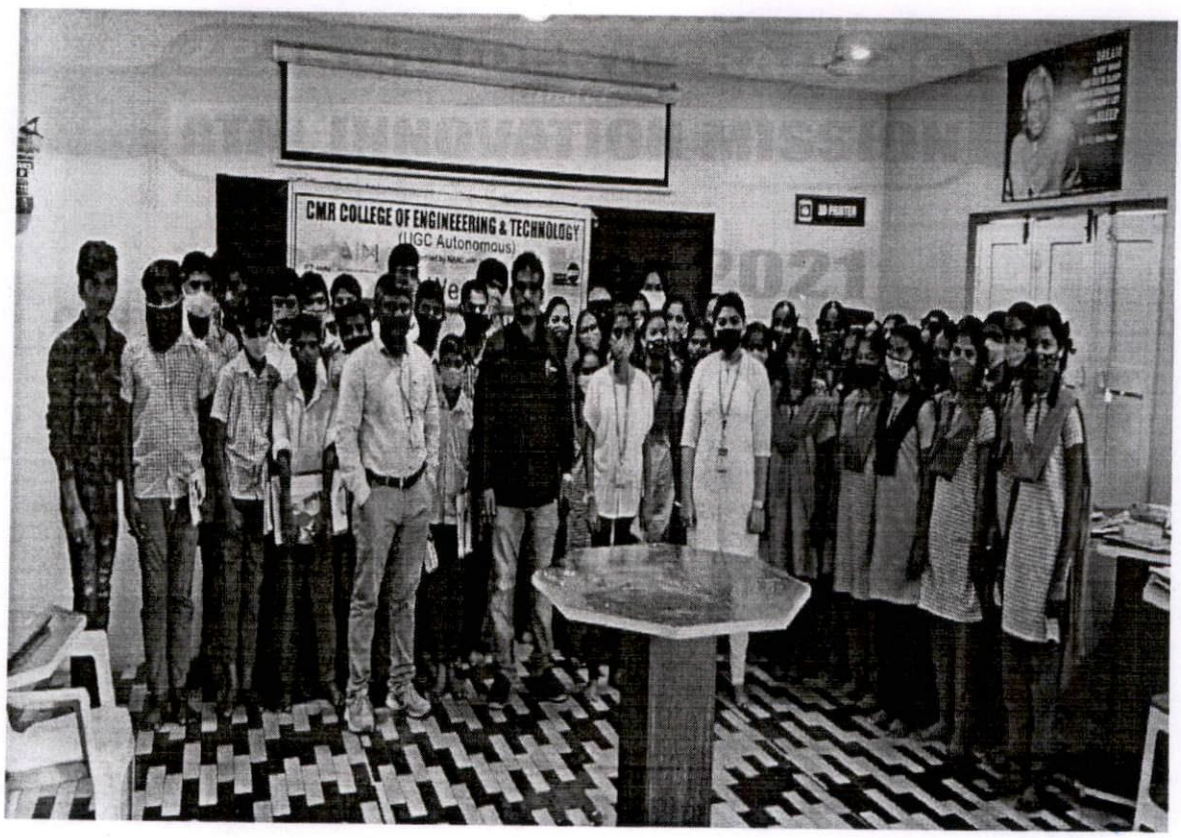
Week-9

- Explained about the Project

Week-10

- Students learnt ''how to Explain a Project''
- Students learnt ''how to work in a Team''

Some of the Photos at ATAL Tinkering Lab:



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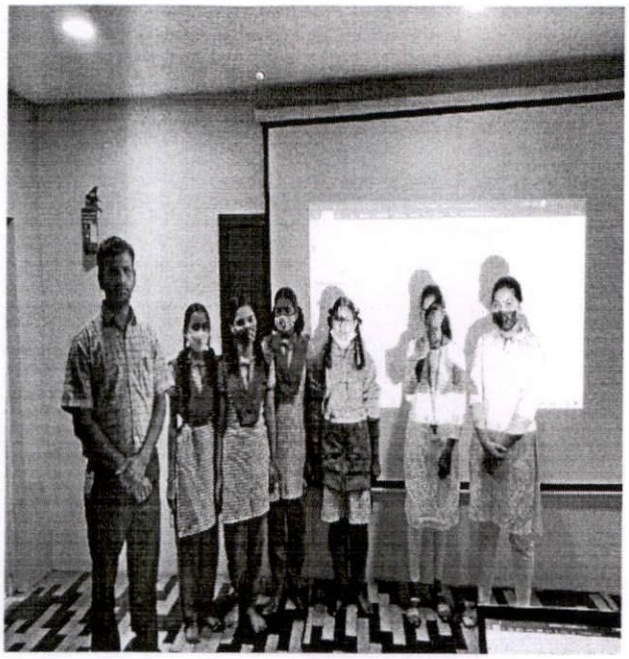
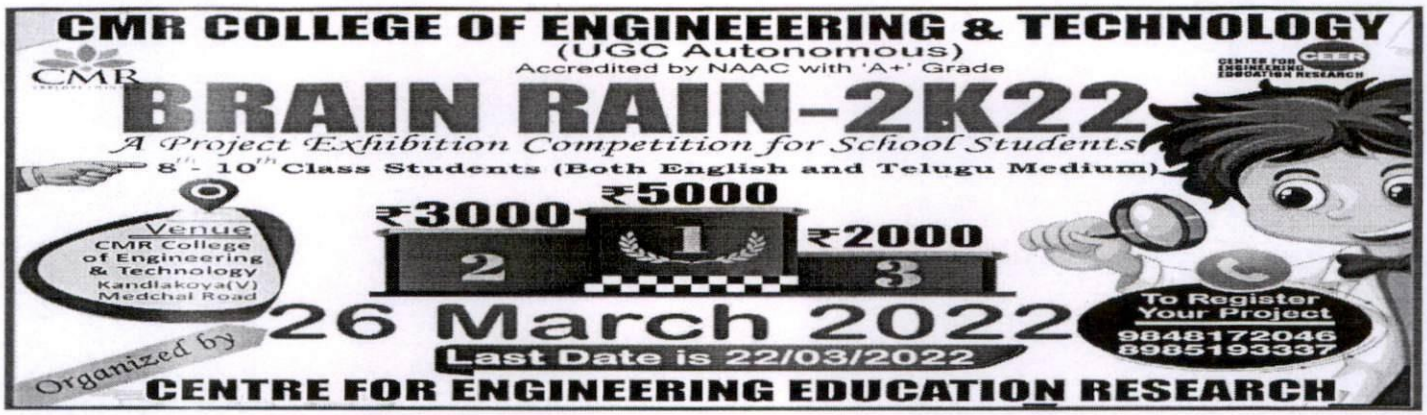
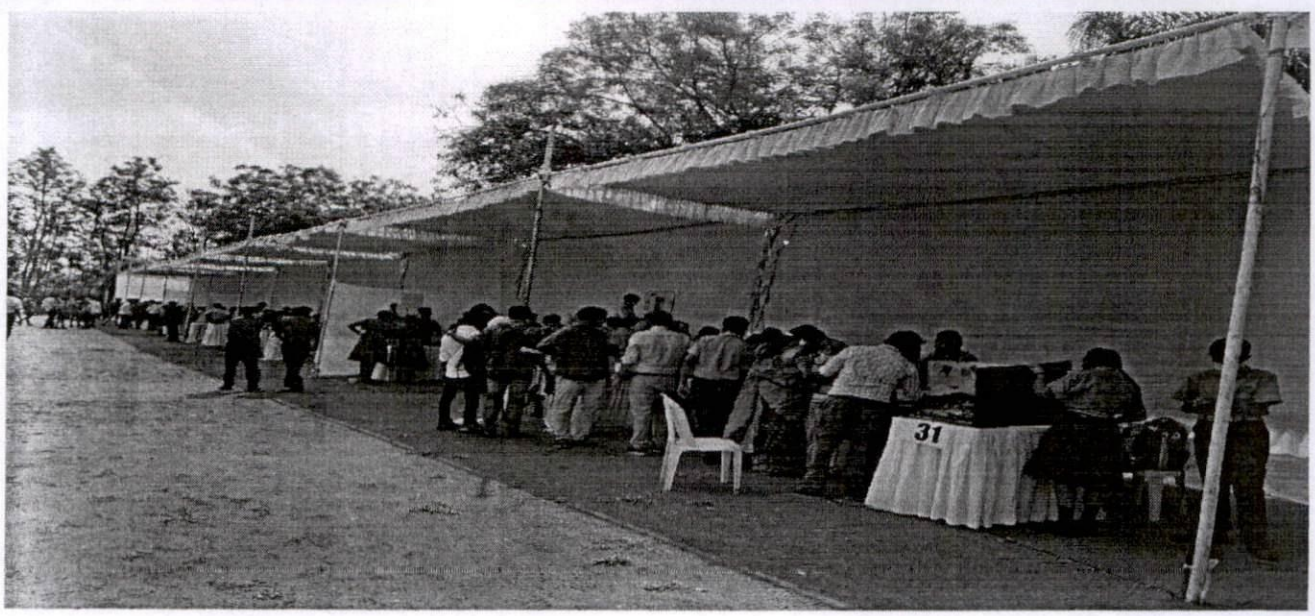
Hyderabad-501401.







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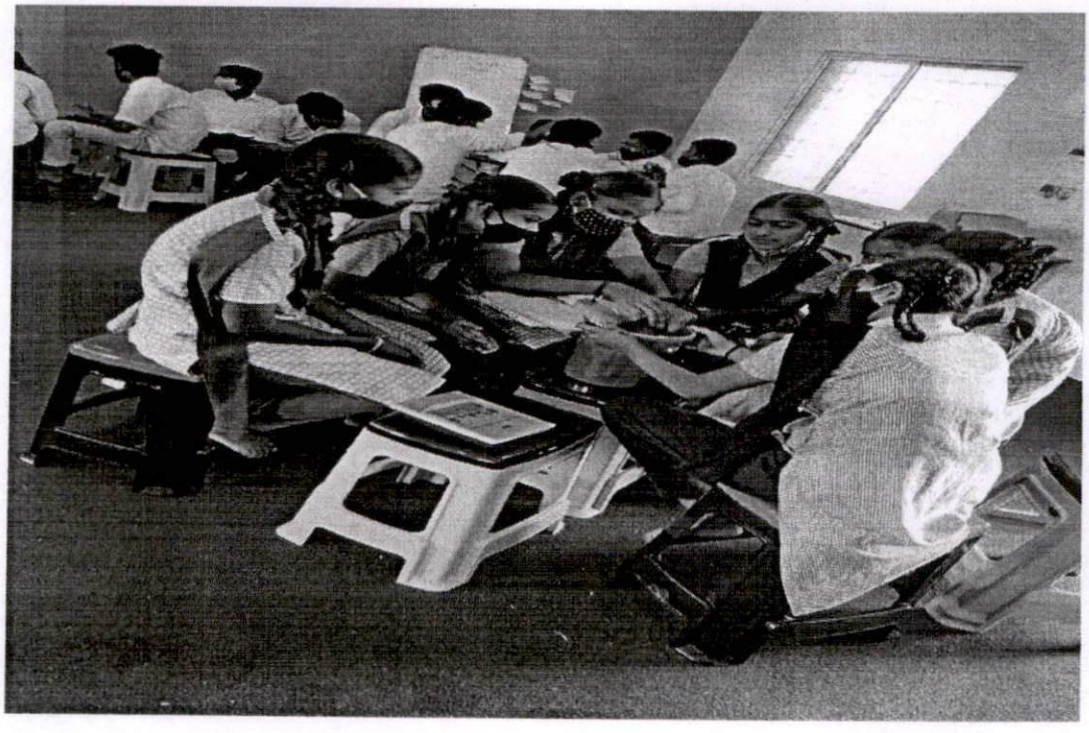

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Kandlakoya (V), Medchal Road,
Hyderabad-501401.

CMR COLLEGE OF ENGINEERING & TECHNOLOGY

(UGC AUTONOMOUS)

KANDLAKOYA , MEDCHAL ROAD, HYDERABAD

LIST OF STUDENTS FOR ATAL TINKERING LABS

Attendance Sheet-ZPHS BACHUPALLY

S. No.	Faculty and Student Name	Week-1	Week-2	Week-3	Week-4	Week-5	Week-6	Week-7	Week-8	Week-9	Week-10
		25/10/22	30/11/22	5/11/22	20/11/22	29/11/22	26/2/22	5/3/22	12/3/22	19/3/22	
1	B Suresh Ram										
2	R Venkateswara Reddy										
3	20H51A05J4- Rahul Sai Ranganathan										
4	20H51A05J3-Anusha Pulipati										
5	20H51A6203-B.Sai Sreeja										
6	ZPHS HM/Principal										

HOD-CEER

PRINCIPAL
CMR COLLEGE OF ENGG. & TECH.
Kandlakoya (V), Medchal Road,
Hyderabad-501401.

CMR COLLEGE OF ENGINEERING & TECHNOLOGY

(AUTONOMOUS)

Kandlakoya (V), Medchal Road, Hyderabad -501401

LIST OF STUDENTS ATAL TINKERING LABS

CENTRE FOR ENGINEERING EDUCATION RESEARCH

Date: 22 OCT 2021,

Hyderabad.

To

The Principal,

CMR College of Engineering & Technology.

Respected sir,

Sub: Request to give the attendance to below students- Reg.

This is to bring into your kind notice that **"Centre for Engineering Education Research"** is planning to organize **"ATAL TINKERING LABS"** training for students in primary schools in Community partner Villages on every Saturday from 23rd OCT 2021 to 18thDEC 2021 (Duration of nine weeks).

Hence I request you to kindly approve the attendance.

Roll NO.	Student Name	Phone Number
20H51A1251	K.Varsha	7671814506

Thanking you,

HOD (IT) and HOD (CSBS)

Permission granted and attendance may be provided on all saturdays

22/10/2021

22/10/21

HOD-CEER

Recommended

Coordinator

Internal Quality Assurance Cell
CMR College of Engineering & Technology
Kandlakoya (V), Medchal Road,
Hyderabad - 501 401.

PRINCIPAL
CMR COLLEGE OF ENGG. & TECH.
Kandlakoya (V), Medchal Road,
Hyderabad-501401.

CMR COLLEGE OF ENGINEERING& TECHNOLOGY
(UGC AUTONOMOUS)
ZPHS-Uppal
Final Report On Training on ATAL Tinkering Lab

Place: ZPHS Uppal, Hyderabad.
Faculty Guide –P.Mahesh Babu, Assistant Professor (MECH/CEER)
G.Karthik Reddy, Assistant Professor (ECE/CEER)

Student Members:

1. S.Manikanta Reddy-20H51A05L9
2. Shreya-20H51A0550
3. Rishab-20H51A0547

Targeted Students: 8th & 9th Class
Students Attended: 25
List of Students:
1.B.Navya sri-9th class
2.A.Tharuni-9th class
3.B.Esther Rani-9th class
4.T.Kavyanjali-9th class
5.P.Divya-9th class
6.V.Srija-9th class
7.M.Shivani-9th class
8.M.Meghana-9th class
9.K.Sangeetha-9th class
10.R.Anitha-9th class
11.P.Karthik-9th class
12.Vamshidhar-9th class
13.Shyam-9th class
14.G.Kartheek-9th class
15.J.Saiteja-9th class
16.Anikith-9th class
17.Rohith-9th class
18.Munipal-9th class
19.S.Alpha-9th class
20.Dhinakar-9th class
21.Vijay kumar-9th class
22.Tharun kumar-9th class
23.Karunakar-9th class
24.Yagneshwar-9th class
25.Hugli-8th class

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Kandlakoya (V), Medchal Road,
Hyderabad-501401.

Activities performed on that Program

Week-1

- Introduction to ATAL Program

Week-2

- Design Thinking

Week-3

- Basics of Electronics

Week-4

- Sensors and Actuators

Week-5

- Soldering practice

Week-6

- All About Arduino operations

Week-7

- Introduction to Project making and selection of projects

Week-8

- Explained about the Projects

Week-9

- Explained about the Project

Week-10

- Students learnt ''how to Explain a Project''
- Students learnt ''how to work in a Team''

PRINCIPAL
CMR COLLEGE OF ENGG. & TECH.
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Hyderabad-501401.

CMR COLLEGE OF ENGINEERING& TECHNOLOGY
(UGC AUTONOMOUS)
ZPHS-Uppal
Report On Training on ATAL Tinkering Lab
Week-9

Date: 19th March 2022

Place: ZPHS Uppal, Hyderabad.

Faculty Guide –P.Mahesh Babu, Assistant Professor (MECH/CEER)

Student Members:

1. Manikanta Reddy
2. Shreya
3. Rishab

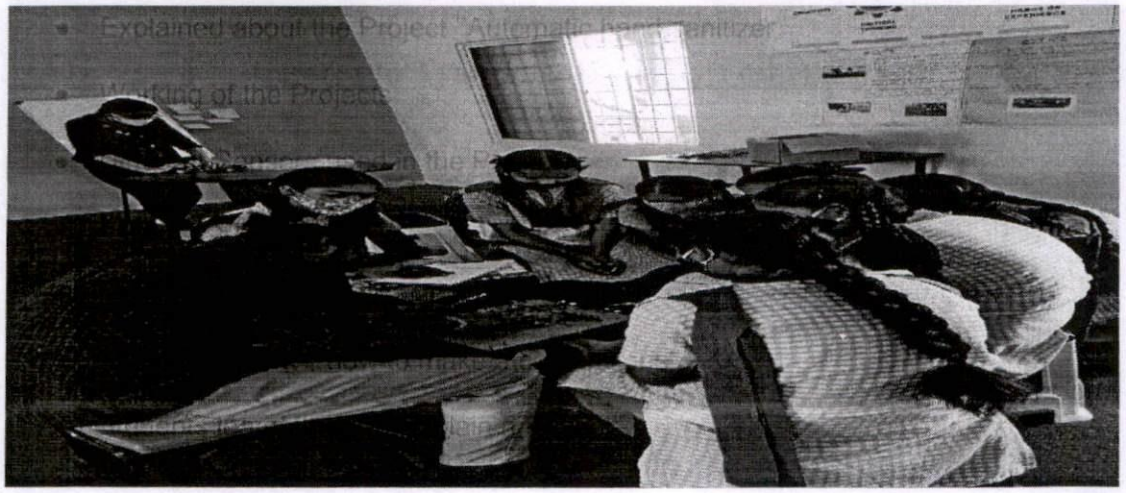
Targeted Students: 9th Class

Students Attended: 25

Discussion/Topic thought for 9th class Students:

- Explained about the Project "Automatic hand sanitizer"
- Working of the Projects
- Different Sensors used in the Project
- Existing Solutions
- Proposed Solutions
- Students Learnt "how to make a connections"
- Students learnt "how to Explain a Project"
- Students learnt "how to work in a Team"

Some of the Photos at ATAL Tinkering Lab:



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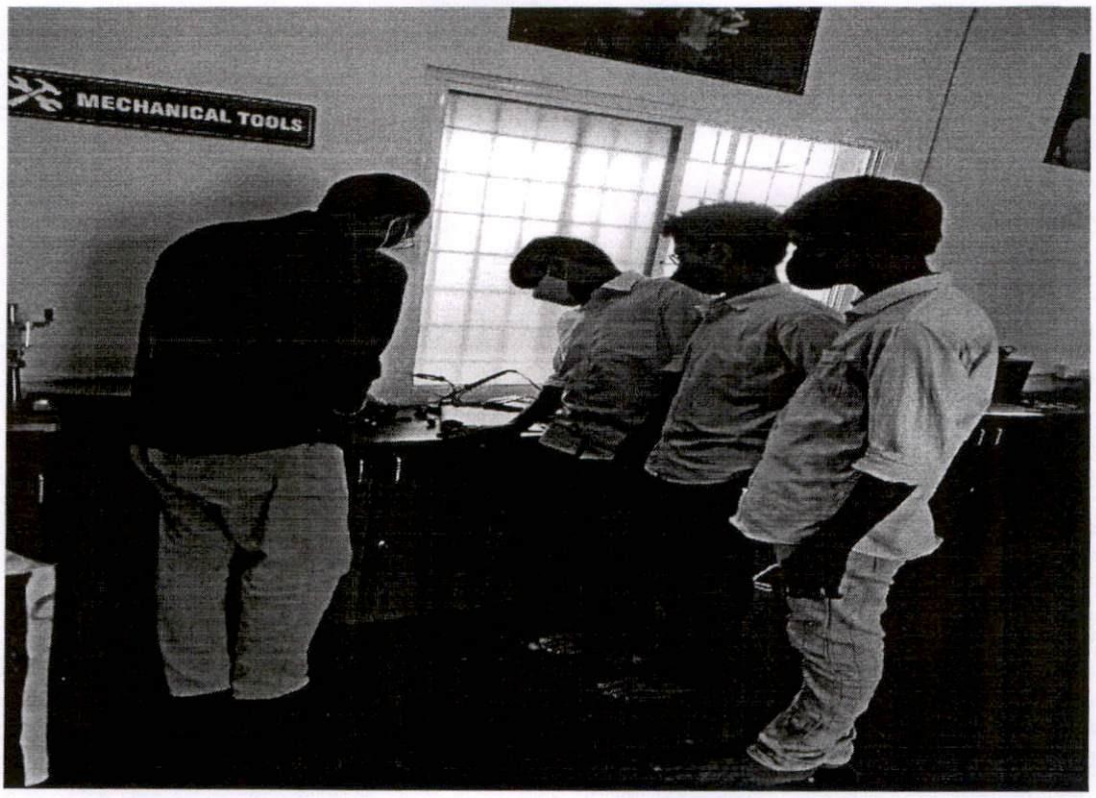

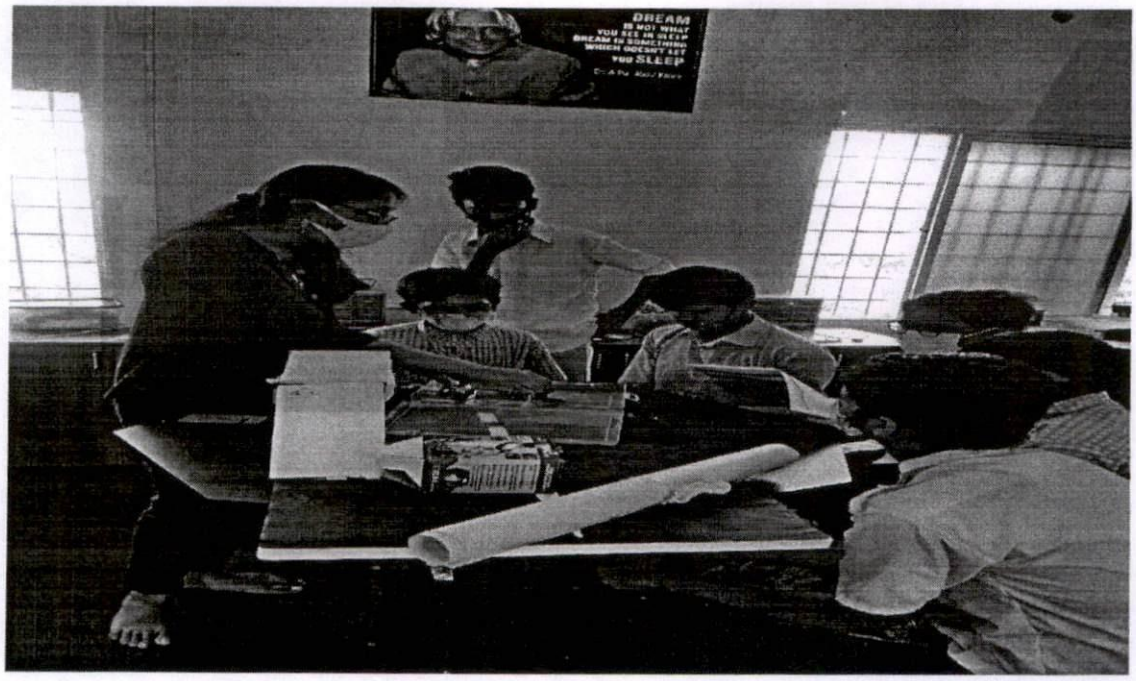

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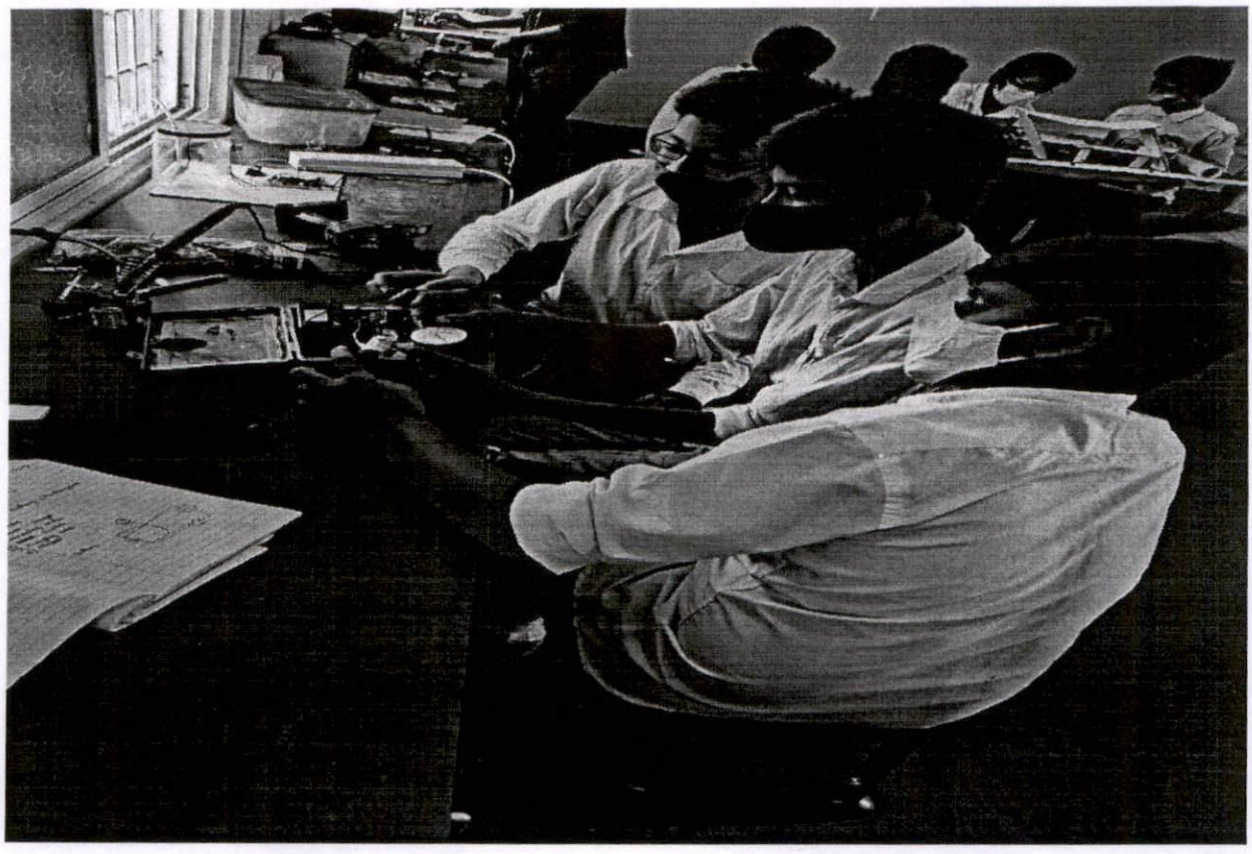

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Hyderabad-501401.

CMR COLLEGE OF ENGINEERING& TECHNOLOGY
(UGC AUTONOMOUS)
ZPHS-Uppal
Report On Training on ATAL Tinkering Lab
Week-10

Date: 25th March 2022

Place: ZPHS Uppal, Hyderabad.
Faculty Guide –P.Mahesh Babu, Assistant Professor (MECH/CEER)

Student Members:

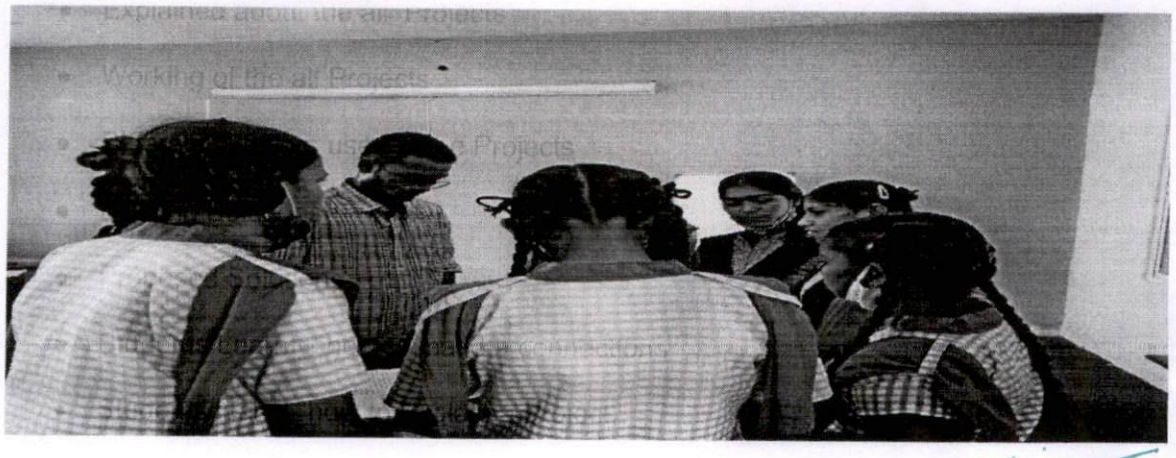
1. Manikanta Reddy
2. Shreya
3. Rishab

Targeted Students: 9th Class
Students Attended: 25

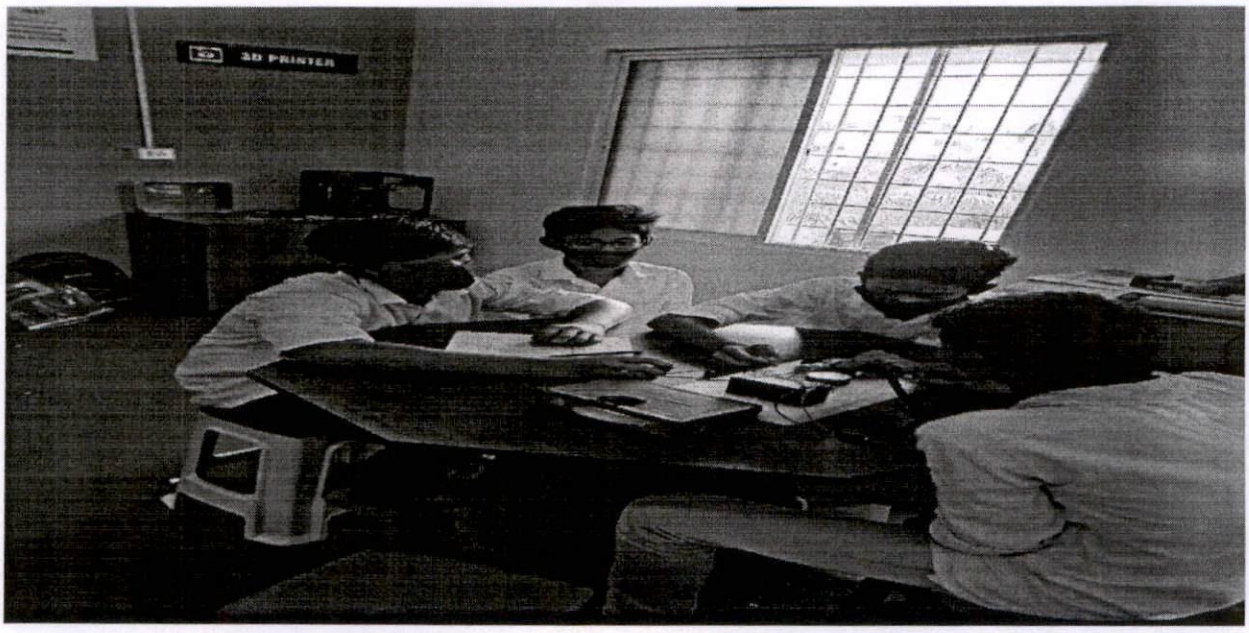
Discussion/Topic thought for 9th class Students:

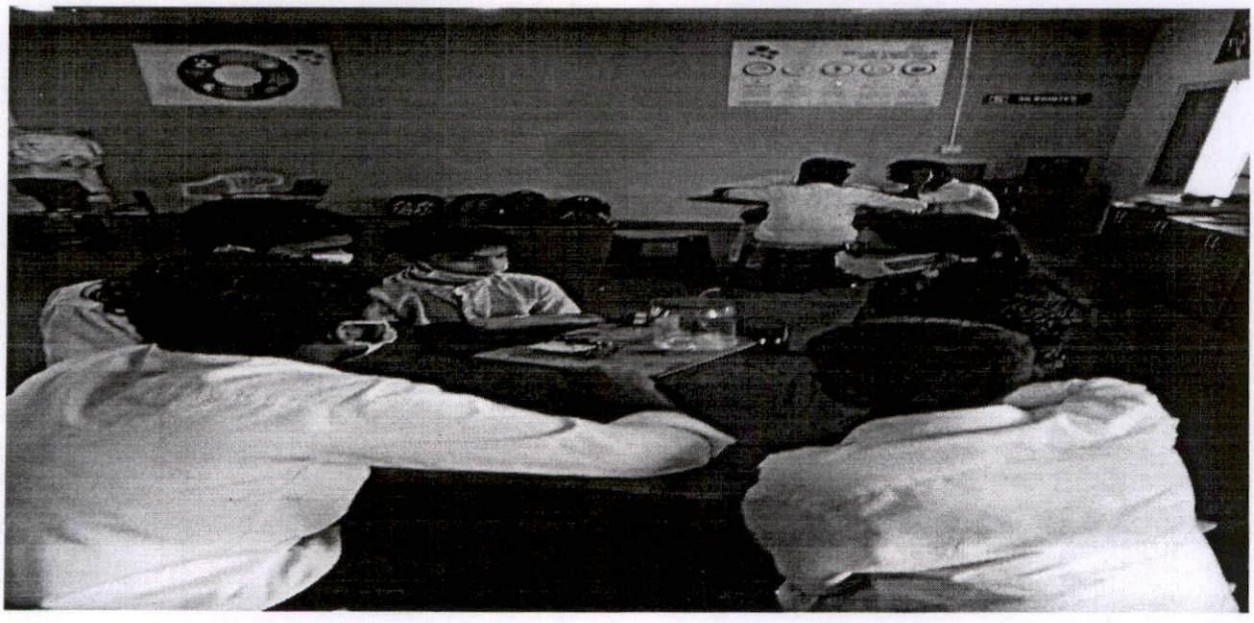
- Explained about the all Projects
- Working of the all Projects
- Different Sensors used in the Projects
- Existing Solutions
- Proposed Solutions
- Students Learnt "how to make a connections"
- Students learnt "how to Explain a Project"
- Students learnt "how to work in a Team"

Some of the Photos at ATAL Tinkering Lab:



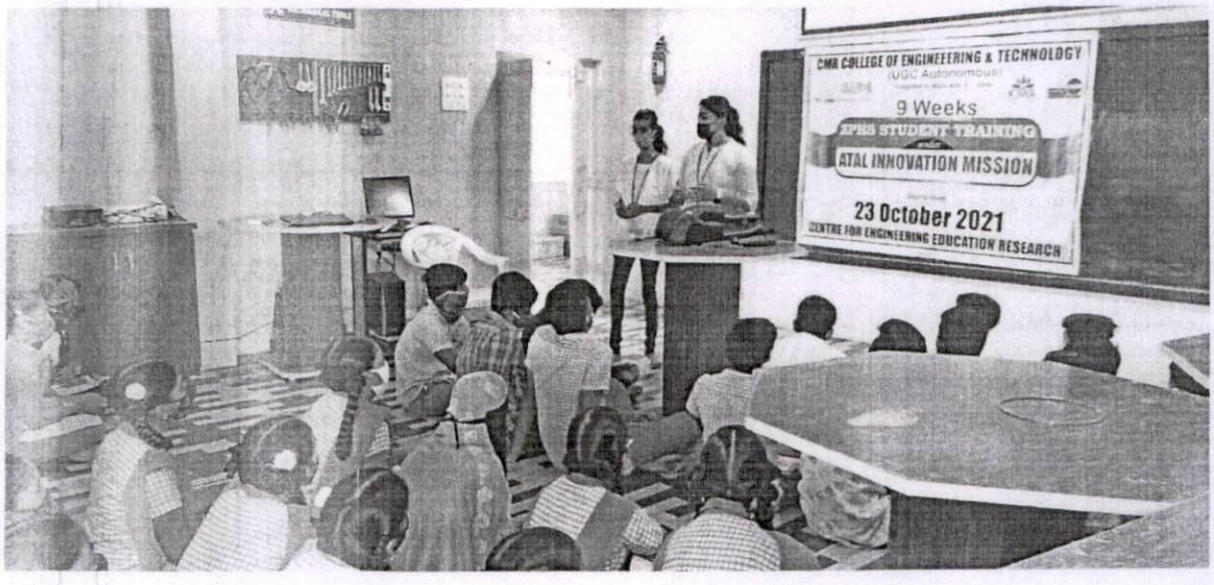
PRINCIPAL
CMR COLLEGE OF ENGG. & TECH.
Kandlakoya (V), Medchal Road,
Hyderabad-501401.





PRINCIPAL
CMR COLLEGE OF ENGG. & TECH.
Kandlakoya (V), Medchal Road,
Hyderabad-501401.

Group Photo



PRINCIPAL
CMR COLLEGE OF ENGG. & TECH
Kandlakoya (V), Medchal Road,
Hyderabad-501401.

Hasmathpet ZPHS Hyderabad

23rd October 2021
Visited to ZPHS Hasmathpet,Hyderabad.
Faculty Guide –K. Sathish. Assistant Professor (MECH/CEER)
Students of B-Tech Second year.

1. Chitra
2. Nitin
3. Harsh

Activities performed on that day

- Introduction about IOT
- Basic View of Technology
- Problems Discussed on Society
- Future Scope of Projects
-

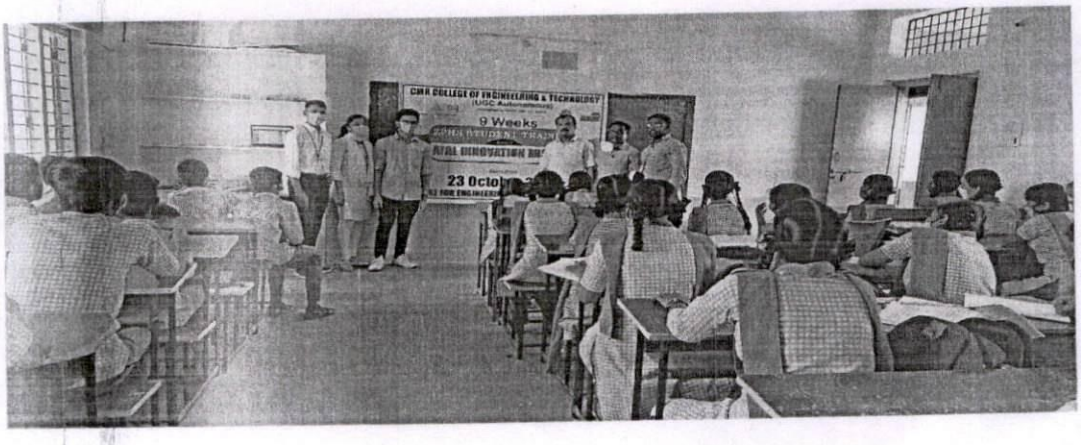
Surveying Of Components and Facilities :

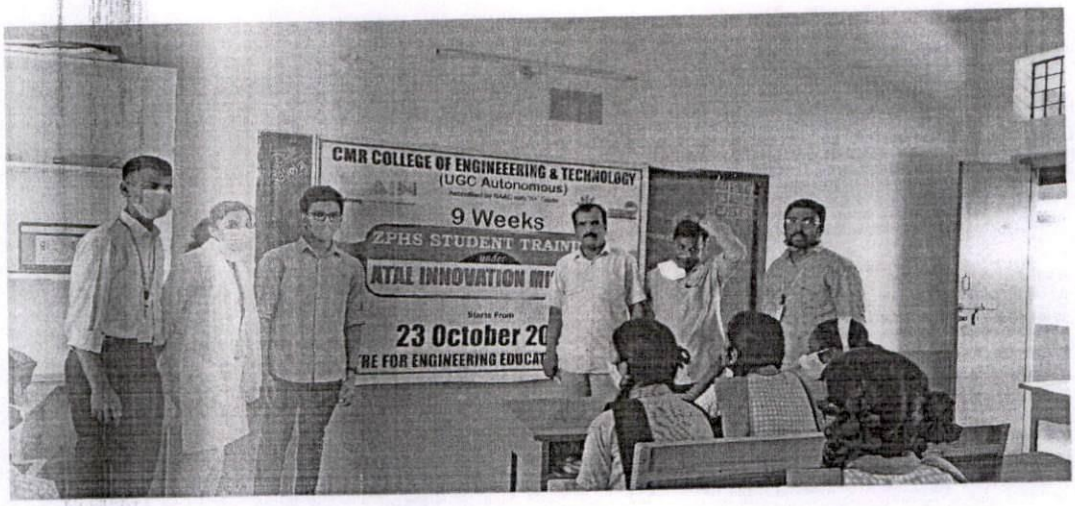
1. LED Lights
2. Push button
3. Resistor
4. LASER Diode
5. Integrated Circuit
6. Pins on Arduino
7. Transistors
8. Gas Sensors
9. Smoke sensors
10. Capacitors

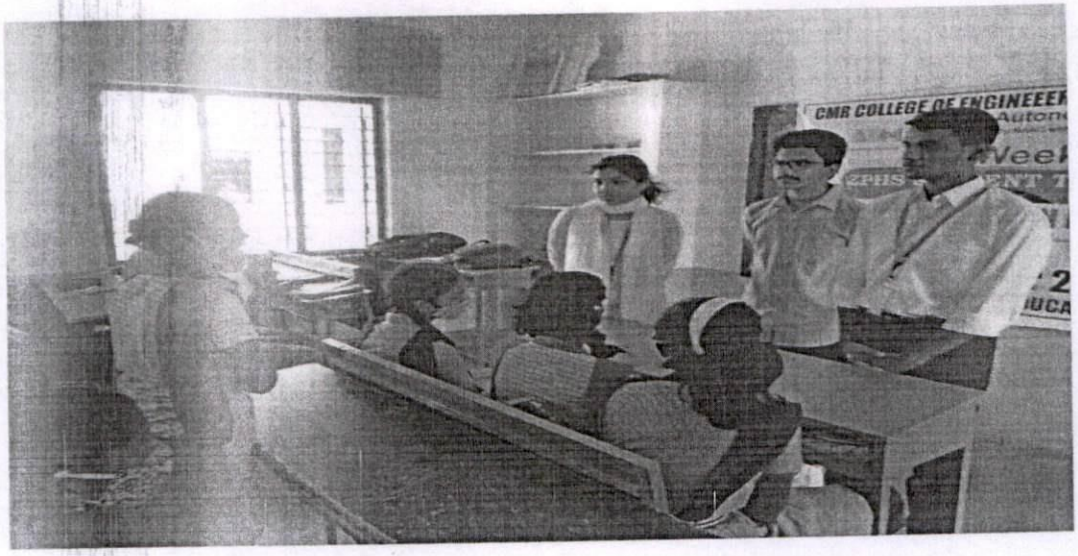
Missing Components :

1. Arduino
2. Bread Board
3. Jumper wires
4. LCD Display
5. Potentiometer

PRINCIPAL
CMR COLLEGE OF ENGG. & TECH.
Kandlakoya (V), Medchal Road,
Hyderabad-501401.







PRINCIPAL
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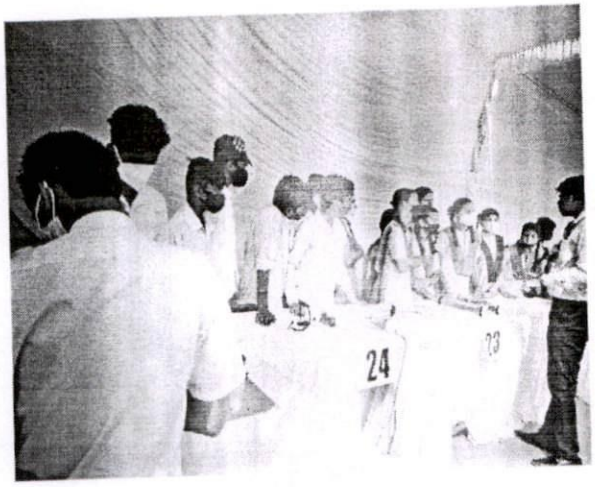
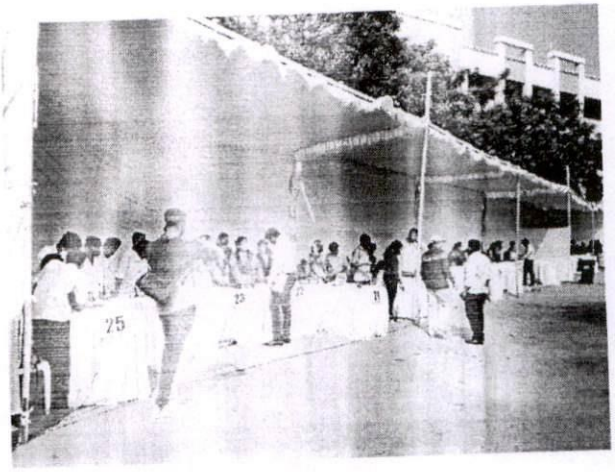
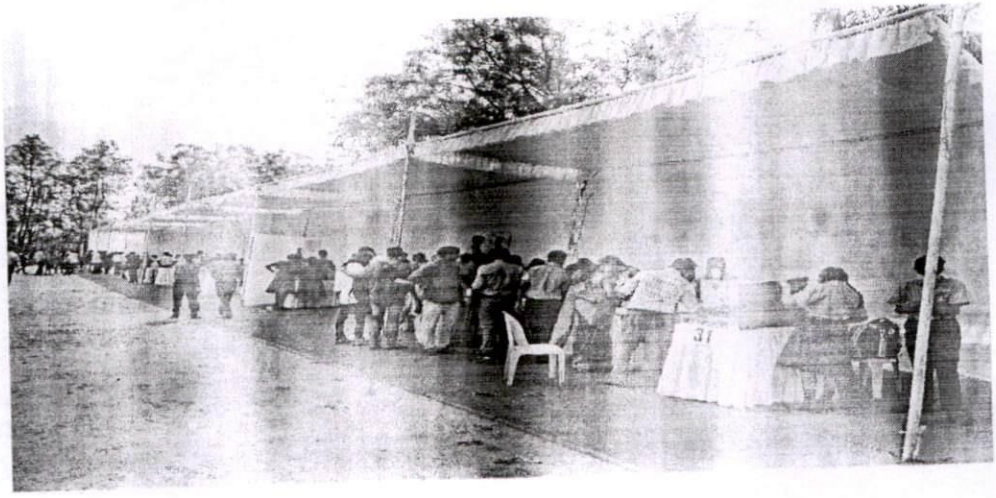
Kandlakoya (V), Medchal Road,
Hyderabad-501401.







CMR COLLEGE OF ENGINEERING & TECHNOLOGY

(UGC AUTONOMOUS)

KANDLAKOYA , MEDCHAL ROAD, HYDERABAD

LIST OF STUDENTS FOR ATAL TINKERING LABS

Attendance Sheet-ZPHS UPPAL

S.No	Faculty and Student Name	Week-1	Week-2	Week-3	Week-4	Week-5	Week-6	Week-7	Week-8	Week-9
		23/10/21	30/10/21	06/11/21	20/11/21	27/11/21	26/02/22	5/3/22	11/3/22	19/3/2022
1	G.Karthik Reddy	Greddy	Greddy	Greddy	—	—	—	—	—	
2	P.Mahesh Babu	—	—	—						
x3	20H51A0332-Satvika	AB	AB	AB	—	—	—	—	—	—
4	20H51A0550-Sreya	Sreyas	Sreyas	Sreyas	Sreyas	Sreyas	Sreyas	Sreyas	Sreyas	Sreyas
5	20H51A05L9-S.Manikanta Reddy	Manikanta	Manikanta	Manikanta	Manikanta	Manikanta	Manikanta	Manikanta	Manikanta	Manikanta
6	ZPHS HM/Principal	FAC 23/10/2021	30/10/2021	FAC 06/11/2021	FAC 20/11/2021	27/11/2021	FAC 26/02/2022	FAC 05/3/2022	FAC 11/3/2022	FAC 19/3/2022
7.	20H51A0547 Rishab	—	Rishab.	Rishab.	Rishab.	Rishab.	Rishab.	Rishab.	Rishab.	Rishab.

29/3/22

HOD-CEER

PRINCIPAL
CMR COLLEGE OF ENGG. & TECH.
Kandlakoya (V), Medchal Road,
Hyderabad-501401.

CMR COLLEGE OF ENGINEERING & TECHNOLOGY

(AUTONOMOUS)

Kandlakoya (V), Medchal Road, Hyderabad -501401

LIST OF STUDENTS ATAL TINKERING LABS

CENTRE FOR ENGINEERING EDUCATION RESEARCH

Date: 22 OCT 2021,

Hyderabad.

To

The Principal,

CMR College of Engineering & Technology.

Respected sir,

Sub: Request to give the attendance to below students- Reg.

This is to bring into your kind notice that **"Centre for Engineering Education Research"** is planning to organize **"ATAL TINKERING LABS"** training for students in primary schools in Community partner Villages on every Saturday from 23rd OCT 2021 to 18thDEC 2021 (Duration of nine weeks).

Hence I request you to kindly approve the attendance.

Roll NO.	Student Name	Phone Number
20H51A0332	Satvika	9177595147

Thanking you,

HOD (mech) and HOD (CEER)

Permission granted, attendance may be given

22/10/21

PRINCIPAL
CMR COLLEGE OF ENGG. & TECH.
Kandlakoya (V), Medchal Road,
Hyderabad-501401.

22/10/21

HOD-CEER

Recommended

Coordinator
Internal Quality Assurance Cell
CMR College of Engineering & Technology
Kandlakoya (V), Medchal Road,
Hyderabad - 501 401.

CMR COLLEGE OF ENGINEERING& TECHNOLOGY
(UGC AUTONOMOUS)
Report On Training on ATAL Tinkering Lab
at ZPGHS Medchal

Date: 28th March, 2022

Faculty Mentor: Talluri Rajesh, Assistant Professor (CE/CEER)
Vaddi Srinivas, Assistant Professor (CE/CEER)

Name of the Students:

1. M.V Goutham – 20H55A1204
2. Dupathi Shravani – 20H51A0509
3. Kodipyaka Varsha – 20H51A1251

Discussion/Topic thought for School Students:

Week -1:

- ✓ Introduction to students about our self and themselves
- ✓ Introduction to ATAL Tinkering lab
- ✓ Knowing the Components present in ATAL Lab of ZPHS Medchal.
- ✓ Discussed about 5 Stages of Design thinking – (Empathies, Define, Ideate, Prototype, Test)
- ✓ Discussed about – Creativity, Critical Thinking, Innovation, Hand on Experience.

Week-2

Discussion on Society Problems

i) Swatch Bharath
ii) National Water
iii) Health
iv) Women safety
v) Education
vi) Disability

Week-3

- Introduction to Basics of Electronics
- Explained about Various components used in Projects.
  i) Arduino
  ii) Jumper Wires
  iii) Bread Board
  iv) LED Bulb
- Discussed about Ohm's Law

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Hyderabad-501401.

Week-4

- Introduction to Soldering
- Hand on Soldering with students and circuit connections.

Week-5

- Introduction to Plat based Software
- Glowing of LED Bulb
- Switch controlled LED Bulb
- Use Of Switch
- Introduction to voltage, current and Resistance

Week-6

- Team division based on self-introduction
- Explained about projects and Project expo.
- Assigning Projects for 4 Teams.
- Project titles:
    - Follow me robot
    - Distance measure using Arduino
    - Sleep detection using eye blink sensor
    - Helmet viper

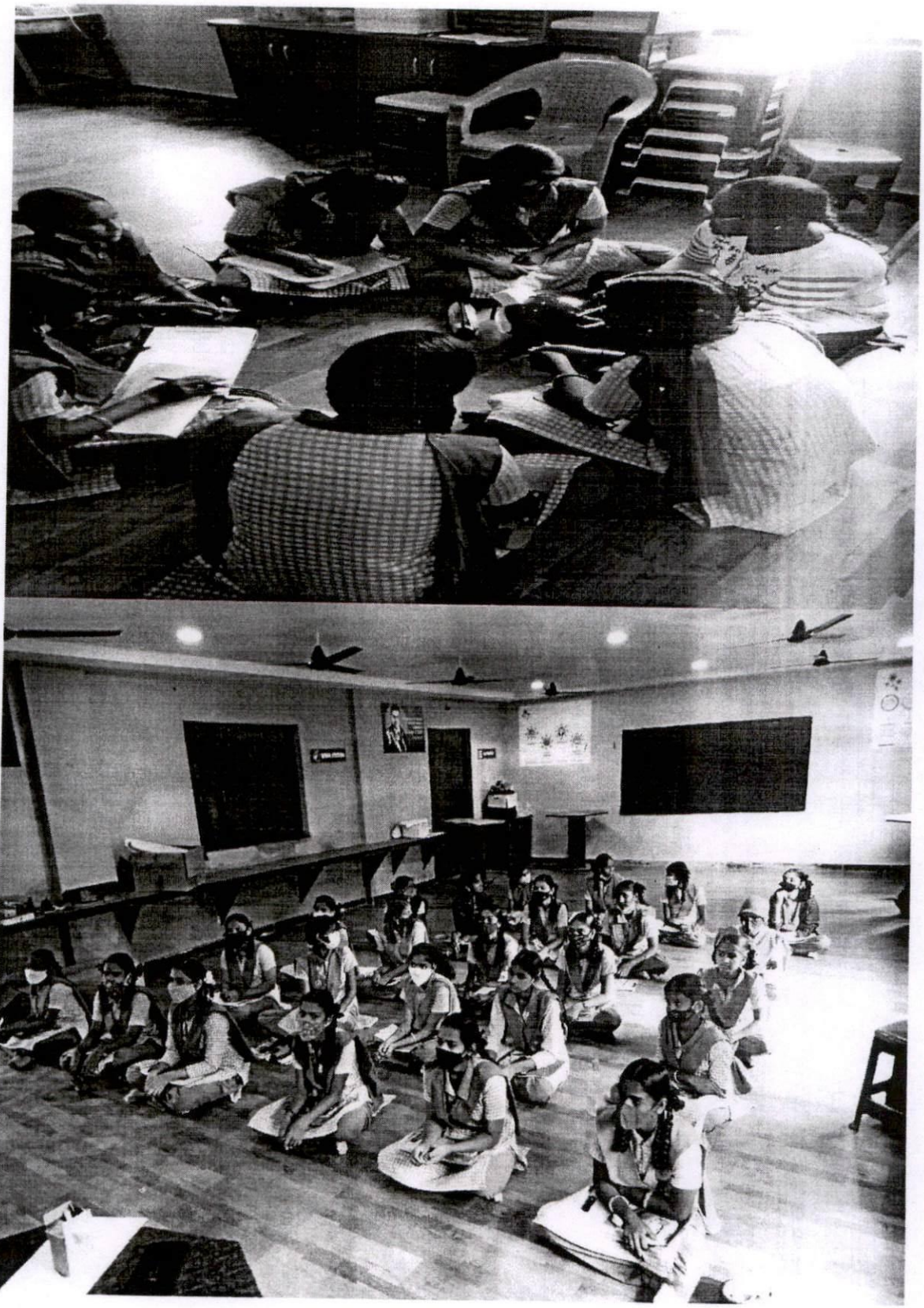
Week-7

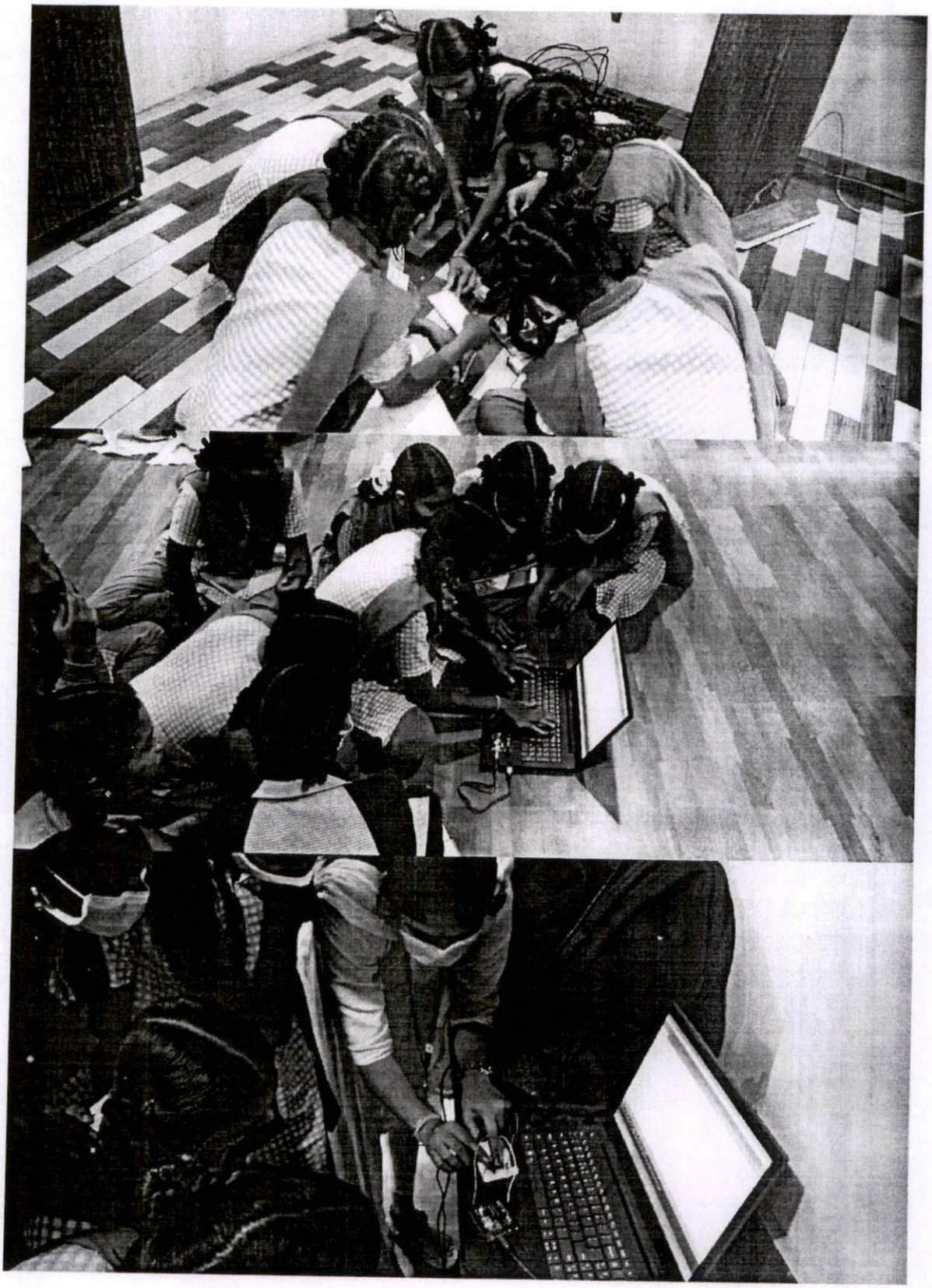
- Explanation about projects.

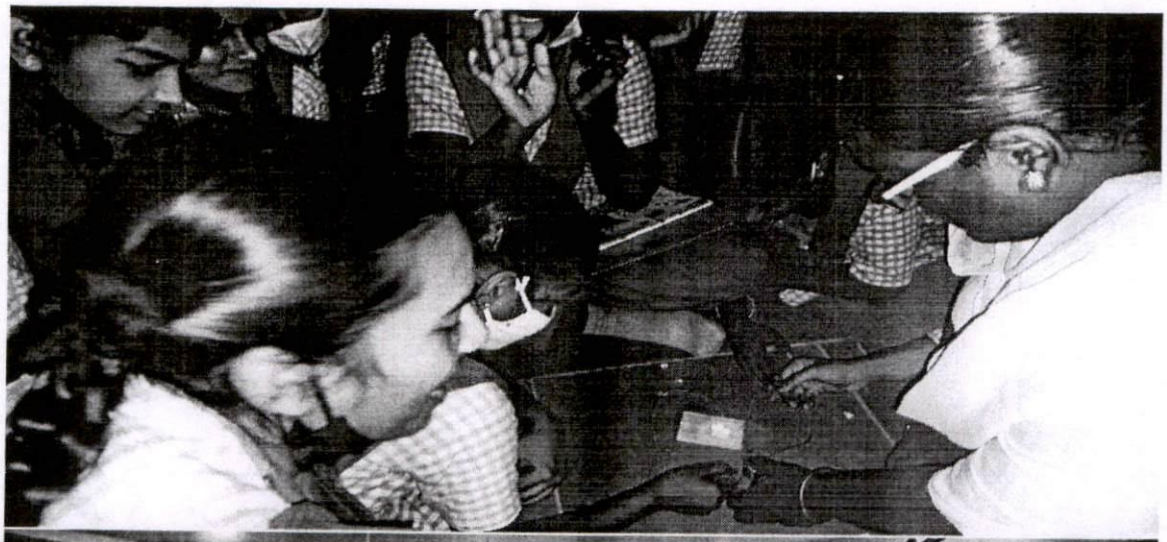
Week-8

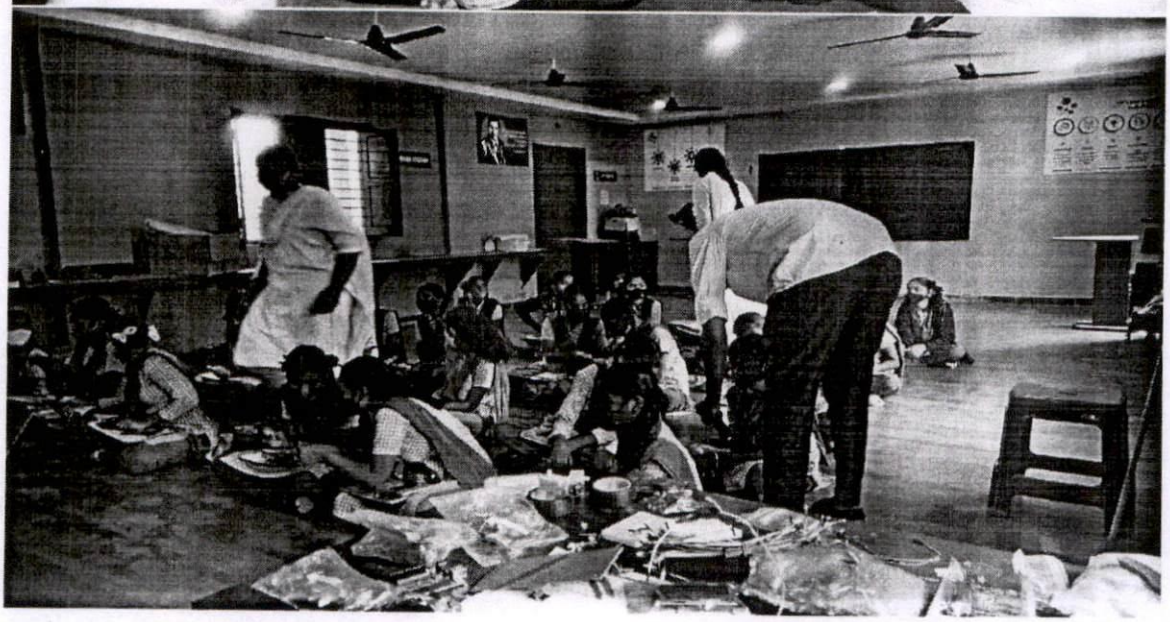
- Selection of final team for Project expo.

Some of the Photos at ATAL Tinkering Lab:

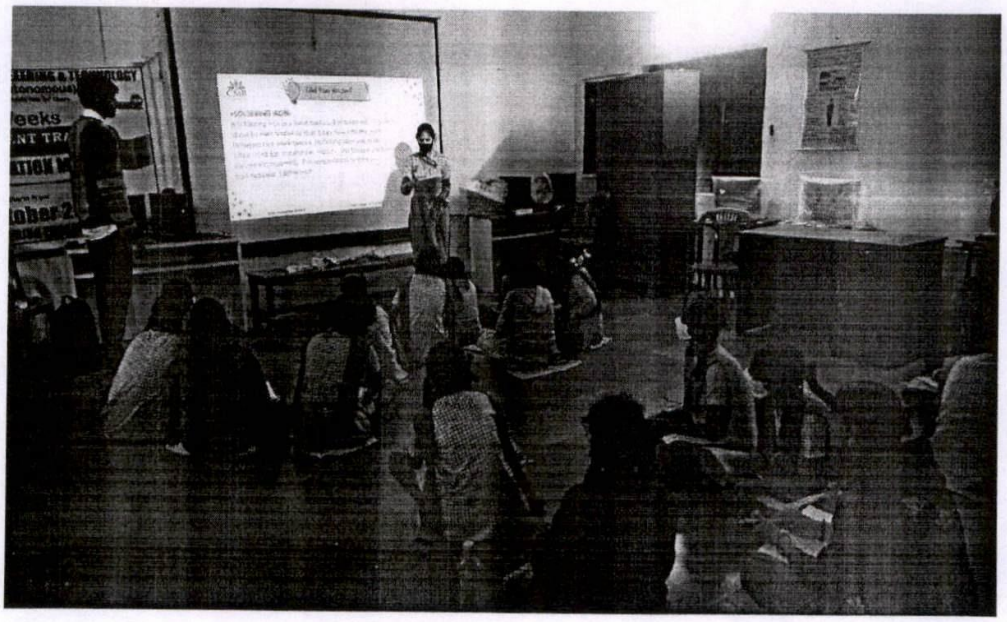


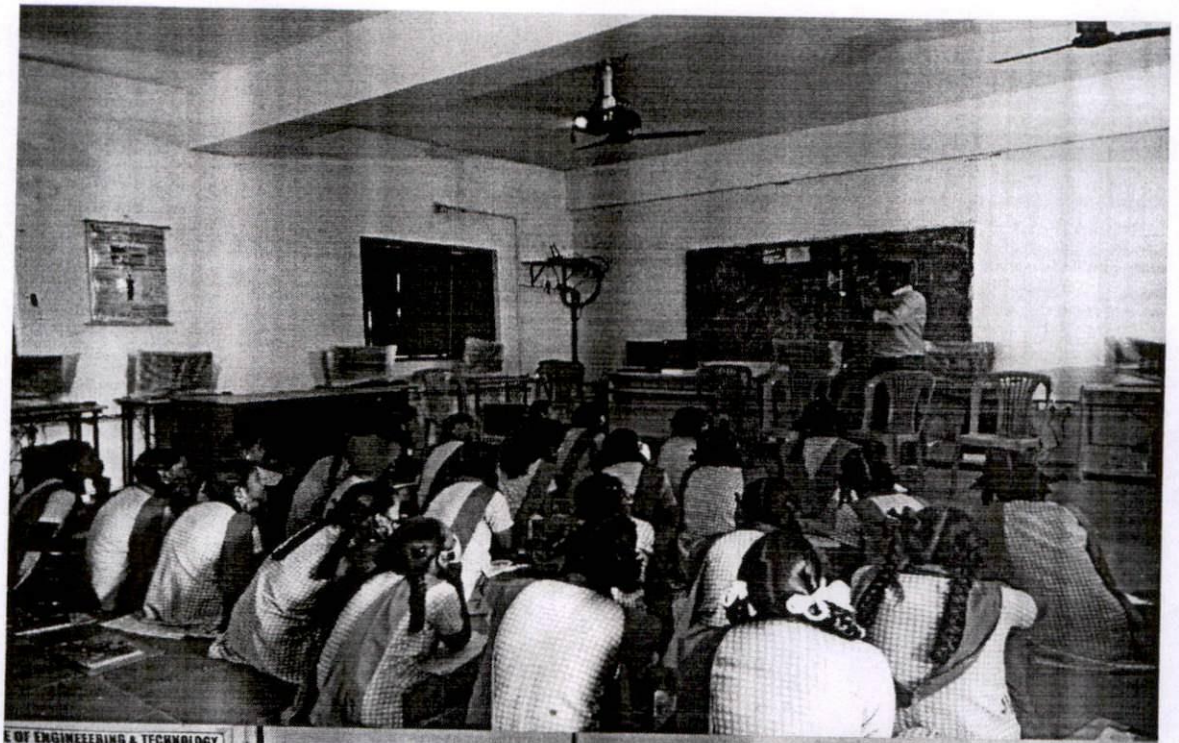


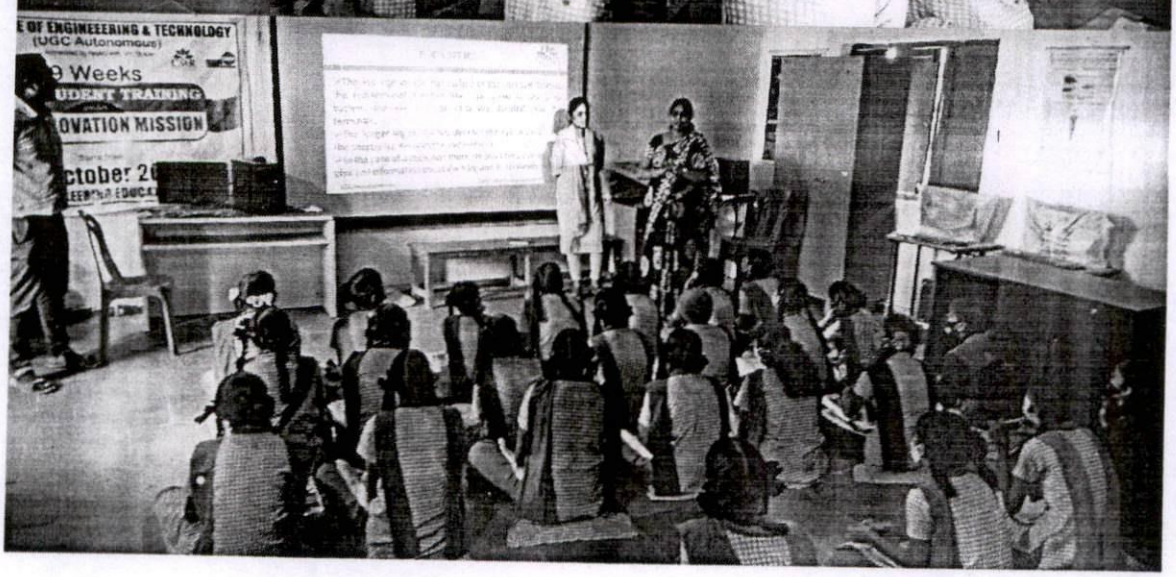




PRINCIPAL
CMR COLLEGE OF ENGG. & TECH.
Kandlakoya (V), Medchal Road,
Hyderabad-501401.







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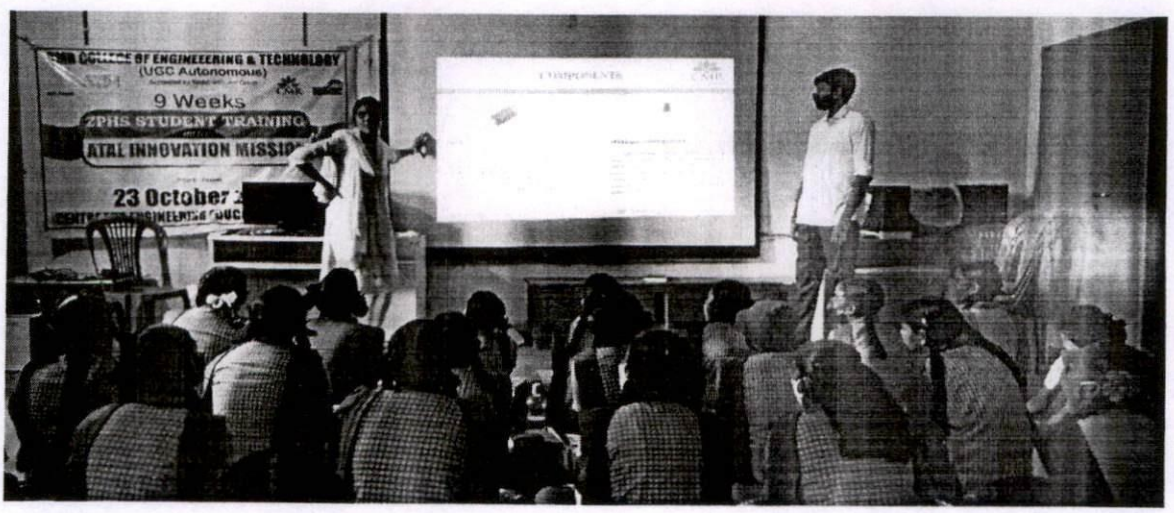
Hyderabad-501401.



CMR COLLEGE OF ENGINEERING & TECHNOLOGY

(UGC AUTONOMOUS)

KANDLAKOYA , MEDCHAL ROAD, HYDERABAD

LIST OF STUDENTS FOR ATAL TINKERING LABS

Attendance Sheet-ZPHS MEDCHAL

S. No.	Faculty and Student Name	Week-1	Week-2	Week-3	Week-4	Week-5	Week-6	Week-7	Week-8	Week-9
		23/10/2021	30-10-2021	06-11-2021	20/11/2021	27/11/2021	26/2/22	19/3/22	23/3/22	
1	T.Rajesh									
2	Chandrashekar Azad									
3	20H51A1251-K.Varsha	K.Varsha	K.Varsha	K.Varsha	K.Varsha	K.varsha	K.Parsha	K.Varsha	K.Varsha	K.Varsha
4	21H55A0204-M.V.Goutham	M.V.Gautham	M.V.Gautham	M.V.Gautha	M.V.Gautham	M.V.Gautham	M.V.Gautham	M.V.Gautam	M.V.Gautam	M.V.Gautham
5	20H51A0509-Dupathi	Sravani	Sravani	Sravani	Sravani	Sravani	Sravani	Sravani	Sravani	Sravani
6	ZPHS HM/Principal									

Gazetted Head Mistress
Z.P.G.H.S. Medchal, Dist - 502 110

Gazetted Head Mistress
Z.P.G.H.S. Medchal
Dist - 502 110.

Gazetted Head Mistress
Z.P.G.H.S. Medchal.
Dist - 502 110

PRINCIPAL
CMR COLLEGE OF ENGG. & TECH.
Kandlakoya (V), Medchal Road,
Hyderabad-501401.

HOD-CEER

Zilla Parishad High School
Bachupally

02-01-2022
Hyderabad,

To

The Principal,

CMR College of Engineering & Technology,

Kandlakoya,

Medchal,

Telangana.

Respected sir,

Subject: Thank You and Apperciation -Reg

We express our sincere thanks to your Institution for delivering Introduction to **Ardiuno Programming** on 23/10/2021. The session has given a good exposure in Ardiuno to our students. We are expecting few more Training sessions on other subjects in future at your convenience. Special Thanks to the speakers of the session and convener of Naipunya club.

Thank you

Head Master.
/PHS, Bachupally.

Gazetted Headmaster
ZPHS Bachupally
Bachupally Mandal
Medchal District 500072.

PRINCIPAL
CMR COLLEGE OF ENGG. & TECH.
Kandlakoya (V), Medchal Road,
Hyderabad-501401.

01-02-2023
Hyderabad,

To

The Principal,

CMR College of Engineering & Technology,

Kandlakoya,

Medchal,

Telangana.

Respected sir,

Subject: Thank You and Apperciation -Reg

We express our sincere thanks to your Institution for conducting practical session on Soldering on 30-10-2021. The session has given a good exposure on Soldering to our students .We are expecting few more sessions on other topics in future at your convenience. Special Thanks to the speakers of the session and convener of Naipunya club.

Thank you

Gazetted Head Master
Z.P.H.S. Boys Medchal,
Medchal-Malkajgiri Dist- 501 401
Head Master/Principal

ZPHS Medchal (Boys).

PRINCIPAL
CMR COLLEGE OF ENGG. & TECH.
Kandlakoya (V), Medchal Road,
Hyderabad-501401.

ZILLA PARISHAD HIGH SCHOOL
HASMATHPET
MEDCHAL DIST

22-12-2022
Hyderabad,

To
The Principal,
CMR College of Engineering & Technology,
Kandlakoya,
Medchal,
Telangana.

Respected sir,

Subject: Thank You and Apperciation -Reg

We express our sincere thanks to your Institution for delivering a 3-Day workshop on Sensors on 06-11-2021. The session has given a good exposure on Sensors to our students .We are expecting few more sessions on other topics in future at your convenience. Special Thanks to the speakers of the session and convener of Naipunya club.

Thank you

Gazetted Head Master.
ZPHS, Hasmathpet.

Gazetted Headmaster
Z.P.H.S. Hasmathpet,
Balanagar (M), Medchal Dist

PRINCIPAL
CMR COLLEGE OF ENGG. & TECH.
Kandlakoya (V), Medchal Road,
Hyderabad-501401.

Zilla Parishad High School
Uppal Kalan
Medchal Dist.-500039

22-02-2022
Hyderabad,

To
The Principal,
CMR College of Engineering & Technology,
Kandlakoya,
Medchal,
Telangana.

Respected sir,

Subject: Thank You and Apperciation -Reg

We express our sincere thanks to your Institution for giving guest lecture on Introduction to Ardiuno Programming with Motors o 13-11-2021. The session has given a good exposure on Ardiuno Programming with motors to our students.We are expecting few more sessions on other topics in future at your convenience. Special Thanks to the speakers of the session and convener of Naipunya club.

Thank you

Headmistress,
ZPHS, Uppal.

HEADMISTRESS
ZPHS UPPAL KALAN
UPPAL (MANDAL), MEDCHAL (DIST)

PRINCIPAL
CMR COLLEGE OF ENGG. & TECH.
Kandlakoya (V), Medchal Road,
Hyderabad-501401.

24-12-2022
Hyderabad,

To

The Principal,

CMR College of Engineering & Technology,

Kandlakoya,

Medchal,

Telangana.

Respected sir,

Subject: Thank You and Apperciation -Reg

We express our sincere thanks to your Institution for delivering Academic training on Basics of Physics on 20/11//2021. The session has given a good exposure in Physics subject to our students. We are expecting few more Trainingsessions on other subjects in future at your convenience. Special Thanks to the speakers of the session and convener of Naipunya club.

Thank you

27/3/2021

Head Master
Gazetted Head
ZPHS,
MEDCHAL.
Dist

PRINCIPAL
CMR COLLEGE OF ENGG. & TECH.
Kandlakoya (V), Medchal Road,
Hyderabad-501401.

29-12-2022
Hyderabad,

To

The Principal,

CMR College of Engineering & Technology,

Kandlakoya,

Medchal,

Telangana.

Respected sir,

Subject: Thank You and Apperciation -Reg

We express our sincere thanks to your Institution for delivering Academic training on Mathematics in linear algebraon27/11/2021. The session has given a good exposure in Mathematics subject to our students. We are expecting few more Training sessions on other subjects in future at your convenience. Special Thanks to the speakers of the session and convener of Naipunya club.

Thank you

PRINCIPAL
CMR COLLEGE OF ENGG. & TECH.
Kandlakoya (V), Medchal Road,
Hyderabad-501401.

HEADMASTER
ZPHS PUDUR
Medchal (M & Dist)

24-01-2022
Hyderabad,

To

The Principal,

CMR College of Engineering & Technology,

Kandlakoya,

Medchal,

Telangana.

Respected sir,

Subject: Thank You and Apperciation -Reg

We express our sincere thanks to your Institution for delivering Academic training on Basics of Chemistry concepts on04/12/2021. The session has given a good exposure in Chemistry subject to our students. We are expecting few more Training sessions on other subjects in future at your convenience. Special Thanks to the speakers of the session and convener of Naipunya club.

Thank you

Zilla Parishad High School RAVALKOLE Medchal Mandal Medchal Dist.

Head Master/Principal

ZPHS Ravalkole.

Head Mistress
ZPHS Ravalkole
Medchal Mandal

PRINCIPAL
CMR COLLEGE OF ENGG. & TECH.
Kandlakoya (V), Medchal Road,
Hyderabad-501401.

15-01-2022
Hyderabad,

To

The Principal,

CMR College of Engineering & Technology,

Kandlakoya,

Medchal,

Telangana.

Respected sir,

Subject: Thank You and Apperciation -Reg

We express our sincere thanks to your Institution for delivering Academic training on Mathematics in probability concepts on 18/12/2021. The session has given a good exposure in Mathematics subject to our students. We are expecting few more Training sessions on other subjects in future at your convenience.Special Thanks to the speakers of the session and convener of Naipunya club.

Thank you

ZILLA PARISHAD HIGH SCHOOL MUNEERABAD

Ste. Chakol Rao
Head Master/Principal
Gazatted Head Master
ZPHS Muneerabad
Mdl Medchal,
Medchal-Malkajgiri Dist.

PRINCIPAL
CMR COLLEGE OF ENGG. & TECH.
Kandlakoya (V), Medchal Road,
Hyderabad-501401.

06-04-2022
Hyderabad,

To

The Principal,

CMR College of Engineering & Technology,

Kandlakoya,

Medchal,

Telangana.

Respected sir,

Subject: Thank You and Apperciation -Reg

We express our sincere thanks to your Institution for delivering Academic training on Physics in light theoryon 08/01/2022. The session has given a good exposure in Physics subject to our students. We are expecting few more Training sessions on other subjects in future at your convenience. Special Thanks to the speakers of the session and convener of Naipunya club.

Thank you

PRINCIPAL
CMR COLLEGE OF ENGG. & TECH.
Kandlakoya (V), Medchal Road,
Hyderabad-501401.

Head Master
school, Yellampet.
MEDCHAL

Head Master
UPS-Yellampet
MP, MEDCHAL

19-04-2022
Hyderabad,

To

The Principal,

CMR College of Engineering & Technology,

Kandlakoya,

Medchal,

Telangana.

Respected sir,

Subject: Thank You and Apperciation -Reg

We express our sincere thanks to your Institution for delivering Academic training on Mathematics in trigonometry on 12/02/2022. The session has given a good exposure in Mathematics subject to our students. We are expecting few more Training sessions on other subjects in future at your convenience. Special Thanks to the speakers of the session and convener of Naipunya club.

Thank you

Head Master/Principal
Gazetted Head Master
ZPHS RAJABOLLARAM
Mdl. Medchal, Dist. Medchal-Malkajgir

ZPHS Rajabollaram.

PRINCIPAL
CMR COLLEGE OF ENGG. & TECH.
Kandlakoya (V), Medchal Road,
Hyderabad-501401.

ZILLA PARISHAD HIGH SCHOOL
HASMATHPET
MEDCHAL DIST

30/03/2022,
Hyderabad.

To
The Principal,
CMR College of Engineering & Technology,
Kandlakoya,
Hyderabad,
Telangana.

Respected Sir,

Sub: **Thanks and Appreciation towards conducting training programme on ATAL Tinkering Lab-** Reg

On behalf of ZPHS, Hasmathpet, I take this opportunity to appreciate the efforts made by your college team, especially faculty from Centre for Engineering Education Research (CEER) for giving 10 week training to our school students on ATAL Tinkering Lab from 23rd October 2021 to 23rd March 2022. This training programme has motivated our students and driven them to put forth their best effort. It sparked interest, passion and ignited a fire within. Our school students were encouraged to improve themselves and learnt a new technique.

We are very much thankful to you for organizing a project exhibition competition for school students **(Brain Rain -2K22)** on 26thMarch 2022. This is a best platform for our students to show case their talent and interact with other school students, teachers, faculty of Engineering college and other experts of academics. We are expecting the same cooperation from your Institution in future also.

Thanking you

Gazetted Head Master,
ZPHS, Hasmathpet.

Gazetted Headmaster
Z.P.H.S. Hasmathpet,
Balanagar (M), Medchal Dist.

PRINCIPAL
CMR COLLEGE OF ENGG. & TECH.
Kandlakoya (V), Medchal Road,
Hyderabad-501401.

Zilla Parishad High School
Bachupally

30/05/2022,
Hyderabad.

To
The Principal,
CMR College of Engineering & Technology,
Kandlakoya,
Hyderabad,
Telangana.

Respected Sir,

Sub: **Thanks and Appreciation towards conducting training programme on ATAL Tinkering Lab-** Reg

On behalf of ZPHS, Bachupally, I take this opportunity to appreciate the efforts made by your college team, especially faculty from Centre for Engineering Education Research (CEER) for giving 10 week training to our school students on ATAL Tinkering Lab from 23rd October 2021 to 23rd March 2022. This training programme has motivated our students and driven them to put forth their best effort. It sparked interest, passion and ignited a fire within. Our school students were encouraged to improve themselves and learnt a new technique.

We are very much thankful to you for organizing a project exhibition competition for school students **(Brain Rain -2K22)** on 26thMarch 2022. This is a best platform for our students to show case their talent and interact with other school students, teachers, faculty of Engineering college and other experts of academics. We are expecting the same cooperation from your Institution in future also.

Thanking you

Head Master,
ZPHS, Bachupally.

PRINCIPAL
CMR COLLEGE OF ENGG. & TECH.
Kandlakoya (V), Medchal Road,
Hyderabad-501401.

Gazetted Headmaster
ZPHS Bachupally
Bachupally Mandal
Medchal District 500072

Zilla Parishad High School
Uppal Kalan
Medchal Dist.-500039

30/03/2022,
Hyderabad.

To
The Principal,
CMR College of Engineering & Technology,
Kandlakoya,
Hyderabad,
Telangana.

Respected Sir,

Sub: **Appreciation and thanks giving towards conducting training programme on ATAL Tinkering Lab**- Reg

I would like to convey my heartfelt appreciation to by your college team, especially faculty and students from Centre for Engineering Education Research (CEER) for their priceless efforts, support, guidance and contribution towards giving 10 week training to our ZPH school students on ATAL Tinkering Lab from 23rd October 2021 to 23rd March 2022. This training programme has motivated our students and driven them to put forth their best effort. It sparked interest, passion and ignited a fire within. Our school students were encouraged to improve themselves and learnt a new technique.

They have absolutely given a lifetime impact to our school students. Our school children have personally shared with us their admiration and appreciation of your faculty and students. Their dedication and patience had enabled our school students to receive positive educational experiences throughout training. These faculty and students are an epitome of promoting inclusivity in education.

We are very much thankful to you for organizing a project exhibition competition for school students **(Brain Rain -2K22)** on 26thMarch 2022. This is a best platform for our students to show case their talent and interact with other school students, teachers, faculty and students of Engineering college and other experts of academics. We are expecting the same cooperation from your Institution in future also.

PRINCIPAL
CMR COLLEGE OF ENGG. & TECH.
Kandlakoya (V), Medchal Road,
Hyderabad-501401.

Headmistress,
ZPHS, Uppal.

HEADMISTRESS
ZPHS UPPAL KALAN
UPPAL (MANDAL), MEDCHAL (DIST)

ZILLA PARISHAD HIGH SCHOOL
GIRLS
MEDCHAL

30/05/2022,
Hyderabad.

To
The Principal,
CMR College of Engineering & Technology,
Kandlakoya,
Hyderabad,
Telangana.

Respected Sir,

Sub: **Thanks and Appreciation towards conducting training programme on ATAL Tinkering Lab-** Reg

On behalf of ZPHS for Girls, Medchal, I take this opportunity to appreciate the efforts made by your college team, especially faculty from Centre for Engineering Education Research (CEER) for giving 10 week training to our school students on ATAL Tinkering Lab from 23rd October 2021 to 23rd March 2022. This training programme has motivated our students and driven them to put forth their best effort. It sparked interest, passion and ignited a fire within. Our school students were encouraged to improve themselves and learnt a new technique.

We are very much thankful to you for organizing a project exhibition competition for school students **(Brain Rain -2K22)** on 26thMarch 2022. This is a best platform for our students to show case their talent and interact with other school students, teachers, faculty of Engineering college and other experts of academics. We are expecting the same cooperation from your Institution in future also.

Thanking you

30/5/2022

Head Mistress,
ZPHS for Girls,
Medchal.

Certified Head Mistr
Z.P.G.H.S. Medch
M., Dist - 502

PRINCIPAL
CMR COLLEGE OF ENGG. & TECH.
Kandlakoya (V), Medchal Road,
Hyderabad-501401.