

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

বিস্মিল্লাহির রাহমানির রাহীম



উদ্দান

একাডেমিক এন্ড এডমিশন কেয়ার



Class X Academic Program -2020

Chemistry

Prepared by : Sadat Ahmed Dipro



(Fossil Fuel)

animal + plants
↓
Decompose

Heat energy

Wood
↑ + O₂
Biom
↓ energy
Diff. Type





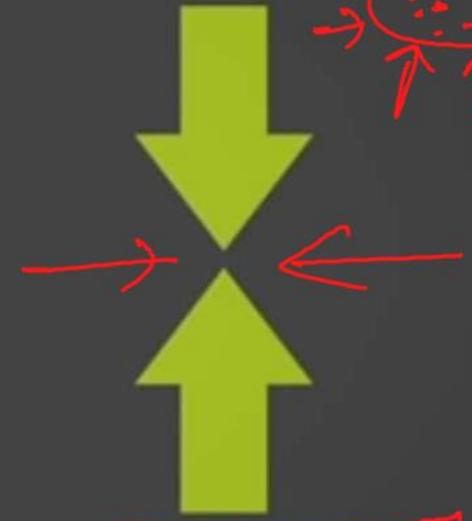
জীবাশ্ম ডায়াগ্রাম

4) Factors

Animal + plant

Decompose

Fossil!



ORGANIC MATTER

TEMPERATURE

TIME

PRESSURE CONDITIONS

Insects + bacteria

enzyme

lengthy process

crucial factor



জীবাশ্ম জ্বালানি

You are screen sharing Stop Share



COAL

Fossil Fuel

Ingredient
C



OIL

petroleum
oil



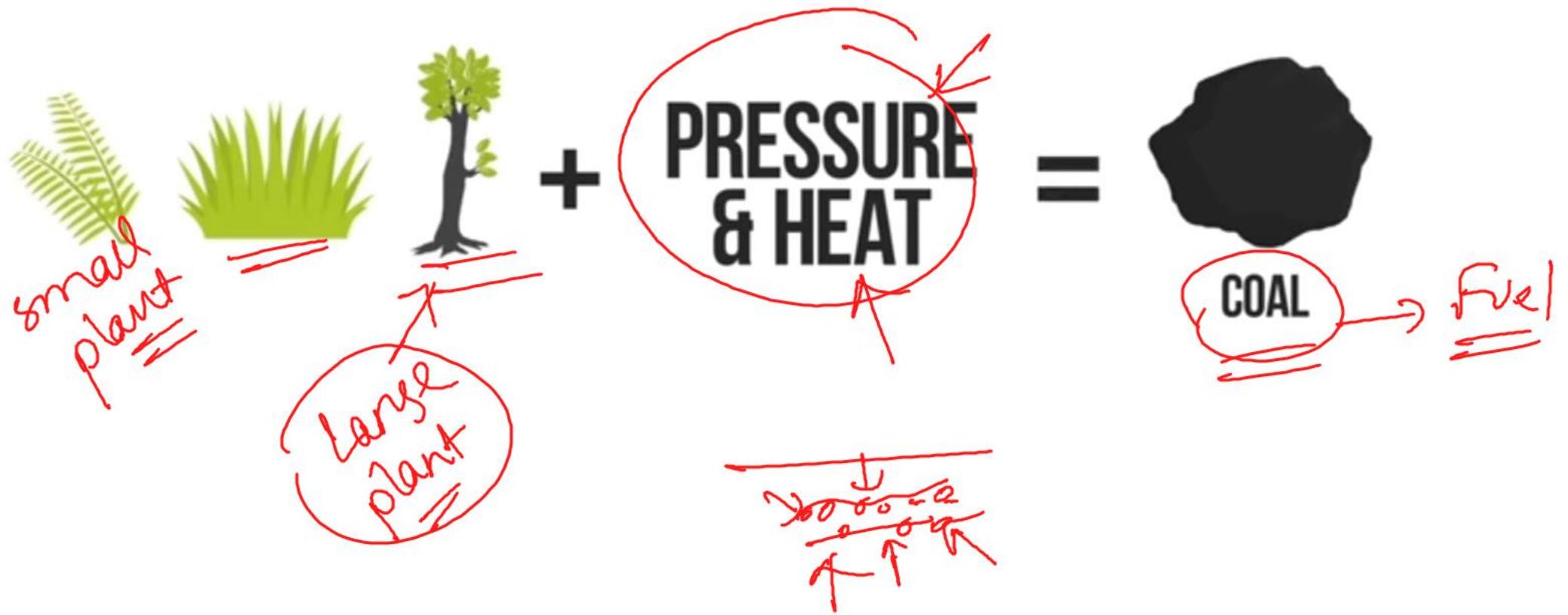
NATURAL GAS

CH_4
 C_2H_6

Mute Start Video Participants 277 Q&A 28 Polls New Share Pause Share Annotate Remote Control More 15

You are screen sharing Stop Share

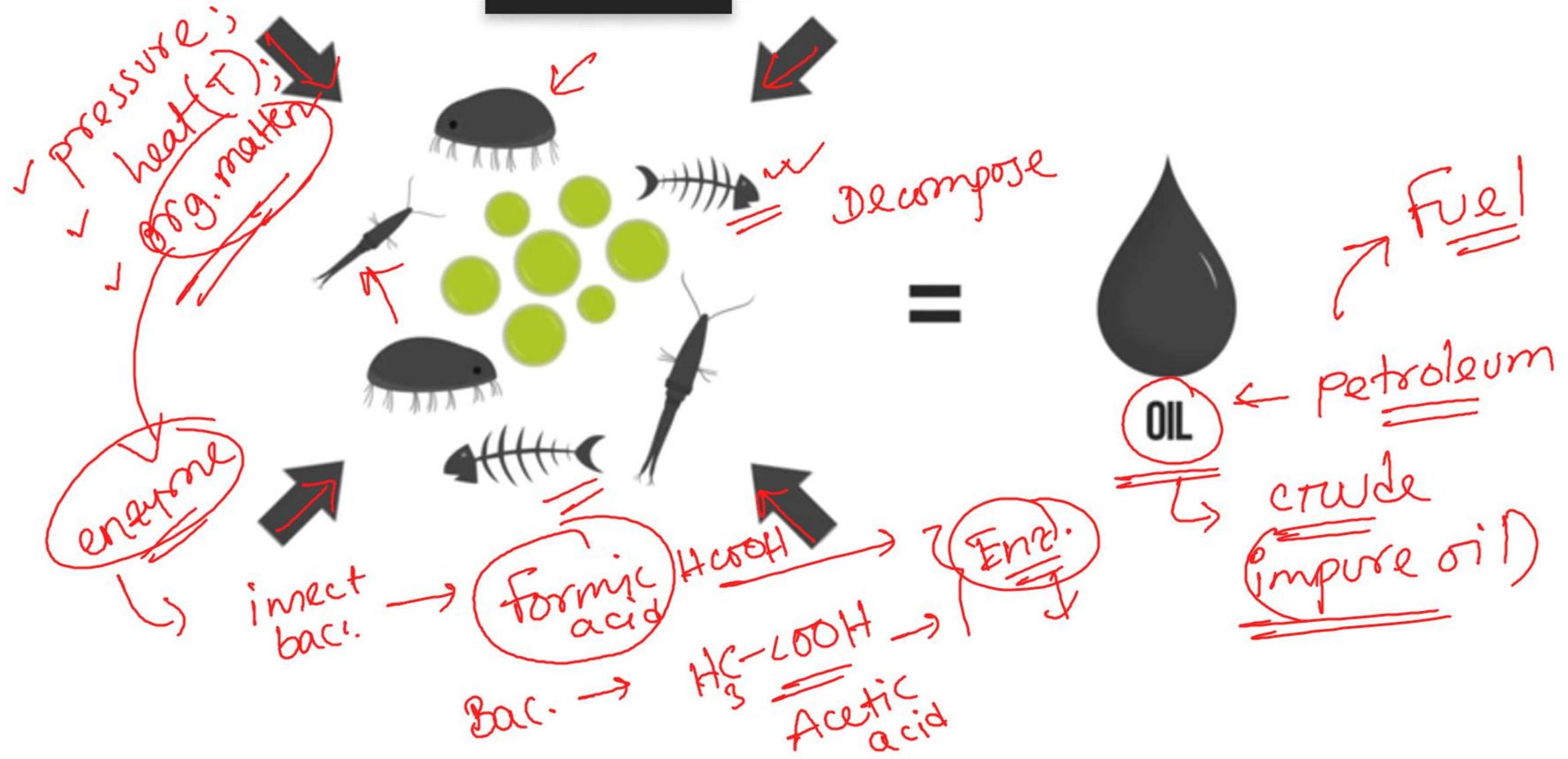
Mouse Select Text Draw Stamp Spotlight Eraser Format Undo Redo Clear Save



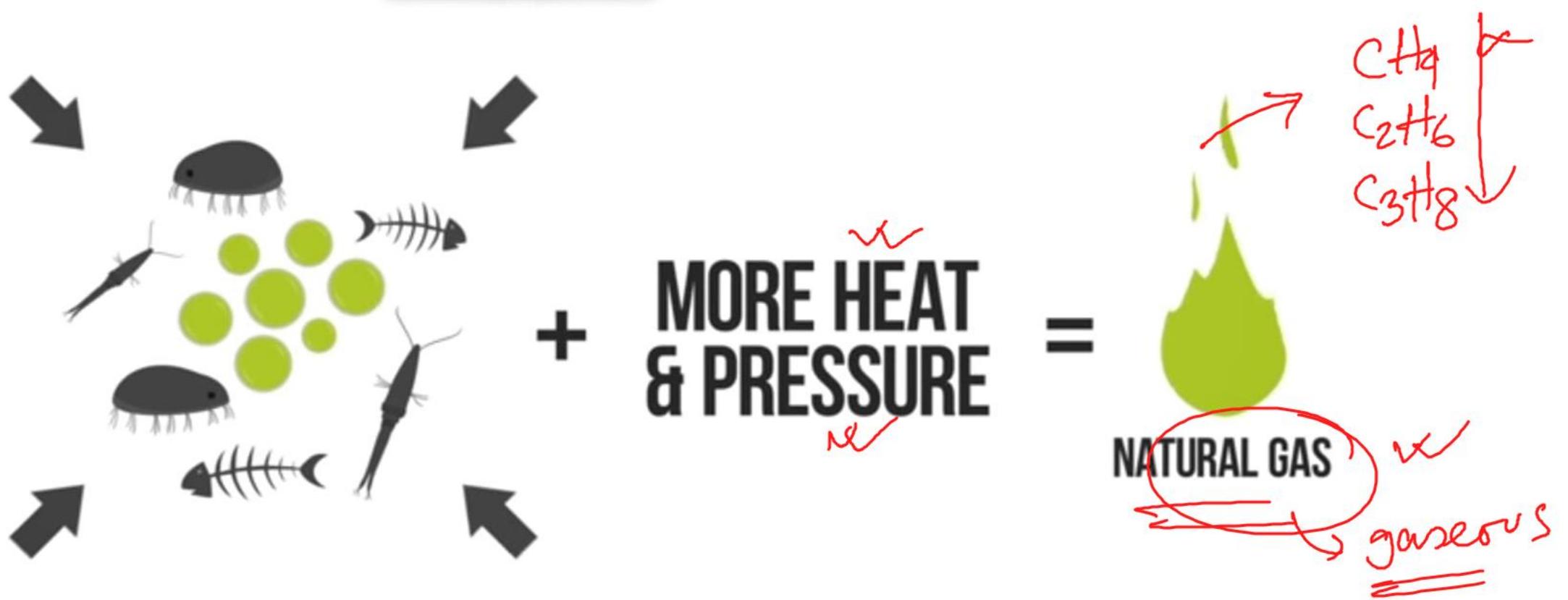
Mute Start Video Participants 290 Q&A 56 Polls New Share Pause Share Annotate Remote Control More 23

You are screen sharing Stop Share

Mouse Select Text Draw Stamp Spotlight Eraser Format Undo Redo Clear Save



Mute Start Video Participants 292 Q&A 56 Polls New Share Pause Share Annotate Remote Control More 23
 You are screen sharing Stop Share
 Mouse Select Text Draw Stamp Spotlight Eraser Format Undo Redo Clear Save

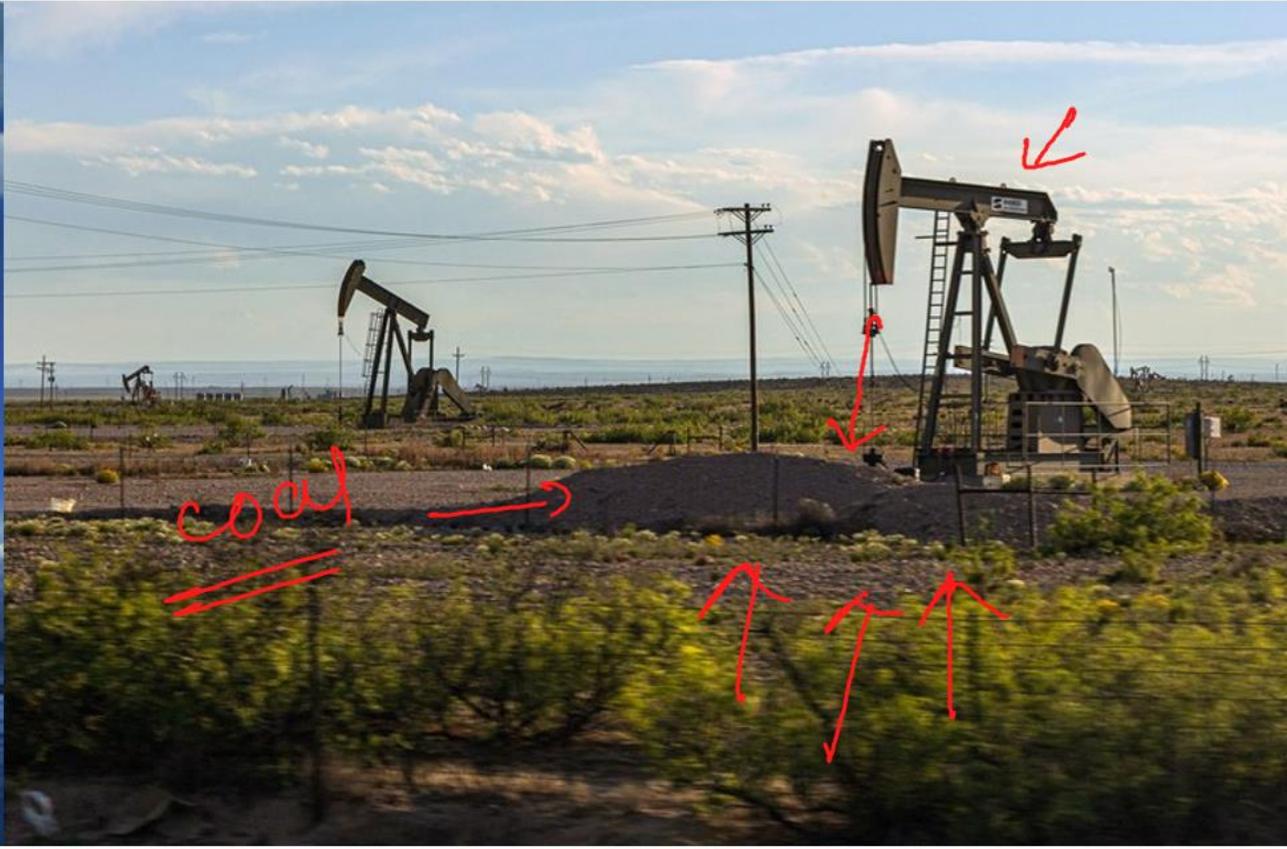




You are screen sharing Stop Share



✓ 1. Natural Resource
✓ 2. Enough sufficient



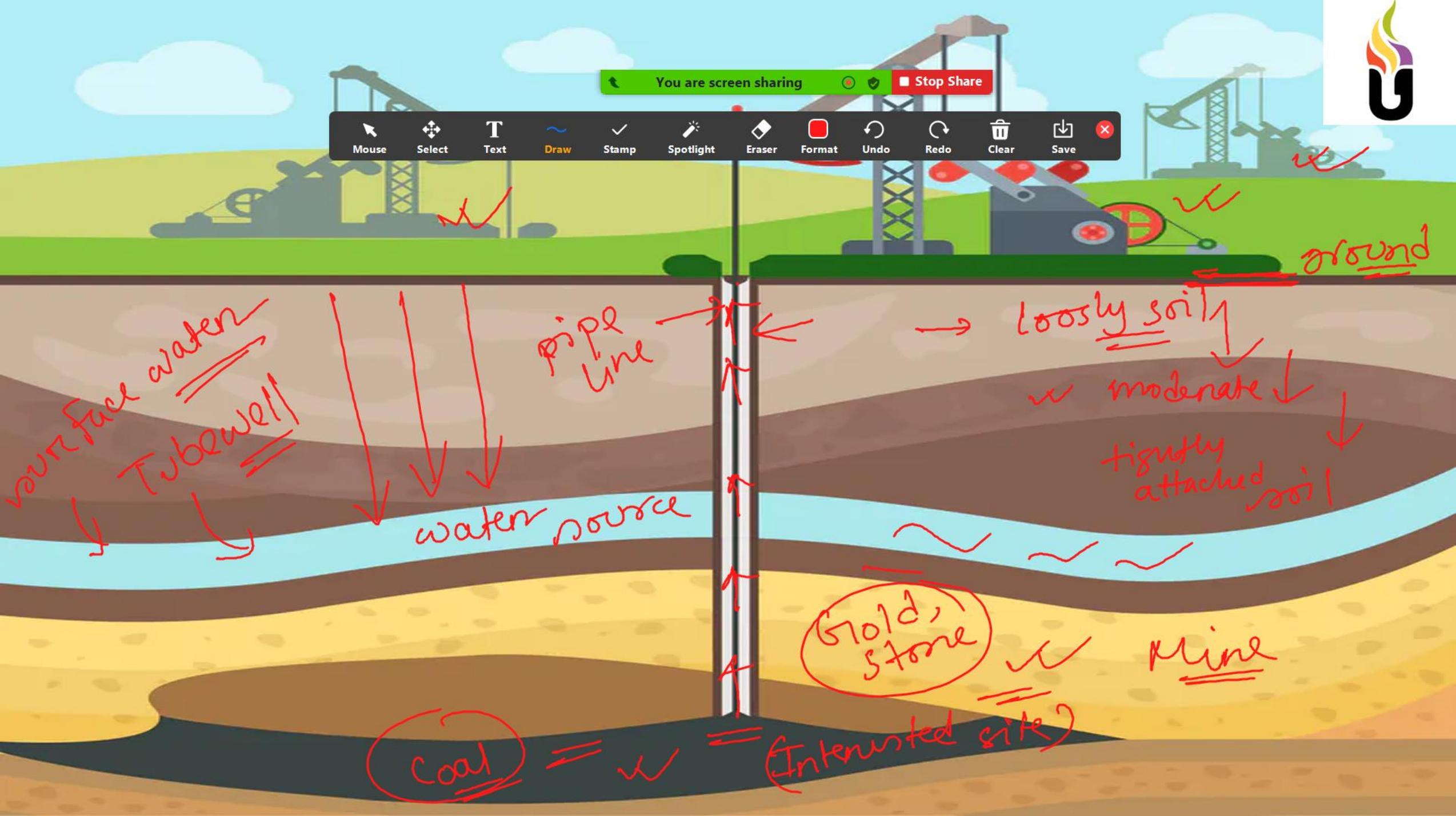
coal

scn



You are screen sharing Stop Share

Mouse Select Text Draw Stamp Spotlight Eraser Format Undo Redo Clear Save



Impure

Mute Start Video Participants 290 Q&A 55 Polls New Share Pause Share Annotate Remote Control More 25

You are screen sharing Stop Share

Mouse Select Text Draw Stamp Spotlight Eraser Format Undo Redo Clear Save

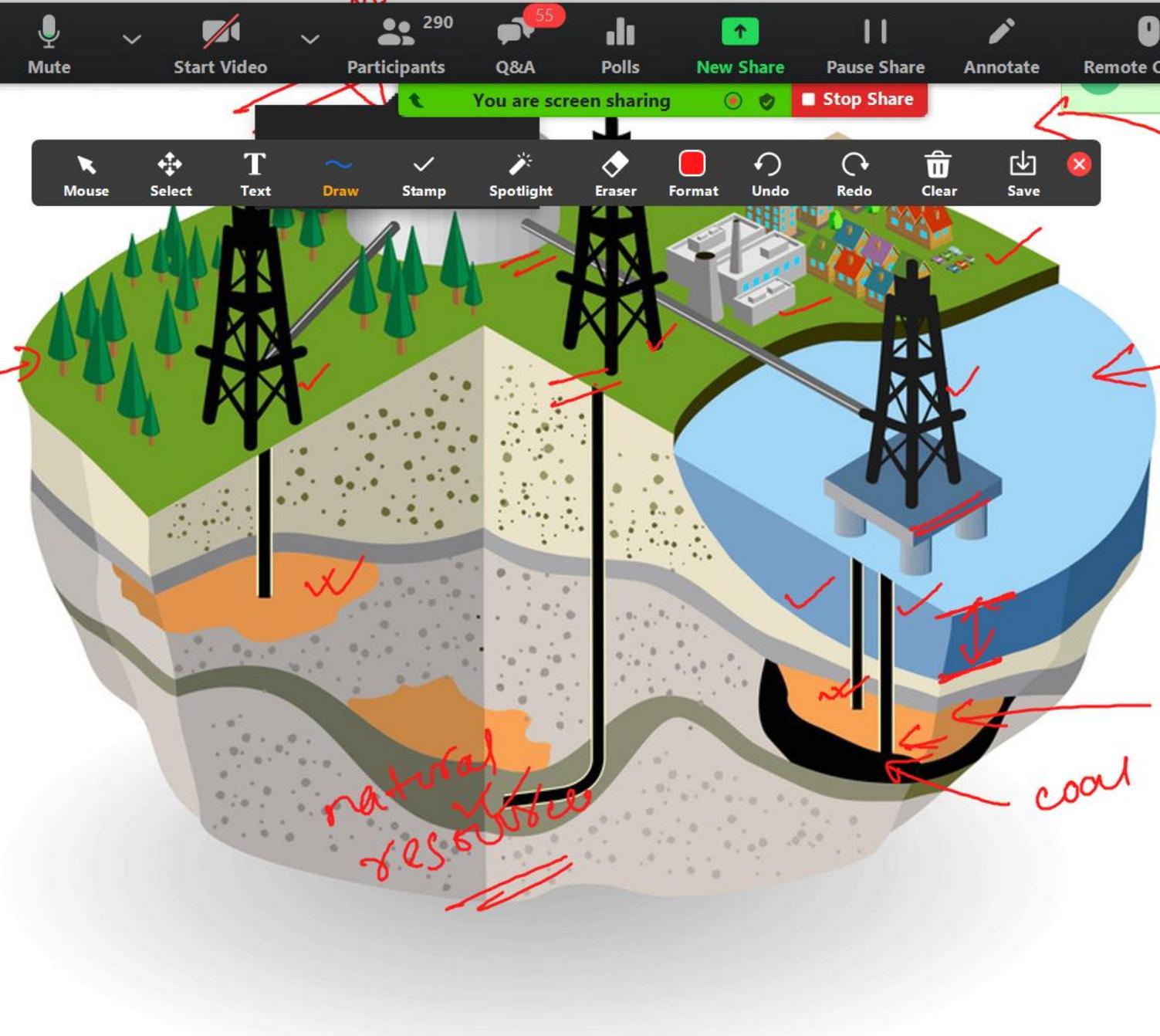
land

water (ocean)

natural resources

natural gas or oil

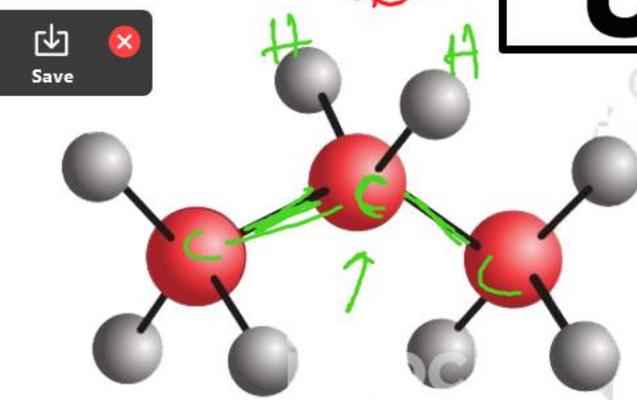
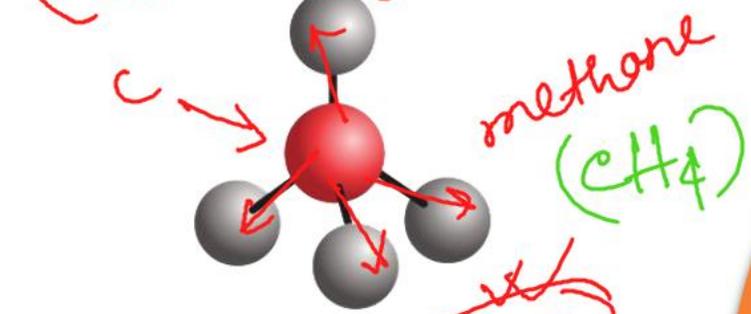
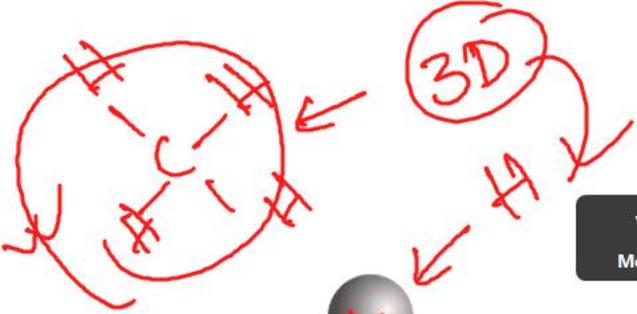
coal



Natural Gas

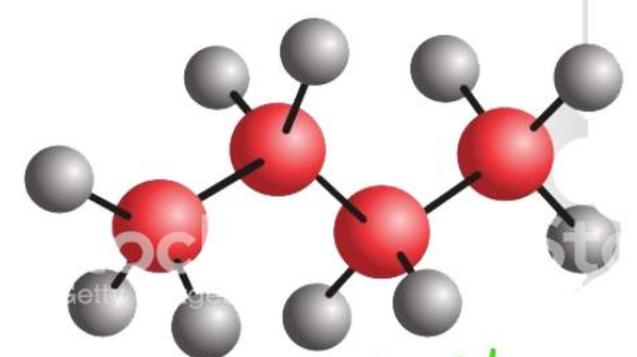
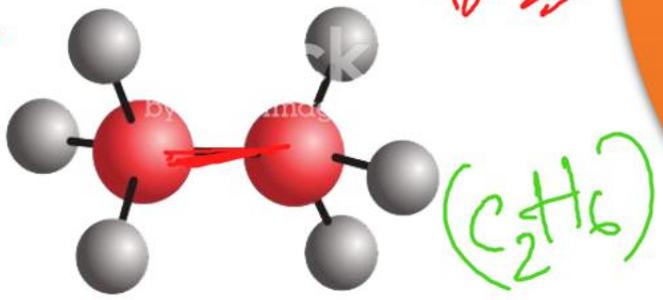


You are screen sharing Stop Share

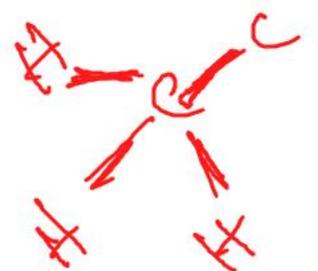
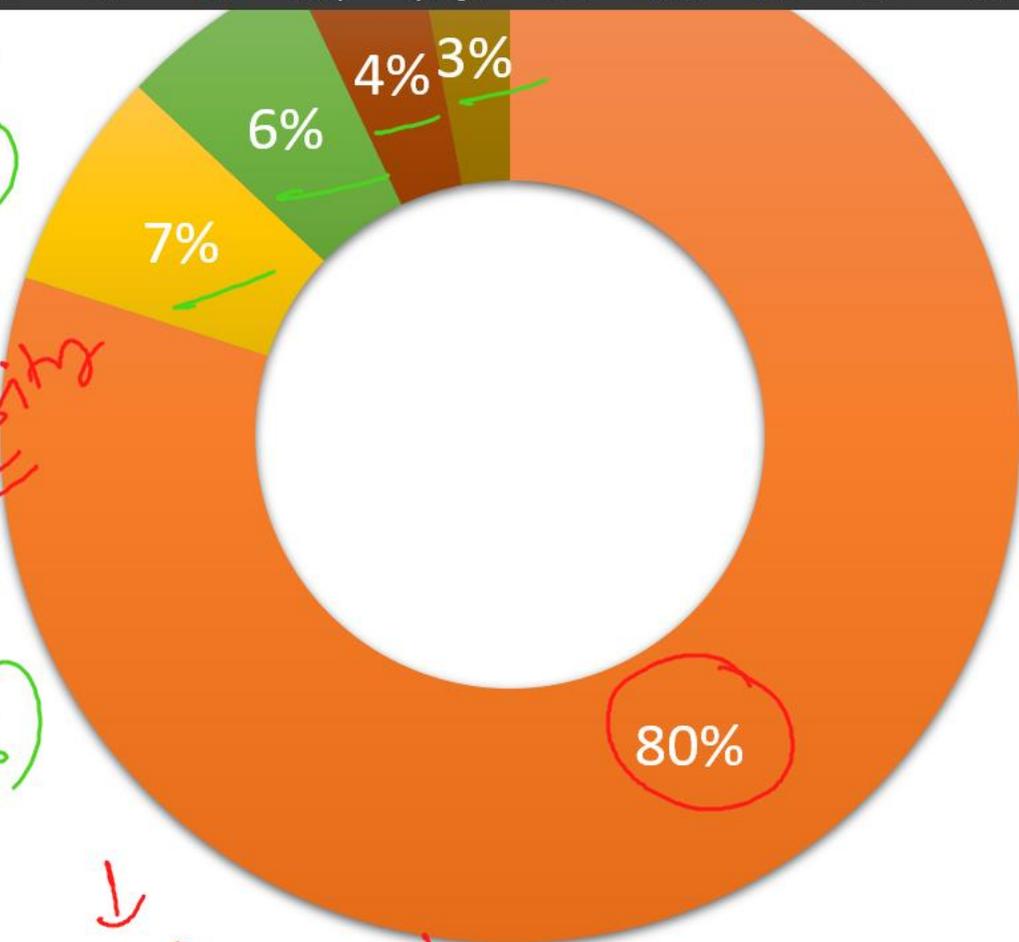


propane (C₃H₈)

HC-CH₃ Catenation Diversity



C₄H₁₀ (Butane)

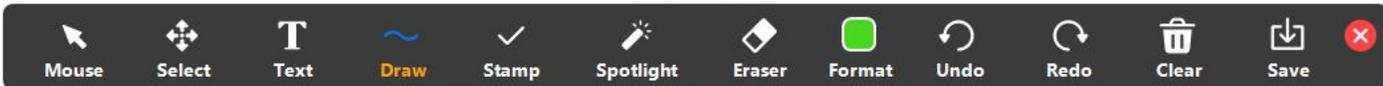


- Methane (1C)
- Ethane (2C)
- Propane (3C)
- Butane & Isobutane (4C)
- Pentane (5C)

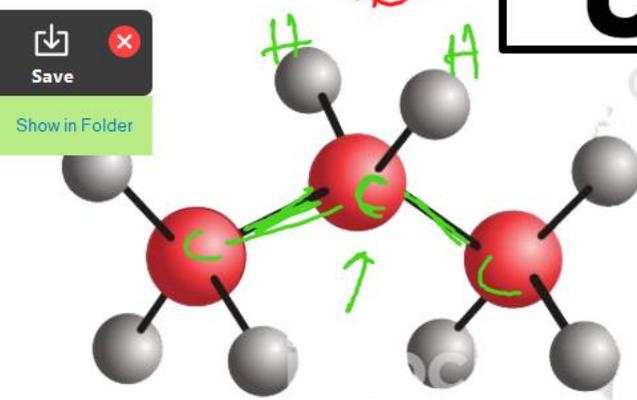
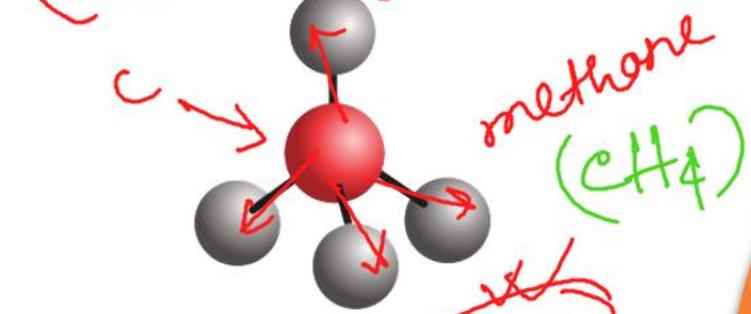
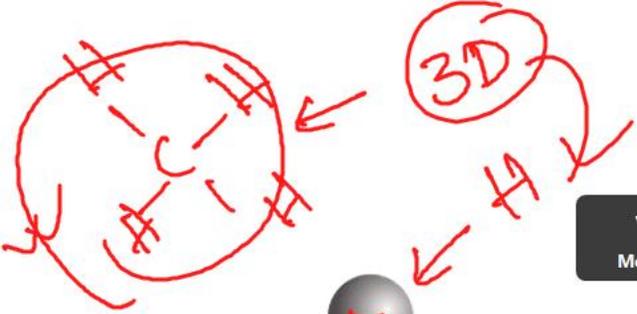
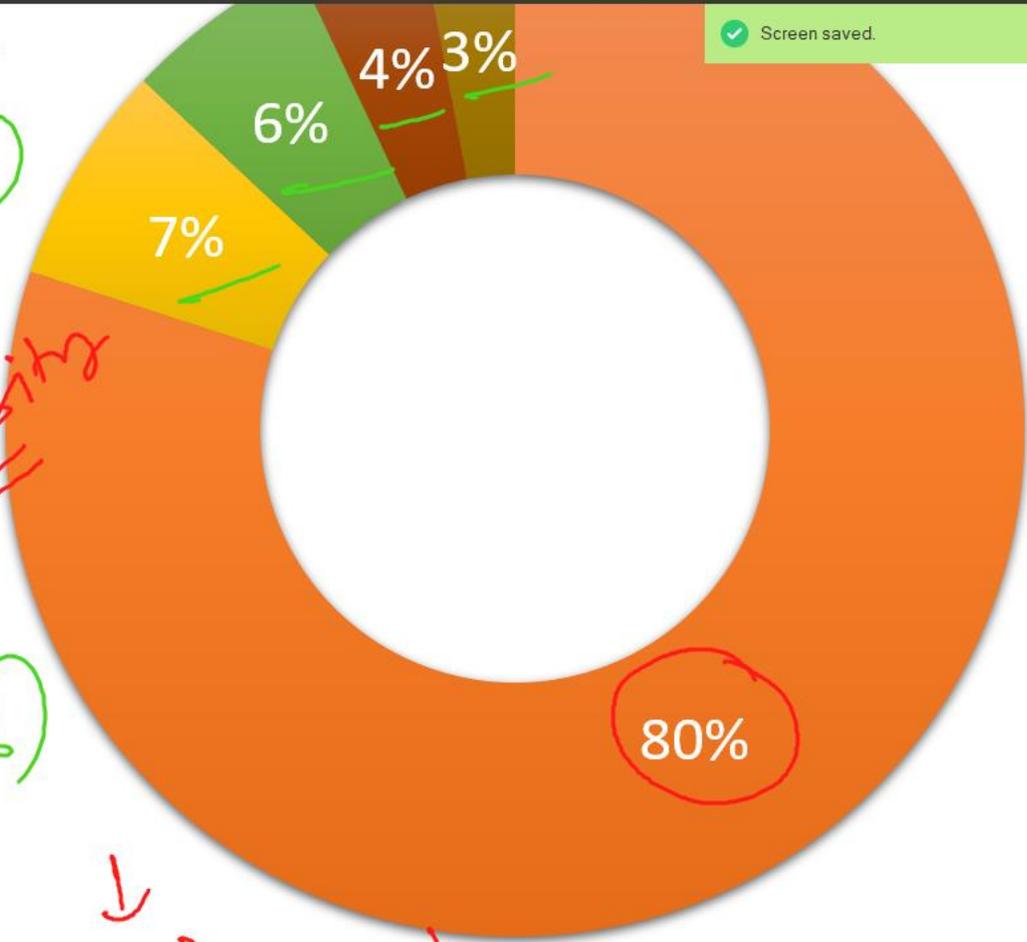
Natural Gas



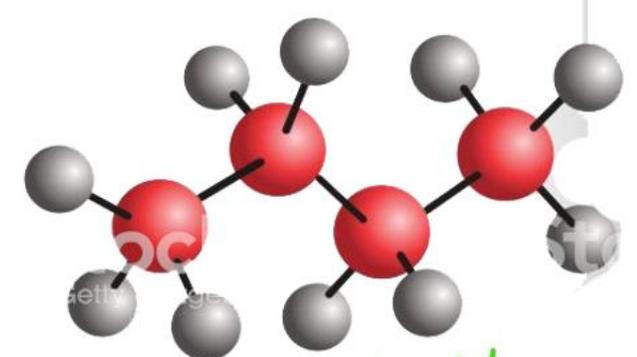
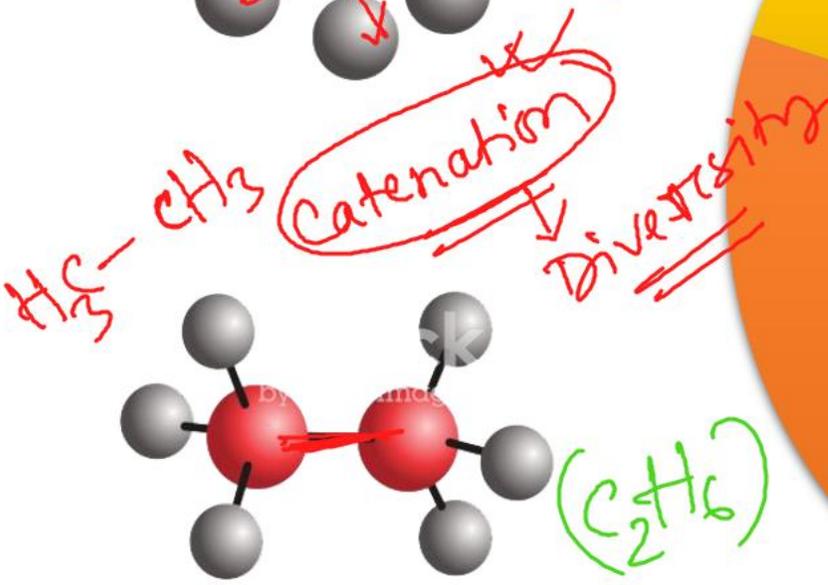
You are screen sharing Stop Share



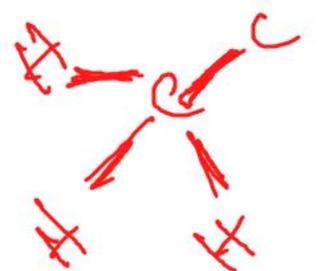
Screen saved. Show in Folder



propane (C₃H₈)



C₄H₁₀ (Butane)



- Methane (1C)
- Ethane (2C)
- Propane (3C)
- Butane & Isobutane (4C)
- Pentane (5C)



পেট্রোলিয়াম
(Petroleum oil)

5000 feet

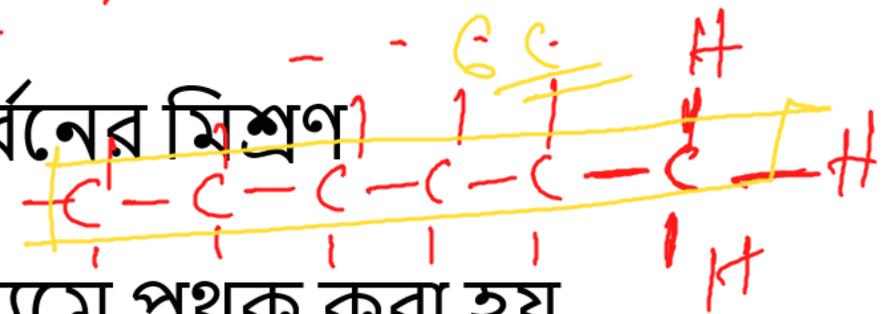
Eng. 1 → petrol
Eng. 2 → Diesel
Eng. 3 → Octane

✓ ৫০০০ ফুট বা তারও গভীরে পাওয়া যায়

✓ Crude Oil / Unprocessed Oil (impurities)
↳ process → utilize

✓ বিভিন্ন দৈর্ঘ্যের কার্বন শিকলের হাইড্রোকার্বনের মিশ্রণ

(catenation):



□ আংশিক পাতনের (Partial Distillation) মাধ্যমে পৃথক করা হয়

Unprocessed Oil → P.D. → processed oil

1. Vaporization
T↑ (Liq. → Vap.)

2. Condensation
(Vap. → Liq.)
T↓

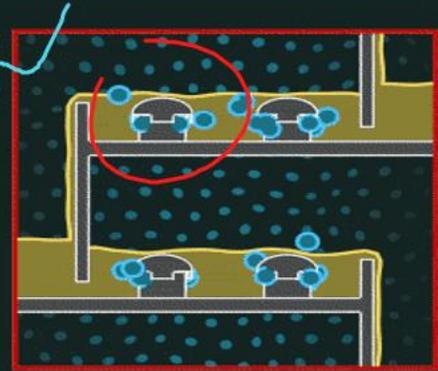
(C' length)
↓
Different

DISTILLATION

Crude oil contains a variety of **hydrocarbons** that have different boiling points. To separate these compounds, the mixture is heated into a super-hot mixture of

The mixture is then fed into a **distillation tower**. In here, the compounds with a lower boiling point rise up as vapours, while the compounds with a higher boiling point fall downwards as liquids.

The tower contains trays that allow the vapour to bubble upward through the liquid, helping to exchange heat and resulting in more effective separation.

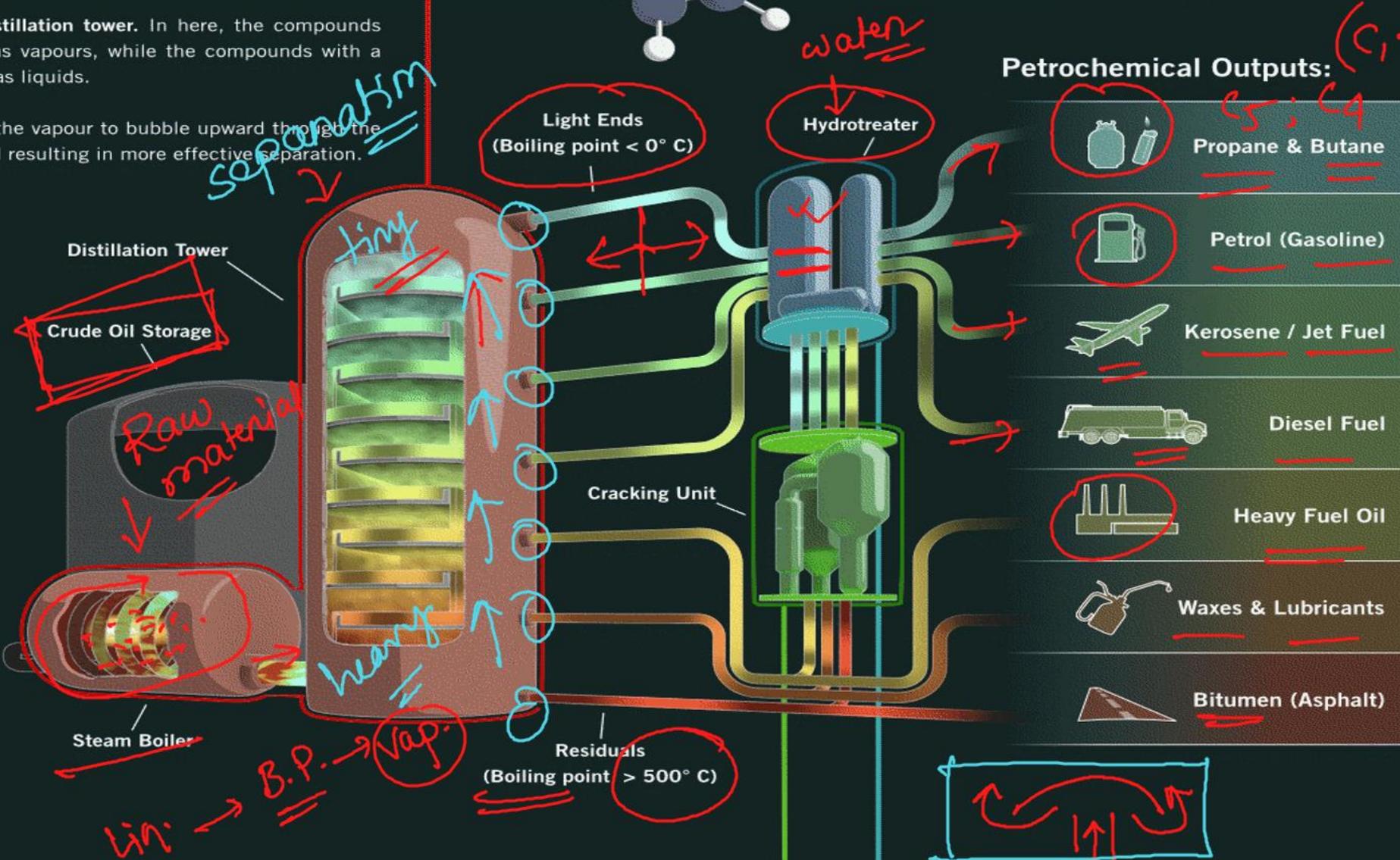


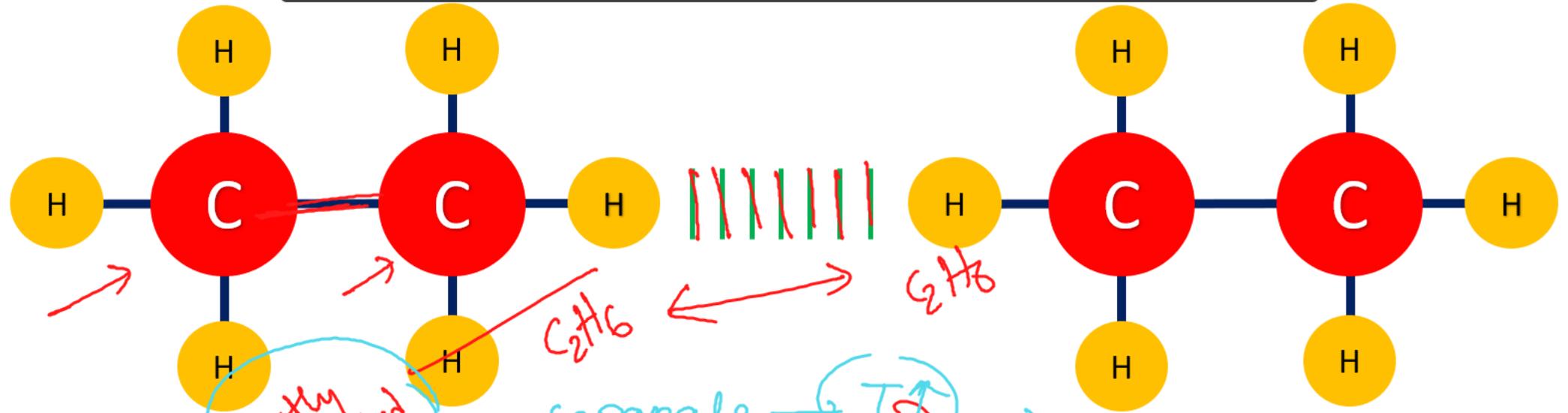
The distilled products are then piped off from the different levels of the tower. These separated products are called **fractions** or **distillates**.

This process may take place along multiple distillation towers.

You are screen sharing [Stop Share]

Mouse Select Text Draw Stamp Spotlight Eraser Format Undo Redo Clear Save





IMAF

↑

→ Tightly attached

→ Loosely attached

↓

T ↓

separate via temp.

↑ T ↑

(IMAF)

আন্তঃআণবিক আকর্ষণ বল
(Inter-Molecular Attraction Force)

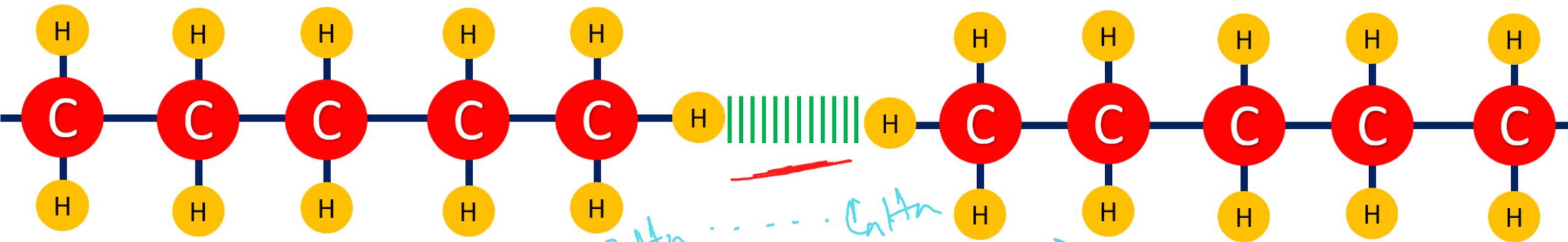
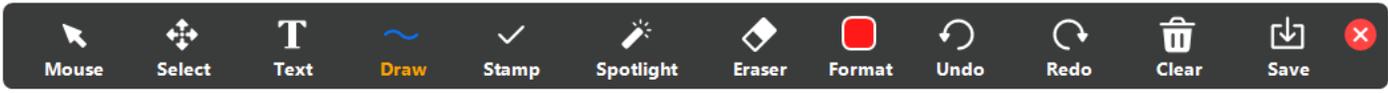
IMAF ↑ ; B.P. ↑

"Relate" ↓ ; B.P. ↓

স্ফুটনাঙ্ক (Boiling Point)
(B.P.)



You are screen sharing Stop Share



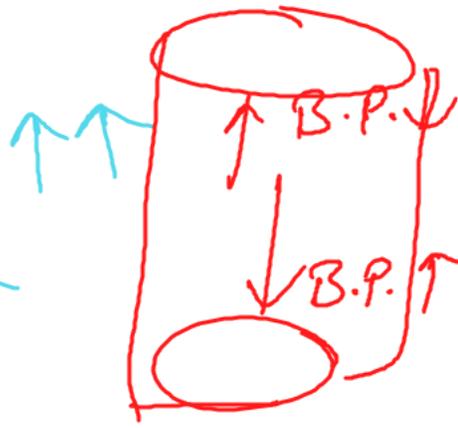
← $C_{nth} \dots C_{nth}$ →

Surface area
Attraction (more)

আন্তঃআণবিক আকর্ষণ বল

স্ফুটনাঙ্ক B.P.

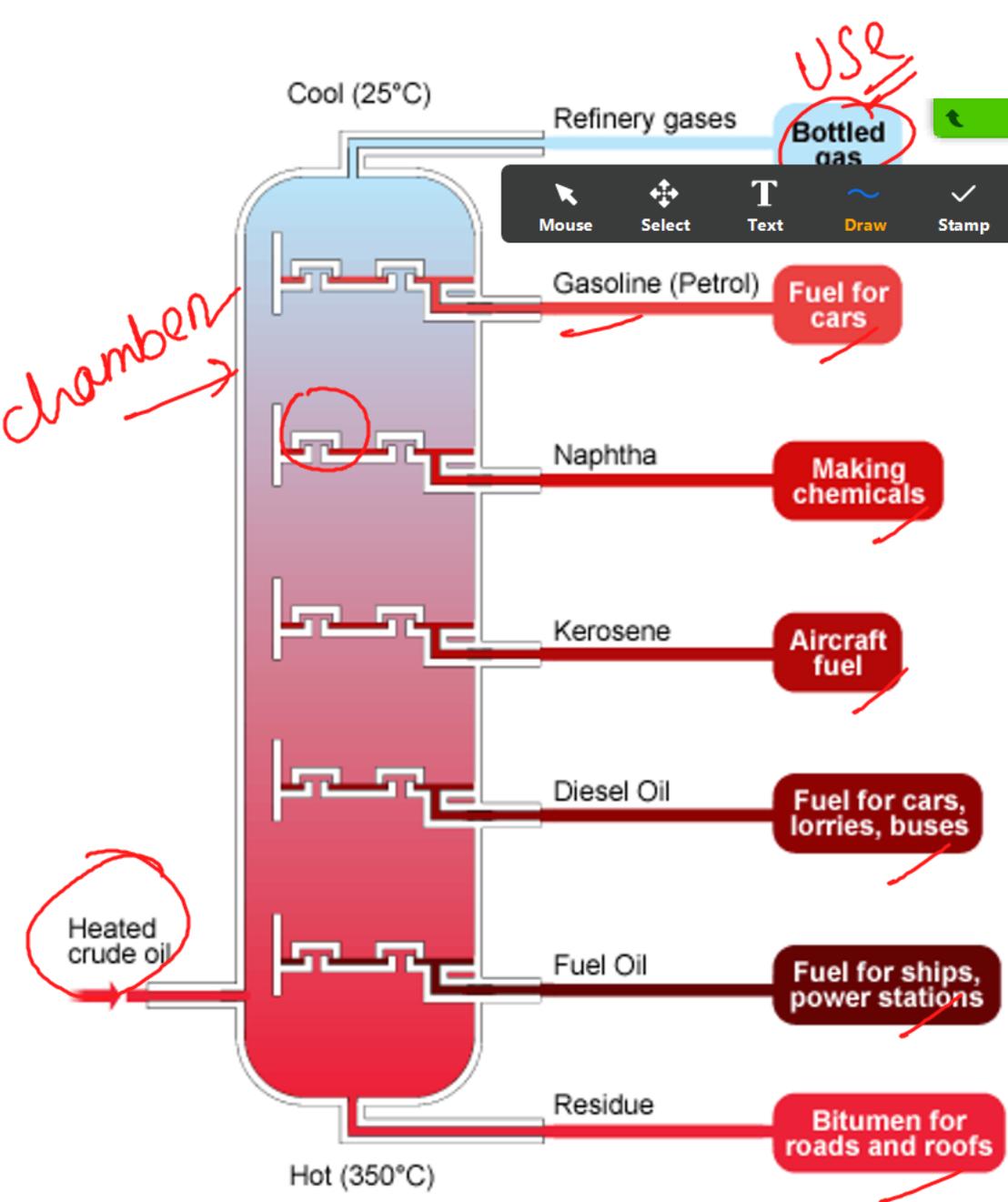
IMAF





chamber

Heated crude oil



USE

You are screen sharing [Stop Share] - 20° C

Mouse Select Text Draw Stamp Spotlight Eraser Format Undo Redo Clear Save

Gasoline (Petrol)	Fuel for cars	$C_5 - C_{10}$	21° C - 70° C
Naphtha	Making chemicals	$C_7 - C_{14}$	71° C - 120° C
Kerosene	Aircraft fuel	$C_{11} - C_{16}$	121° C - 170° C
Diesel Oil	Fuel for cars, lorries, buses	$C_{17} - C_{20}$	171° C - 270° C
Fuel Oil	Fuel for ships, power stations	$C_{20} - C_{30}$	271° C - 340° C
Residue	Bitumen for roads and roofs	$>C_{30}$	$>340° C$

*molecular surface ↓
I.M.A.F. ↓
B.P. ↓*

*gas → liquidified
↑
high pressure*

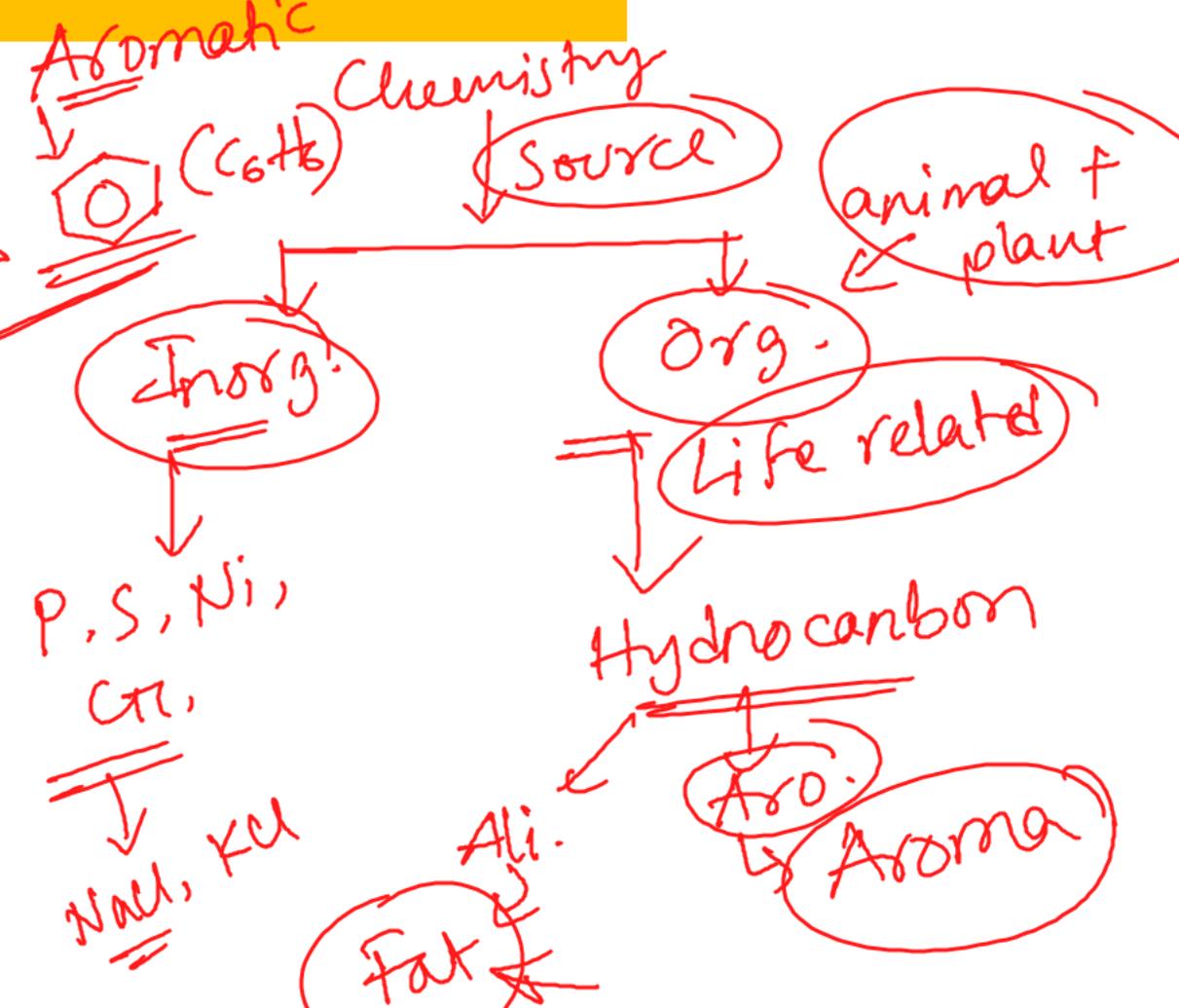
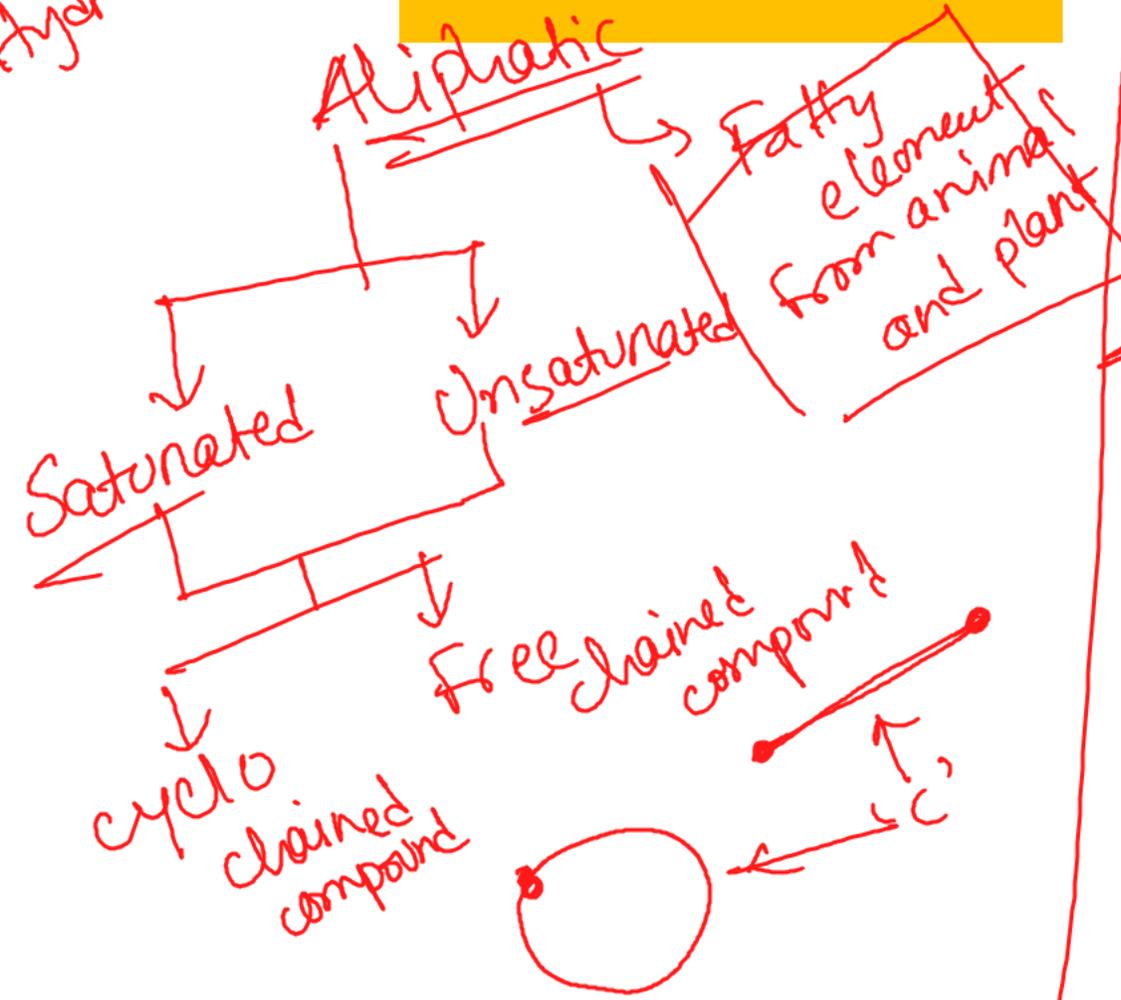
*molecular sur. ↑
I.M.A.F. ↑
B.P. ↑↑*



made of
(C, H)
Hydrocarbon

অ্যালিফেটিক

অ্যারোমেটিক



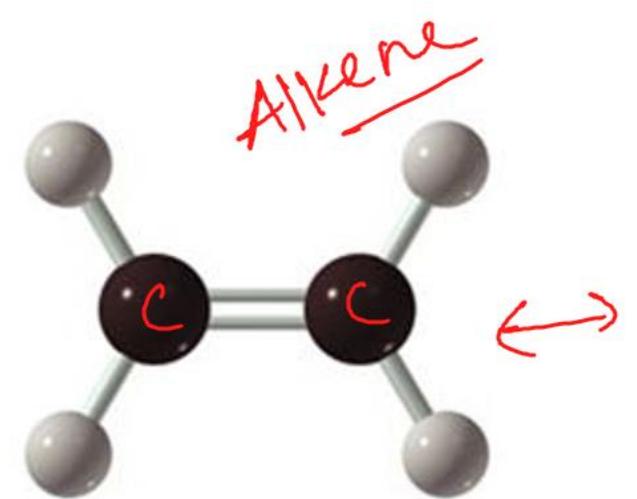
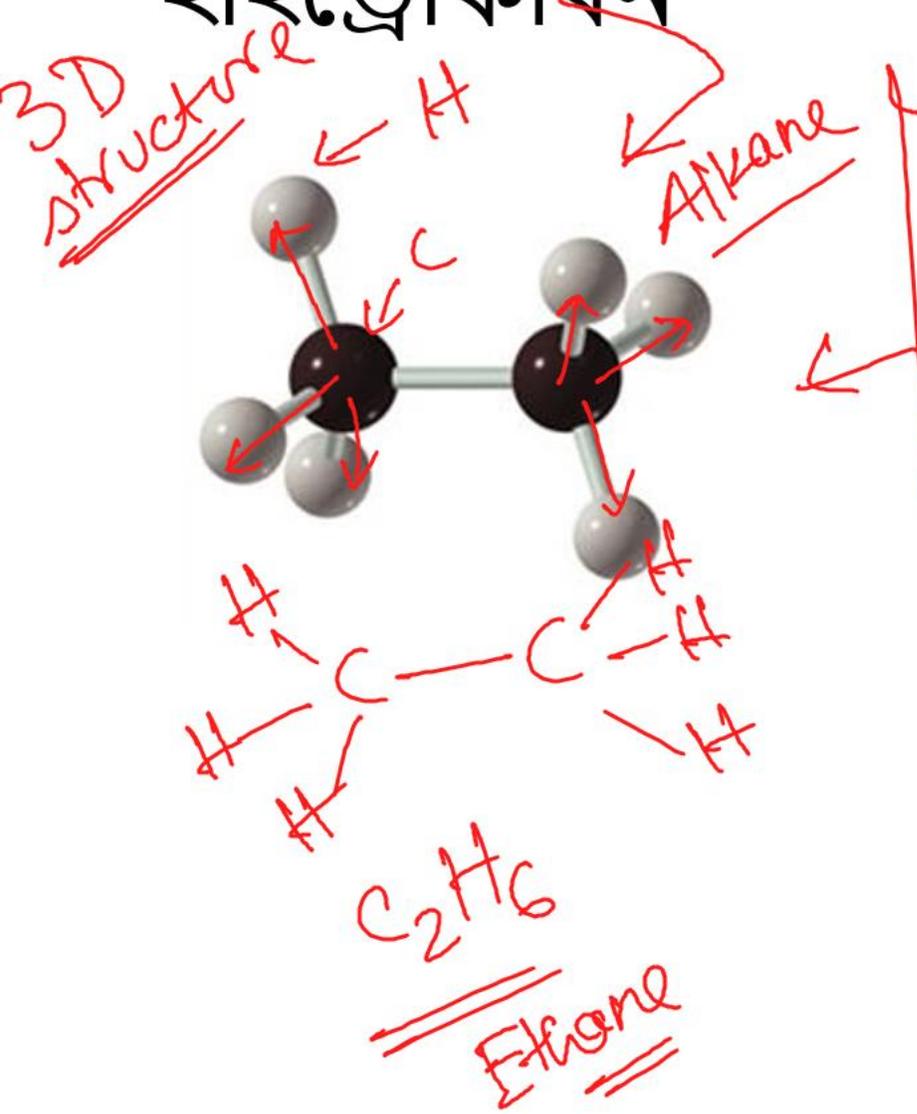
সম্পৃক্ত (Saturated) ও অসম্পৃক্ত (Unsaturated)

হাইড্রোকার্বন

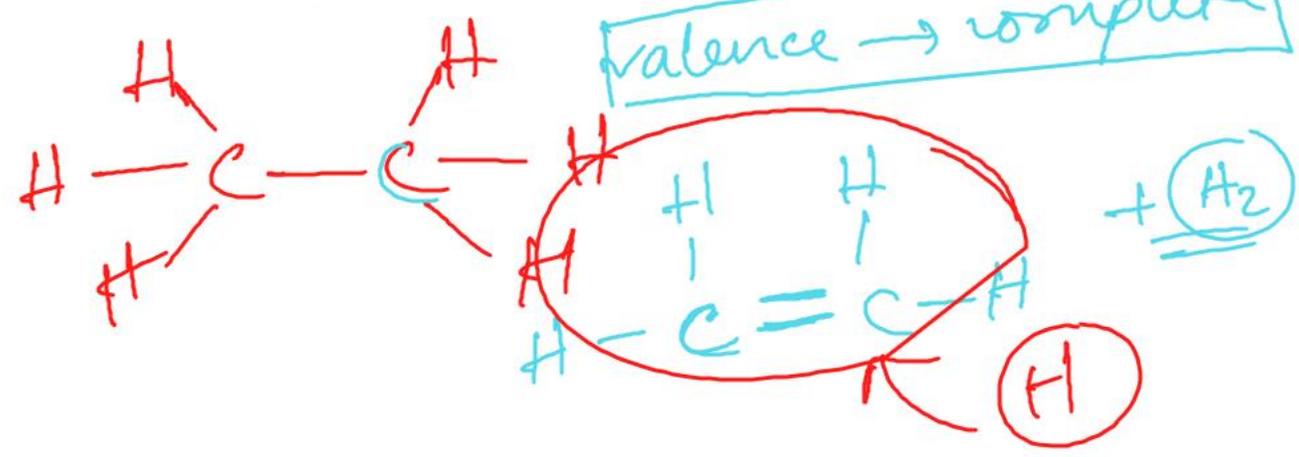
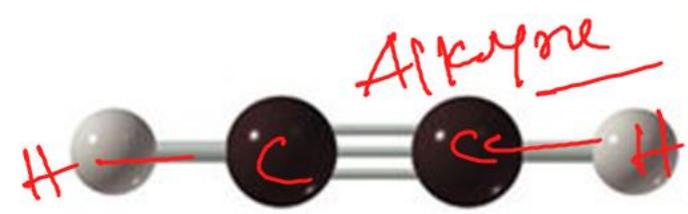


You are screen sharing Stop Share

Mouse Select Text Draw Stamp Spotlight Eraser Format Undo Redo Clear Save



Saturated: Single Bond
 Unsaturated: Double " or Triple "

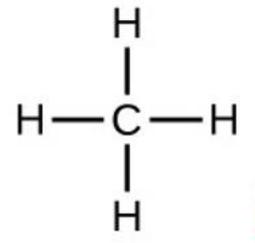


সম্পৃক্ত (Saturated) হাইড্রোকার্বন

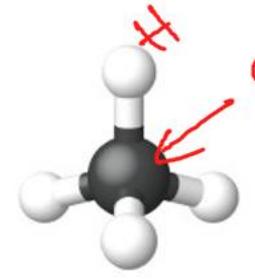
Mute Start Video Participants 239 Q&A 66 Polls New Share Pause Share Annotate Remote Control More 38

You are screen sharing Stop Share

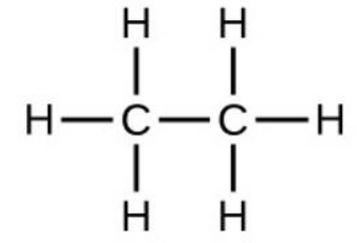
Mouse Select Text Draw Stamp Spotlight Eraser Format Undo Redo Clear Save



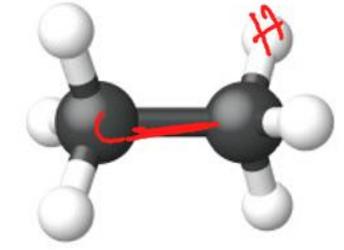
CH_4



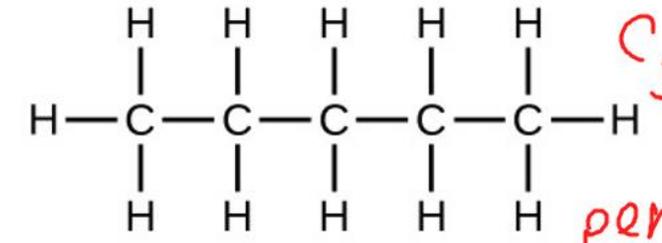
c methane



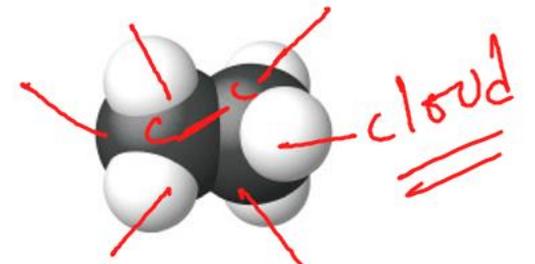
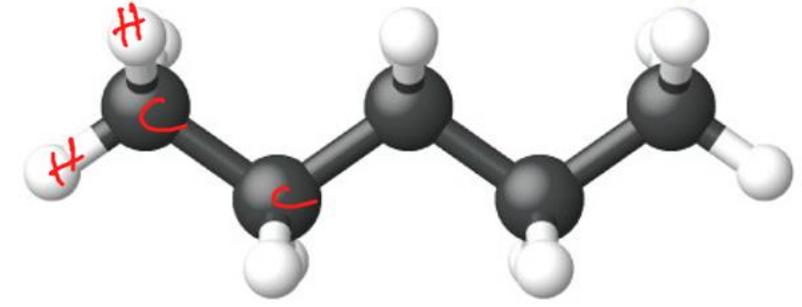
C_2H_6
ethane



stick



C_5H_{12}
pentane



cloud

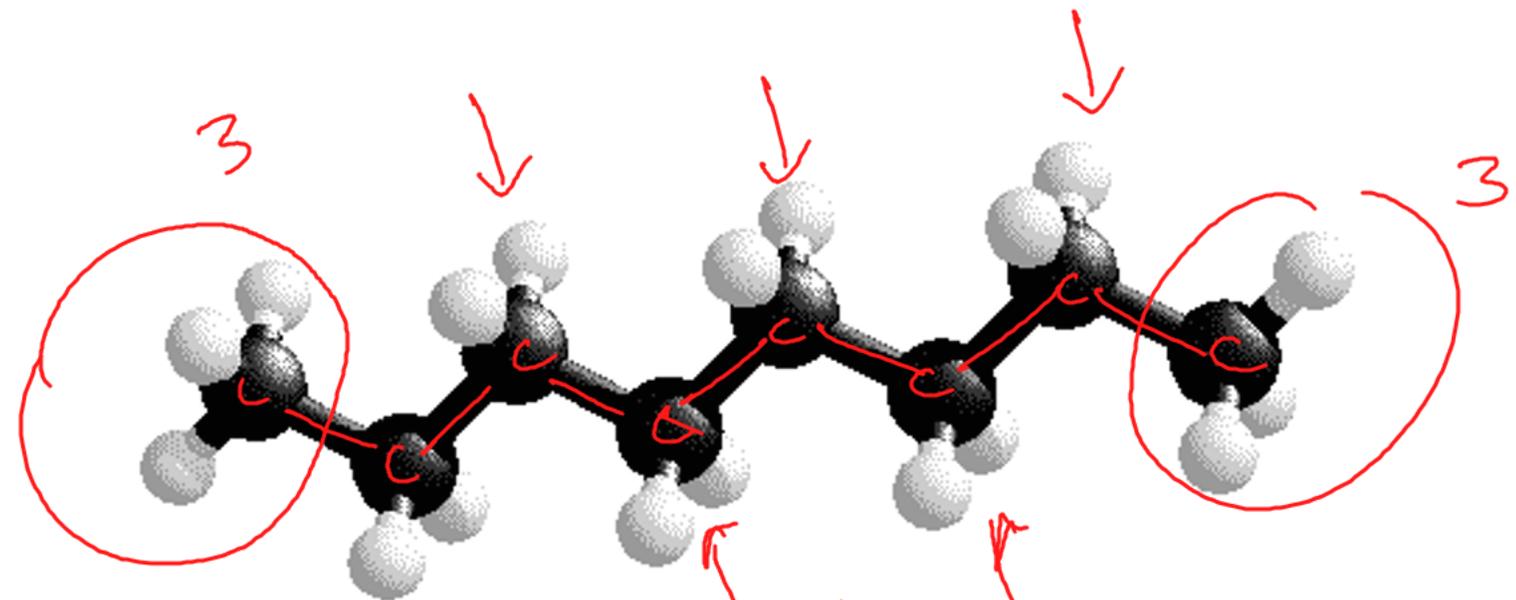
All of them are saturated hydrocarbons.

সম্পৃক্ত (Saturated) হাইড্রোকার্বন (Saturated Hydrocarbon)



You are screen sharing Stop Share

Mouse Select Text Draw Stamp Spotlight Eraser Format Undo Redo Clear Save



C₈H₁₈

Octane

sufficient natural resource

লেগে থাকো সৎভাবে,
স্বপ্ন জয় তোমারই হবে

ঔদ্ভাস-উন্মেষ শিক্ষা পরিবার

Thank You