

Peer-Peer Mentoring Program

Student Learning Center, Hansraj College

Month and Year: March & April, 2022

Department: Chemistry

Name of the Departmental Program Coordinator: Dr Jyoti Singh

S. No	Name of the Mentor	Semester	Number of sessions	Date and Time (of each session)	Topics covered (in each session)	No. of Mentees attended (per each session)
1	Mr Sudhanshu	IV	3 (each of 1 hour)	6-03-2022 2:00 PM - 4:00 PM	Periodicity of elements	46
				13-03-2022 12:00 PM - 1:00 PM	Periodicity of elements	26
2	Ms Mahak Chabbra	VI	2 (each of 1 hour)	13-03-2022 12:00 PM - 1:00 PM	Conductance	10
				27-03-2022 12:00 PM - 1:00 PM	Conductance	10
3	Ms Manya Aggarwal	VI	2 (each of 1 hour)	10-04-2022 2:30 PM – 4:00 PM	Terpenes	7
				17-04-2022 2:30 PM – 4:30 PM	Terpenes	4

Mentor 1: Mr. Sudhanshu

Course: B.Sc (H) Chemistry

Current Sem: IV

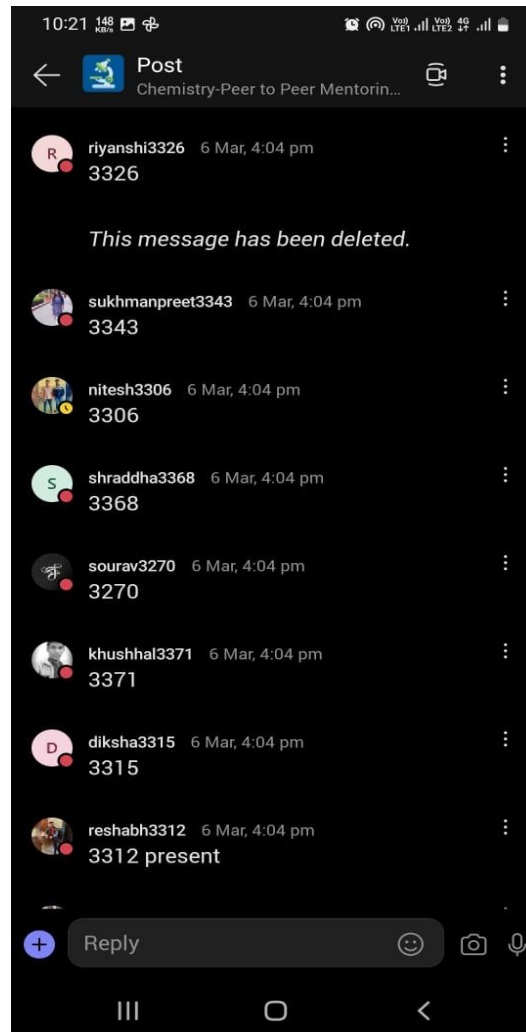
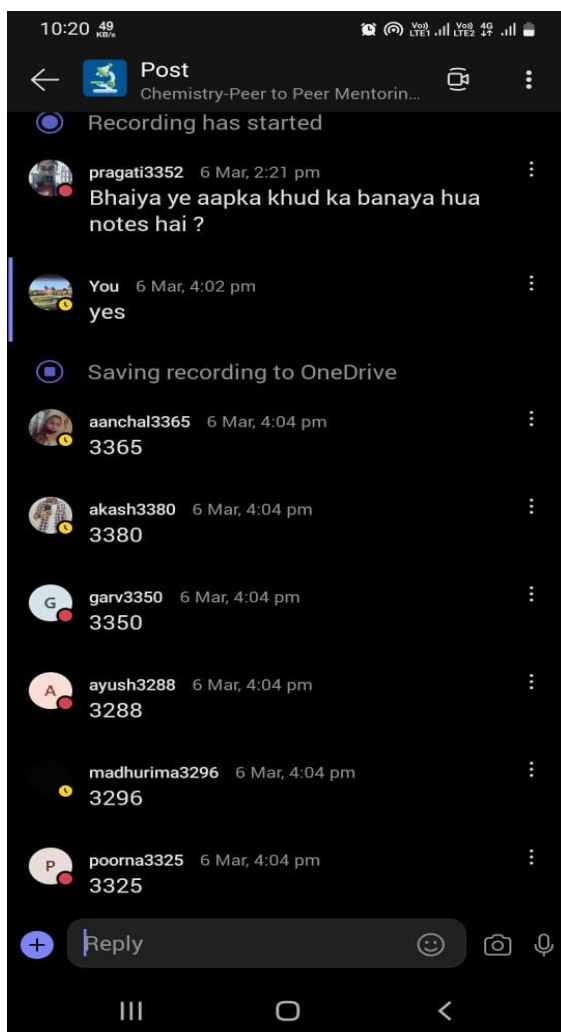
Email id: Sudhanshu4bel@gmail.com

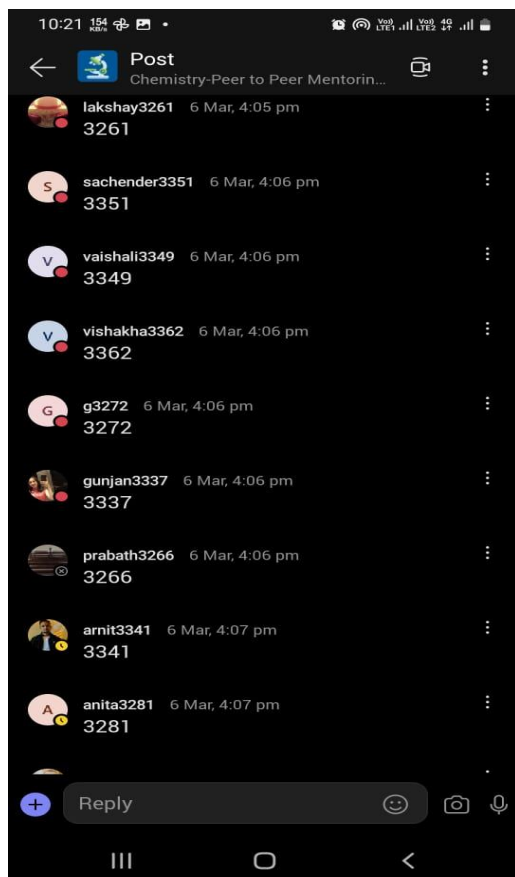


March 6, 2022 and March 13, 2022: Both the sessions focused on brief discussion of the following properties of the elements, with reference to s-& p-block and the trends shown:

- Effective nuclear charge, shielding or screening effect, Slater rules, variation of effective nuclear charge in periodic table.
- Atomic and ionic radii.
- Ionization enthalpy, Successive ionization enthalpies and factors affecting ionization enthalpy and trends in groups and periods.
- Electron gain enthalpy and trends in groups and periods.
- Electronegativity, Pauling's/ Allred Rochow's scales. Variation of electronegativity with bond order, partial charge, hybridization, group electronegativity

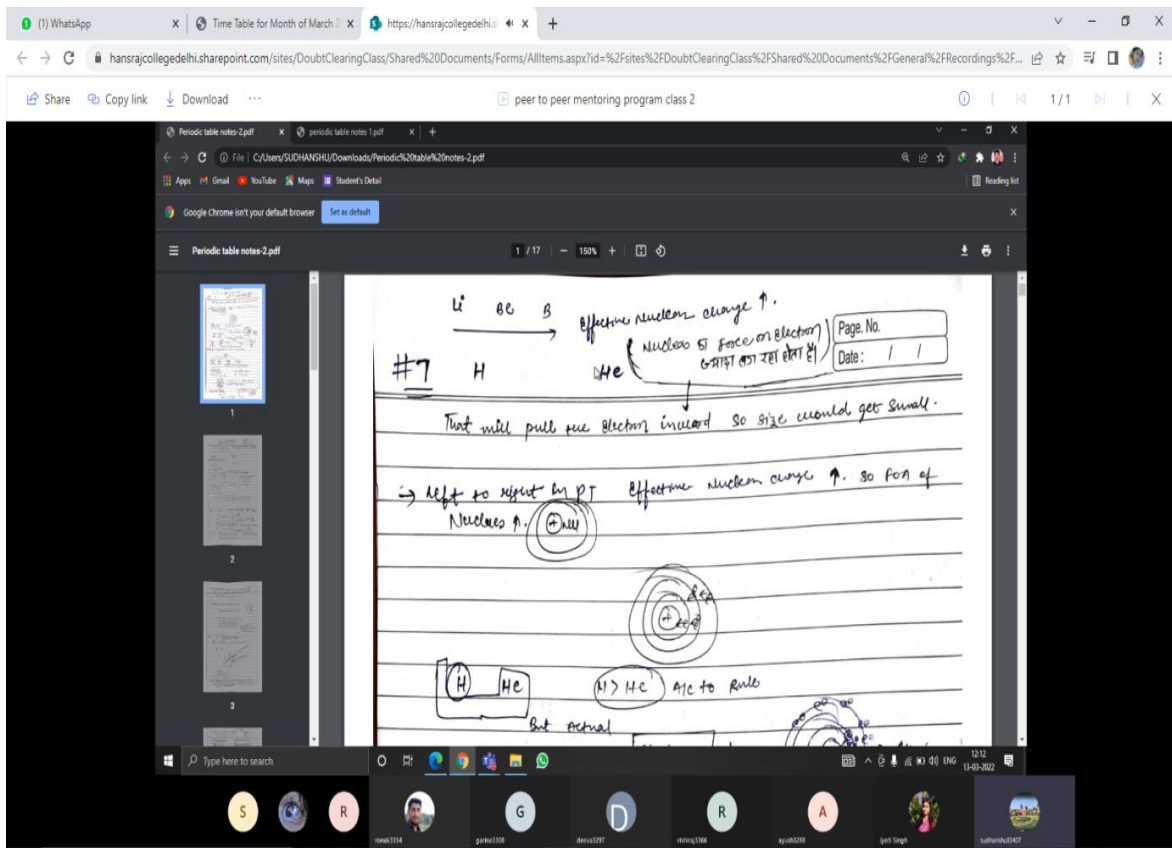
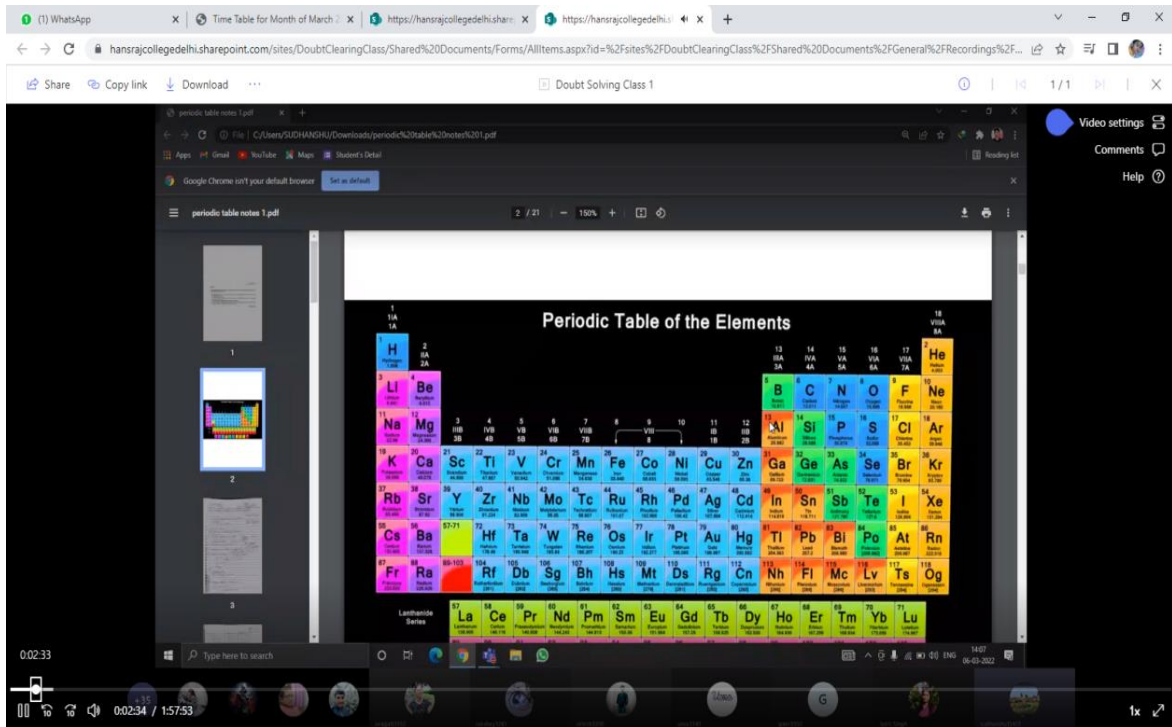
Attendance:





sudhanshu13407	Joined	3/13/2022, 11:59:00 AM
lakshay3261	Joined	3/13/2022, 11:59:17 AM
kirti13378	Joined	3/13/2022, 11:59:29 AM
riyanshi3326	Joined	3/13/2022, 11:59:30 AM
Jyoti Singh	Joined	3/13/2022, 11:59:40 AM
ayush3288	Joined	3/13/2022, 12:00:21 PM
ayush3288	Joined	3/13/2022, 12:04:17 PM
seema13416	Joined	3/13/2022, 12:01:41 PM
jai3327	Joined	3/13/2022, 12:03:59 PM
garina3308	Joined	3/13/2022, 12:04:42 PM
garina3308	Joined	3/13/2022, 12:07:51 PM
garina3308	Joined	3/13/2022, 12:14:49 PM
ronak3354	Joined	3/13/2022, 12:05:48 PM
deeva3297	Joined	3/13/2022, 12:06:16 PM
rishiraj3366	Joined	3/13/2022, 12:06:27 PM
yashika3329	Joined	3/13/2022, 12:06:32 PM
vishakha3362	Joined	3/13/2022, 12:09:22 PM
aman13345	Joined	3/13/2022, 12:10:51 PM
sanjeet3318	Joined	3/13/2022, 12:12:02 PM
vaishali3349	Joined	3/13/2022, 12:13:06 PM
diksha3315	Joined	3/13/2022, 12:14:53 PM
abhinav3274	Joined	3/13/2022, 12:19:10 PM
divyanshi3290	Joined	3/13/2022, 12:23:01 PM
ashutosh3334	Joined	3/13/2022, 12:30:11 PM
nitesh3280	Joined	3/13/2022, 12:34:37 PM
jagrati3260	Joined	3/13/2022, 12:36:36 PM
shalu13385	Joined	3/13/2022, 12:47:37 PM

Pictures taken on MS Teams:



Mentor 2: Ms Mahak Chhabra

Course: B.Sc (H) Chemistry

Current Sem: VI

Email id: mahakchhabra2711@gmail.com



March 13th, 2022 and March 27th, 2022: The session's focused on conductometric titration, types of conductance, factors affecting conductance, Kohlrausch's law etc. The importance of relations instead of formula in conductance was also explained. Kohlrausch's law and its applications was also discussed in detail. To study beyond topic, students were excited to know about transport number, ionic strength, activity coefficient and their relation. Conductance being a topic of physical chemistry cannot be taught without numerical and my efforts were fruitful to see the eagerness in students to solve them.

Pictures taken on MS Teams:

CURRENT

- FLOW OF CHARGES PER UNIT TIME

The slide shows three categories of conductors:

- e⁻**: ELECTRONIC OR METALLIC CONDUCTOR
- Ions**: IONIC OR ELECTROLYTIC CONDUCTOR
- Ions + e⁻**: MIXED CONDUCTOR

Applications of Kohlrausch law

To find molar conductance at infinite dilution for weak acids
Using strong acids

1. $\lambda^\infty(\text{HCl}) = \lambda^\infty(\text{H}^+) + \lambda^\infty(\text{Cl}^-)$
2. $\lambda^\infty(\text{CH}_3\text{COONa}) = \lambda^\infty(\text{Na}^+) + \lambda^\infty(\text{CH}_3\text{COO}^-)$
3. $\lambda^\infty(\text{NaCl}) = \lambda^\infty(\text{Na}^+) + \lambda^\infty(\text{Cl}^-)$

$\lambda^\infty(\text{CH}_3\text{COOH}) = \lambda^\infty(\text{H}^+) + \lambda^\infty(\text{CH}_3\text{COO}^-)$ (1+2-3)

Q- Calculate molar conductance at infinite dilution for AgCl if the data for molar conductance at infinite dilution is given as

AgNO₃ = 100
NaNO₃ = 150
NaCl = 125

Mentor 3: Ms Manya

Course: B.Sc (H) Chemistry

Current Sem: VI

Email id: manyaagarwal790@gmail.com



April 10th, 2022 and April 17th, 2022: Topic, “Terpenoids” and Nitrogen containing functional groups were discussed. Terpenoids, is a small topic in organic chemistry. Terpenes is a group of compounds the majority of which occur in plant kingdom, except a few derived from other sources. She discussed their occurrence, uses, classification, isoprene and special isoprene rule, general methods of structural elucidation. Also a terpene named citral was discussed in length; elucidation of its structure, synthesis and industrial application was included. N-containing functional groups was taken in next session. She discussed amines in detail covering their synthesis, chemical properties, name and general reactions. Nitro compounds, isocyanides and cyanides were also discussed at length in the class. Reactions of diazonium salts was also taken up.

Pictures taken on MSTEams:

The screenshot shows a presentation slide with the title "TERPENES" in red, underlined text. Below the title, the word "Terpenes" is written in black. The main text on the slide reads: "Introduction, Occurrence, Uses, classification, isoprene and special isoprene rule; general methods of structure elucidation including distinction between isopropylidene and isopropenyl group. Elucidation of structure, synthesis and industrial application of Citral." At the bottom right of the slide, it says "(Lectures: 6)". The slide is displayed within a Microsoft Teams window, with a navigation bar at the bottom showing icons for chat, gallery view, and other participants.

The screenshot shows a presentation slide with handwritten chemical reactions in red and blue ink. The title is "* Rean with HNO₂ (Nitrous acid)".

Reaction 1: $\text{RNH}_2 + \text{NaNO}_2 + \text{HCl} \xrightarrow{\text{[HNO}_2\text{]}} \text{RN}=\text{N}(\text{OH})$
This reaction is labeled "1° amine (aliphatic)". A note below it says "ROR + N₂↑" and "1° alcohol".

Reaction 2: $\text{ArNH}_2 + \text{NaNO}_2 + \text{HCl} \xrightarrow{0-5^\circ\text{C}} \text{ArN}=\text{N}(\text{OH})$
This reaction is labeled "1° Amine (aromatic)" and "Diazotisation Rean.". The product is shown as a benzene ring with an $\text{N}=\text{N}(\text{OH})$ group. A note below it says "Resonance structures" and "(stable)".

The slide is displayed within a Microsoft Teams window, with a navigation bar at the bottom showing icons for chat, gallery view, and other participants.