

# YAKEEN NEET 2.0

**2026**

**Some Basic Concept of Chemistry**

**Physical Chemistry**

**Lecture -01**

**By- Amit Mahajan Sir**








## Topics to be covered

- 1 Add – ons this year
- 2 History of Chemistry & Applications of Chemistry
- 3 Matter & its Classification
- 4 Atoms, Molecules & Ions

A man with a beard and curly hair is speaking to a woman with long blonde hair. The man is looking slightly upwards and to the side, while the woman is looking at him.

There is one big flaw in your Preparation that's name is Backlog ? What do we say to Backlog ?

A man with a beard and curly hair is pointing his finger at a woman with long blonde hair. The man is looking directly at the woman, and she is looking back at him. A blue checkmark is drawn over the woman's head.

NOT TODAY !!!





## Add ons this year ?



Tricks to make your calculation fast

- ✓ Amazing ppt work for better visualization & retention according to NCERT
- ✓ Many questions will be discussed in class which are from lines of NEW NCERT
- ✓ PYQ of NEET, AIIMS PYQ, JEE MAINS & JEE Advance & NCERT Exemplar in class
- ✓ MAGARMACH practice questions (MPQ) daily & solution in Recorded form
- ✓ Class after chapter completion for NEET advance → *Class 2 NEET advance sheet*
- ✓ Chapter summary in Recorded form
- ✓ Special focus on Assertion & Reason as well as Statement wise questions
- ✓ Daily Test start after 2 chapters
- ✓ Revision of Last Class in next Class





## Rules to Attend Class



- ✓ **1. Always sit in a peaceful environment with headphone and be ready with your copy and pen.**
- ✓ **2. Never ever attend a class from in between or don't join a live class in the middle of the chapter.**
- ✓ **3. Make sure to revise the last class before attending the next class & always complete your home work.**
- ✓ **4. Never ever engage in chat whether live or recorded on the topic which is not being discussed in current class as by doing so u can be blocked by the admin team or your subscription can be cancelled.**





## Rules to Attend Class



5. Try to make maximum notes during the class if something is left then u can use the notes pdf after the class to complete the remaining class.
6. Always ask your doubts in doubt section to get answer from faculty. Before asking any doubt please check whether same doubt has been asked by someone or not.
7. It does not matter whatever situation you are in **NEVER EVER CREATE A BACKLOG BECAUSE IT MAY RESULT IN BACKLOG FOR YOUR DREAM COLLEGE.**

Q What are the







# History Of Chemistry

- ① Philosopher's stone (Paras) → which will turn metals into Gold.
- ② Elixir of life → Immortal
- ③ Chemistry → Rasayan Shastra.

## The Story of Chemistry: From Magic to Molecules

Once upon a time, humans looked at the world and wondered—



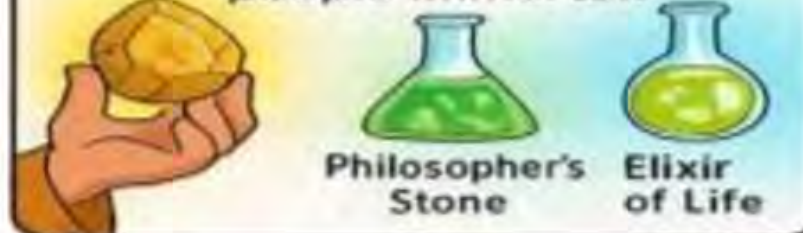
Their curiosity led to science, and one special branch of science called **Chemistry**—the study of substances, their properties, how they combine, react and change.

But chemistry wasn't always taught in labs or books.



Thousands of years ago, in ancient India, it was part of everyday life and deep philosophically. They called it **Rasayan Shastra**, and it included everything from preparing perfumes and glass to dyes and healing potions.

They believed in magical things like the **Philosopher's Stone (Paras)** that could turn metals into gold, and the **Elixir of Life** to make people immortal.



🏺 **Mohenjo-Daro**, potters mass-produced glazed pottery using chemical processes like heating and mixing materials.







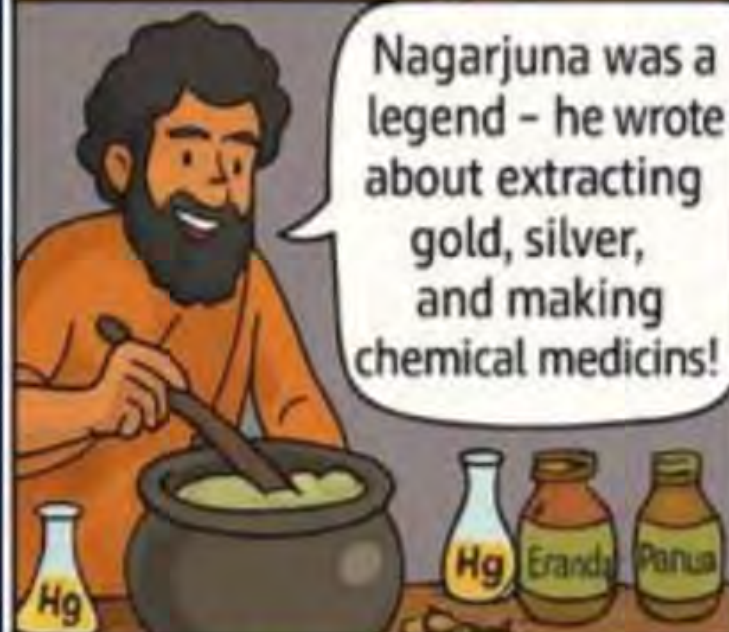
# History Of Chemistry

④ Nagarjuna → extraction of Gold, Silver & Chemical medicines

② Chakrapani → discovered  $HgS$ , Soap → mustard oil + alkalis.

③ Soap →  $CaCO_3$  + Mahua seeds  
18<sup>th</sup> Century + Eranda oil.

## Alchemy, Metals & Soap-Making



## Secret Inks, Fireworks & Nanotech?!



## ANCIENT INDIAN CHEMISTRY – SOAPS, SCIENCE, AND STUNNING WALLS





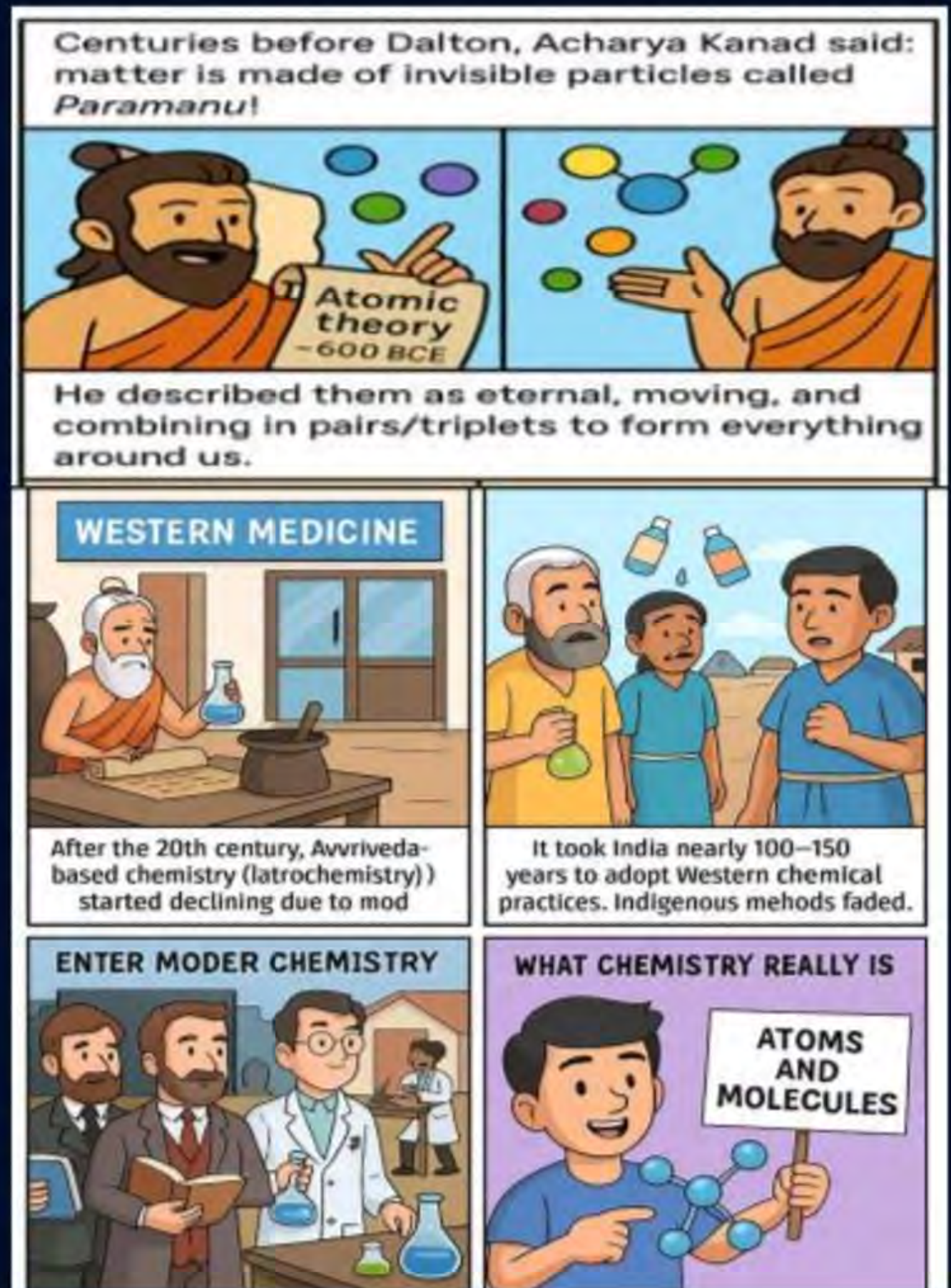
④ wall glue → made from boiled fruits, seeds & bark.





⑤ Acharya Kanada  
 ↓  
 Matter → small particles  
 ↓  
 paramanu.

⑥ Bhasm → Nano-particles





**According to Charaka Samhita, extreme reduction in metal size was part of:**

- ☐ **A** Atomic fusion
- ☐ **B** Ayurvedic cooling
- ☒ **C** Nanotechnology
- ☐ **D** Alkaline testing



**Which ancient civilization is associated with early chemical processes like baking bricks and pottery?**

- ☐ A Egyptian
- ☐ B Roman
- ☒ C Harappan
- ☐ D Chinese



**The preparation of soaps in 18th century India included:**

- ☒ **A**  $\text{CaCO}_3$  only
- ☐ **B** Ash and acid
- ☒ **C** Oil of Eranda and seeds of Mahua
- ☐ **D** Lemon and soda





# Applications Of Chemistry

① Fertilizers  $\rightarrow$  N P K elements  
Nitrogen, Phosphorus, Potassium

for ex: Urea ( $\text{NH}_2-\text{C}(=\text{O})-\text{NH}_2$ )

Ammonium sulphate  $(\text{NH}_4)_2\text{SO}_4$

Sodium nitrate  $(\text{NaNO}_3)$

Sodium sulphate  $\text{Na}_2\text{SO}_4$

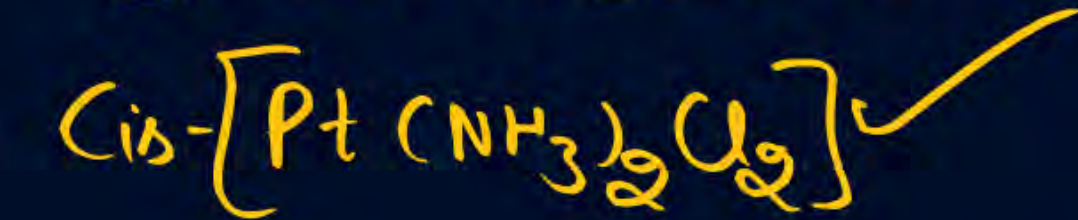




② Sanitiser  $\rightarrow$  Isopropanol + water.

③ Medicine  $\rightarrow$

① Cis-Platin & Taxol  $\rightarrow$  treatment of Cancer.



② AZT (Azidothymidine)  $\rightarrow$  treatment of AIDS



④ CFC → (Chlorofluorocarbons) which used in electronic devices used to deplete ozone layer.  
now replaced by safer alternatives.



✓ **Assertion (A):** Chemistry has contributed significantly to cancer therapy.

✓ **Reason (R):** Cisplatin and Taxol are drugs used in the treatment of cancer

- ✓
- A. Both A and R are true, and R is the correct explanation of A
  - B. Both A and R are true, but R is not the correct explanation of A
  - C. A is true, but R is false
  - D. A is false, but R is true



## Question



### Column A

A. Cisplatin

B. AZT (Azidothymidine)

C. Safer alternatives to CFCs

D. Conducting polymers

### Column B

i. Used in AIDS therapy

ii. Used in cancer therapy

iii. Environmental protection

iv. Industrial application in electronics

A → (ii)

B → (i)

C → (iii)

D → (iv)



**Which of the following is a chemical fertilizer?**

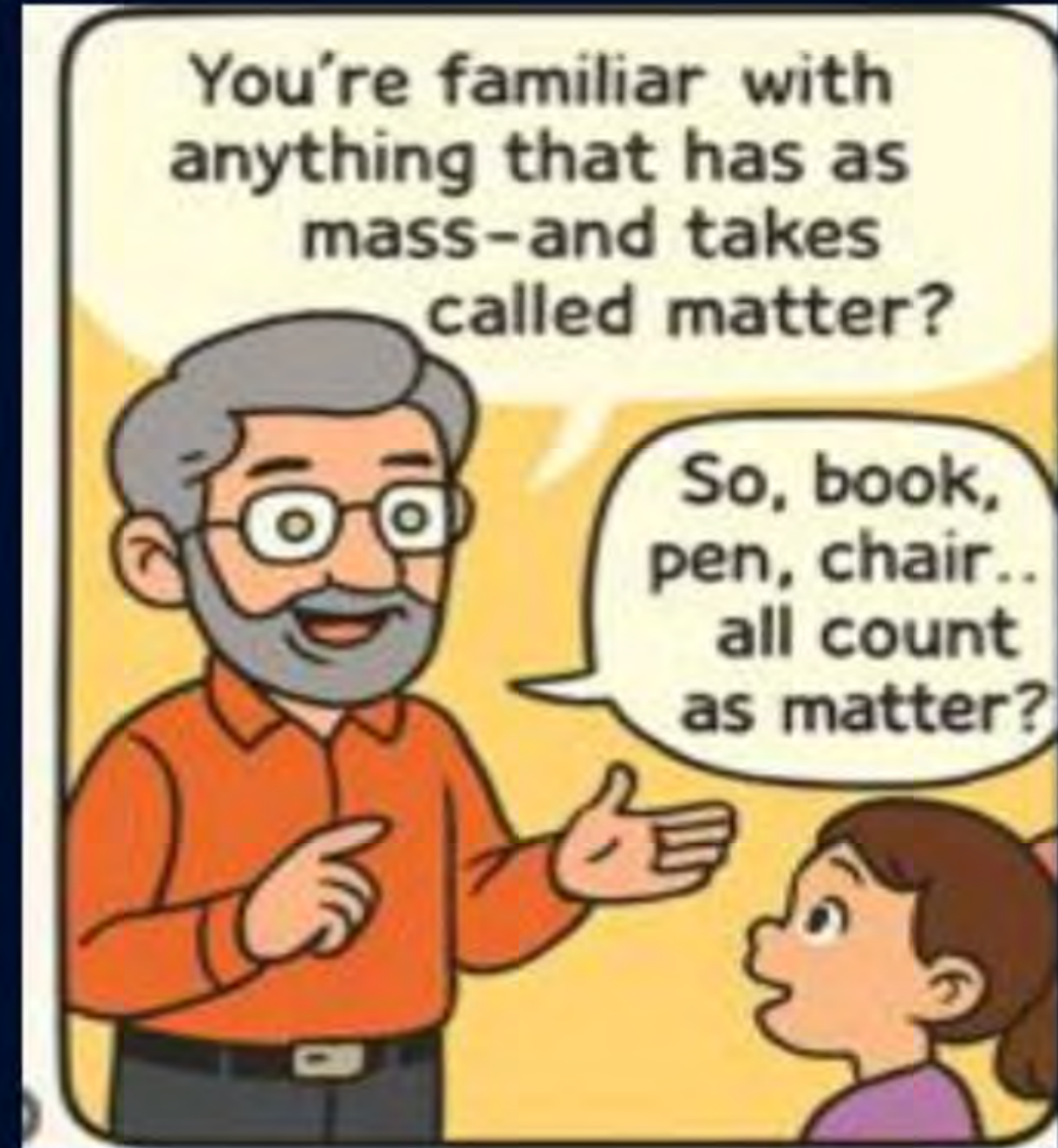
- ☐ **A** Urea
- ☐ **B** Sodium Nitrate
- ☐ **C** Ammonium sulphate
- ☒ **D** All of these





## MATTER: Nature and Classification

Anything has mass & occupies space  
is matter.





Dil.	✓
Dimag.	✓
Soch.	X
Mann.	X
Haddi	✓
Yaad.	X

Paisa(Money)





**Which is not a type of matter?**

- A** Dil (heart)
- B** Dimag (Brain)
- C** Haddi (Bone)
- D** Mann



✓ Statement-I: Matter can neither be created nor be destroyed.

✗ Statement-II: In all physical and chemical changes, the total mass of the reactions is never equal to the total mass of the products..

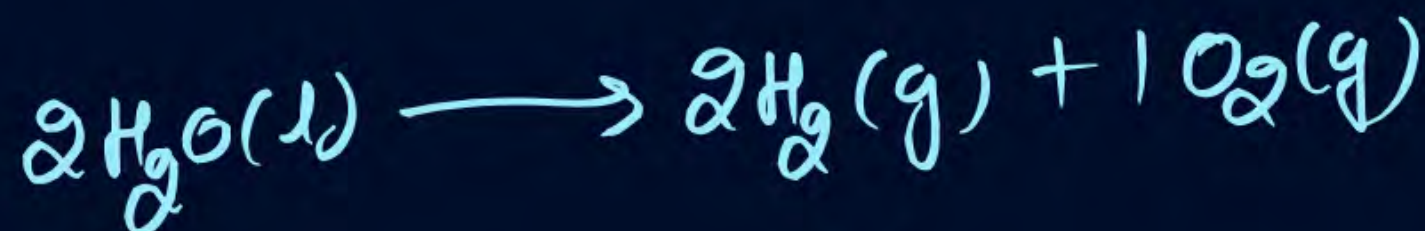


A Both statement-I and statement-II are correct

B Both statement-I and statement-II are incorrect

✓ C Statement-I is correct and statement-II is incorrect

D Statement-I is incorrect and statement-II is correct







## Physical Classification of Matter



Solid, Liquid & Gas

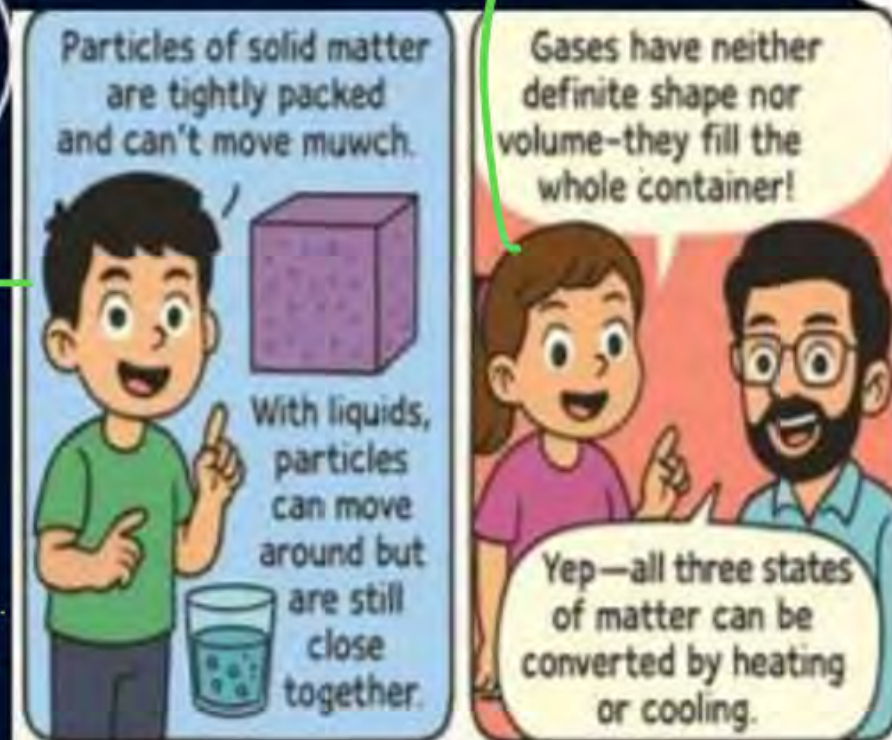




# Difference between Solid, Liquid & Gases

Rookie

Rookie



Solid → particles don't move in true solids  
Strongest Force of attraction, Particles closest  
fixed shape & fixed volume, incompressible.

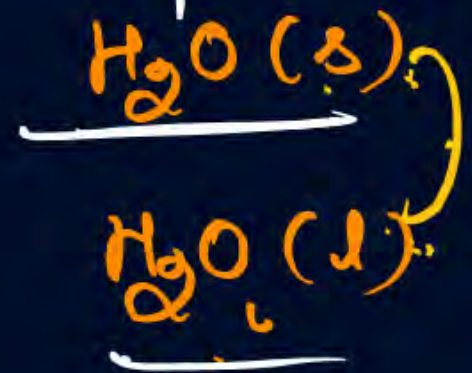
Liquids → particles move, F.O.A. weak  
Volume fixed, shape not fixed.



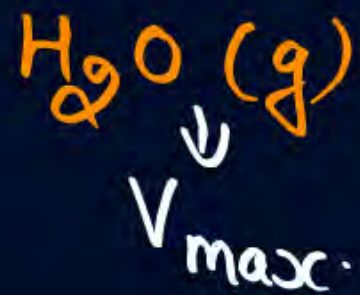
Gas  $\rightarrow$  least F.O.A., Neither fixed shape nor fixed

Volume, highest compressible.

density =  $\frac{\text{mass}}{\text{Volume}}$

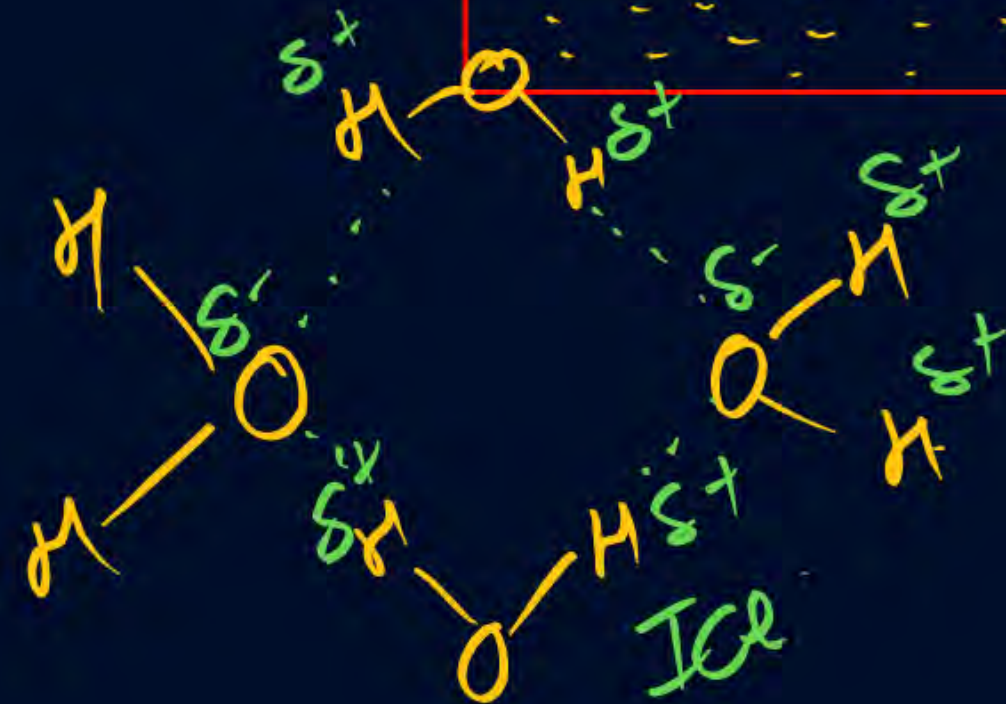
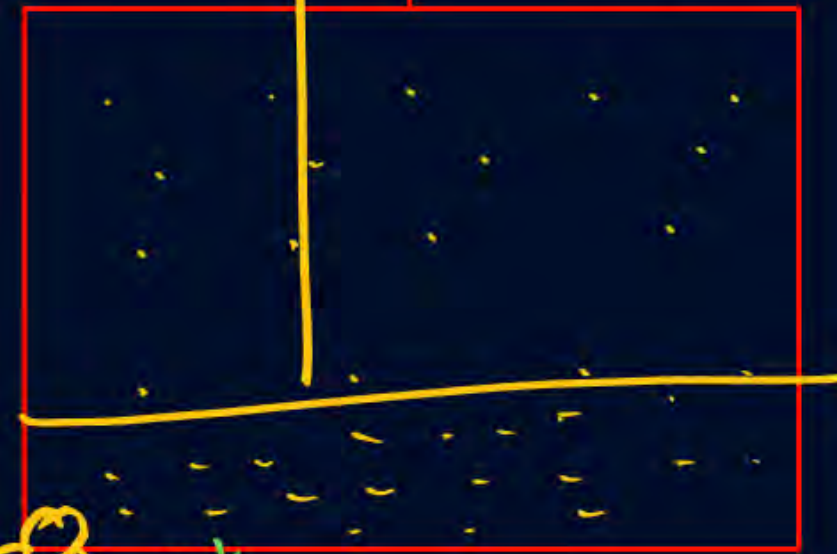


density max.

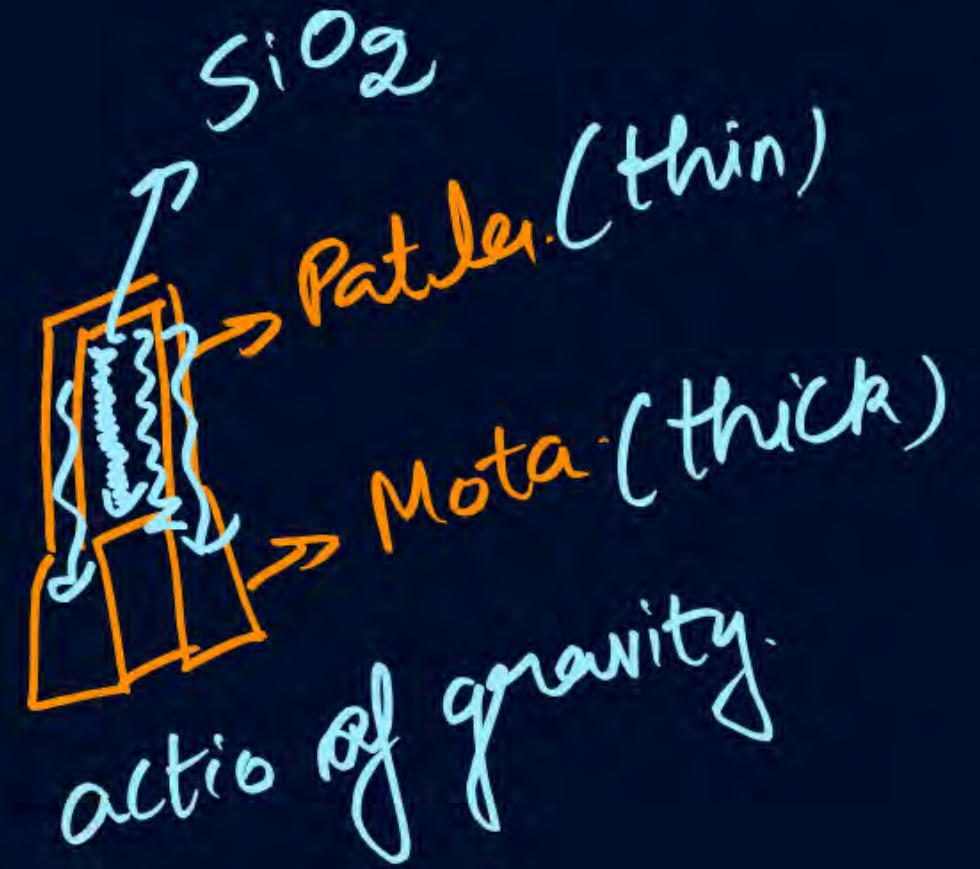
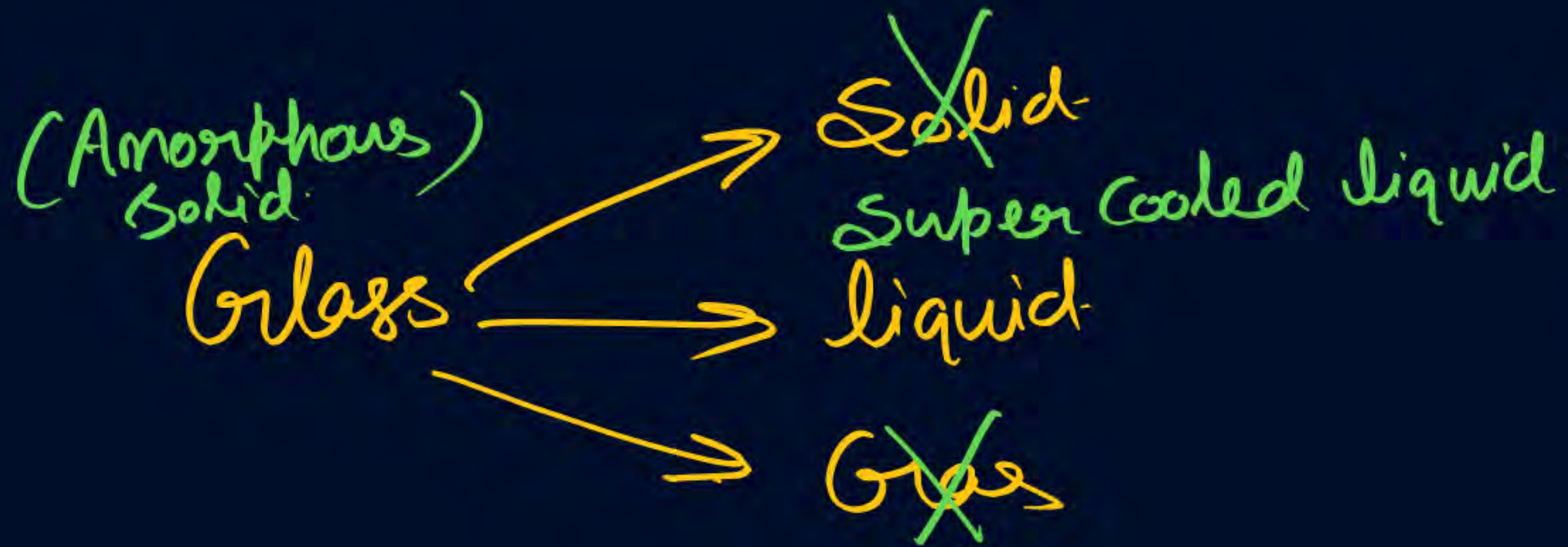


density least.

$\text{solid} < \text{liquid} < \text{gas}$   
 $\xrightarrow{\text{Volume } \uparrow}$









**The ability of gases to occupy the entire volume of the container is due to:**

- A** Strong intermolecular forces
- B** High density
- C** Negligible intermolecular forces
- D** Definite shape



Which of the following is the correct order of particle movement from least to greatest?

*Solid < Liquid < Gas*

- ☒ **A** Solid < Liquid < Gas
- ☐ **B** Gas < Liquid < Solid
- ☐ **C** Liquid < Solid < Gas
- ☐ **D** Solid < Gas < Liquid



Which of the following changes involves a physical change of state?

$wax(s) \rightleftharpoons wax(l)$  Most appropriate answer

**A** Burning of candle

☒ **B** Freezing of water  $H_2O(l) \rightleftharpoons H_2O(s)$

☐ **C** Rusting of iron  $Fe(s) \rightarrow Fe_2O_3 \cdot xH_2O(s)$   
rust iron

☐ **D** None of these

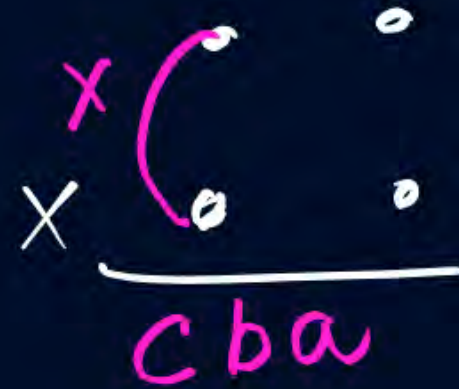
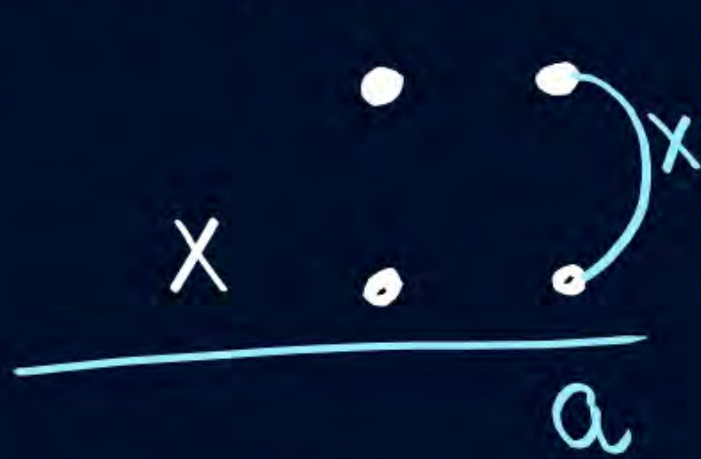




# Tricks for fast Calculations



Multiplication ÷ 2 digit



$$\begin{array}{r} 2 \\ 23 \\ \times 82 \\ \hline 1886 \end{array}$$

$$\begin{array}{r} 23 \\ \times 82 \\ \hline 16 \\ +2 \end{array}$$



$$\begin{array}{r} 91 \\ \times 24 \\ \hline 2184 \end{array} \quad 3$$

$$\begin{array}{r} 25 \\ \times 31 \\ \hline 775 \end{array}$$

$$\begin{array}{r} 36 \\ \times 24 \\ \hline 864 \end{array} \quad 2$$





$$\begin{array}{r} \text{X} \quad 231 \\ \text{X} \quad 23 \\ \hline 28413 \end{array}$$

$$\begin{array}{r} 217 \\ \text{X} \quad 713 \\ \hline 154721 \end{array}$$



$$\begin{array}{r}
 1 \text{ } \underline{\underline{3}} \\
 21.3 \text{ } 1 \\
 \times 6.19 \text{ } 2 \\
 \hline
 131847
 \end{array}$$

$$\frac{131847}{1000} \approx 131.847$$





## Magarmach Practice Questions ( MPQ )



**The decline of iatrochemistry in India began with:**

- A** Introduction of European alchemy
- B** Rise of Buddhist traditions
- C** Adoption of modern Western medicine
- D** British banning Ayurveda



**AZT is used for treatment of**

- A** Cancer
- B** AIDS
- C** Headache
- D** None of these

**Which is a type of matter?**

- A** Pen
- B** Paper
- C** Ink
- D** All of these



**Which of the following is not a characteristic of solids?**

- A** Definite shape
- B** Definite volume
- C** High compressibility
- D** Strong intermolecular forces

**Which statement is correct about gases?**

- A** Gases have fixed shape but not fixed volume
- B** Gases are incompressible
- C** Gases have negligible intermolecular forces
- D** Gases have highest density among the three states



**Which state of matter exhibits both viscosity and fluidity?**

- A** Solid
- B** Liquid
- C** Gas
- D** All of these

**Statement 1 : On heating, a solid usually changes to a liquid and the liquid on further heating changes to the gaseous state.**

**Statement 2 : Arrangement of constituent particles is different in solid, liquid and gaseous state.**

- A** Both statement-I and statement-II are correct
- B** Both statement-I and statement-II are incorrect
- C** Statement-I is correct and statement-II is incorrect
- D** Statement-I is incorrect and statement-II is correct



**Which of the following is not a correct match?**

- A** Solid - Least compressible
- B** Liquid - Definite shape
- C** Gas - No definite volume
- D** Plasma - Ionized gas

**Which property is not exhibited by liquids?**

- A** Surface tension
- B** Definite shape
- C** Viscosity
- D** Ability to flow



**Which among the following states of matter has the highest kinetic energy of particles at room temperature ?**

- A** Solid
- B** Liquid
- C** Gas
- D** Plasma

**THANK**  
**YOU**