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Sarojini Naidu Vanita Maha Vidyalaya

Best Practices by Departments

1. Department of Botany

Best practices & Activities Undertaken:

1. Maintaining eco-club.
2. Maintaining Hydroponic Unit.
3. Project work on various topics such as algal member studies on various water samples, identification of plants through ICT tool plant-net and QR code, assessment of water quality from various lakes of the city, Ethno-medicinal studies, assessment of noise pollution through noise level meter at various places in twin cities.
4. Workshop on grafting.

Expected outcome:

1. Students will be sensitized to growing different plants and to conserving, and hand-on experience with gardening.
2. Leaning new technique of raising soilless plants.
3. Learning various latest e-technologies in learning subject through various apps available like plantnet, QR Code, using instruments estimation of noise levels at various places, and assessing water quality, and ethnomedicinal studies.
4. Will learn horticultural techniques like grafting and gardening tips from the experts.

Supporting Documents and Photographs:

Eco-Club Activity:

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ECO-CLUB
'GIFT A PLANT'
FOR
OCCASIONS
50
Pilea

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GPS Map Camera
Hyderabad, Telangana, India
5-5-902, HIndi Nagar, Ghosha Mahal North, Nampally, Hyderabad, Telangana 500001, India
Lat 17.384645°
Long 78.468914°
29/12/23 12:48 PM GMT +05:30
Google


GPS Map Camera
Hyderabad, Telangana, India
5-5-823, HIndi Nagar, Ghosha Mahal North, Nampally, Hyderabad, Telangana 500001, India
Lat 17.384534°
Long 78.469594°
20/09/22 11:49 AM GMT +05:30
Google

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Hydroponic Unit

Workshop organized for MSc. students with Prof. Gangadhar on practical knowledge on "Grafting techniques" on February 2019.

Guest Lecture on grafting techniques

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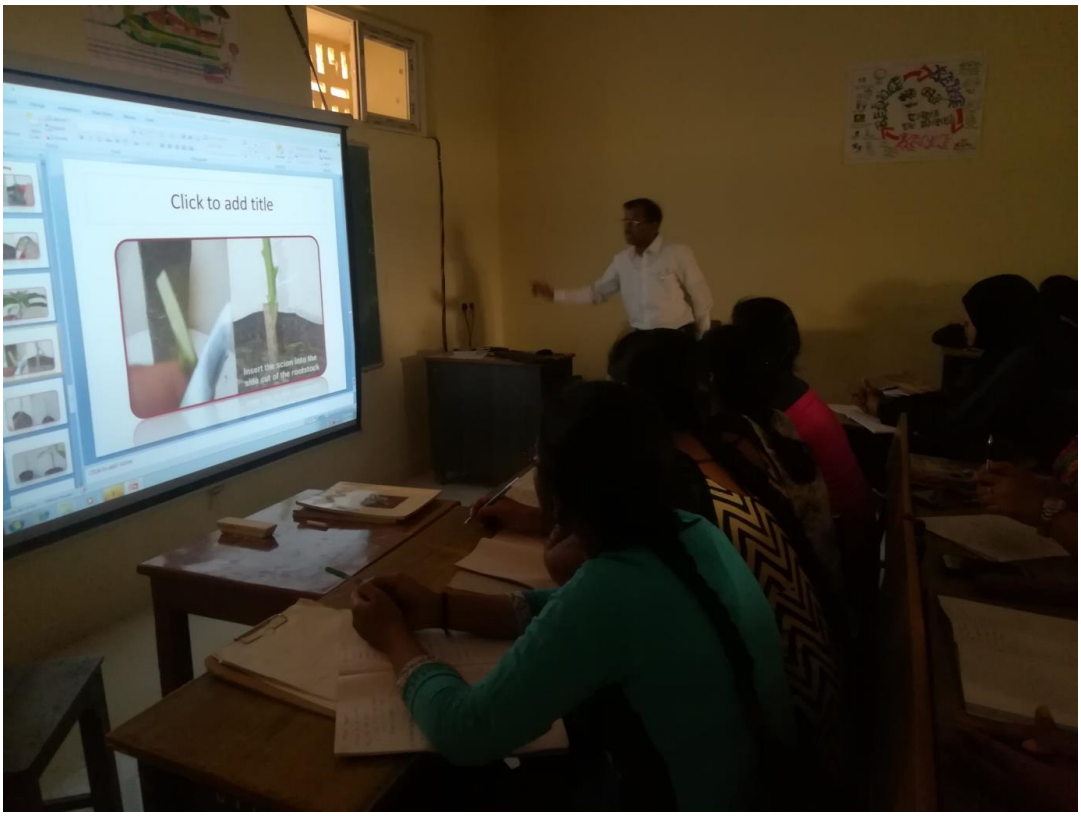

Guest lecture by Prof Gangadhar

Guest lecture on grafting techniques by Prof Gangadhar

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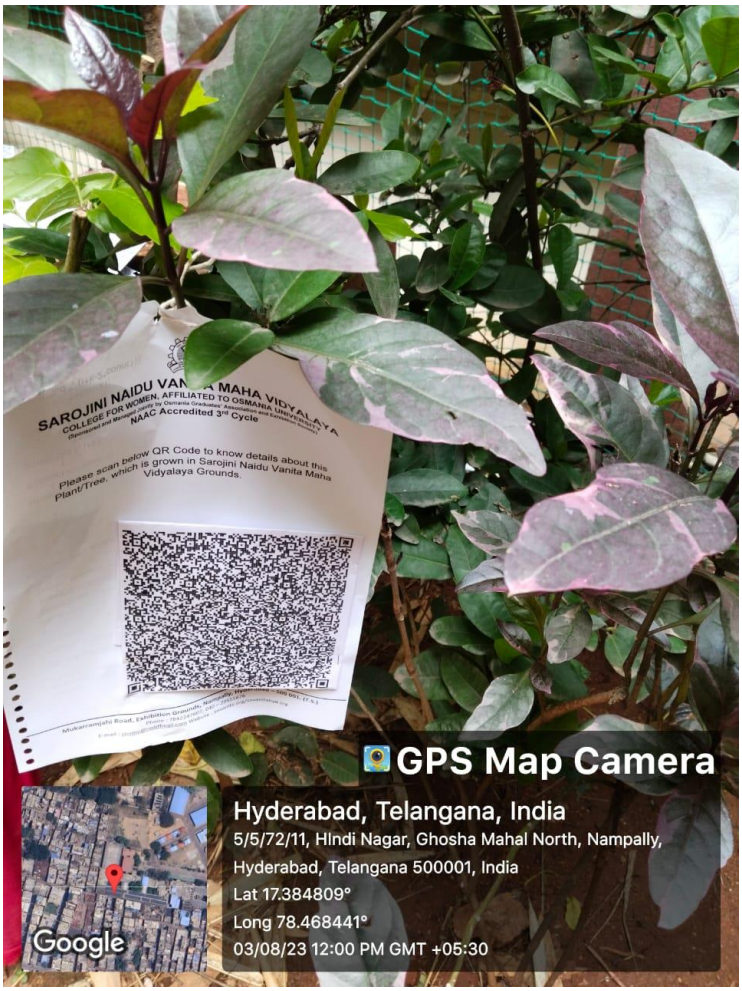

Identification of Plants through QR code (mobile app)

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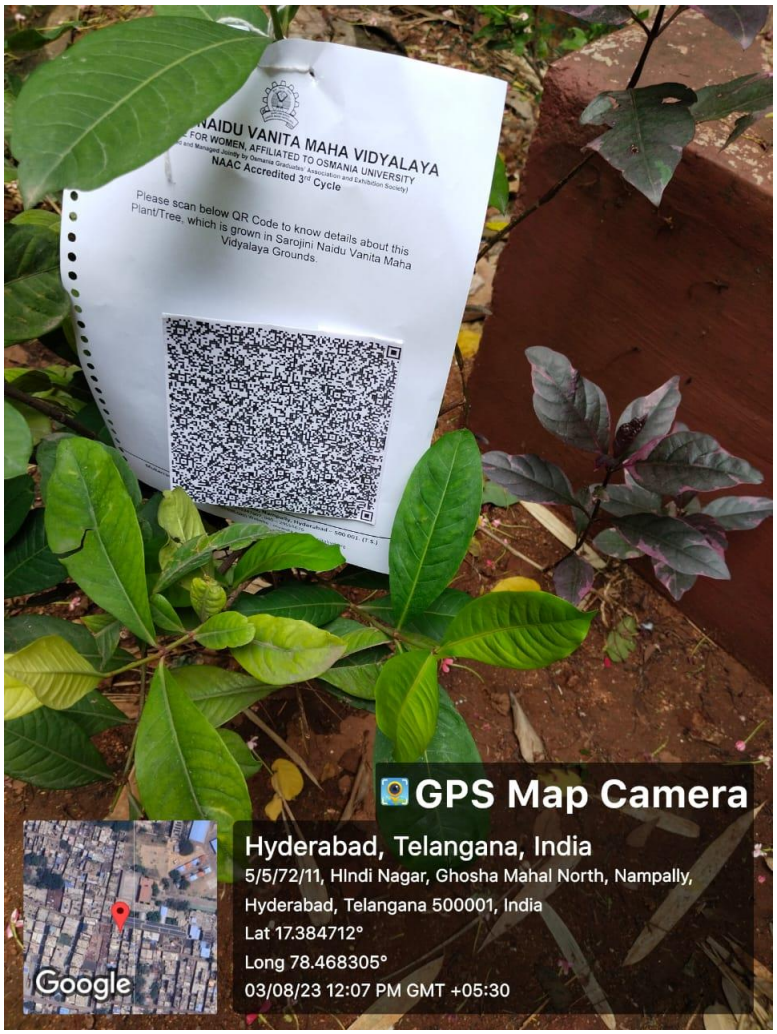

Identification of Plants through Plantnet(Mobile app)

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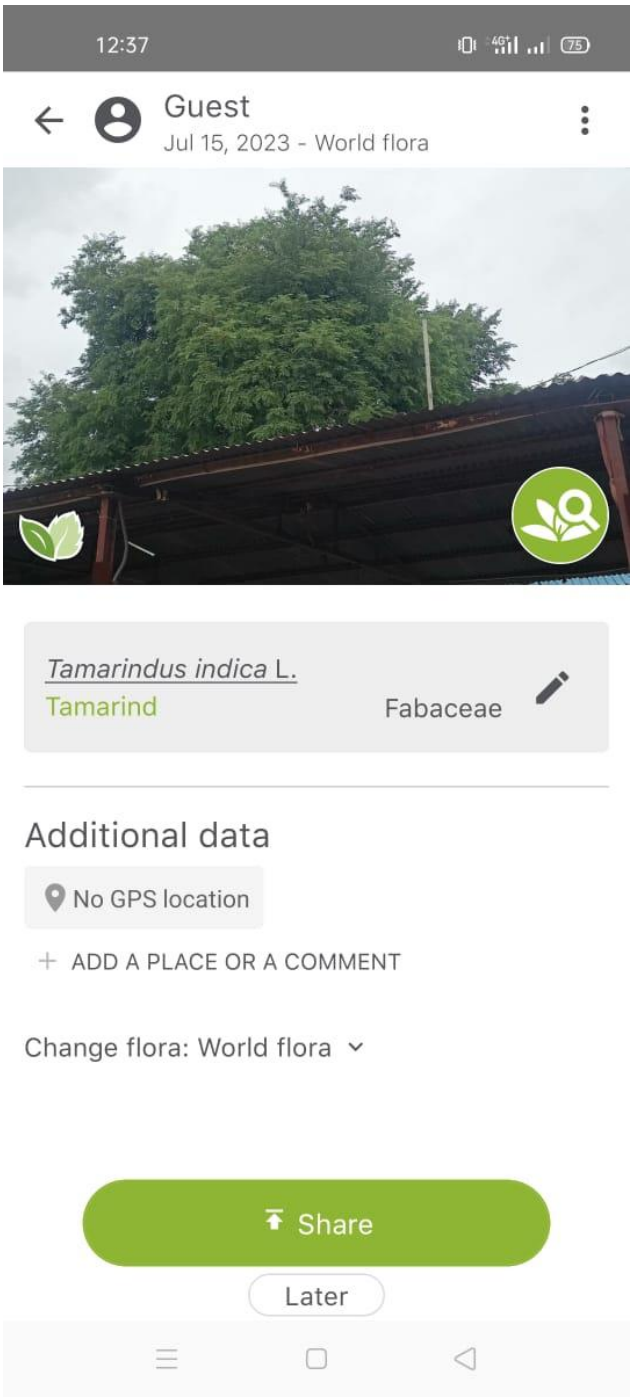
12:37
Guest
Jul 15, 2023 - World flora
Tamarindus indica L.
Tamarind
Fabaceae
Additional data
No GPS location
ADD A PLACE OR A COMMENT
Change flora: World flora
Share
Later

``

12:42

Supriya K

Jul 15, 2023 - World flora

Ruellia tuberosa L.

Minnieroot

Acanthaceae

Additional data

No GPS location

+ ADD A PLACE OR A COMMENT

Change flora: World flora

Share

Later

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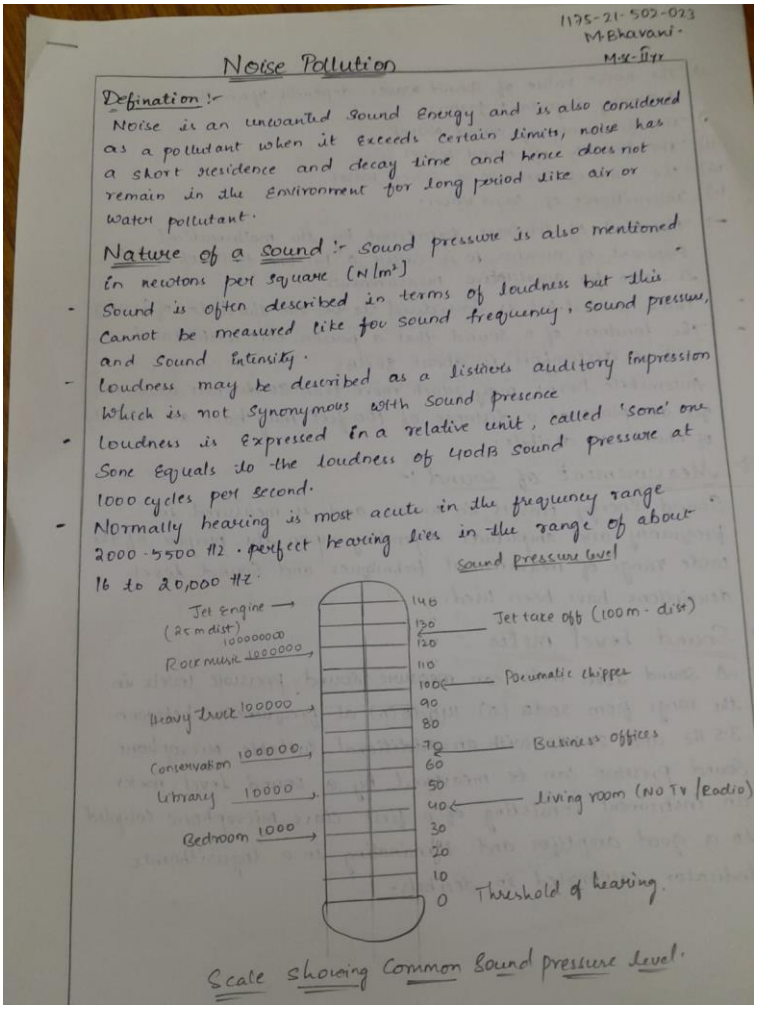
Noise Pollution at certain areas of Hyderabad



1135-21-502-023
M. Bhavani
M.Sc-IInd

Noise Pollution

Defination :-
Noise is an unwanted sound energy and is also considered as a pollutant when it exceeds certain limits, noise has a short residence and decay time and hence does not remain in the environment for long period like air or water pollutant.

Nature of a sound :- Sound pressure is also mentioned in newtons per square (N/m²)

- Sound is often described in terms of loudness but this cannot be measured like for sound frequency, sound pressure, and sound intensity.
- Loudness may be described as a listners auditory impression which is not synonymous with sound presence
- Loudness is expressed in a relative unit, called 'sone' one sone equals to the loudness of 40dB sound pressure at 1000 cycles per second.
- Normally hearing is most acute in the frequency range 2000-5500 Hz. perfect hearing lies in the range of about 16 to 20,000 Hz.

Sound pressure level

Scale showing Common Sound pressure level.

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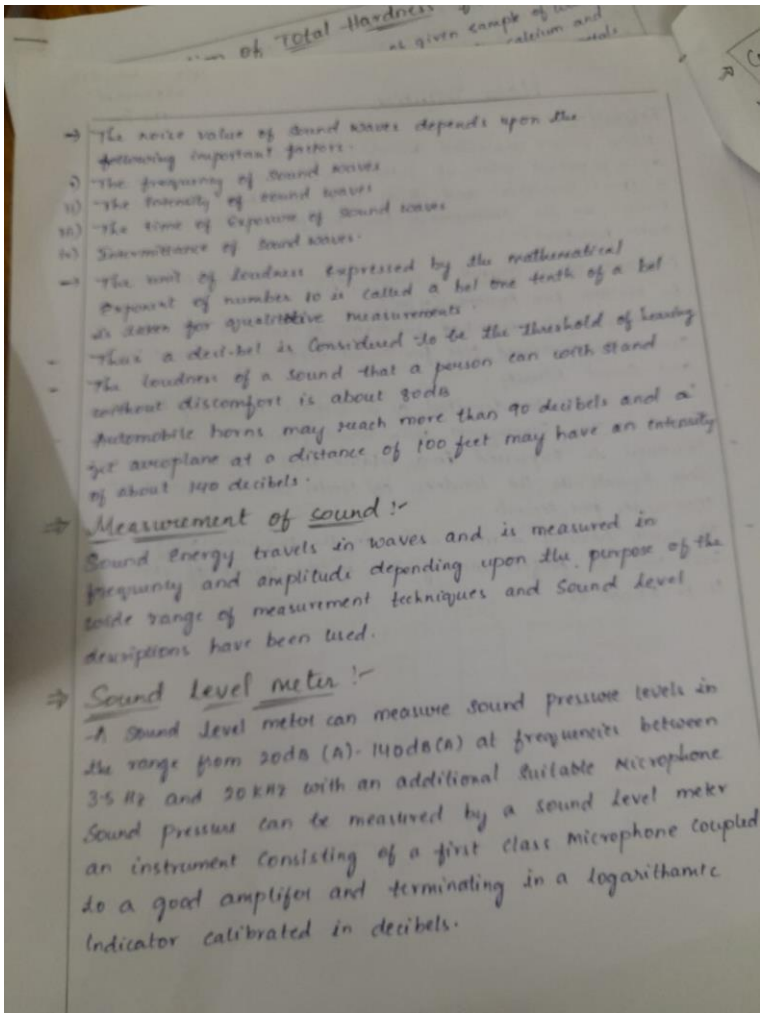


of Total Hardness ... given sample of ... calcium and ...

→ The noise value of sound waves depends upon the following important factors.

i) The frequency of sound waves
ii) The intensity of sound waves
iii) The time of exposure of sound waves
iv) Transmittance of sound waves.

→ The unit of loudness expressed by the mathematical exponent of number 10 is called a bel one tenth of a bel is taken for quantitative measurements.

- Thus a decibel is considered to be the threshold of hearing
- The loudness of a sound that a person can with stand without discomfort is about 80db

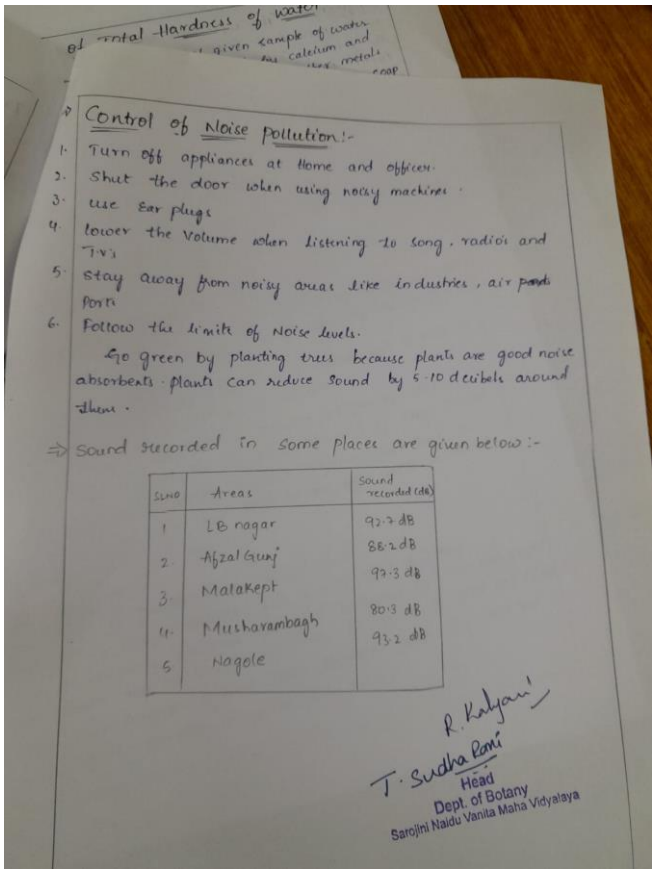
Automobile horns may reach more than 90 decibels and a jet aeroplane at a distance of 100 feet may have an intensity of about 140 decibels.

⇒ **Measurement of sound :-**

Sound energy travels in waves and is measured in frequency and amplitude depending upon the purpose of the wide range of measurement techniques and sound level descriptions have been used.

⇒ **Sound level meter :-**

A sound level meter can measure sound pressure levels in the range from 20dB (A)- 140dB(A) at frequencies between 3.5 Hz and 20 kHz with an additional suitable Microphone Sound pressure can be measured by a sound level meter an instrument consisting of a first class microphone coupled to a good amplifier and terminating in a logarithmic indicator calibrated in decibels.



of ...ntal Hardness of water ... given sample of water ... calcium and ... metals

⇒ **Control of Noise pollution :-**

1. Turn off appliances at Home and offices.
2. Shut the door when using noisy machines.
3. Use Ear plugs
4. Lower the volume when listening to song, radio and TV's
5. Stay away from noisy areas like industries, air ports
6. Follow the limits of Noise levels.

Go green by planting trees because plants are good noise absorbents. Plants can reduce sound by 5-10 decibels around them.

⇒ Sound recorded in some places are given below :-

Sl.No	Areas	Sound recorded (dB)
1	LB nagar	92.7 dB
2.	Afzal Gunj	88.2 dB
3.	Malakpet	92.3 dB
4.	Musharambagh	80.3 dB
5	Nagole	93.2 dB

R. Kalyani

T. Sudha Rani
Head
Dept. of Botany
Sarojini Naidu Vanita Maha Vidyalaya

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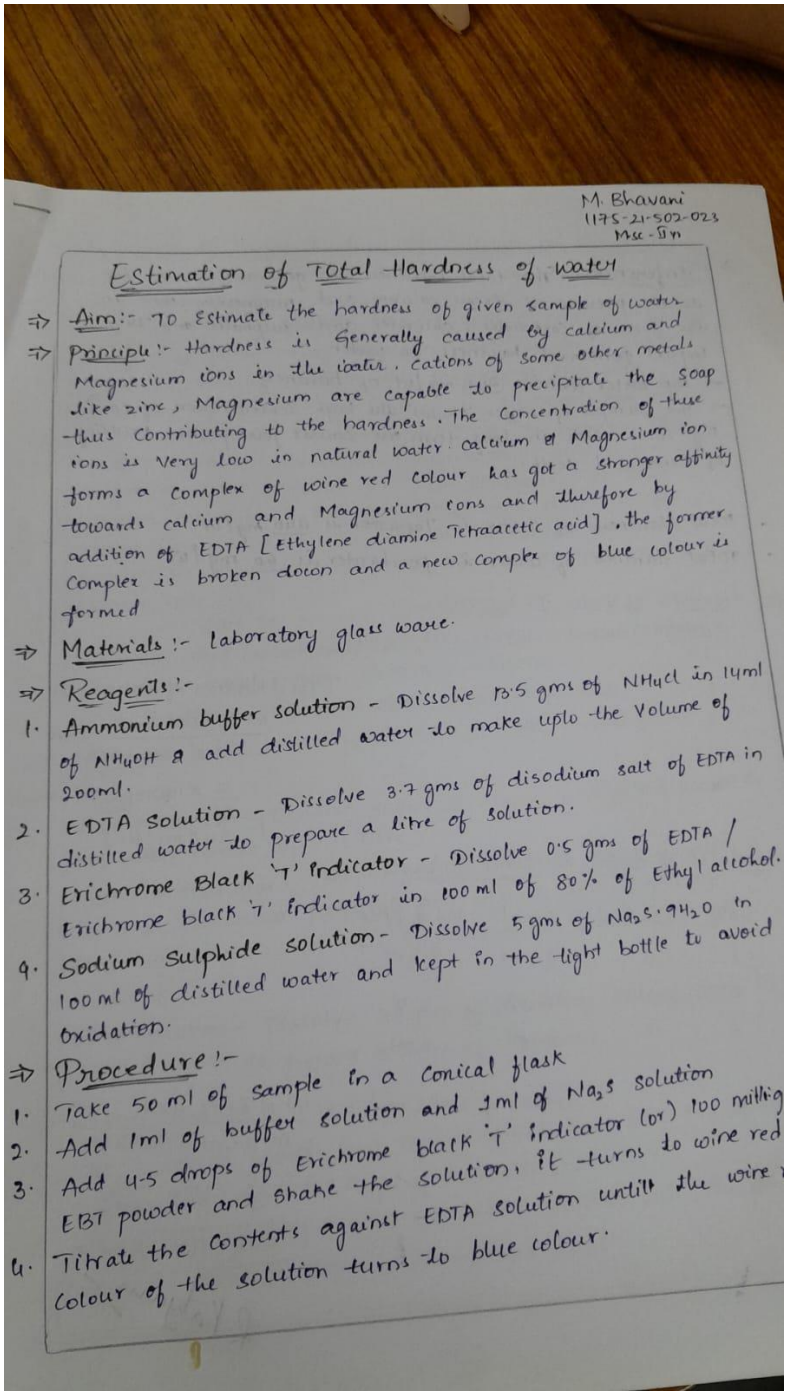
Estimation of Total Hardness of water:



M. Bhavani
1175-21-502-023
Msc-II m

Estimation of Total Hardness of water

⇒ **Aim:-** To Estimate the hardness of given sample of water

⇒ **Principle:-** Hardness is Generally caused by calcium and Magnesium ions in the water. Cations of some other metals like zinc, Magnesium are capable to precipitate the soap thus contributing to the hardness. The Concentration of these ions is very low in natural water. Calcium & Magnesium ion forms a complex of wine red colour has got a stronger affinity towards calcium and Magnesium ions and therefore by addition of EDTA [Ethylene diamine Tetraacetic acid], the former Complex is broken down and a new complex of blue colour is formed

⇒ **Materials:-** Laboratory glass ware.

⇒ **Reagents:-**

1. Ammonium buffer solution - Dissolve 70.5 gms of NH_4Cl in 14ml of NH_4OH & add distilled water to make upto the volume of 200ml.
2. EDTA Solution - Dissolve 3.7 gms of disodium salt of EDTA in distilled water to prepare a litre of solution.
3. Erichrome Black 'T' Indicator - Dissolve 0.5 gms of EDTA / Erichrome black 'T' indicator in 100 ml of 80% of Ethyl alcohol.
4. Sodium Sulphide solution - Dissolve 5 gms of $Na_2S \cdot 9H_2O$ in 100 ml of distilled water and kept in the tight bottle to avoid oxidation.

⇒ **Procedure:-**

1. Take 50 ml of sample in a Conical flask
2. Add 1ml of buffer solution and 1ml of Na_2S solution
3. Add 4-5 drops of Erichrome black 'T' indicator (or) 100 milligm EBT powder and shake the solution, it turns to wine red
4. Titrate the contents against EDTA solution until the wine red Colour of the solution turns to blue colour.

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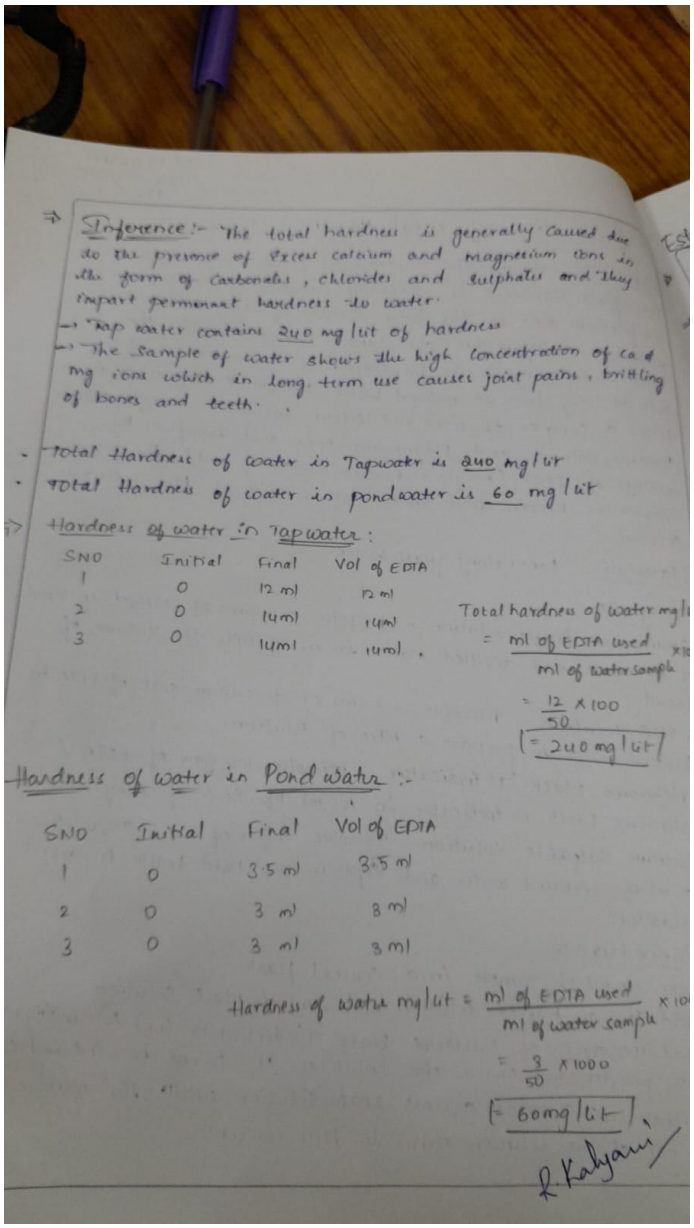

⇒ Inference :- The total hardness is generally caused due to the presence of excess calcium and magnesium ions in the form of carbonates, chlorides and sulphates and they impart permanent hardness to water.

→ Tap water contains 240 mg/lit of hardness

→ The sample of water shows the high concentration of Ca & Mg ions which in long term use causes joint pains, brittling of bones and teeth.

- Total Hardness of water in Tapwater is 240 mg/lit
- Total Hardness of water in pondwater is 60 mg/lit

⇒ Hardness of water in Tapwater :

SNO	Initial	Final	Vol of EDTA
1	0	12 ml	12 ml
2	0	14ml	14ml
3	0	14ml	14ml

Total hardness of water mg/l = ml of EDTA used / ml of water sample x 10

= 12/50 x 100

= 240 mg/lit

Hardness of water in Pond water :-

SNO	Initial	Final	Vol of EDTA
1	0	3.5 ml	3.5 ml
2	0	3 ml	3 ml
3	0	3 ml	3 ml

Hardness of water mg/lit = ml of EDTA used / ml of water sample x 10

= 3/50 x 1000

= 60mg/lit

R. Kalyani

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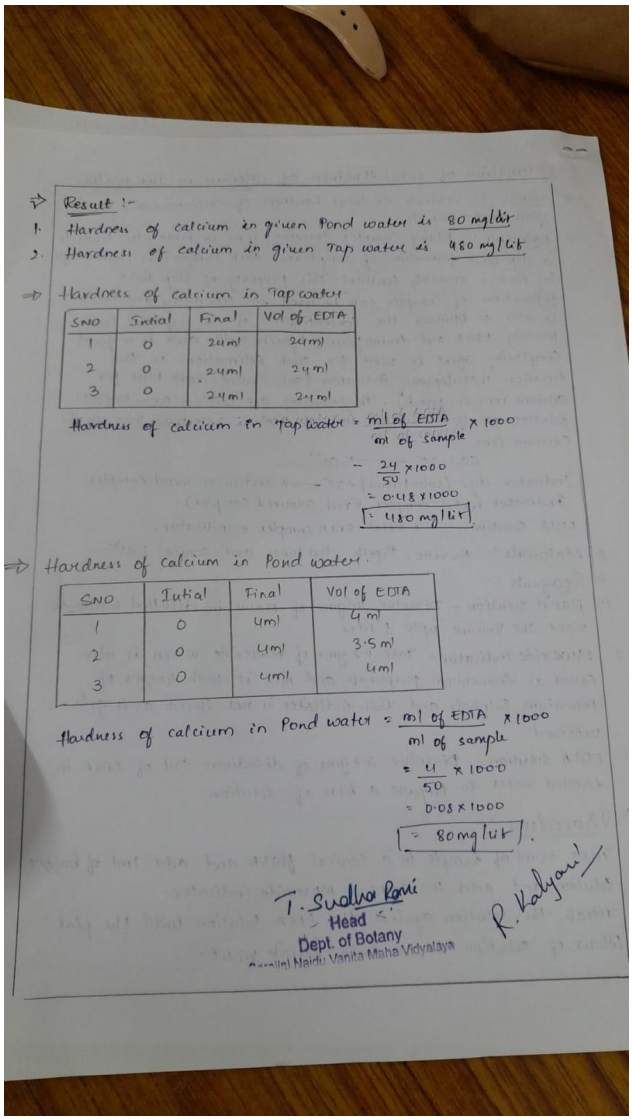

⇒ Result :-

1. Hardness of calcium in given Pond water is 80 mg/lit
2. Hardness of calcium in given Tap water is 480 mg/lit

⇒ Hardness of calcium in Tap water

SNO	Initial	Final	Vol of EDTA
1	0	24ml	24ml
2	0	24ml	24ml
3	0	24ml	24ml

Hardness of calcium in Tap water = $\frac{\text{ml of EDTA}}{\text{ml of sample}} \times 1000$

$= \frac{24}{50} \times 1000$

$= 0.48 \times 1000$

= 480 mg/lit.

⇒ Hardness of calcium in Pond water

SNO	Intial	Final	Vol of EDTA
1	0	4ml	4 ml
2	0	4ml	3.5 ml
3	0	4ml	4ml

Hardness of calcium in Pond water = $\frac{\text{ml of EDTA}}{\text{ml of sample}} \times 1000$

$= \frac{4}{50} \times 1000$

$= 0.08 \times 1000$

= 80mg/lit.

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Head
Dept. of Botany
Smt. Nalini Naidu Vanita Maha Vidyalaya

R. Kalyani

Estimation of calcium in the given water sample:

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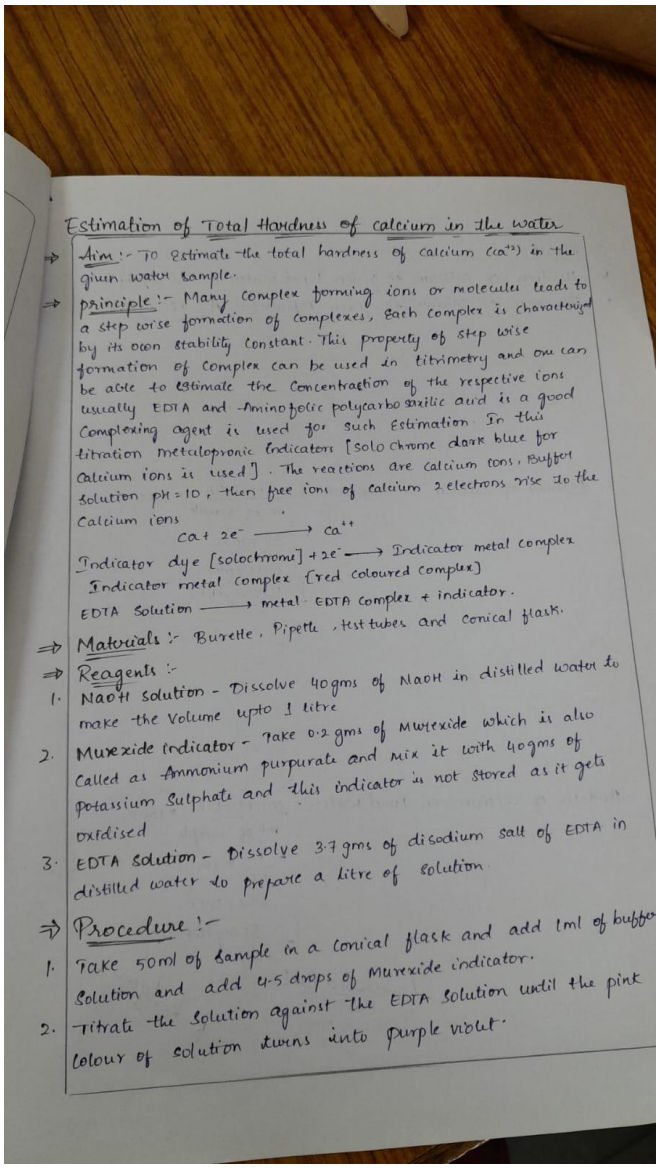

Estimation of Total Hardness of calcium in the water

⇒ **Aim** :- To Estimate the total hardness of calcium (Ca^{+2}) in the given water sample.

⇒ **principle** :- Many complex forming ions or molecules leads to a step wise formation of complexes, Each complex is characterized by its own stability constant. This property of step wise formation of complex can be used in titrimetry and one can be able to estimate the Concentration of the respective ions usually EDTA and Aminopolic polycarboxilic acid is a good Complexing agent is used for such Estimation. In this titration metalopronic Indicators [solo chrome dark blue for Calcium ions is used]. The reactions are calcium ions, Buffer Solution pH = 10, then free ions of calcium 2 electrons rise to the Calcium ions

$$Ca + 2e^- \longrightarrow Ca^{++}$$

Indicator dye [soloctromi] $+ 2e^- \longrightarrow$ Indicator metal complex

Indicator metal complex (red coloured complex)

EDTA Solution $\longrightarrow$ metal EDTA complex + indicator.

⇒ **Materials** :- Burette, Pipette, Test tubes and conical flask.

⇒ **Reagents** :-

1. NaOH solution - Dissolve 40gms of NaOH in distilled water to make the Volume upto 1 litre
2. Murexide indicator - Take 0.2 gms of Murexide which is also called as Ammonium purpurate and mix it with 40gms of potassium Sulphate and this indicator is not stored as it gets oxidised
3. EDTA Solution - Dissolve 3.7 gms of disodium salt of EDTA in distilled water to prepare a litre of solution.

⇒ **Procedure** :-

1. Take 50ml of sample in a conical flask and add 1ml of buffer solution and add 4-5 drops of Murexide indicator.
2. Titrate the solution against the EDTA solution until the pink colour of solution turns into purple violet.

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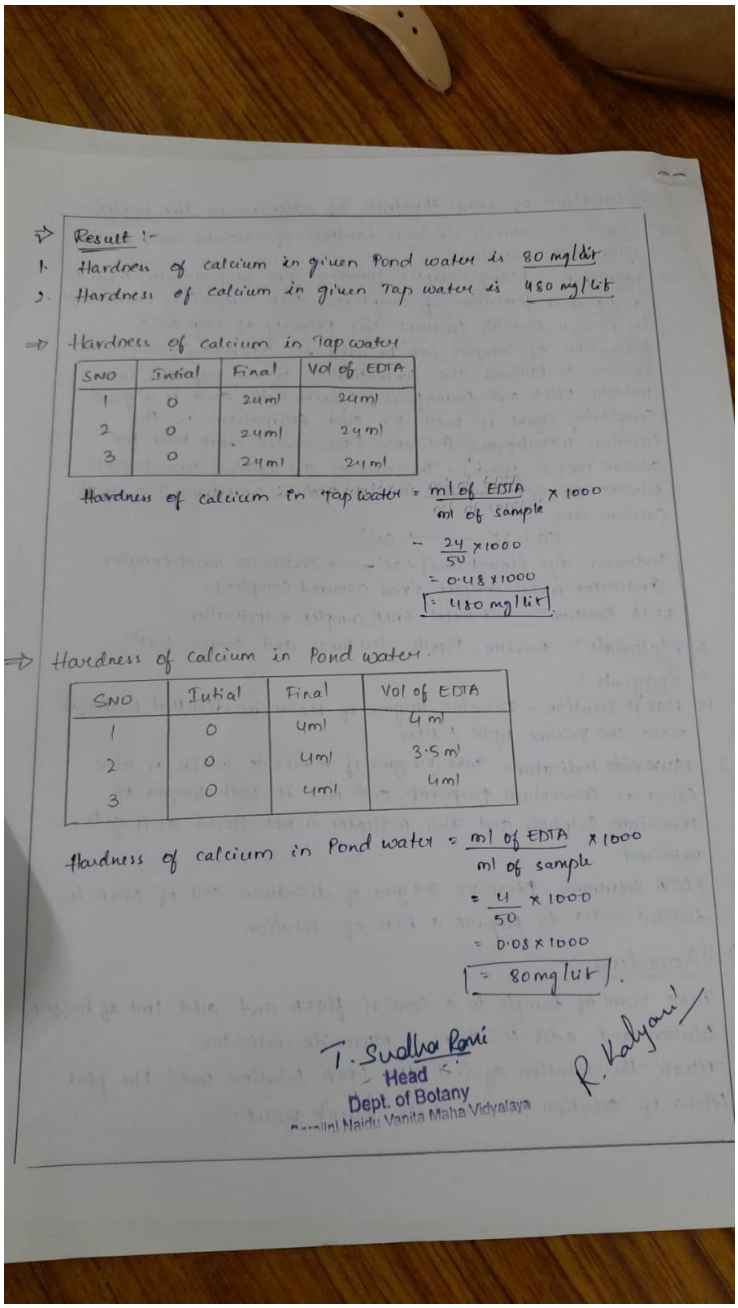

⇨ Result :-

1. Hardness of calcium in given Pond water is 80 mg/lit
2. Hardness of calcium in given Tap water is 480 mg/lit

⇒ Hardness of calcium in Tap water

SNO	Initial	Final	Vol of EDTA
1	0	24ml	24ml
2	0	24ml	24ml
3	0	24ml	24ml

Hardness of calcium in Tap water = $\frac{\text{ml of EDTA}}{\text{ml of sample}} \times 1000$

$= \frac{24}{50} \times 1000$

$= 0.48 \times 1000$

= 480 mg/lit.

⇒ Hardness of calcium in Pond water.

SNO	Initial	Final	Vol of EDTA
1	0	4ml	4 ml
2	0	4ml	3.5 ml
3	0	4ml	4ml

Hardness of calcium in Pond water = $\frac{\text{ml of EDTA}}{\text{ml of sample}} \times 1000$

$= \frac{4}{50} \times 1000$

$= 0.08 \times 1000$

= 80 mg/lit.

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Head
Dept. of Botany
Pamidi Naidu Vanita Maha Vidyalaya

R. Kalyani

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2. Department of Micro-Biology

Best practices:

- Hands on experience for students in collecting various samples.

Expected outcomes:

- Analyze the usage of various equipments used in lab during collection and preservation of samples.
- Explore and apply their practical knowledge in their future endeavours.

Supporting documents / Photographs:




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3. **Department of Zoology**

Best Practice: VERMICOMPOST PIT

4. Vermicomposting is a natural process where by earth worm convert waste material with rigid structures into compost.
5. Vermicompost contains water soluble nutrients and is an excellent, nutrient –rich organic fertilizer and soil conditioner.
6. It is used in gardening and sustainable, organic farming.
7. We use dry waste for Composting (Dry cow dung, Hay and dry leaves) The compost is used for manuring the plants in the college garden.
8. Students are trained in preparing the organic compost which can be done at their homes too by utilizing the dry and wet waste (kitchen waste)

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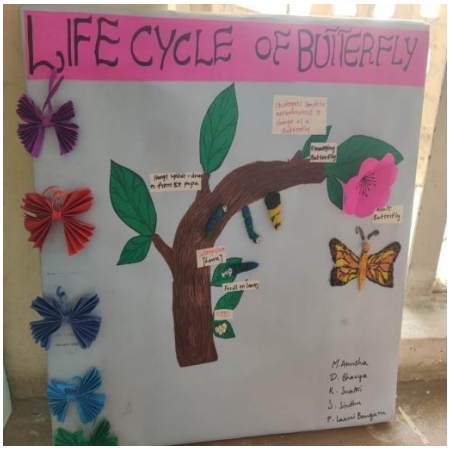
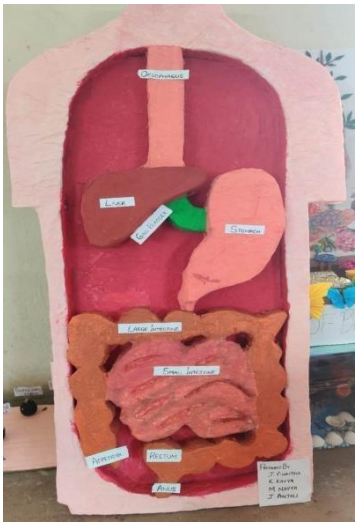
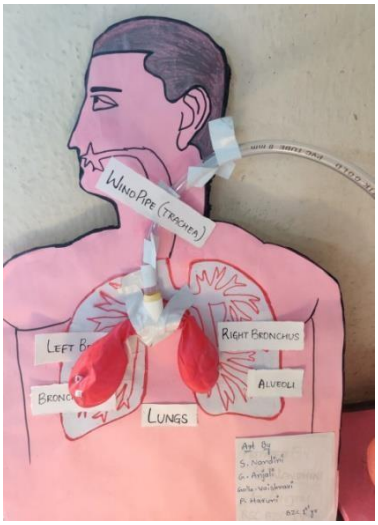
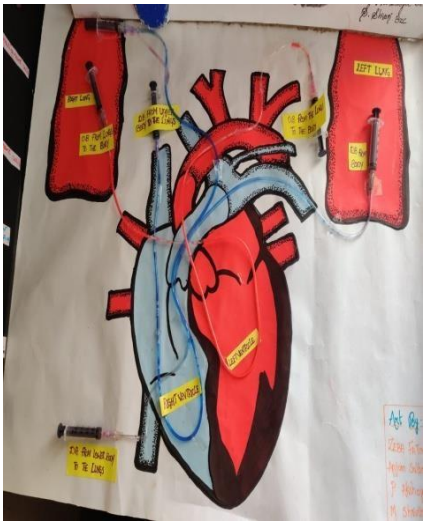
Beast Practice: Zoo club

Low cost working models using eco-friendly material are made by the students which are donated to the government schools where we conduct outreach programs. These models are used as aids for explaining the subject.









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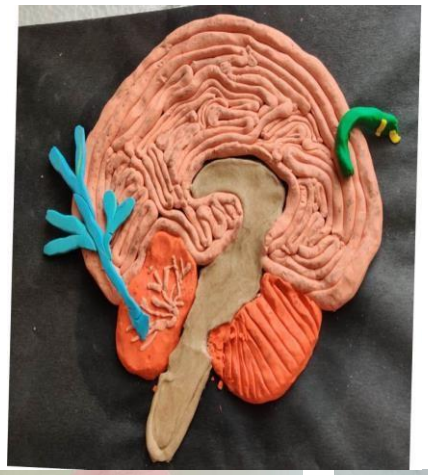
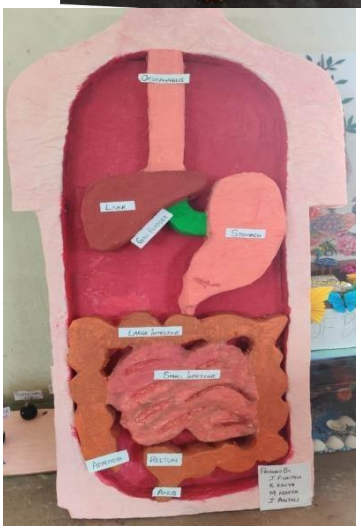
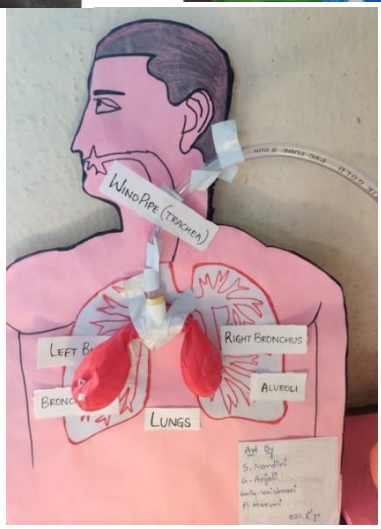
External heart

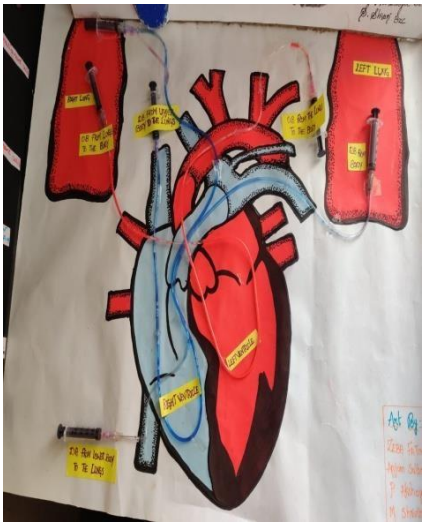



DENDRITE
NUCLEUS
CELL BODY
AXON
NEURON
P. ASHRITHA
M. BHAVYA LAKSHMI
M. SANGEETHA
-BZAN


REPRODUCTION OF CHICK


OESOPHAGUS
LIVER
STOMACH
LARGE INTESTINE
SMALL INTESTINE
PANCREAS
RECTUM
ANUS


WINDPIPE (TRACHEA)
RIGHT BRONCHUS
ALVEOLI
LUNGS


LEFT LUNG
RIGHT VENTRICLE

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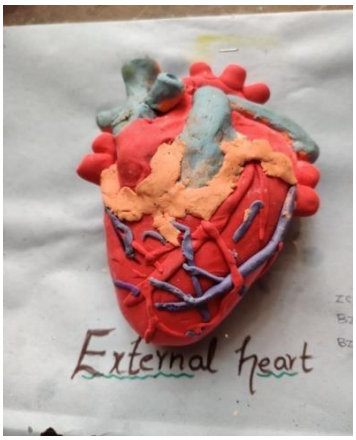
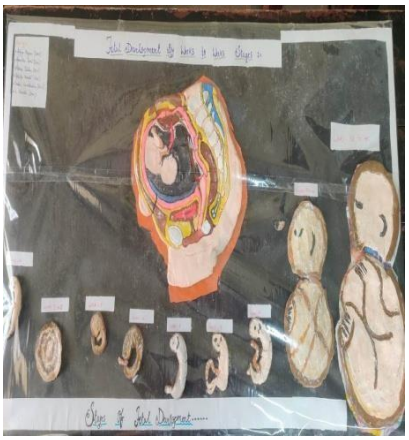

External heart




DENDRITE
NUCLEUS
CELL BODY
AXON
MYELIN SHEATH
NODE OF RANVIER
SCHEJANITH
NEURON

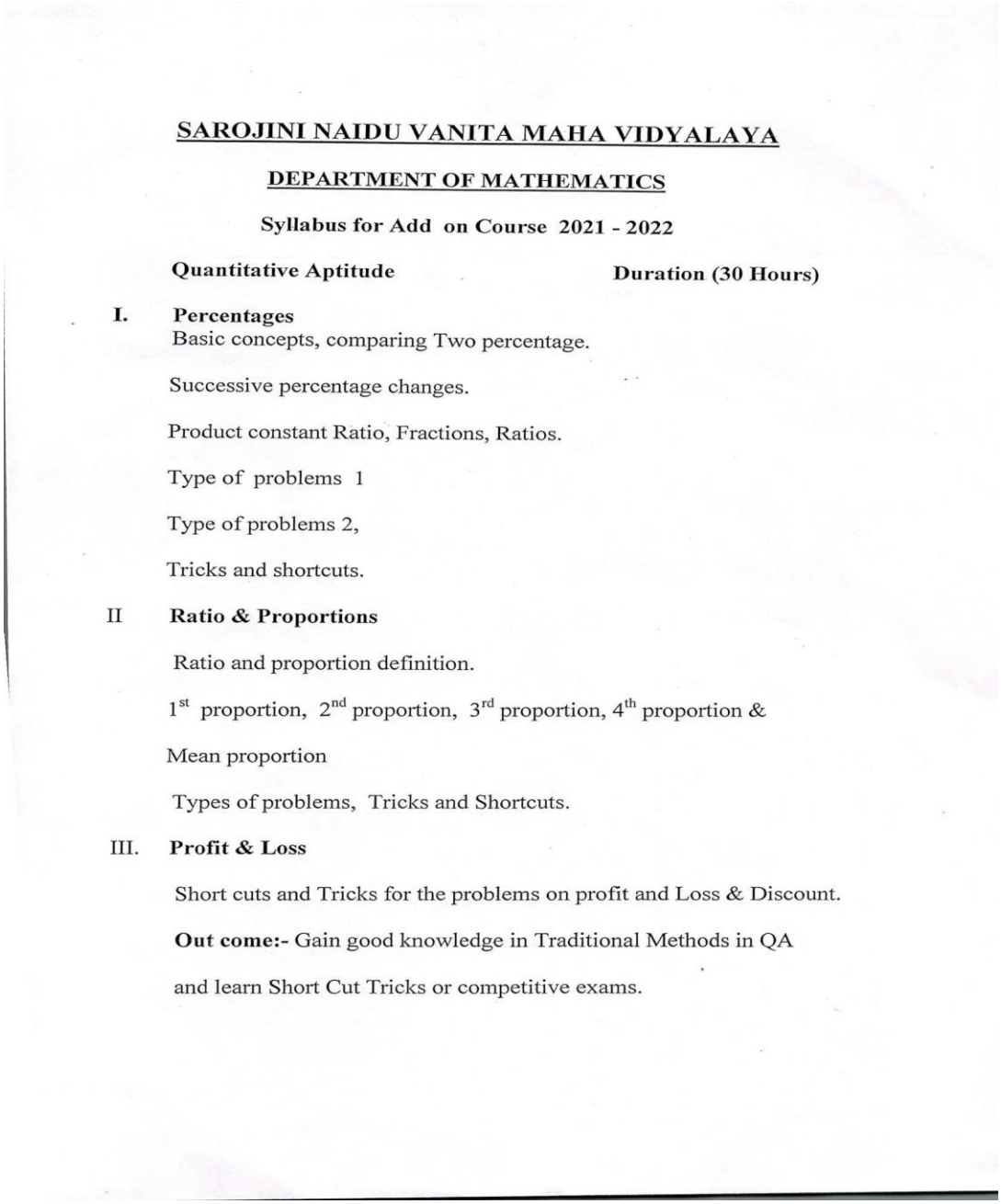

REPRODUCTION OF CHICK

``

5. Department of Mathematics

Best Practice: Training in Quantitative Aptitude and Reasoning

Many students will write competitive examinations like **State Services, Civil Services, and Banking Service exanimations.** The Department gives coaching to the interested students before and after college hours. It will save the money and time for the students as it will be provided free of cost and in the college



SAROJINI NAIDU VANITA MAHA VIDYALAYA

DEPARTMENT OF MATHEMATICS

Syllabus for Add on Course 2021 - 2022

Quantitative Aptitude **Duration (30 Hours)**

I. **Percentages**
Basic concepts, comparing Two percentage.

Successive percentage changes.

Product constant Ratio, Fractions, Ratios.

Type of problems 1

Type of problems 2,

Tricks and shortcuts.

II **Ratio & Proportions**

Ratio and proportion definition.

1^{st} proportion, 2^{nd} proportion, 3^{rd} proportion, 4^{th} proportion &

Mean proportion

Types of problems, Tricks and Shortcuts.

III. **Profit & Loss**

Short cuts and Tricks for the problems on profit and Loss & Discount.

Out come:- Gain good knowledge in Traditional Methods in QA

and learn Short Cut Tricks or competitive exams.

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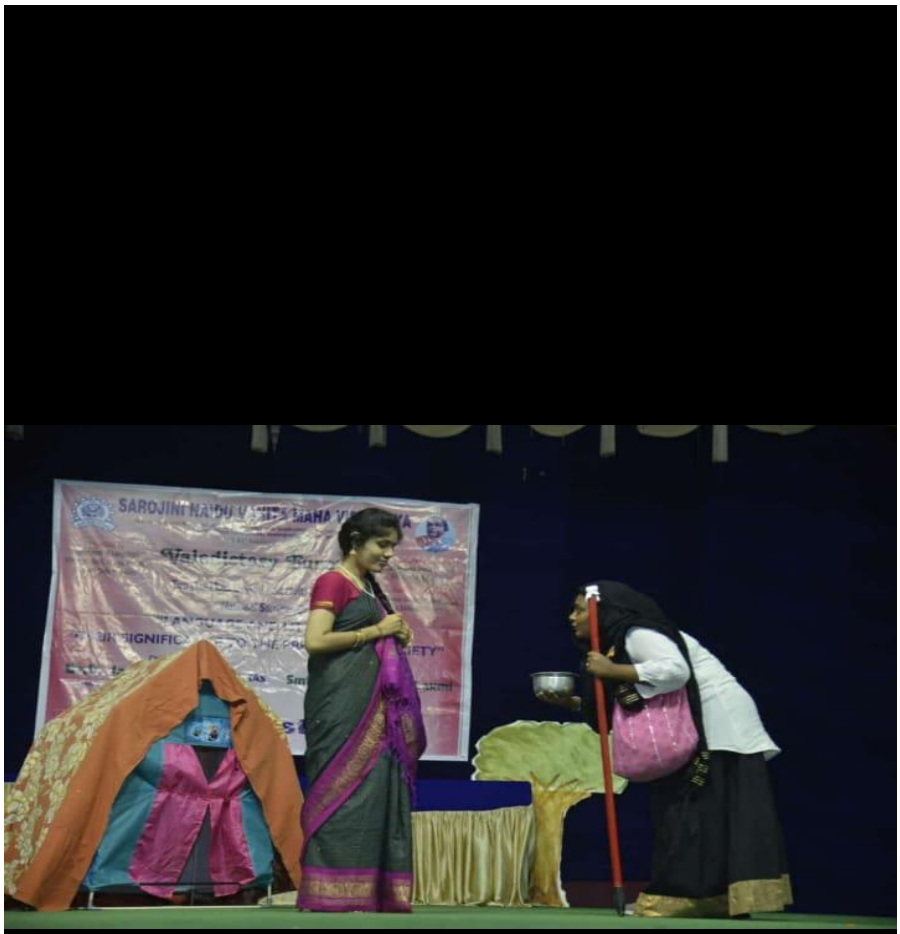
6. **Department of English**

Best Practice: The Department will make the students to enact the poetry and dramas on stage. It will make them understand the pronunciation and the attire referred in the lessons. Bangle Sellers by Smt. Saorojini Naidu and Girish Karnad play 'Nagamandala' English students are few plays to quote



Glimpses of skit performed as tribute to Girish Karnad on the play Nagamandala performed by MA students

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7. DEPARTMENT OF COMMERCE

1. **Best Practices** : a) Commerce Club

b) Departmental Library

2. Expected Outcome :

a) Commerce club provides opportunity for the students to show case their talent and skills and it helps in their holistic development.

b) Departmental library comprises of 521 books that are issued to the students. It helps both the advanced learners and slow learners to improve their academic performance. The faculty donates the specimen copies received from the publishers to the Departmental library.

Students are issued reference and the books prescribed by the affiliated university. Students are allowed to use the books till the completion of the end semester examination.

3. Activities undertaken

Under the best practices : a) Commerce Club conducted

a) Commerce Antakshari on 28-2-19
b) Industrial Logo competition on 2-6-2022
c) Quiz competition on 7-11-2022
d) JAM session on 3-4-2023
e) Industrial Logo competition on 29-8-2023
f) Diwali Mela on 9-11-2023

b) Under department library books were issued to the students

4. Supporting documents/

Photographs : Attached

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Students participating in JAM session

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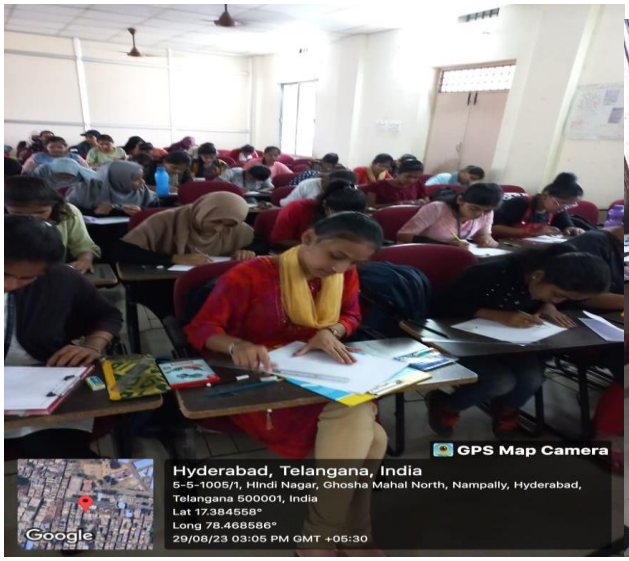
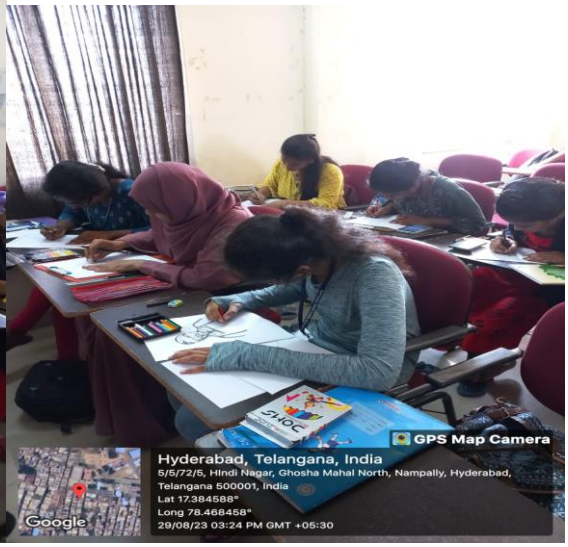
STUDENTS PARTICIPATING IN LOGO COMPETITION





DIWALI MELA

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RANGOLI COMPETITION

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8. Department of Computer Science

Best Practices: Mobile as Computer

Many students cannot afford desktops or Lap tops, Whereas most of the students have smart phones. Department various suggests students to down load various Apps which will work as compilers, Web designers, AV editors. Using these tools students can run programs. Most of the Lab exercise can be done on mobile. This gives level playing field to economically week students.

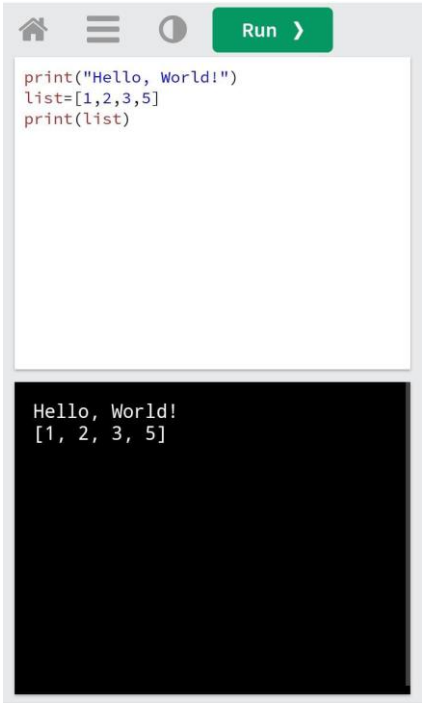
- Compiler App
- Google Colab
- W3schools
- HTML Editor

3. Expected Outcome: Students can gain programming skills and get practical knowledge.

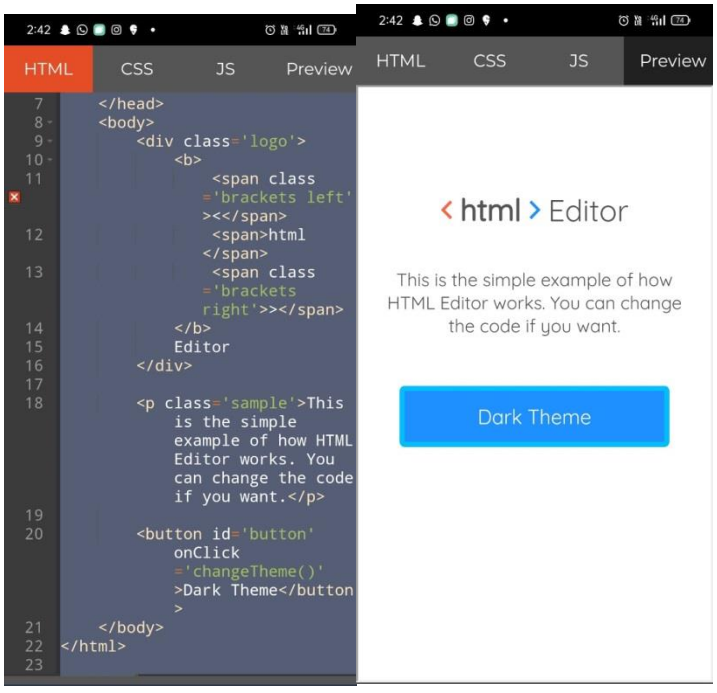
4. Activities Undertaken under the best practices: Google Colab (Python)

5. Supporting Documents and Photographs

Google Colab



HTML EDITOR



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9. Department of Physics & Electronics
Best Pratices

1. <u>Book Bank</u> : Department maintains **Book Bank** which is repository of books generously donated/contributed by former students, staff and specimen copies of text books given by publishers . Students can barrow the essential books and materials required for their courses . This practice ensures that all students have access to the resources they need to succeed academically, regardless of financial constraints. This initiative promotes equity and inclusivity fostering a supportive learning environment where every student has the opportunity to excel

2.<u>Optimal utilisation of equipment</u>: The department prioritize the design of **Experiment Cycles** to maintain a better student – to – equipment ratio. This practice ensures that each student has ample access to apparatus /equipment, facilitating hands-on learning experience.

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B.Sc (PHYSICS) PRACTICALS, SEM-IV

CYCLE-I **Date: 21-1-2024**

GROUP	Roll No.	Strength	Experiment No.
MPCs	1175-22-468-**001** TO -**009**	8	1
	1175-22-468-**010** TO -**018**	8	2
	1175-22-468-**019** TO -**026**	8	3
	1175-22-468-**027** TO -**035**	9	4
	1175-22-468-**036** TO -**044**	8	1
	1175-22-468-**045** TO -**053**	8	2
	1175-22-468-**054** TO -**061**	8	3
MPCs &MPC	1175-22-468-**062** TO -**068** & 1175-22-441-**001** TO -**004**	9	4

Experiment No.	Name of the Experiment
1	Wedge method
2	Dispersive power of a Prism
3	Pulfrich refractometer
4	Sonometer

21/1/2024

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B.Sc (PHYSICS) PRACTICALS, SEM-II

CYCLE-I

GROUP	Roll No.	Strength	Experiment No.
MPCs	1175-23-468-**001** TO -**009**	9	1
	1175-23-468-**010** TO -**018**	9	2
	1175-23-468-**019** TO -**027**	9	3
MPCs	1175-23-468-**028** TO -**036**	9	1
	1175-23-468-**037** TO -**045**	9	2
	1175-23-468-**046** TO -**055**	10	3

Experiment No.	Name of the Experiment
1	Lee's method
2	Electrical Kettle
3	Mechanical to Heat conversion

Aradhana
21/4/24