

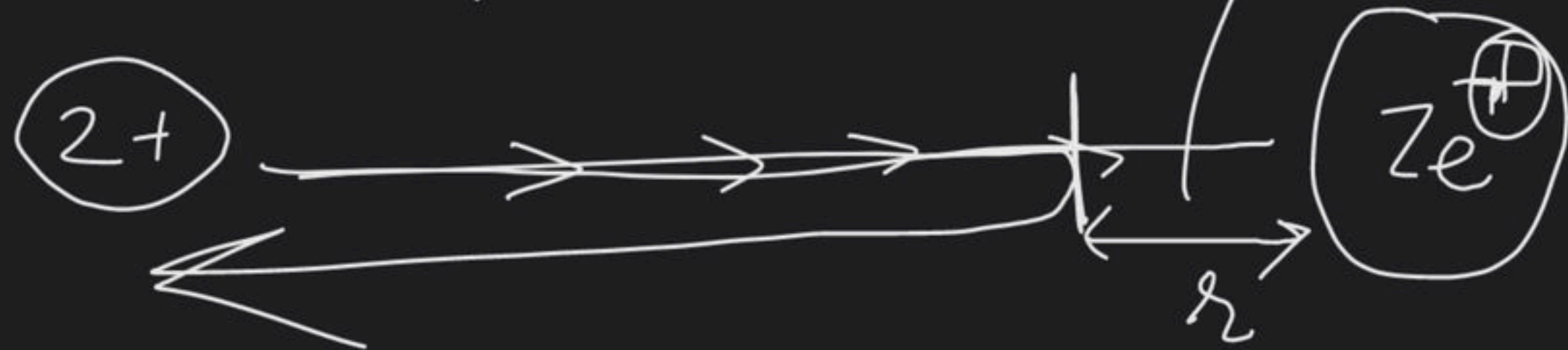


Doubt Clearing Session

Course on Atomic Structure for Class XI

$$\textcircled{1} \quad H_{\alpha}^{2+} = \underline{\underline{2e}}$$

$$\textcircled{i} \quad KE = 2e \times 2 \times 10^6 \\ = 4 \times 10^6 \text{ eV}$$



distance of
closest
approach

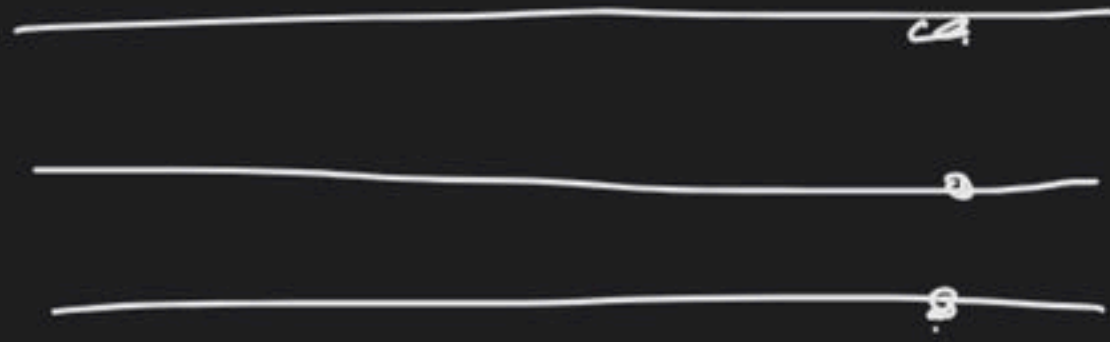
$$KE = PE$$

$$\textcircled{iii} \quad 4 \times 10^6 = \frac{k (47e) (2e)}{r}$$

3



$h\nu$



-13.6

$n=1$

H

He^+

Li^{2+}

$Z=?$

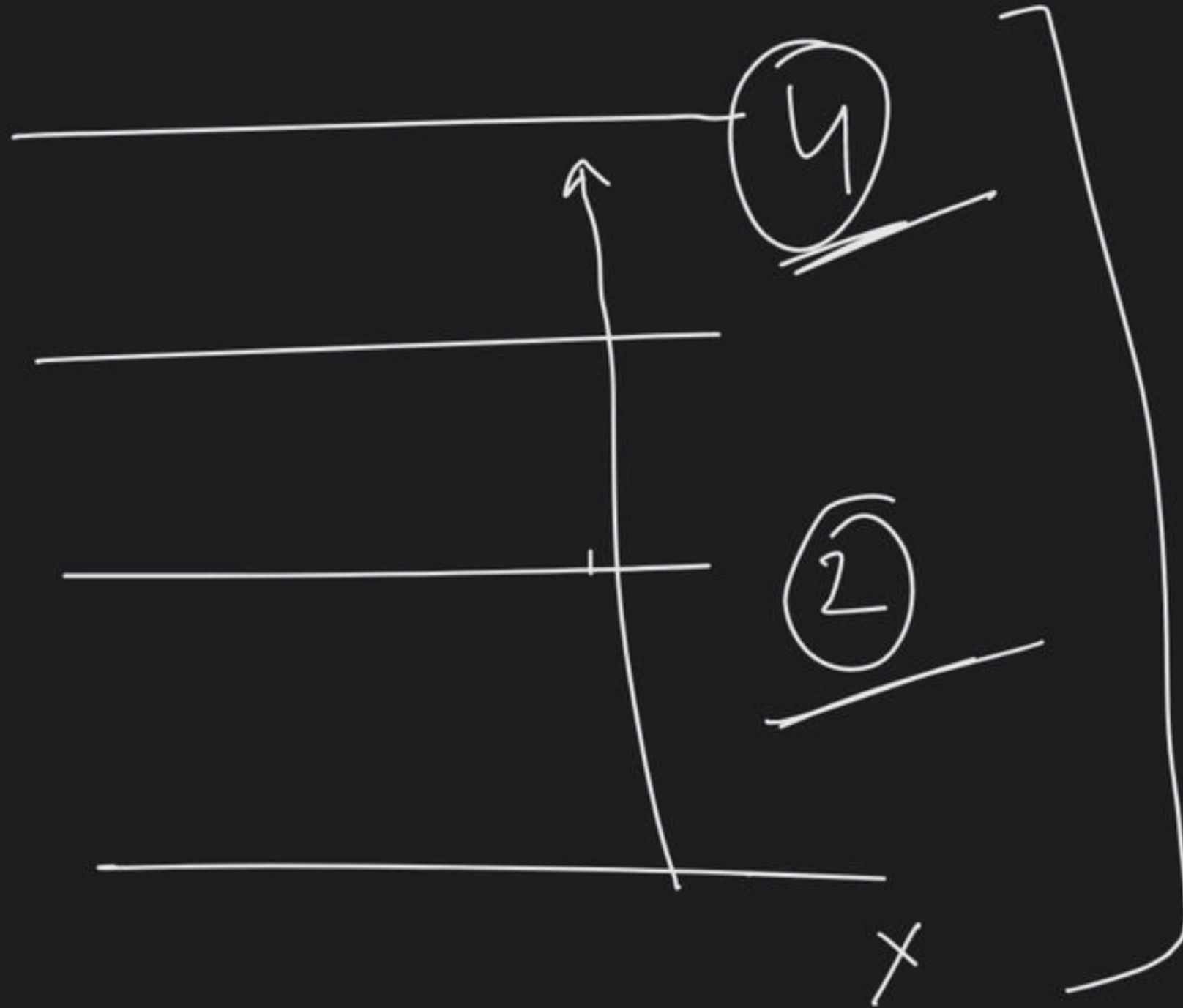
$Z=1$

< 13.6

He^+

H-atom

2.55 eV photon



(8)

$$1 \text{ Rydberg} = \frac{21.8 \times 10^{-19} \text{ J}}{1.6 \times 10^{-19}} = \underline{\underline{13.6 \text{ eV}}}$$

$$T.E = \frac{Z^2}{n^2}$$

$$\text{Rydberg} = 4 \text{ Rydberg}$$

$$\underline{\underline{Z=2}}$$

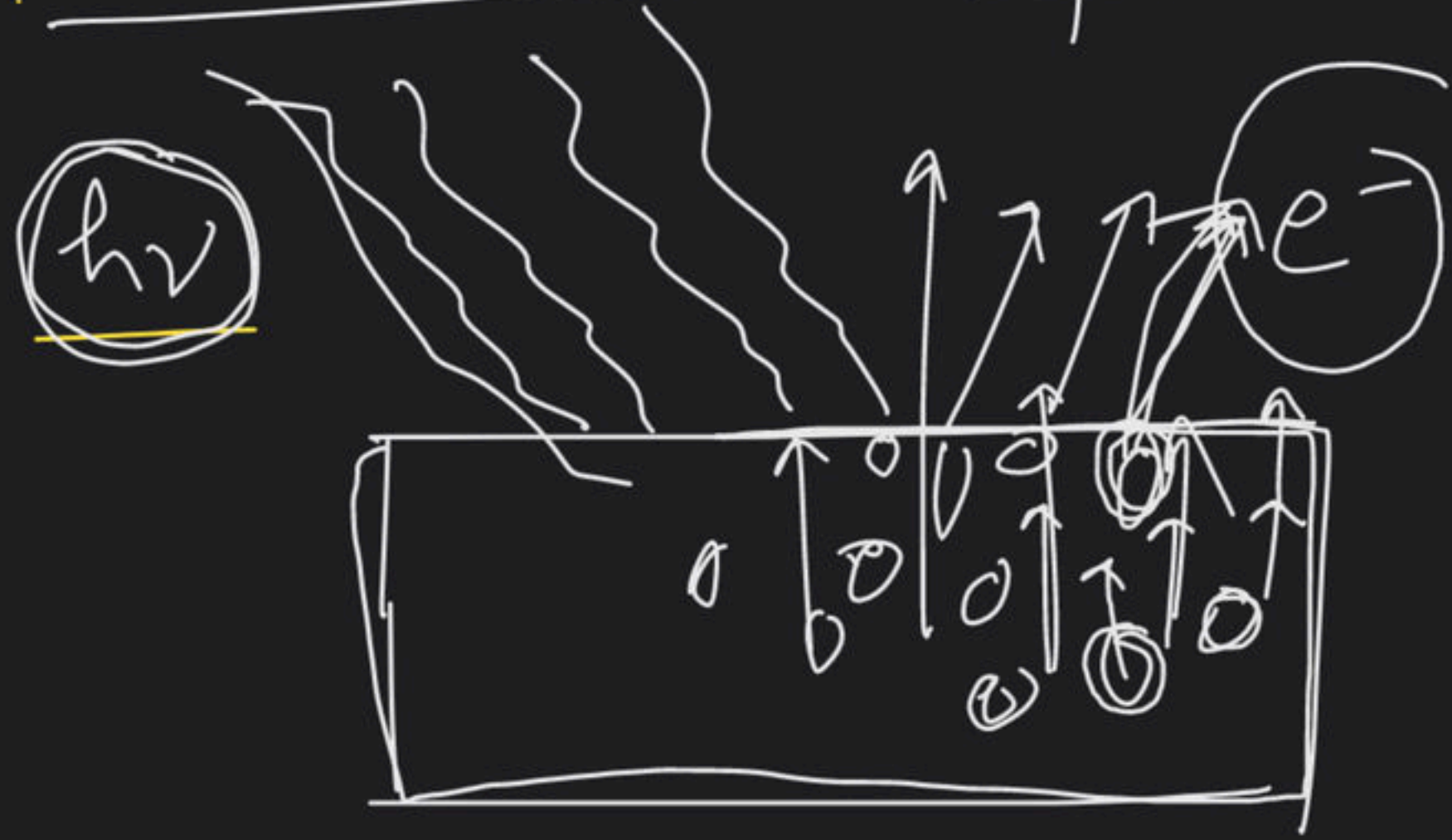
$$\begin{array}{l} T.E = \frac{4 \text{ Rydberg}}{h^2} \\ \text{--- } 4 \text{ Ryd} \\ \text{--- } 1 \text{ Ryd} \\ \text{--- } 4 \text{ Ryd.} \end{array}$$

$$T.E = -13.6 \frac{Z^2}{n^2} \text{ eV}$$

$$13.6 \text{ eV} = 1 \text{ SP}$$

$$T.E = -\frac{Z^2}{n^2} \text{ SP}$$

photoelectric effect : \rightarrow Ejection of e^- from metal plate is called photoelectric effect.



Metal plate

$W = \phi$ = work function
= 5 eV

Threshold energy : — Minimum energy of photon required to eject an e^- .

$$\underline{\underline{KE_{\max} = h\nu - \phi}}$$

$$0 < KE \text{ of ejected } e^- \leq KE_{\max}$$

$$\underline{\text{Quantum yield}} = \frac{\text{no. of } e^- \text{ ejected}}{\text{no. of photons struck}} \times 100$$



Intensity of light

Brightness

(energy per unit area per unit time)

As per wave theory of light

Intensity \propto (amplitude)²

As p.

As per particle nature of light

Intensity \propto frequency.

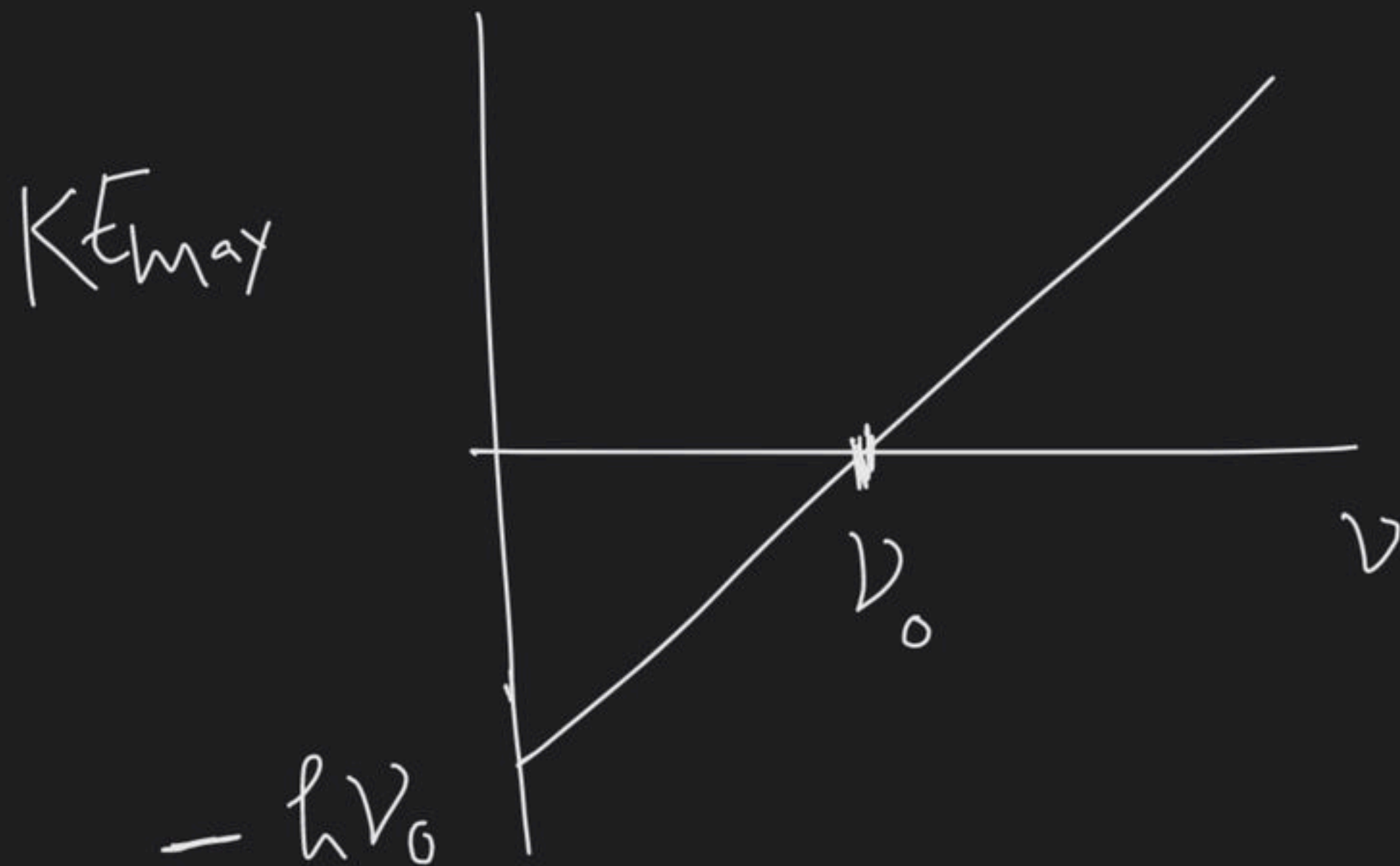
\propto no. of photons striking
per second per unit
area

(photo-intensity)

KE_{\max} depends on

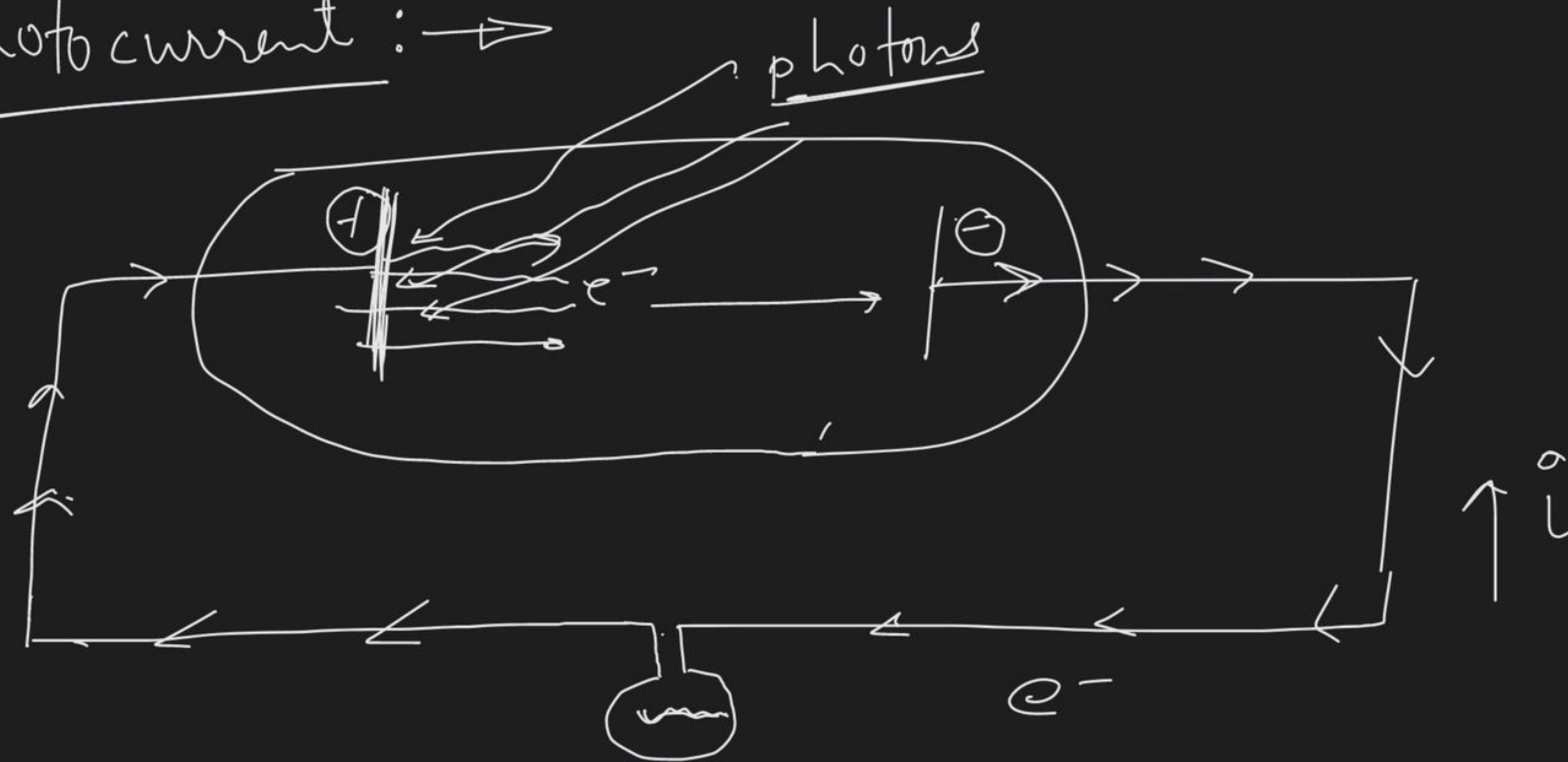
frequency of light used and
is independent

photo-intensity



$$KE_{\max} = h\nu - \phi$$
$$= h\nu - h\nu_0$$

photo current : \rightarrow



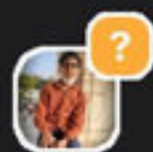
current produced by photoe's
is called _____

0-11

1, 2, 3, 4, 5, 6, 7, 8, 9

10, 11, 12,

1-12



Question

from Aaditya Ag...

Please help me with this doubt

Good evening sir, Sir 1 issue aa rha tha bhot

Sir 18th September se school m offline exam h aur sir usme Maths Syllabus m bhot kuch h jo hamne nhi padha abhi toh sir usme bhi time dena pad rha h ab aur school ke teachers bhi force kar rhe h ki school ke notes dikhao sab aur exam se pehle check karwane h.

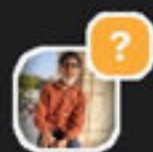
Sir is time aap sab teachers bhi important chapters padha rhe h aur isliye sabhi subject m HW bhi jyada mil rha h sir aur 19th ko hamara Monthly test bhi h Advanced ka, sir bilkul time manage nhi ho paa rha itna saara work ho rha h aur revision ka time bhi nhi mil rha

Please sir thodi help kar dijiye kis tarah se karoo kuch samajh nhi aa rha

Minimum frequency (ν_0)

$$W = h\nu_0 = \frac{hc}{\lambda_0}$$

Maximum wavelength (λ_0)



Question

from Aaditya Ag...

sir ye h Anna sir ki shaadi ki pic





Question

from Aaditya Ag...

PIC 1



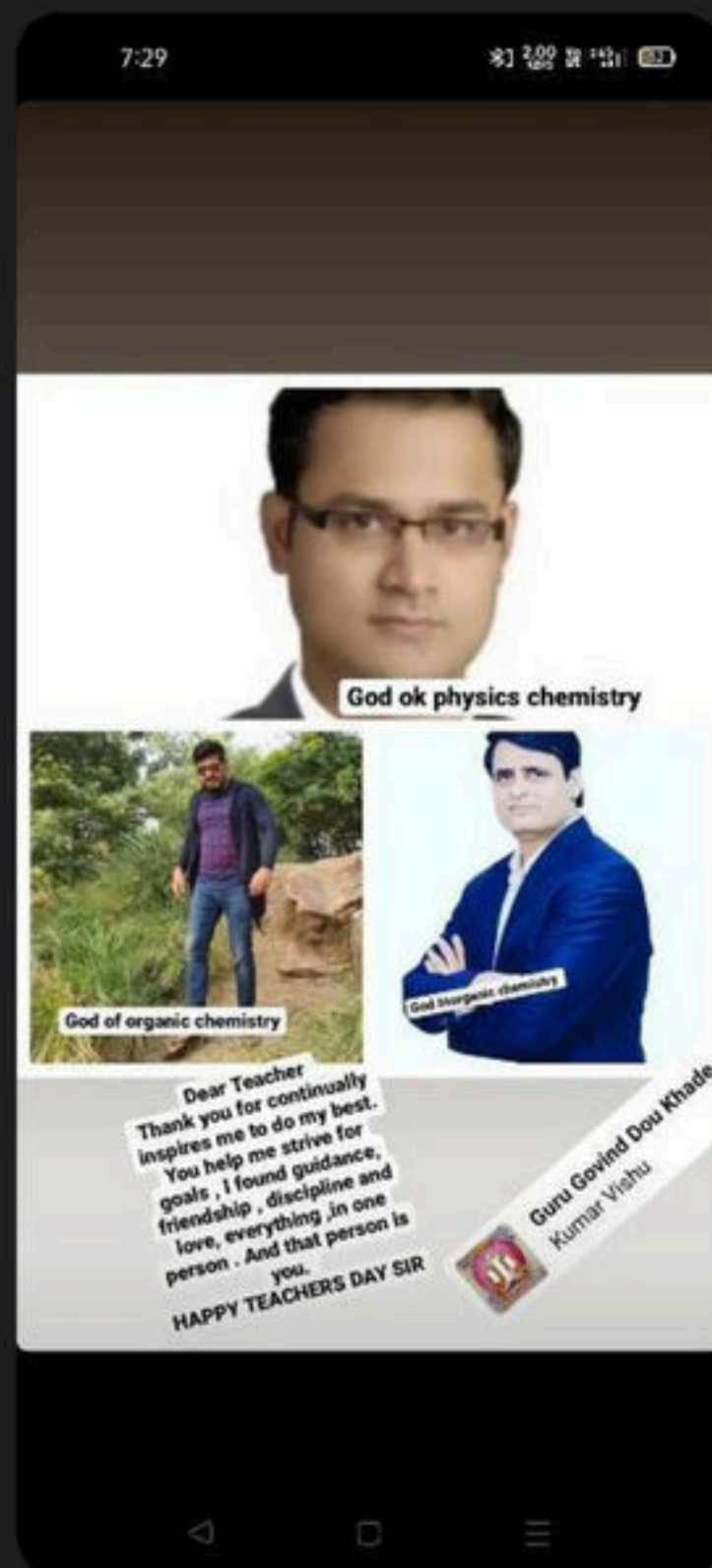
*Disclaimer: The content is provided by the Learner and is reproduced 'As Is' and Unacademy disclaims any and all liabilities with regards to the content



Question

from PJxi Visha...

Please help me with this doubt





Question

from supreet

my doubt





Question

from Aaditya Ag...

PIC 2



*Disclaimer: The content is provided by the Learner and is reproduced 'As Is' and Unacademy disclaims any and all liabilities with regards to the content



Question

from ARITRA AMB...

MY LITTLE WORK. SORRY SIR FOR SENDING LATE. MID ME
CLASS NHI THA SO.....

Dedicated to all my Teachers

"THE WAY OF LIFE IS SOMBER AS IT MOVES
THROUGH UPS AND DOWNS,
BUT WE, THE PILGRIMS, HAVE FOLLOWED IT
THROUGH AGES.

OH! ETERNAL CHARIOTEER, THE WHEELS OF YOUR
CHARIOT

ECHO DAY AND NIGHT IN THE PATH
IN THE MIDST OF FIERCE REVOLUTION,
YOUR CONCH SHELL SOUNDS.

YOU SAVE US FROM FEAR AND MISERY.

OH! YOU WHO GUIDE THE PEOPLE THROUGH
TORTUROUS PATH,

VICTORY BE TO YOU, DISPENSER OF THE DESTINY
OF INDIA!

VICTORY, VICTORY, VICTORY TO YOU!

DURING THE BLEAKEST OF NIGHTS,
WHEN THE WHOLE COUNTRY WAS SICK AND IN
SUDOR

WAKEFUL REMAINED YOUR INCESSANT BLESSINGS,
THROUGH YOUR LOWERED BUT WINK-LESS EYES

THROUGH NIGHTMARES AND FEARS,

YOU PROTECTED US ON YOUR LAP,

OH LOVING MOTHER!

OH! YOU WHO HAVE REMOVED THE MISERY OF
THE PEOPLE,

VICTORY BE TO YOU, DISPENSER OF THE DESTINY
OF INDIA!

VICTORY, VICTORY, VICTORY TO YOU!

THE NIGHT IS OVER, AND THE SUN HAS RISEN
OVER THE HILLS OF THE EASTERN HORIZON.
THE BIRDS ARE SINGING, AND A GENTLE AUSPICIOUS BREEZE.

IS POURING THE ELIXIR OF NEW LIFE.

BY THE HALO OF YOUR COMPASSION,

INDIA THAT WAS ASLEEP IS NOW WAKING.

ON YOUR FEET WE NOW LAY OUR HEADS.

OH! VICTORY, VICTORY, VICTORY TO YOU, THE SUPREME KING.

VICTORY BE TO YOU, DISPENSER OF THE DESTINY OF INDIA!

VICTORY, VICTORY, VICTORY TO YOU!"

(ADAPTED FROM A POEM OF RABINDRANATH TAGORE)

5.9.2021

FROM

ARITRA AMBUDH DUTTA

NURTURE, PREMIUM 2023



HAPPY TEACHER'S DAY SIRJEE. I AM GRATEFUL TO THE ALMIGHTY
THAT I HAVE GOT AN OPPORTUNITY TO BE UNDER GUIDANCE OF
THE GODS WHO HAVE CHANGED MY WORLD FULLY, WHO HAVE
TRANSFORMED MY THINKING ABILITY AND MADE ME BELIEVE ON
MYSELF. YOUR CONTRIBUTION IN MY LIFE IS INDISPENSABLE.
PLEASE BLESS ME SIR SO THAT I MAY DO MORE N MORE HARDWORK
CONSISTENTLY TO ACHIEVE MY GOAL, LEARN MORE FROM MISTAKES
AND PROGRESS EVERYDAY A LITTLE BIT FROM WHAT I WAS
YESTERDAY.



Question

from samrat

Belated happy Teacher's Day sir

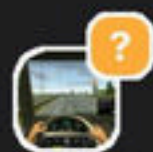
जो बनाए हमें इंसान
और दे सही-गलत की पहचान
देश के उन निर्माताओं को
हम करते हैं शत-शत प्रणाम!

शिक्षक दिवस की हार्दिक शुभकामनाएं.

— Samrat Dutta



YourQuote.in

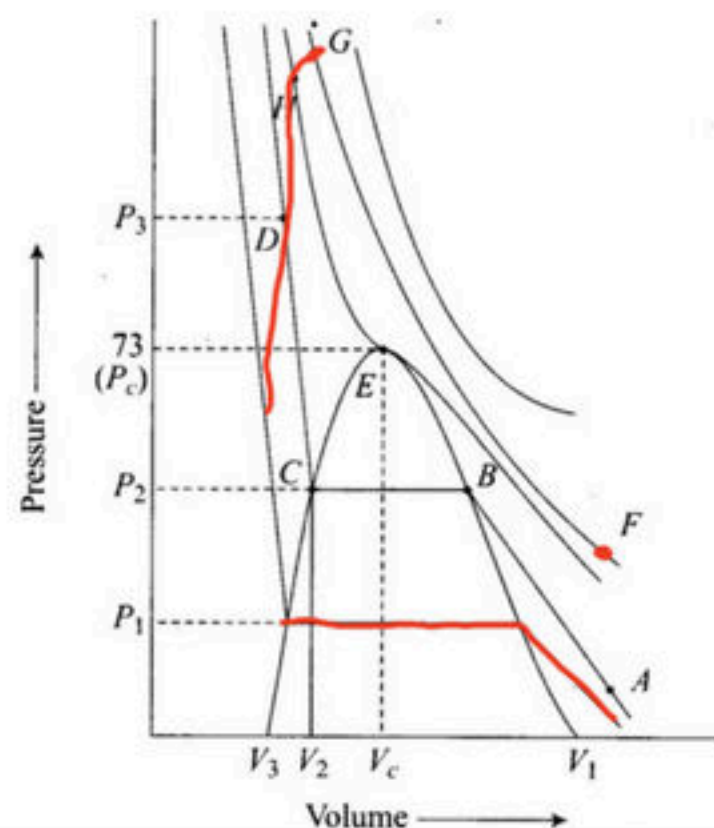


Question

from DHRUV

SIR YE WALA Q CLR NAHI HO PAYA PLS EK BAAR AAP REPEAT KAR SAKTA HAAN IT WOULD BE VERY HELPFUL FOR ME

Q55. Isotherms of carbon dioxide gas are shown in figure. Mark a path for changing gas into liquid such that only one phase (i.e. either a gas or liquid) exists at any time during the change. Explain how the temperature, volume and pressure should be changed to carry out the change.



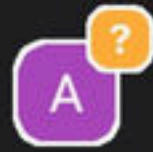


Question

from supreet

Please help me with this doubt





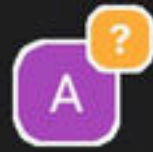
Question

from Ankit Kuma...

Please help me with this doubt



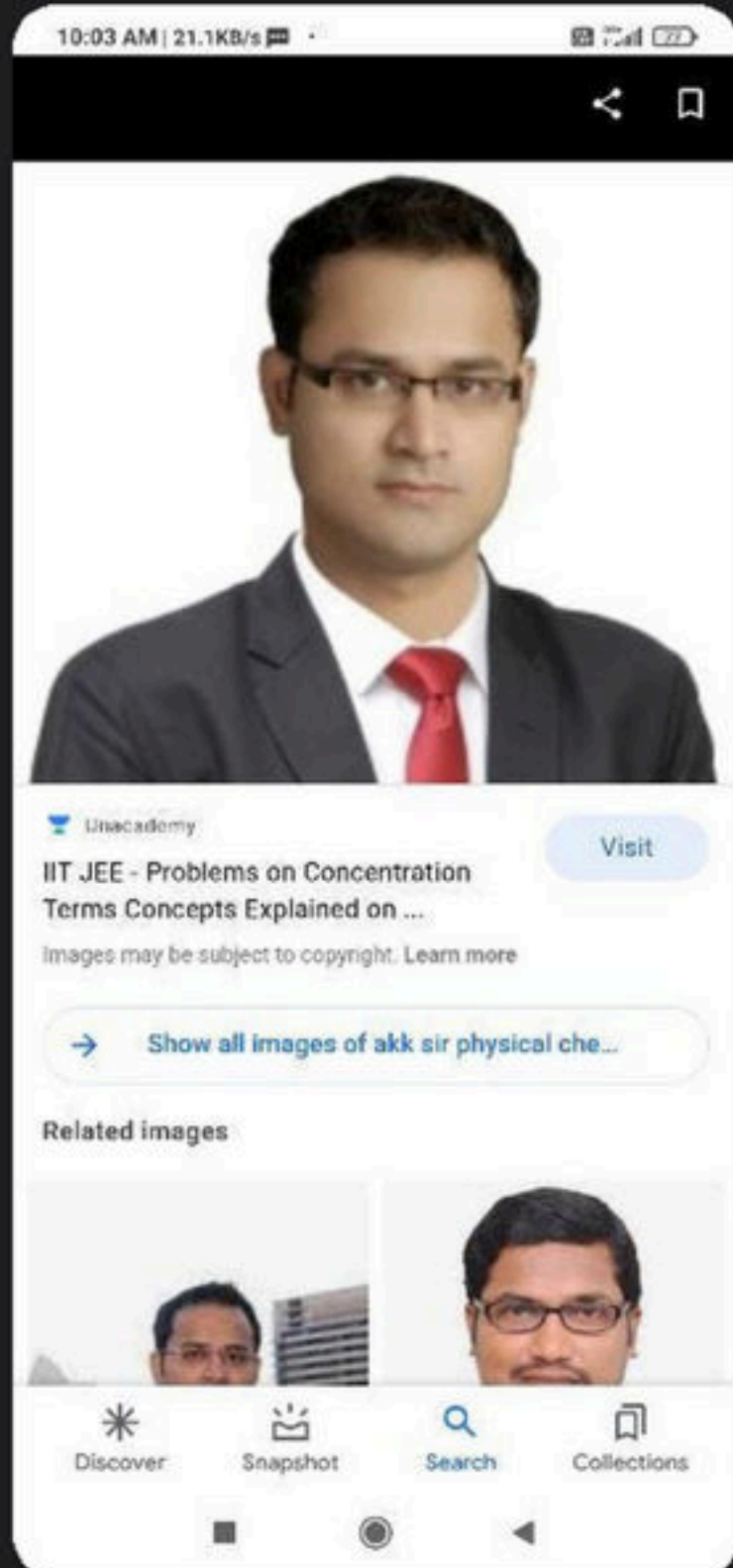
*Disclaimer: The content is provided by the Learner and is reproduced 'As Is' and Unacademy disclaims any and all liabilities with regards to the content



Question

from Ankit Kuma...

Happy teacher day sirji ek baar VC pls

















*Disclaimer: The content is provided by the Learner and is reproduced 'As Is' and Unacademy disclaims any and all liabilities with regards to the content



Question

from Aman

Please help me with this doubt

THEN	NOW
 Parth Chouksey sir dpp	 Sounak HW no sir
 Kishan Singh dpp	 Kavya HW ho sir
 Gulshan Sagar Sir Homework?	 Adarsh Y NO HW
 Yash Chauhan sir homework PLZZ	 Akshay sir pls no hw
 Parth Chouksey sir dpp	 Deepanshu no homework sir pls
 Kishan Singh dpp	 SHASWATPAT... Sir aaj no hw
 Gulshan Sagar Sir Homework?	 Rishu No hw

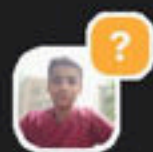


Question

from supreet

bahut din se doubt hai plz clear kardo





Question

from ARNAV GUPTA

Please help me with this doubt



*Disclaimer: The content is provided by the Learner and is reproduced 'As Is' and Unacademy disclaims any and all liabilities with regards to the content



Question

from Rachit

Please help me with this doubt



*Disclaimer: The content is provided by the Learner and is reproduced 'As Is' and Unacademy disclaims any and all liabilities with regards to the content



Question

from NikitaSing...

Please help me with this doubt





Question

from Sachin

HAPPY HAPPY TEACHER*S DAY



*Disclaimer: The content is provided by the Learner and is reproduced 'As Is' and Unacademy disclaims any and all liabilities with regards to the content