JEE MAIN 2025

PAPER DISCUSSION

Attempt : 01
Date : 24th Jan 2025
Shift : 01

LIVE STREAMING

LIVE STREAM

JEE MAIN 2025 PAPER DISCUSSION

JEE ULTIMATE CRASH COURSE 2025

Physical Chemistry

LIVE STREAM

JEE MAIN 2025 PAPER DISCUSSION

JEE ULTIMATE CRASH COURSE 2025

If 10 mol CO and 10 mol of Fe_3O_4 reacts according to $Fe_3O_4 + 4CO \longrightarrow 4CO_2 + 3Fe$. What is the weight of Fe produce?

L.R

$Fe_3O_4 + 4CO \longrightarrow 4CO_2 + 3Fe$

1 mol 1 mol

L.R $\Rightarrow$ $\xi_{Fe_3O_4} = \frac{n_{Fe_3O_4}}{1} = \frac{10}{1}$

$\xi_{CO} = \frac{n_{CO}}{4} = \frac{10}{4}$

$\xi_{product} = \xi_{L.R}$

$\frac{n_{Fe}}{3} = \frac{n_{CO}}{4}$

$n_{Fe} = \frac{3}{4} \times 10 = \frac{15}{2} = 7.5$ mole

$w = n \times MM$

$= 7.5 \times 56$

LIVE STREAM

JEE MAIN 2025 PAPER DISCUSSION

JEE ULTIMATE CRASH COURSE 2025

Process is non-spontaneous at freezing point but spontaneous at boiling point, find ΔH and ΔS.

A. Both are positive

B. Both are negative

C. ΔS positive, ΔH negative

D. ΔS negative, ΔH positive

Liquid $\longrightarrow$ Gaseous

Heat

ΔH = +ve

$\Delta G = \Delta H - T\Delta S$

$= +ve - T(+ve)$

ΔS = +ve

for spontaneous process

ΔG = -ve

LIVE STREAM

JEE MAIN 2025 PAPER DISCUSSION

JEE ULTIMATE CRASH COURSE 2025

If the K_{sp} of $Cr(OH)_3$ is 1.6×10^{-30} M^4. The molar solubility of salt in water is 1.56×10^{-X}, then value of x is:

$S =$

$Cr(OH)_3 \rightleftharpoons Cr^{+3} + 3OH^-$

at eqm

$K_{sp} = [Cr^{+3}][OH^-]^3$

	$Cr(OH)_3$	Cr^{+3}	$3OH^-$
t_0	1		
t_{eq}	$1-S$	S	$3S$

$K_{sp} = S \times (3S)^3$

$1.6 \times 10^{-30} = 27 \times S^4$

$\frac{1.6}{27} \times 10^{-30} = S^4$

$\frac{160 \times 10^{-32}}{27} = S^4$

$\left(\frac{160}{27} \times 10^{-32}\right)^{1/4} = S$

$$\left(\frac{160\times10^{-32}}{27}\right)^{1/4} = 5$$

$$\left(\frac{160}{27}\times10^{-32}\right)^{\frac{1}{4}} = 1.56\times10^{-x}$$

$$\left[\left(\frac{160}{27}\right)^{1/4}\times\frac{1}{4}\right]\times10^{-\frac{32}{4}\times\frac{8}{4}} = 1.56\times10^{-x}$$

$$\boxed{x = 8}$$

LIVE STREAM

JEE MAIN 2025 PAPER DISCUSSION

JEE ULTIMATE CRASH COURSE 2025

Calculate the standard cell potential in (V) of the cell in which following reaction takes place:

$Ag^{+} + Fe^{+2} \longrightarrow Ag + Fe^{+3}$

Given that:

$Ag^{+} \longrightarrow Ag$; $E^{\circ}(Ag^{+}/Ag) = x$

$Fe^{+2} \longrightarrow Fe$; $E^{\circ}(Fe^{+2}/Fe) = y$

$Fe^{+3} \longrightarrow Fe$; $E^{\circ}(Fe^{+3}/Fe) = z$

$Fe^{+2} \longrightarrow Fe^{+3} + e^{-}$

$E^{\circ}_{cell} = E^{\circ}_{Ag^{+}/Ag} + E^{\circ}_{Fe^{+2}/Fe^{+3}}$

$= x + 2y - 3z$

$Fe^{+2} + 2e^{-} \longrightarrow Fe$ $\quad E^{\circ}_1 = y$

$Fe \longrightarrow Fe^{+3} + 3e^{-}$ $\quad E^{\circ}_2 = -z$

$Fe^{+2} \longrightarrow Fe^{+3} + e^{-}$

(A) $x + y - z$

(B) $x + 3y - 2z$

(C) $y - 2x$

(D) $x - 3z + 2y$

$$E^\circ_{cell} = \frac{n_1 E_1^\circ + n_2 E_2^\circ}{n}$$

$$= \frac{2y - 3z}{1}$$

$$= 2y - 3z$$

LIVE STREAM

JEE MAIN 2025 PAPER DISCUSSION

JEE ULTIMATE CRASH COURSE 2025

In a process pressure of the gas is directly proportional to temperature then choose correct option.

(A) Process is isochoric.

(B) Work done in process is zero.

(C) Internal energy increase with increase in temperature.

A. A and B are correct

B. A and C are correct

C. A, B and C are correct

D. B and C are correct

at constant V,

$W = -P_{ext} dV$

$V = \text{Constant}$

$dV = 0$

$\Rightarrow W = 0$

Gay-lussa Law

at Constant V

$P \propto T$

for isochoric process

$dU = nC_v dT$

LIVE STREAM

JEE MAIN 2025 PAPER DISCUSSION

JEE ULTIMATE CRASH COURSE 2025

Organic Chemistry

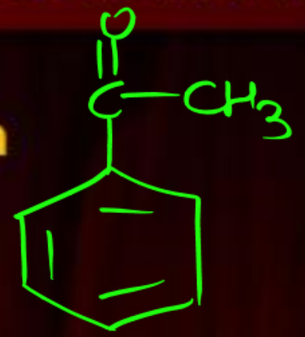
LIVE STREAM

JEE MAIN 2025 PAPER DISCUSSION

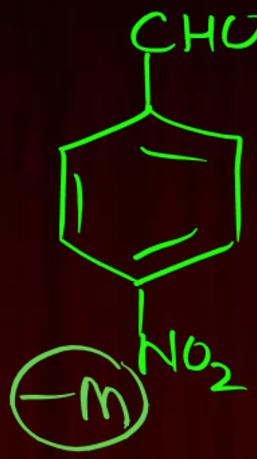
JEE ULTIMATE CRASH COURSE 2025

Order of nucleophilicaddition

1. Acetophenone,
2. p-nitrobenzaldehyde
3. benzaldehyde,
4. p-tolualdehyde

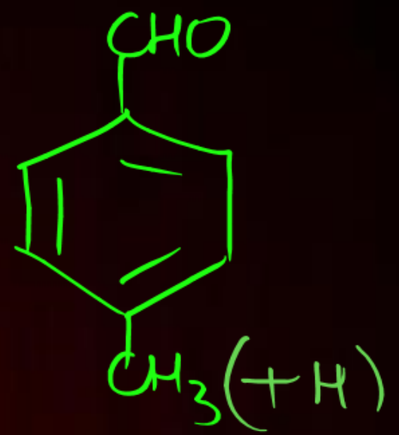


1

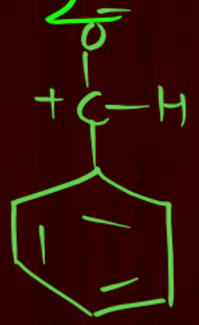


2

3



4



A. 1 > 2 > 3 > 4

B. 2 > 3 > 4 > 1

C. 2 > 4 > 3 > 1

D. 4 > 3 > 2 > 1

LIVE STREAM

JEE MAIN 2025 PAPER DISCUSSION

JEE ULTIMATE CRASH COURSE 2025

Ribose present in DNA is

(A) It is a pentose sugar

(B) Present in pyranose form

pyranose = six member ring

(B)

(C) α anomeric carbon is present configuration

(D) Present in D

(E) It is reducing sugar in free form

Choose the correct statements :

A. A, C and E only

B. A, D and E only

C. A, B, C, D and E

D. A and E only

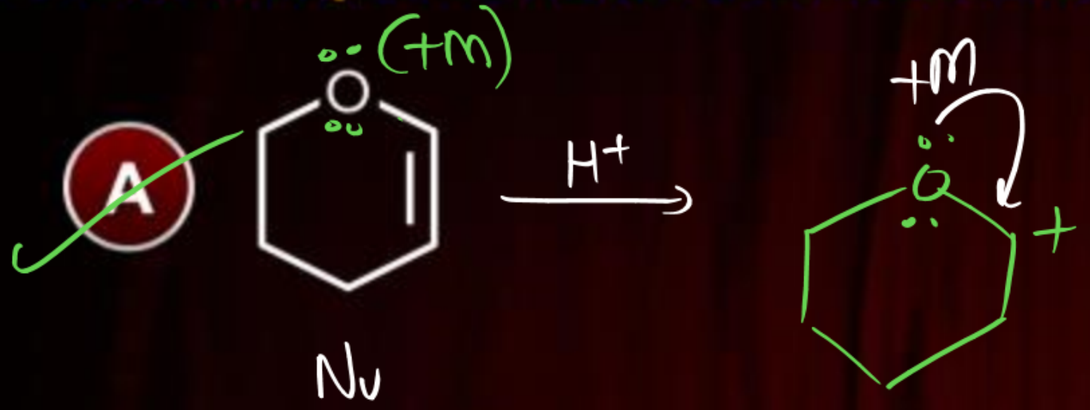
LIVE STREAM

JEE MAIN 2025 PAPER DISCUSSION

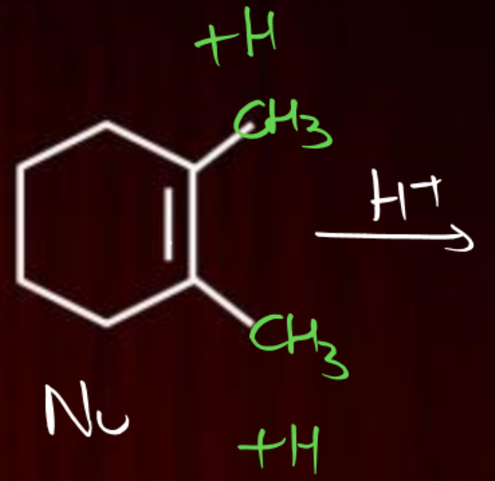
JEE ULTIMATE CRASH COURSE 2025

Which compound react fastest with HBr.

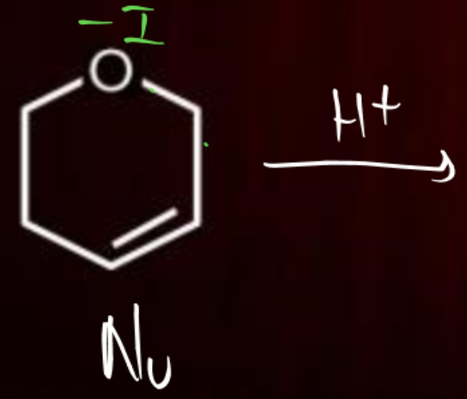
A



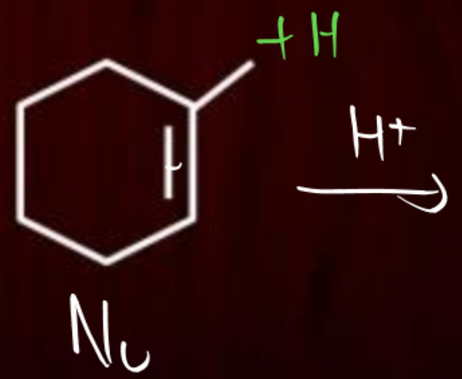
B



C



D



LIVE STREAM

JEE MAIN 2025 PAPER DISCUSSION

JEE ULTIMATE CRASH COURSE 2025

In Duma which gas is evolved?

A N_2

B O_2

C SO_2

D SO_3

LIVE STREAM

JEE MAIN 2025 PAPER DISCUSSION

JEE ULTIMATE CRASH COURSE 2025

$CH_3 - CH_2 - C \equiv CH$ $\xrightarrow[(2)\ HCN]{(1)\ Hg^{2+} / H_2SO_4}$ $\xrightarrow[(3)\ H_2/Ni]{}$ 'A'

$H^+ OH^-$

$CH_3-CH_2-\underset{OH}{\overset{|}{C}}=CH_2 \xrightarrow{tautu} CH_3-CH_2-\underset{O}{\overset{||}{C}}-CH_3$

$H^+ \bar{C}N$

Find major product 'A'

A $CH_3 - CH_2 - \underset{CH_2NH_2}{\overset{OH}{\underset{|}{\overset{|}{C}}}} - CH_3$

B $CH_3 - \underset{O}{\overset{||}{C}} - CH_3$

$CH_3-CH_2-\underset{CN}{\overset{OH}{\underset{|}{\overset{|}{C}}}}-CH_3 \xrightarrow{H_2,Ni} CH_3-CH_2-\underset{CH_2-NH_2}{\overset{OH}{\underset{|}{\overset{|}{C}}}}-CH_3$

C $CH_3 - CH_2 - \underset{NH_2}{\overset{|}{CH}} - CH_3$

D $CH_3 - CH_2\,CH_2\,NH_2$

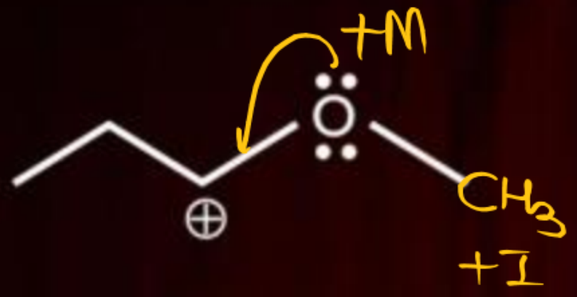
LIVE STREAM

JEE MAIN 2025 PAPER DISCUSSION

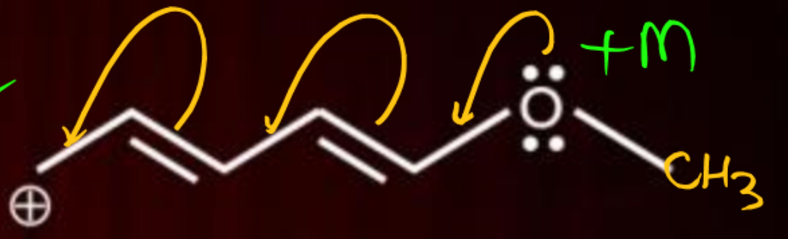
JEE ULTIMATE CRASH COURSE 2025

Stability of carbocation is Maximum in ?

A

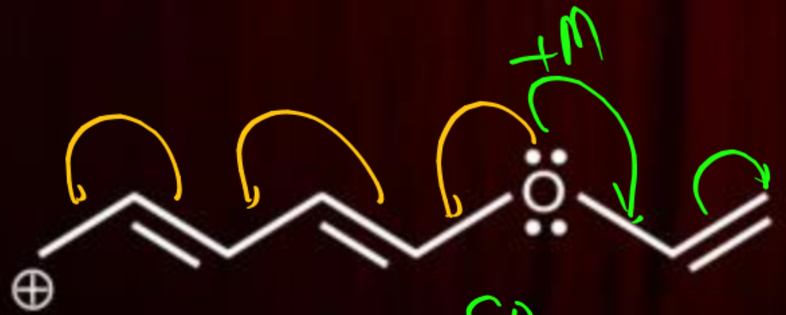


B



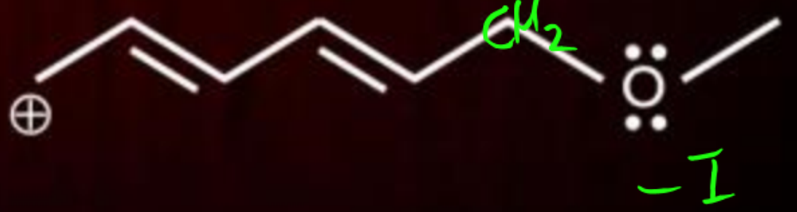
Extended Resonance

C



CROSS Resonance

D



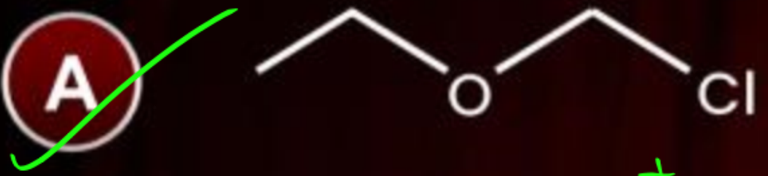
LIVE STREAM

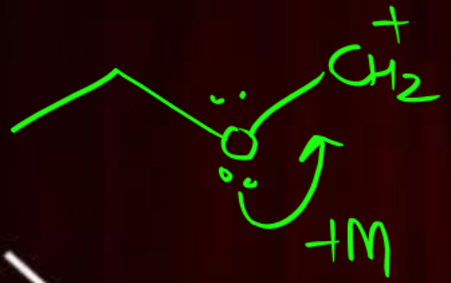
JEE MAIN 2025 PAPER DISCUSSION

JEE ULTIMATE CRASH COURSE 2025

Which of the following give nucleophile substitution react fastest?

A





B

C

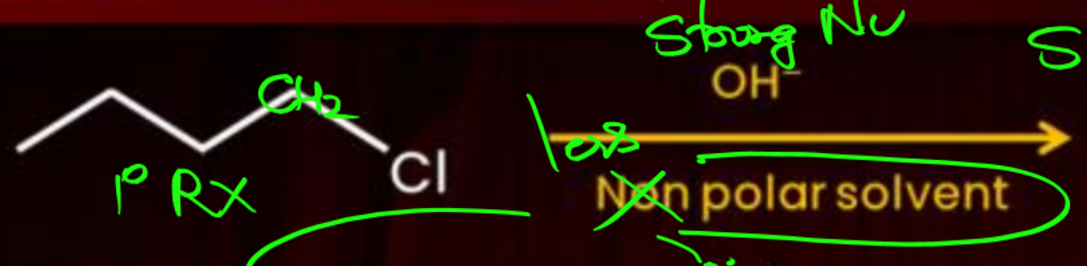
D

LIVE STREAM

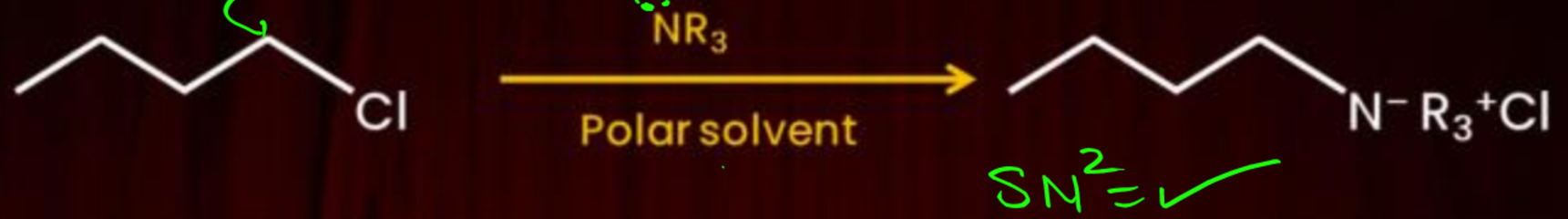
JEE MAIN 2025 PAPER DISCUSSION

JEE ULTIMATE CRASH COURSE 2025

Statement - I



Statement - II



A Statement- I is false, statement –II is true

B Statement- I is true, statement –II is true, statement – 2 is the correct explanation of statement - I

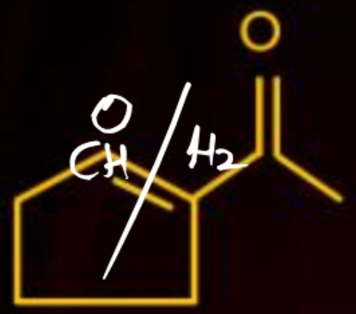
C Statement- I is true, statement –II is false

D Statement- I is true, statement –II is true, statement – 2 is not the correct explanation of statement - 1

LIVE STREAM

JEE MAIN 2025 PAPER DISCUSSION

JEE ULTIMATE CRASH COURSE 2025



This compound is aldol condensation product of which of the following alkene after ozonolysis?

Parent molecule ⇒