Experiential Learning:

Visiting of Research Laboratories:

Dept of chemistry

Field Visit to Mart Specialities Lab Pvt. Ltd, Hyderabad For

"Training and Hands-on Experience on Atomic Absorption Spectroscopy"

DEPARTMENT OF CHEMISTRY

TARA GOVERNMENT COLLEGE, SANGAREDDY (A)

2021-22

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Tara Govt. College, Sangareddy(A)

Field Visit to Mart Specialities Lab Pvt. Ltd, Hyderabad For

"Training and Hands-on Experience on Atomic Absorption Spectroscopy"

Department of chemistry has organized Field Visit to **MART Specialities Lab Pvt. Ltd., Hyderabad** for the final year students of B.Sc. Chemistry on **11.06.2022** to train the student in **Atomic Absorption Spectroscopy (AAS)** to assess the heavy metal content at ppm levels. **Six (6)** students of B.Sc. Chemistry Final year student were perfectly trained in this programme. **Dr.Abhijit Kantankar**, Head, Department of Chemistry acted as Coordinator of the Filed Visit.

Objective of the Programme:

To provide Scientific and Research knowledge to the students to enhance their research skills to carry out assigned research projects.

Context of the Programme:

Field Visit to Scientific and Research Institutes provides positive effect on both teachers and students in the cognitive and affective aspects. It is one of the most effective and the best way of teaching which provides the elements of scientific inquiry. Even the faculty will have the chance to develop their teaching abilities, including the capacity to make complex subjects understandable to people who aren't academics. Students have a stronger comprehension of the research elements in their field of study as a result of the procedure. Additionally, the positive

experience of taking part in the process influenced their desire to take part in subsequent outreach initiatives. Implementing the Field visit provides a complex experience of learning.

In this regard, Department of chemistry has arranged a Field visit to **MART Specilaities Lab Pvt. Ltd, Hyderabad** for **Real time learning and hands-on training** on Atomic Absorption Spectroscopy with **THERMO Scientific iCE-3000** equipment which is essential to carry out their allotted Research Projects on Metal adsorption studies. This Field Visit was arranged as part of **POST-MoU activity** as MART Specilaities Lab Pvt. Ltd, Hyderabad and Department of Chemistry, Tara Govt. College, Sangareddy(A) reached MoU on 31.12.2021.

Students Trained in the Programme:

S.No.	Name of the Student	Roll Number	Group	Year
1	S.Shirisha	6058-19-578-029	B.Sc.(MCCs)	III
2	Mukthi Kanth Rout	6058-19-578-022	B.Sc.(MCCs)	III
3	N.Shiva Shankar	6058-19-578-025	B.Sc.(MCCs)	III
4	Y. Avinash Reddy	6058-19-578-038	B.Sc.(MCCs)	III
5	T.Chandana	6058-19-578-032	B.Sc.(MCCs)	III
6	K.Dheeraj Kumar	6058-19-578-017	B.Sc.(MCCs)	III

TRAINING MANUAL

Atomic Absorption Spectrometry

Atomic absorption spectrometry (AAS) is an analytical technique that measures the concentrations of elements. Atomic absorption is so sensitive that it can measure down parts per billion of a gram ($\mu g\ dm^{-3}$) in a sample. The technique makes use of the wavelengths of light specifically absorbed by an element. They correspond to the energies needed to promote electrons from one energy level to another, higher, energy level.

Atomic absorption spectrometry has many uses in different areas of chemistry.

Clinical analysis: Analysing metals in biological fluids such as blood and urine.

Environmental analysis: Monitoring our environment- eg finding out the levels of various elements in rivers, seawater, drinking water, air, petrol and drinks such as wine, beer and fruit drinks.

Pharmaceuticals: In some pharmaceutical manufacturing processes, minute quantities of a catalyst used in the process (usually a metal) are sometimes present in the final product. By using AAS the amount of catalyst present can be determined.

Industry: Many raw materials are examined and AAS is widely used to check that the major elements are present and that toxic impurities are lower than specified- eg in concrete, where calcium is a major constituent, the lead level should be low because it is toxic.

Mining: By using AAS the amount of metals such as gold in rocks can be determined to see whether it is worth mining the rocks to extract the gold.

How it works

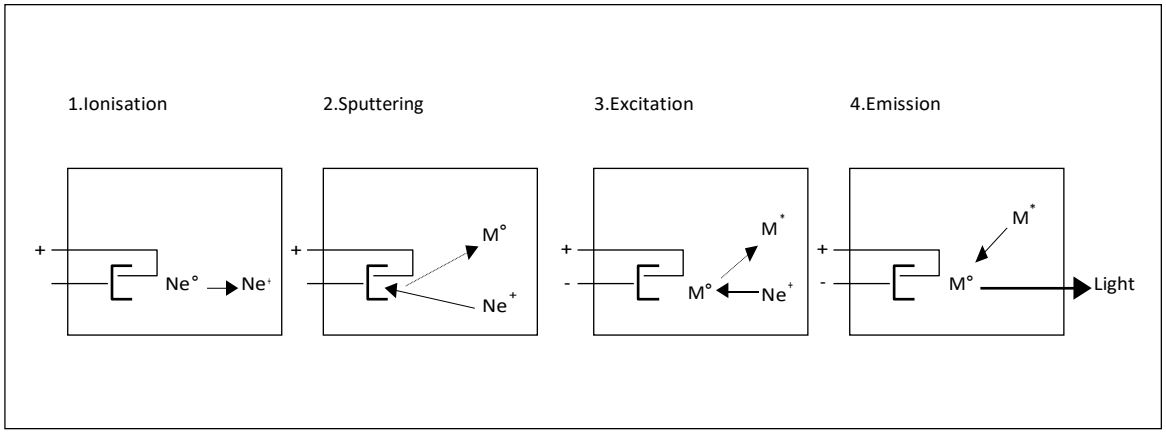
Atoms of different elements absorb characteristic wavelengths of light. Analysing a sample to see if it contains a particular element means using light from that element. For example with lead, a lamp containing lead emits light from excited lead atoms that produce the right mix of wavelengths to be absorbed by any lead atoms from the sample. In AAS, the sample is atomized- i.e. converted into ground state free atoms in the vapour state- and a beam of electromagnetic radiation emitted from excited lead atoms is passed through the vaporized sample. Some of the radiation is absorbed by the lead atoms in the sample. The greater the number of atoms there is in the vapour, the more radiation is absorbed. The amount of light absorbed is proportional to the number of lead atoms. A calibration curve is constructed by running several samples of known lead concentration under the same conditions as the unknown. The amount the standard absorbs is compared with the calibration curve and this enables the calculation of the lead concentration in the unknown sample.

Consequently an atomic absorption spectrometer needs the following three components: a light source; a sample cell to produce gaseous atoms; and a means of measuring the specific light absorbed.

The light source

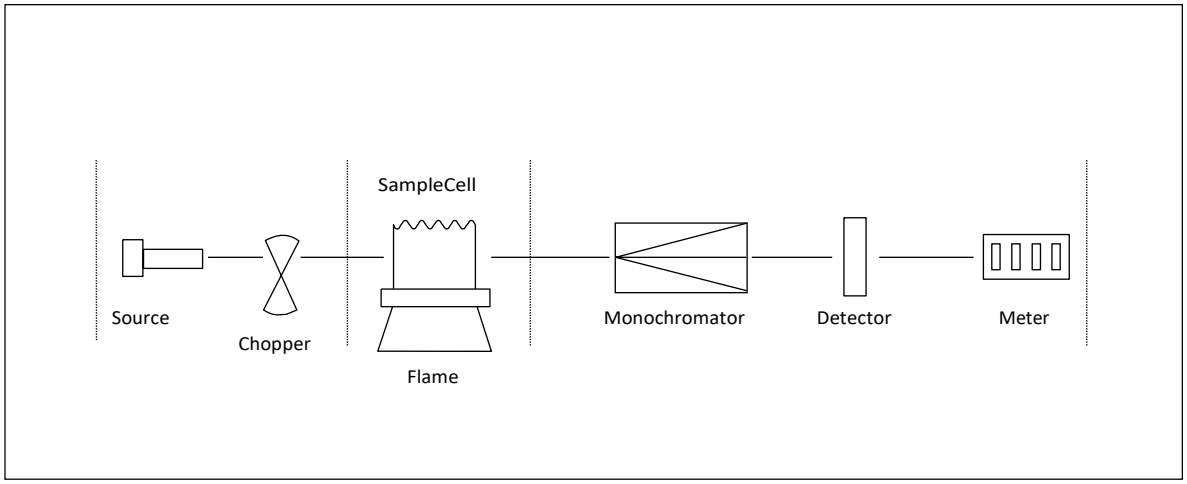
The common source of light is a ‘hollow cathode lamp’. This contains a tungsten anode and a cylindrical hollow cathode made of the element to be determined. These are sealed in a glass tube filled with an inert gas- e.g neon or argon- at a pressure of between 1 Nm^{-2} and 5 Nm^{-2}.

The ionization of some gas atoms occurs by applying a potential difference of about 300-400V between the anode and the cathode. These gaseous ions bombard the cathode and eject metal atoms from the cathode in a process called sputtering. Some sputtered atoms are in excited states and emit radiation characteristic of the metal as they fall back to the ground state – *eg*Pb* →Pb + *h* ν. The shape of the cathode concentrates the radiation into a beam which passes through a quartz window, and the shape of the lamp is such that most of the sputtered atoms are redeposited on the cathode. A typical atomic absorption instrument holds several lamps each for a different element. The lamps are housed in a rotating turret so that the correct lamp can be quickly selected.



The optical system and detector

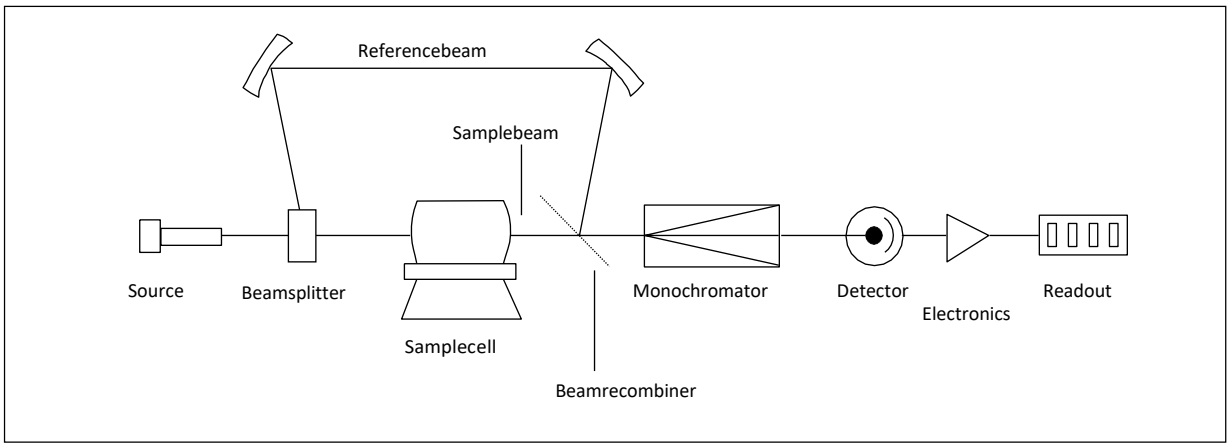
A monochromator is used to select the specific wavelength of light –i.e spectral line – which is absorbed by the sample, and to exclude other wavelengths. The selection of the specific light allows the determination of the selected element in the presence of others. The light selected by the monochromator is directed onto a detector that is typically a photomultiplier tube. This produces an electrical signal proportional to the light intensity



Double beam spectrometers

Modern spectrometers incorporate a beam splitter so that one part of the beam passes through the sample cell and the other is the reference . The intensity of the light source may not stay constant during an analysis. If only a single beam is used to pass through the atom cell, a blank reading containing no analyte (substance to be analysed) would have to be taken first, setting the absorbance at zero. If the intensity of the source changes by the time the sample is put in place, the measurement will be inaccurate. In the double beam instrument there is a constant monitoring between the reference beam and the light source. To ensure that the spectrum does

not suffer from loss of sensitivity, the beam splitter is designed so that as high a proportion as possible of the energy of the lamp beam passes through the sample.



Atomisation of the sample

Two systems are commonly used to produce atoms from the sample. Aspiration involves sucking asolution of the sample into a flame; and electrothermal atomisation is where a drop of sample is placed into a graphite tube that is then heated electrically.

Some instruments have both atomisation systems but share one set of lamps. Once the appropriate lamp has been selected, it is pointed towards one or other atomisation system.

Flame aspiration

Ethyne/air (giving a flame with a temperature of 2200–2400°C) or ethyne/dinitrogen oxide (2600– 2800°C) are often used. A flexible capillary tube connects the solution to the nebuliser. At the tip of the capillary, the solution is ‘nebulised’ –ie broken into small drops. The larger drops fall out and drain off while smaller ones vaporise in the flame. Only ca 1% of the sample is nebulised.

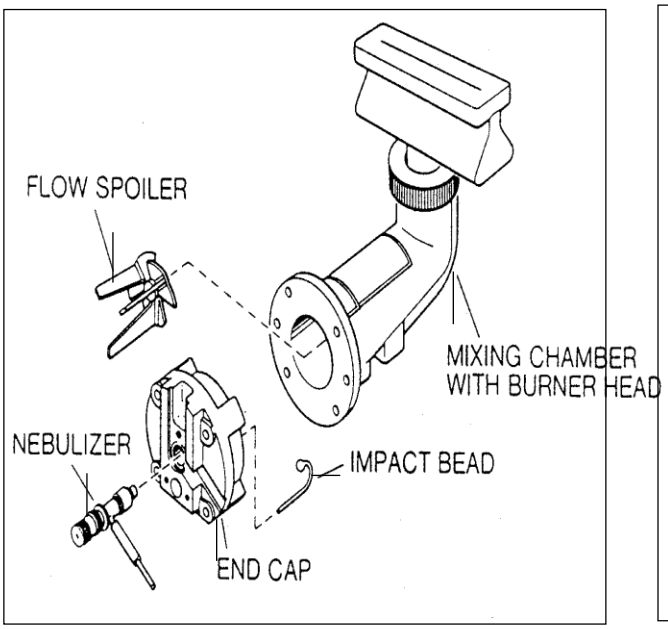


Figure 1

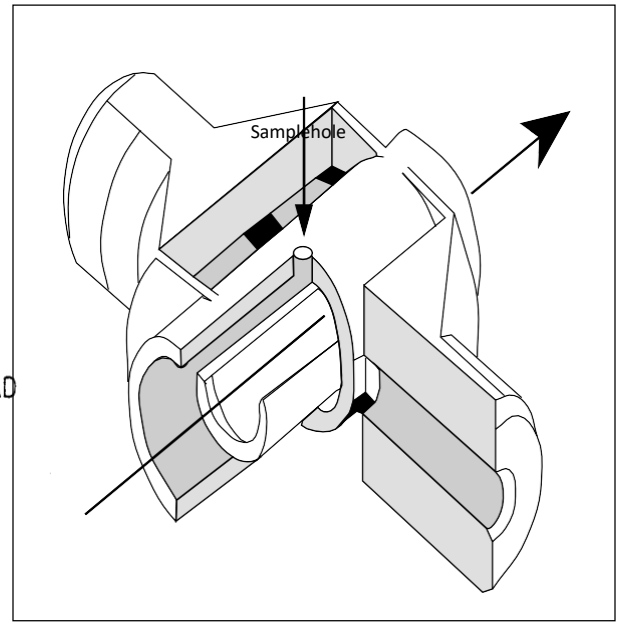


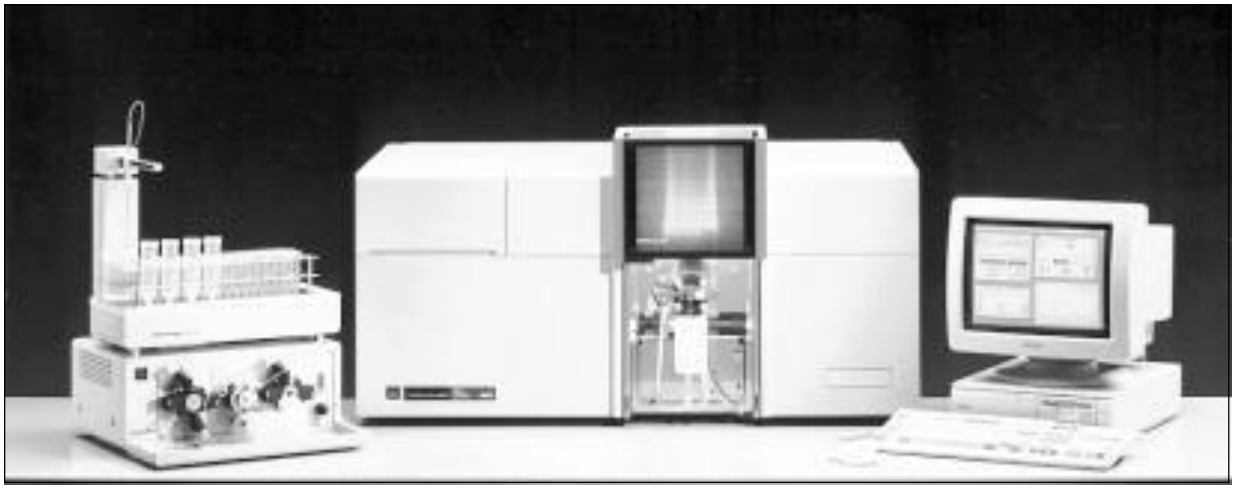
Figure 2

Electro-thermal atomization

25 µl of sample (ca 1/100th of a raindrop) is placed through the sample hole and onto the platform from an automated micropipette and sample changer. The tube is heated electrically by passing a current through it in a pre-programmed series of steps. The details will vary with the sample but typically they might be 30–40 seconds at 150°C to evaporate the solvent, 30 seconds at 600°C to drive off any volatile organic material and char the sample to ash, and with a very fast heating rate (ca 1500 °C s^{-1}) to 2000-2500°C for 5–10 seconds to vaporise and atomise elements (including the element being analysed). Finally heating the tube to a still higher temperature –ca 2700°C – cleans it ready for the next sample. During this heating cycle the graphite tube is flushed with argon gas to prevent the tube burning away. In electrothermal atomisation almost 100% of the sample is atomised. This makes the technique much more sensitive than flame AAS.

Sample preparation

Sample preparation is often simple, and the chemical form of the element is usually unimportant. This is because atomisation converts the sample into free atoms irrespective of its initial state. The sample is weighed and made into a solution by suitable dilution. Elements in biological fluids such as urine and blood are often measured simply after a dilution of the original sample.



When making reference solutions of the element under analysis, for calibration, the chemical environment of the sample should be matched as closely as possible –i.e. the analyte should be in the same compound and the same solvent. Teflon containers may be used when analyzing very dilute aolutions because elements such as lead are sometimes leached out of glass vessels and can affect the results

Background absorption

It is possible that other atoms or molecules apart from those of the element being determined will absorb or scatter some radiation from the light source. These species could

include unvaporised solvent droplets, or compounds of the matrix (chemical species, such as anions, that tend to accompany the metals being analysed) that are not removed completely. This means that there is a background absorption as well as that of the sample.

One way of measuring and correcting this background absorption is to use two light sources, one of which is the hollow cathode lamp appropriate to the element being measured. The second light source is a deuterium lamp.

The deuterium lamp produces broad band radiation, not specific spectral lines as with a hollow cathode lamp. By alternating the measurements of the two light sources – generally at 50 –100 Hz – the total absorption (absorption due to analyte atoms plus background) is measured with the specific light from the hollow cathode lamp and the background absorption is measured with the light from the deuterium lamp. Subtracting the background from the total absorption gives the absorption arising from only analyte atoms.

Calibration

A calibration curve is used to determine the unknown concentration of an element –*eg* lead – in a solution.The instrument is calibrated using several solutions of known concentrations.A calibration curve is produced which is continually rescaled as more concentrated solutions are used – the more concentrated solutions absorb more radiation up to a certain absorbance. The calibration curve shows the concentration against the amount of radiation absorbed in the given figure.(a) The sample solution is fed into the instrument and the unknown concentration of the element-e.g. lead- is then displayed on the calibration curve given in the below figure.(b)

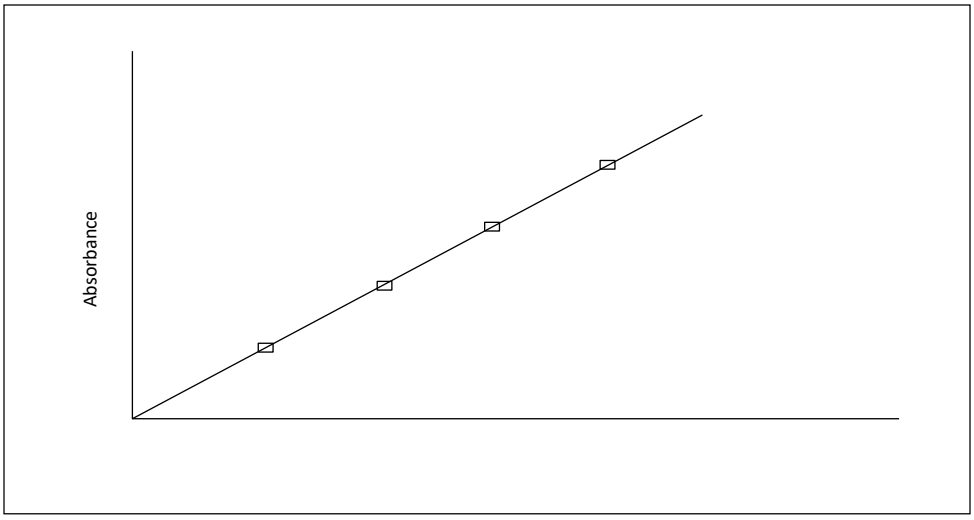


Figure (a)

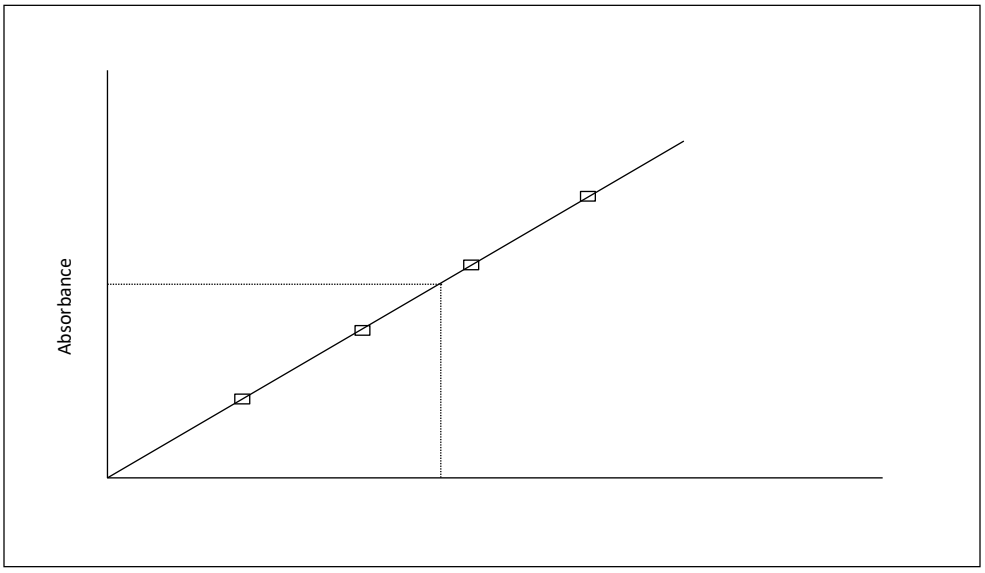


Figure (b)

Interferences and matrix modification Other chemicals that are present in the sample may affect the atomisation process. For example, in flame atomic absorption, phosphate ions may react with calcium ions to form calcium pyrophosphate. This does not dissociate in the flame and therefore results in a low reading for calcium. This problem is avoided by adding different reagents to the sample that may react with the phosphate to give a more volatile compound that is dissociated easily. Lanthanum nitrate solution is added to samples containing calcium to tie up the phosphate and to allow the calcium to be atomised, making the calcium absorbance independent of the amount of phosphate. With electrothermal atomisation, chemical modifiers can be added which react with an interfering substance in the sample to make it more volatile than the analyte compound. This volatile component vaporises at a relatively low temperature and is removed during the low and medium temperature stages of electrothermal atomisation.

COURTESY: *The Education Department, The Royal Society of Chemistry, Burlington House, Piccadilly, London W1J 0BA. (The Royal Society of Chemistry Fine Chemicals and Medicinals Group).*

Atomic absorption spectrometer (THERMO Scientific iCE-3000)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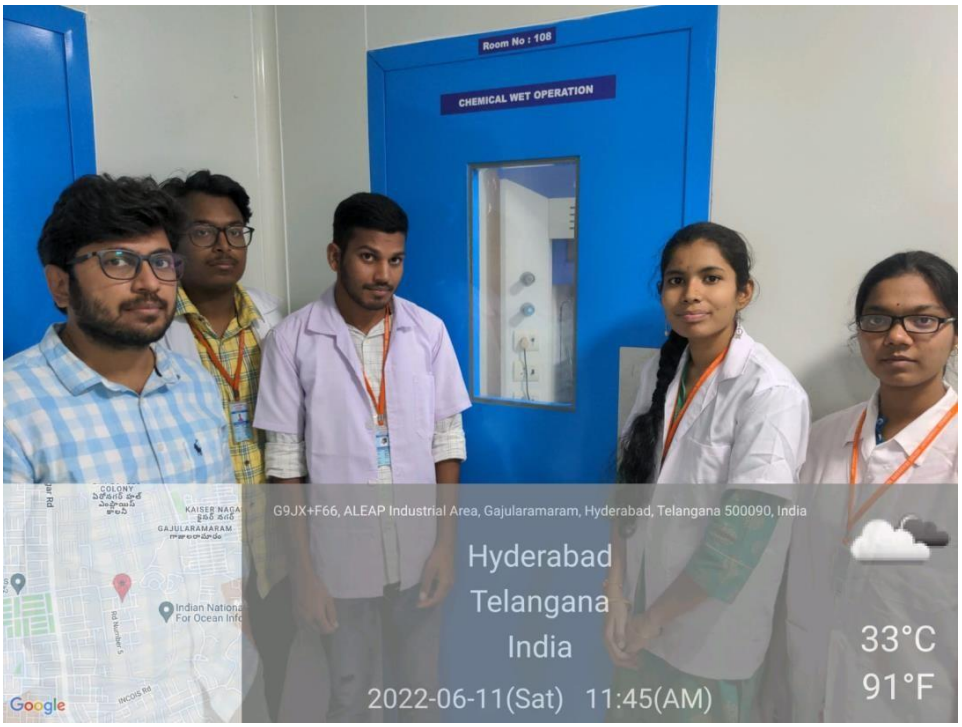
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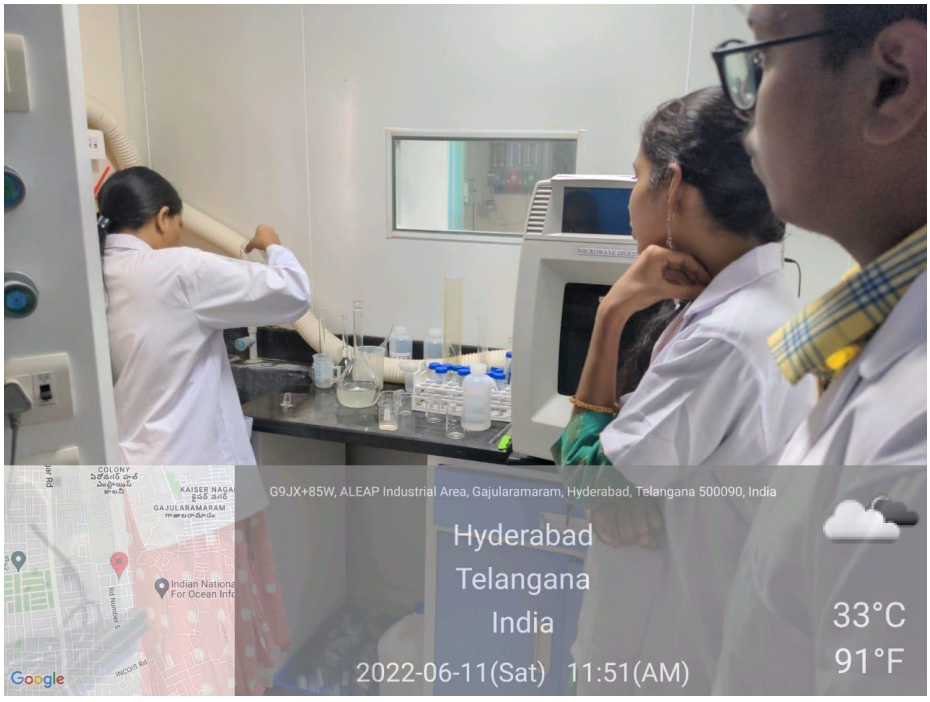
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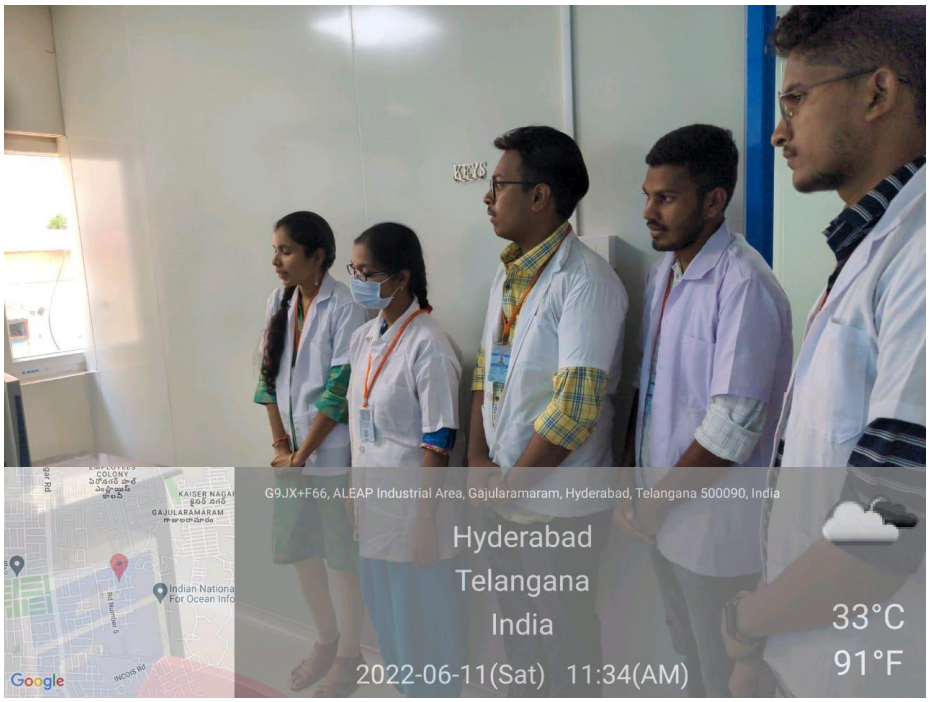
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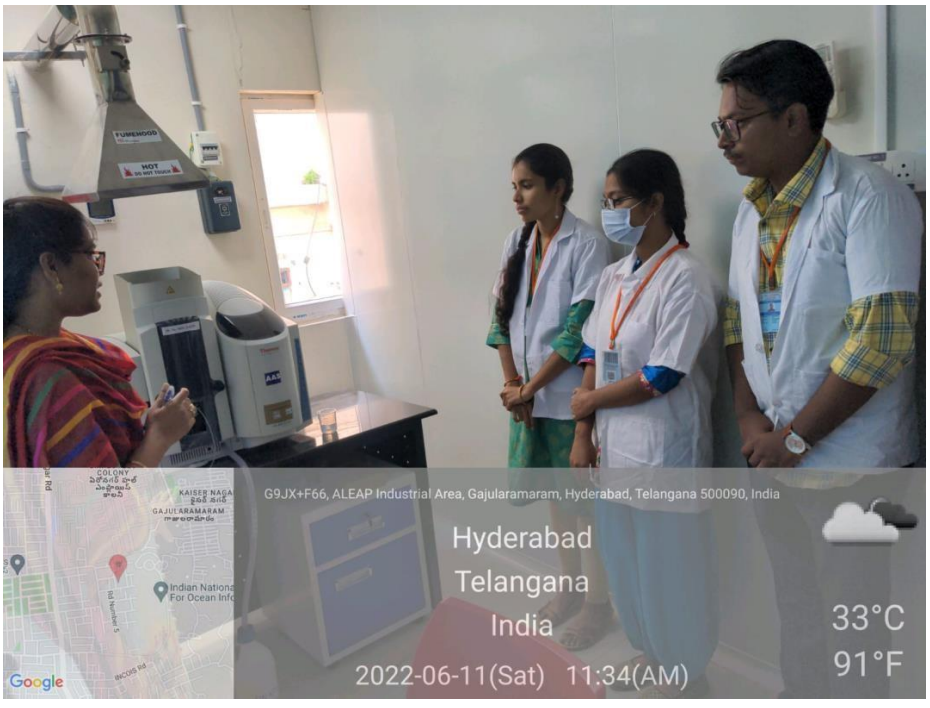
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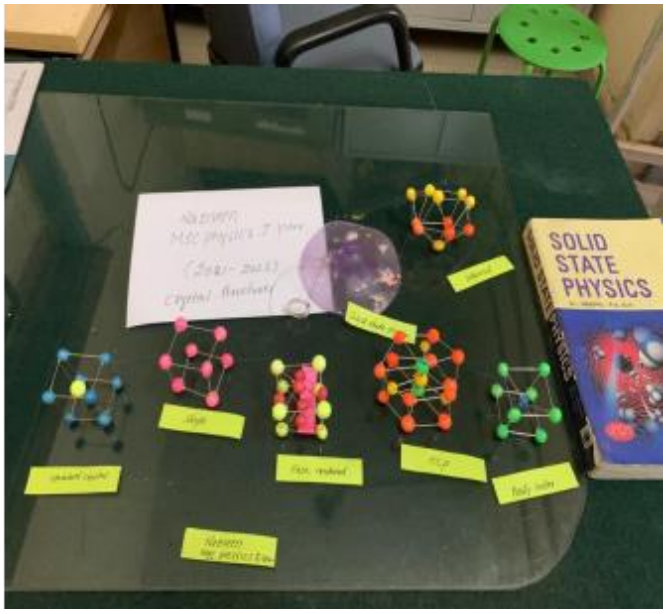
Model Building:

Department of Physics:

Crystal Models: M.Sc. Physics I yr Student Ayesha Nazneen has made models of various crystal structures using Ball and Stick method.



PRACTICALS:

CHEMISTRY DEPARTMENT: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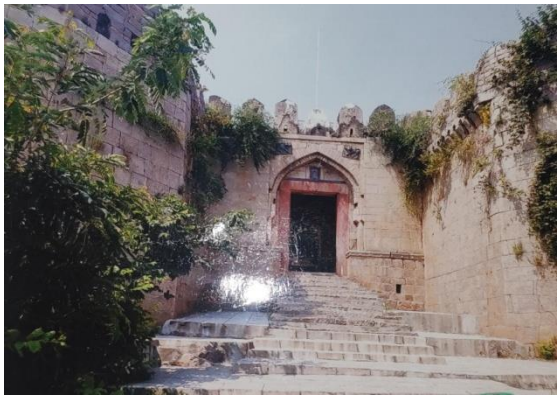
VISTING OF HISTORICAL MANUMENTS/FIELD TRIPS:

Department of History
Tara Government College, Sangareddy
(Autonomous)
2017- 2018

The Department of History organized a Educational field trip on **20th December 2017**. As part of this, Students visited the **historic fort in Medak**, **the Koneti well** near the fort, Medak Church. Twenty students took part in the tour.



Medak Fort is one of the important forts built by the Satavahana and Kakatiya emperors in their vast empire. The fort is a natural formation for the town of Medak. It is built on a 500 feet high hill.

The fort was built by the Kakatiya Emperor Prataparudra II. But during the Satavahana rule, Medak was known as Methuku Fort. The Nawabs of Golconda used to call Medak as Gulshanabad.

Kings are gone, kingdoms are gone. But there is no doubt that the fort of Medak stands as a witness to the history of that time. The students witnessed the fort and were amazed to see the endangered prisons, granaries, wells and the crumbling fort walls.

The students got a lot of experience when they saw the four unique structures in the fort and the skill of the citizens in their demolition.

From the top of the fort, one can enjoy the view of the town of Medak, which stretches for 10 km, the Medak Church next to the fort, the Indian-shaped pond built during the Kakatiya period, and the largest Christian spiritual center in Asia.

The Department of History organized a Educational field trip on **22th December 2017**.As part of this, Students visited **Medak Church**. Twenty students took part in the tour.

Medak Cathedral is one of the most visited churches in South India, which was built by Charles Walker Fasnet of British Wesleyan Methodists and consecrated on 25 December 1924. It is the single largest diocese in Asia and the second-largest in the world after the Vatican located in Medak town.

Medak Cathedral is the seat of the Bishop in Medak for the Church of South India (comprising Wesleyan Methodist, Congregational and Anglican missionary societies). The church complex is an Architectural Marvel spread in more than 300 acres. The cathedral is 100 ft (30 m) wide and 200 ft (61 m) long, and conforms to the Gothic Revival style and can accommodate about 5,000 people at a time.

The mosaic tiles were imported from Britain and Italian masons were engaged for laying the decorative flooring. Massive pillars built with fine-hewn and well-dressed grey stone support the gallery and the whole edifice. The roof of the church is made sound-proof by means of hollow sponge material and has an impressive style of vaulting. The bell-tower is 175 ft (53 m) high and visible from few miles.

The biggest attraction of the Cathedral is its stained glass windows depicting different scenes from Christ's life – Ascension behind the altar, Nativity in the west transept, and Crucifixion in the east transept. This magnificent Cathedral is the quintessence of impeccable craftsmanship and attracts more than three million tourists per annum fromacross the country.

The Department of History organized a Educational field trip on **2nd January 2018**.As part of this, Students visited **Yedupayala**. Twenty students took part in the tour.

The specialty of this temple is it is formed with the names of seven sages who are famous in the Indian mythology and the names are Jamadagni, Atri, Kasyapa, Viswamitra, Vasistha, Bharadwaja and Gowtama and a feast is celebrated every year during the time of Shiva Ratri and the name of that feast is Seven Payala jaatara.

This temple is formed in the 12th century. The goddess Durga (Vanadurga) is originated first in the Paapanna Pet Mandalam at Nagsanpalli region out skirts. The feast is celebrated for one week every year starting from the Shiva Ratri season. Once upon a time this area is

very silent with no population and human being wandering there but after the origin of this Durga temple, the Seven branches of river Manjeera became very famous with a number of devotees. The idol of the goddess is situated in the middle of these 7 rivulets 3 front and four back.

Every year more than 20 lakh people worship goddess vanadurga and do customary bath in the 7 rivers and pray the goddess vanadurga for the good cultivation and better living in the time of shivaratri and durgashtami. Here thousands of devotees pitch up their makeshift tents around the temple for three days jaatara of goddess vanadurga devi. Here thousands of devotee give cut (Bali) of sheep and hen as a nivedana to the goddess to fulfil their wishes.

The festival begins on the day of Sivaratri and is followed by Bandi Utsavam where hundreds of decorated bullock carts from 32 villages go around the temple and concludes with the rathothsavam. Every year, around thirty lakhs of devotees worship the Goddess Durga. To watch this occasion the devotees not only from our country come here but from various parts of the country come to worship goddess Durga. The Manjeera River which had its origin at Beedar and flowing at Medak and Nizamabad districts is acting as the sub division of the river.

The Department of History organized a Educational field trip on **10th January 2018**.As part of this, Students visited **"Arts College, Osmania University**. 11 students took part in the tour.

Educators Raput Yar Jung and Jamaluddin Afghani were instrumental in establishing a regional language university in the Kingdom of Hyderabad. About 1913 Darul ul Utam College students formed the "Old Boys' Association" and submitted a petition to the Nizam King requiring the university, which the Nizam King discussed with his finance minister, Sir Akbar Haider, and approved the name "Osmania University".

Mir Osman Ali Khan VII issued Farmana on August 28, 1918 to establish the university on 1400 acres. Determining its exact location, the king issued an edict on August 7, 1919. University classes also began in the rented houses in Abids. Although the university began teaching in Urdu, English was still shared as a definite subject in the arts and sciences.

Nawab Jain Yang and Syed Ali Raja, two prominent Hyderabad sculptors, combined Jasper's sculpture create a design for the construction of the university. Fascinated by Jasper's design, he was brought to Hyderabad; he designed a mix of ancient Hindu, medieval Muslim and modern European buildings, starting in 1934 and completing in 1933.

The students were very happy to see the university building. And decided to learn the historical background of that university and begin their efforts for higher studies.

The Department of History organized a Educational field trip on **27th January 2018**.As part of this, Students visited **Salarjung Museum, Hyderabad.** 12 students took part in the tour.

The Salar Jung Museum was established in the year 1951 and is located on the southern bank of the River Musi in Hyderabad, Telangana State of India. The Salar Jung family is responsible for its collection of rare art objects from all over the world.

Situated on the southern banks of Musi River, the Salarjung Museum has a unique distinction as the third largest museum in India and has a worldwide fame for its biggest one-man collections of antiques. It is widely known in India for its prized collections dating back to different civilizations.

The Department of History organized a Educational field trip on **17th February 2018**.As part of this, Students visited **Archaeological Museum , Kondapur.** Twenty students took part in the tour.

Kondapur is Koundinyapuram, a prosperous trading centre during the Satavahana period. The museum here shows tourists a glimpse into the culture of the day. Excavations have unearthed symbols, minted coins and gilded coins dating back to the reign of the kings who ruled the region from 37 BC to 14 AD.
The city flourished as an important town. Archaeological excavations have uncovered many ancient artefacts during the V Satavahana period.

Gold coins printed by the Roman emperor Pontif Augustine are also found here. The museum also houses a Tiberian medal of the Roman emperor, antiques, coins, earthenware, earthenware, and droplets.

The excavations made at Kondapur have brought to light the remains of the Satavahana dynasty and the Buddhist era . The exhibits from this museum are basically retrieved from an ancient mound locally known as Kotagadda (Fort Mound) located at a distance of one km east of the museum . The Archaeological Museum Kondapur site was first explored by the famous Archaeologist Mr. Henry Cousens in the early years of the 19th century . Later it was passed on to the Department of Archaeology of the erstwhile Hyderabad State under H.E.H. the Nizam of Hyderabad who carried on a series of excavations at this mound in 1940 .

The Kondapur Museum is located at a distance of 16 km from Sangareddy, the district headquarters. It can also be reached by traveling 7 km from Peddapur Junction on National Highway 9. If the museum is further developed as it is just 60 km away from the city of Hyderabad, it is likely to attract a large number of tourists.

2019-2020

The Department of History organized a Educational field trip on **4th February 2020**.As part of this, Students visited **Salar Jung Museum, Hyderabad.** 16 students took part in the tour.

The Salar Jung Museum was established in 1951. The major portion of the collection of the museum was acquired by Mir Yousuf Ali Khan, popularly known as Salar Jung III.The Salar Jung Museum was established in the year 1951 and is located on the southern bank of the River Musi in Hyderabad, Telangana State of India. The Salar Jung family is responsible for its collection of rare art objects from all over the world.
Salar Jung Museum is semicircular shaped with an imposing white structure, that showcase decades of regality and richness. This magnificent building is further divided into 38 galleries which are spread over two floors.

It comprises of three buildings, namely Eastern Block (Mir Laiq Ali Khan Bhavan), Western Block (Mir Turab Ali Khan Bhavan) and the Indian Block. Most of the galleries, 27, are in the Indian/ Central Block of the museum. The Western Block of the museum has 7 galleries while the Eastern Block houses 4 galleries.

There are also many other sections situated inside the monument such as Photo section, Education Wing, Chemical Conservation Laboratory and a Display section. This is in addition to a reception center and a Sales counter.

With a collection of close to 43000 art objects, 9000 manuscripts and 47000 printed books, Salar Jung Museum promises a rich experience to all its visitors. The museum has 38 galleries which are spread over two floors. An impressive number of around 13,654 objects are being displayed in all the 37 galleries of Salar Jung Museum.

The collection in the museum consists of Indian Art, Far Eastern Art, European Art, Children Art, Middle Eastern Art, as well as Founders gallery and rare manuscript section. One of the major attractions of the museum is the 19th Century British Musical Clock. This clock was sold by Cooke and Kelvey of England.

The Department of History organized a Educational field trip on **15th February 2020**.As part of this, Students visited **Dr. Y. S.Rajashekara Reddy state museum, Hyderabad.**

Telangana State Archaeology Museum or Hyderabad Museum is a museum located in Hyderabad, India. It is the oldest museum in Hyderabad. Archaeologist Henry Cousens first explored the site in the beginning of the 19th century, and around 1940 the mound was excavated under the supervision of Nizam of Hyderabad. The excavated items were placed in a museum built on the ancient site. In 1952, the museum's contents were moved to the current building, under the administrative control of Archaeological Survey of India.

In 1930, (Nizam VII) Mir Osman Ali Khan, who wanted to preserve the Hyderabad's state's heritage, had named the museum as Hyderabad Museum.

It was named as Andhra Pradesh State Archaeology Museum in 1960.

In 2008, a sword belonging to the Nizam and other artefacts were stolen from the museum.

After the bifurcation of Andhra Pradesh and Telangana in 2014, the museum was renamed Telangana State Archaeology Museum.
This museum's main attraction is its Egyptian mummy of Princess Naishu which was brought in 1930 to Hyderabad by Nasir Nawaz Jung, the son-in-law of Asaf Jah VI. He presented it to the Asaf Jah VII, who donated it to the museum.[6] He had reportedly bought it for 1000

pounds.[7] It is one of the six Egyptian mummies in India, the others being in Lucknow, Mumbai, Vadodara, Jaipur, and Kolkata.

The mummy, which previously was deteriorating, was restored in 2016 and placed in an oxygen-free case.
There is a huge gallery on Buddha dating back to the last century. The museum has a wide variety of archaeological artifacts from the Nizam and Kakatiya dynasty.

2020-2021

The Department of History organized a Educational field trip on **26th November 2020**.As part of this, Students visited **Archaeological Museum Kondapur, Sangareddy District. 3**students took part in the tour.

The excavations made at Kondapur have brought to light the remains of the Satavahana dynasty and the Buddhist era. The exhibits from this museum are basically retrieved from an ancient mound locally known as Kotagadda (Fort Mound) located at a distance of one km east of the Archaeological Museum Kondapur site was first explored by the famous Archaeologist Mr. Henry Cousens in the early years of the 19th century. Later it was passed on to the Department of Archaeology of the erstwhile Hyderabad State under H.E.H. the Nizam of Hyderabad who carried on a series of excavations at this mound in 1940.

Initially, the museum was established with the excavated material over the ancient site itself which was later shifted to the present building. In 1952 the museum came under the administrative control of the Archaeological Survey of India. Most of the artefacts displayed in the museum have been unearthed during this period. The Archaeological Museum Kondapur contains about 8,100 antiquities at present. The museum has a central hall and two more galleries, it has a rich collection of minor antiquities unearthed during 1940-1942.

The museum houses the coins of the Satavahana , the remains of Chaityas , and Stupas indicating the Kondapur as a great Buddhist center and also bead pieces of Terracota bangles , Shell , Ivory , Copper , and Glass embossed with designs . The Museum has a large number of antiquities displayed , it indicates different facets of the material culture of the early historic period such as pottery , terracotta figurines , bone and shell objects , metal objects , talismans , pendants , beads , inscribed pottery , and coins , etc. Coins were unearthed from the Fort Mound belonging to various different dynasties and cultures are displayed here . The gold coin belonging to the Roman Emperor Augustus of 37 BC and 14 AD , along with a dozen silver coins and 50 lead coins are on display at the Museum .

The Archaeological Museum Kondapur also displays a wide collection of construction material like brick tiles, sharpening stones, moulded bricks , and designed panels that are displayed in the main hall . Prehistoric tools and fossils are exhibited in the galleries. Apart from these objects , a couple of sculptures , a Buddhapada , a standing image of four - handed Vishnu carved on a door jamb , and two inscribed storage jars are other attractive pieces in this gallery . The Archaeological Museum also displays Ajanta paintings and houses a separate manuscript section. The rare manuscripts include a copy of the Quran that carries the seal of Shah Jahan. A corner of the museum is also dedicated to the Egyptian Mummy which was bought for 1000 pounds by the son - in - law of VI Nizam Mahbub Ali Khan and presented to the last Nizam Mir Osman Ali Khan as a gift.

In this way the students expressed a great feeling by visiting this historic area. After the visit, they were both amazed at the importance of history and technology in antiquity. It was decided to solidify the history, its evidence and historical monuments.

HISTORY EXHIBITIONS:

Department of history regularly conducts history exhibitions to enhance the knowledge of the students by looking at the models of the monuments and old coins.


TARA GOVERNMENT COLLEGE
SANGAREDDY, MEDAK DISTRICT
DEPARTMENT OF HISTORY
Date : 07-02-2019
Programme : HISTORICAL EXHIBITION

MAKING OF CLAY IDOLS OF GANESHA BY ECO CLUB:

ECO FRIENDLY GANESH IDOLS DISTRIBUTION ON 09-09-2021

Eco friendly clay idols of Lord Ganesh were distributed among the staff as a **BEST PRACTICE OF ECO CLUB**.

Objectives: The basic idea of this best practice is to respect the environment. Ganesh Chaturthi is a festival which is celebrated all over India to worship Lord Ganesh, is becoming more eco-friendly nowadays. Generally, Ganesh murties are made of Plaster of Paris, are immersed in water after Ganesh Chaturthi, which harms the water bodies. Many of the people are practicing the eco-friendly Idol during Ganesh Chaturthi.

Eco-friendly Ganesh Murties are made of organic soil/mud, natural colours. Being responsible future citizens, students can accomplish something for our environment. Plaster of Paris is non-biodegradable made of poisons and unsafe colours and it severely pollutes the sea-going life and water bodies. To spare and secure our nature, we should hold hands and do our bit, and go for eco-friendly items.

Numerous campaigns are performed to make awareness on conserving the environment through different mediums.

The following are the significant outcomes expected by utilizing eco-accommodating Ganesh Murties.

It Saves Our Water Resources: As stated before, Ganesh Chaturthi is celebrated by immersing Ganesh murtis in water. Idols made of Plaster of Paris are non-biodegradable and it will contaminate water by killing the sea-going lives and expanding the corrosive substance of the water. While eco-friendly idols are degradable and they won't hurt any living creatures in the water.

It Protects Human Health: One of the main aspects of why you should use eco-friendly Ganesh Idols is that with unclean and dirty water, people will get infected with dangerous elements. Plaster of Paris and other harmful colours can cause health problems. By worshiping Eco-friendly Idols which are made of organic soil can solve this problem It Helps Avoid Food Poisoning, The components used to design Lord Ganesh contain various metals that pollute the water. Be that as it may, in eco-accommodating Ganesh Idols, while in eco-friendly Idols there are no such poisonous elements are used.

Fake diamonds and glitters: There are numerous sparkles and metals used to make Ganesh Murtis that are harmful to the body when it interacts with it. This can cause allergy and other health problems due to the presence of chemicals. While Eco-friendly Ganesh Idols are not made with any such sparkles.

Eco-friendly is easy to make: If you want a Ganesh Idol made of Plaster of Paris, you may need to rely upon the sculptor. In the case of eco-friendly idols, you can make one yourself with the help of your family members. It spreads more satisfaction and congruity in the family and among the individuals from the family. The family bond is one of the significant factors of bringing home an eco-friendly idol

It is Easily Available: Why you should use eco-friendly Ganesh Idols? Indeed, the answer is simple. Eco-friendly murti can be made with things that are effectively accessible at home. With the increase in the number of people who support or love the environment, eco-friendly Ganesh idols are easily available in the market as well. Along these lines, have a favoured eco-friendly Ganesh Chaturthi by bringing eco-friendly Ganesh idols and conserving nature with going green every Ganesh Chaturthi

How to recognize Eco-friendly Idols: Plaster of Paris Idols are almost very lighter in weight and painted with toxic and shiny colours. While eco-friendly murti is heavier in weight and natural colour are been used to paint them which will help to keep our water bodies clean even after Ganesh Chaturthi.

Eco friendly clay Idols of Lord Ganesh being handed over by respected principal ma’am Smt. Praveena garu to Staff members.

Shri. Dinesh Shukla, A.O., Tara GDC (A), Srd, TS receiving Clay Idol from Principal Madam.

Distribution of Mitti Ganesha

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