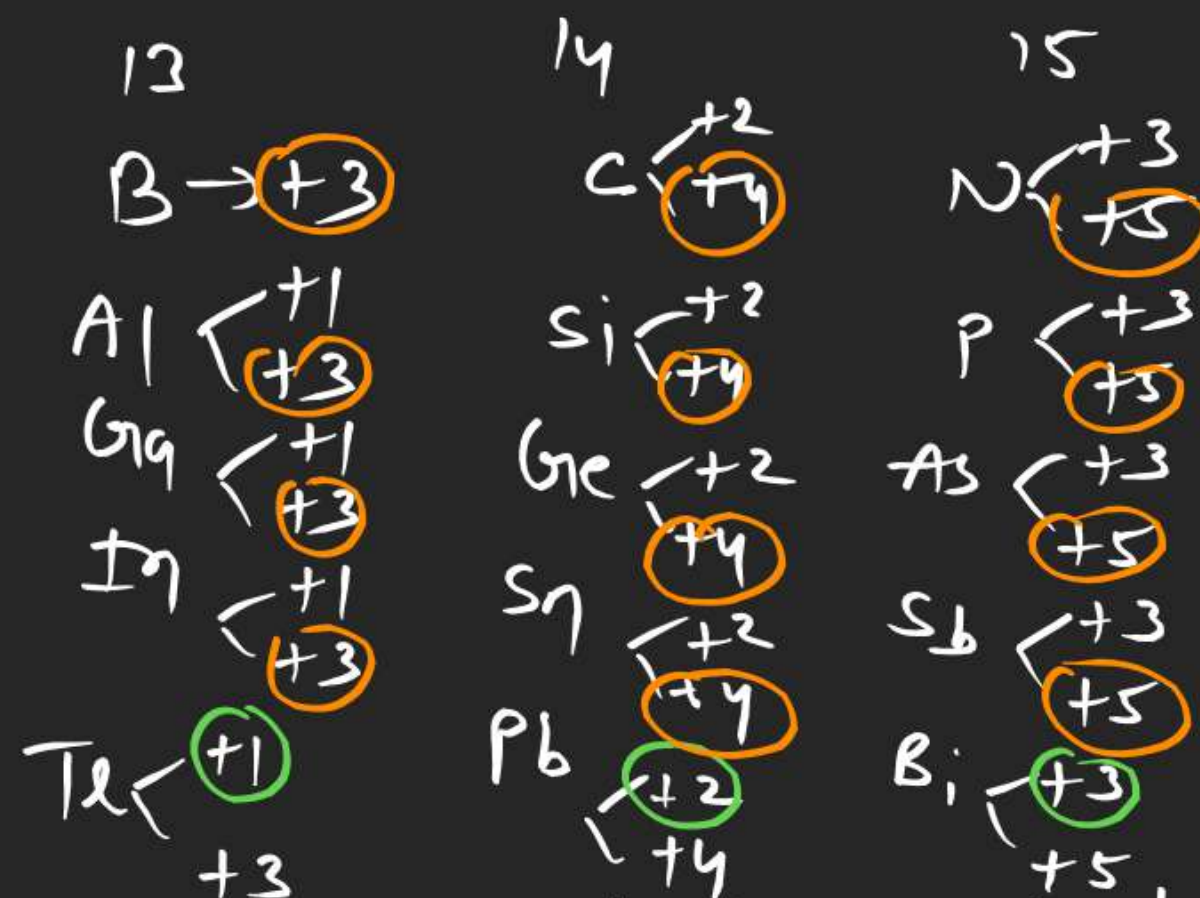


Inert pair effect

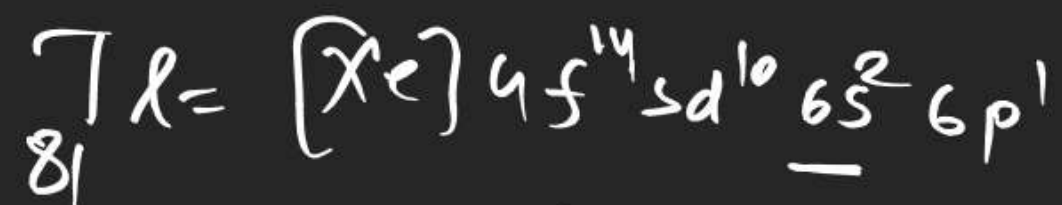


Note \Rightarrow generally higher oxidation state becomes more stable then the lower oxidation state but in p-block

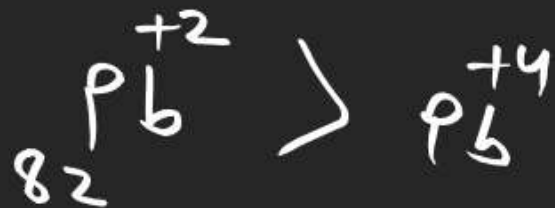
Vishal Joshi

Tedx Talk

on moving down lower oxidation state becomes more stable then higher due to poor s.e of 4f subshell.



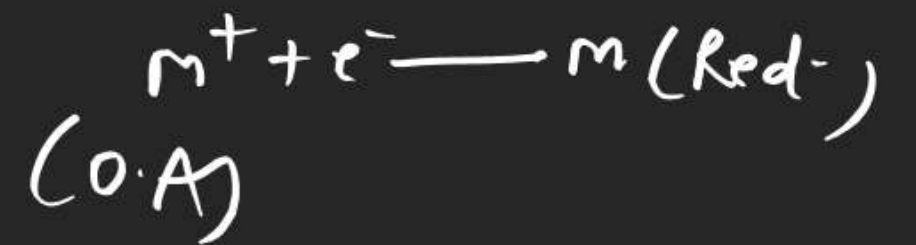
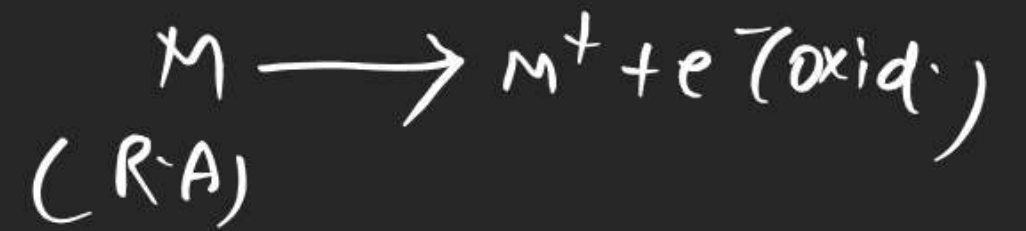
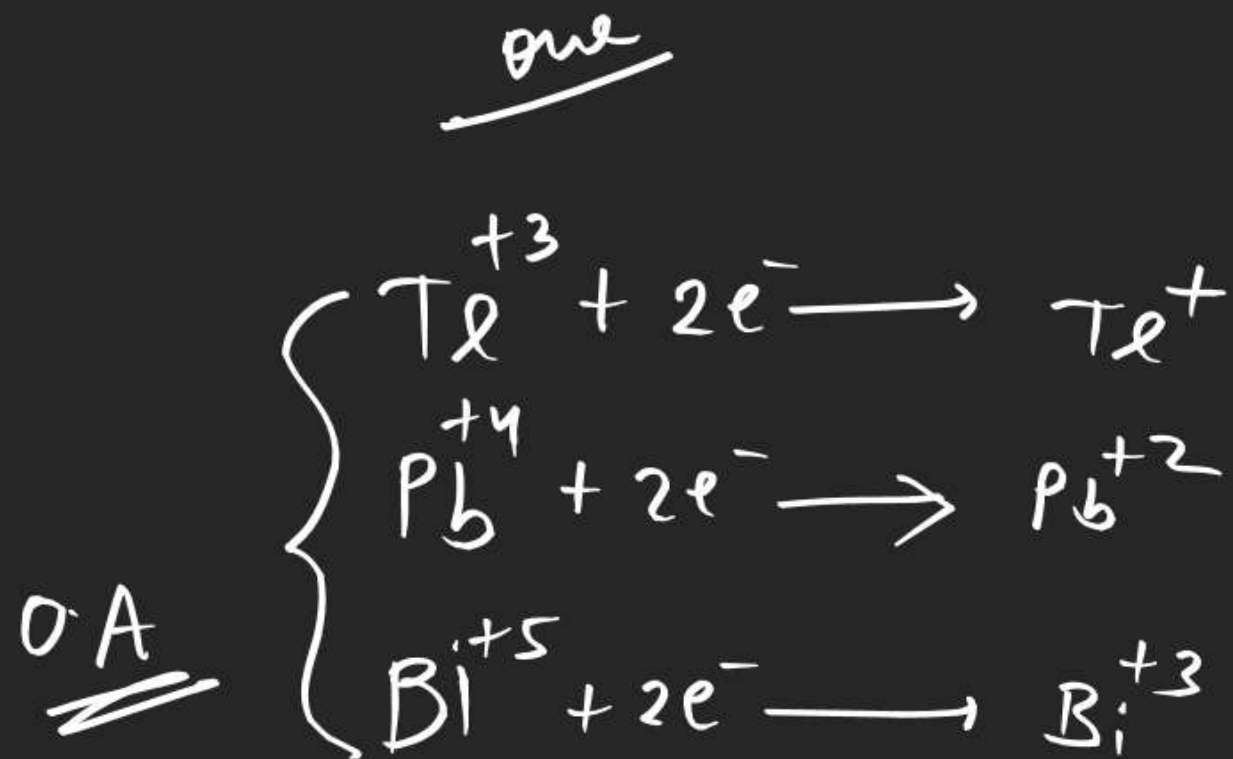
Stability



S.E



Note \Rightarrow The tendency of inertness of ns e^- towards bonding is called inert pair effect



Order of Stability of dihalide



Order of Stability of tetrahalides



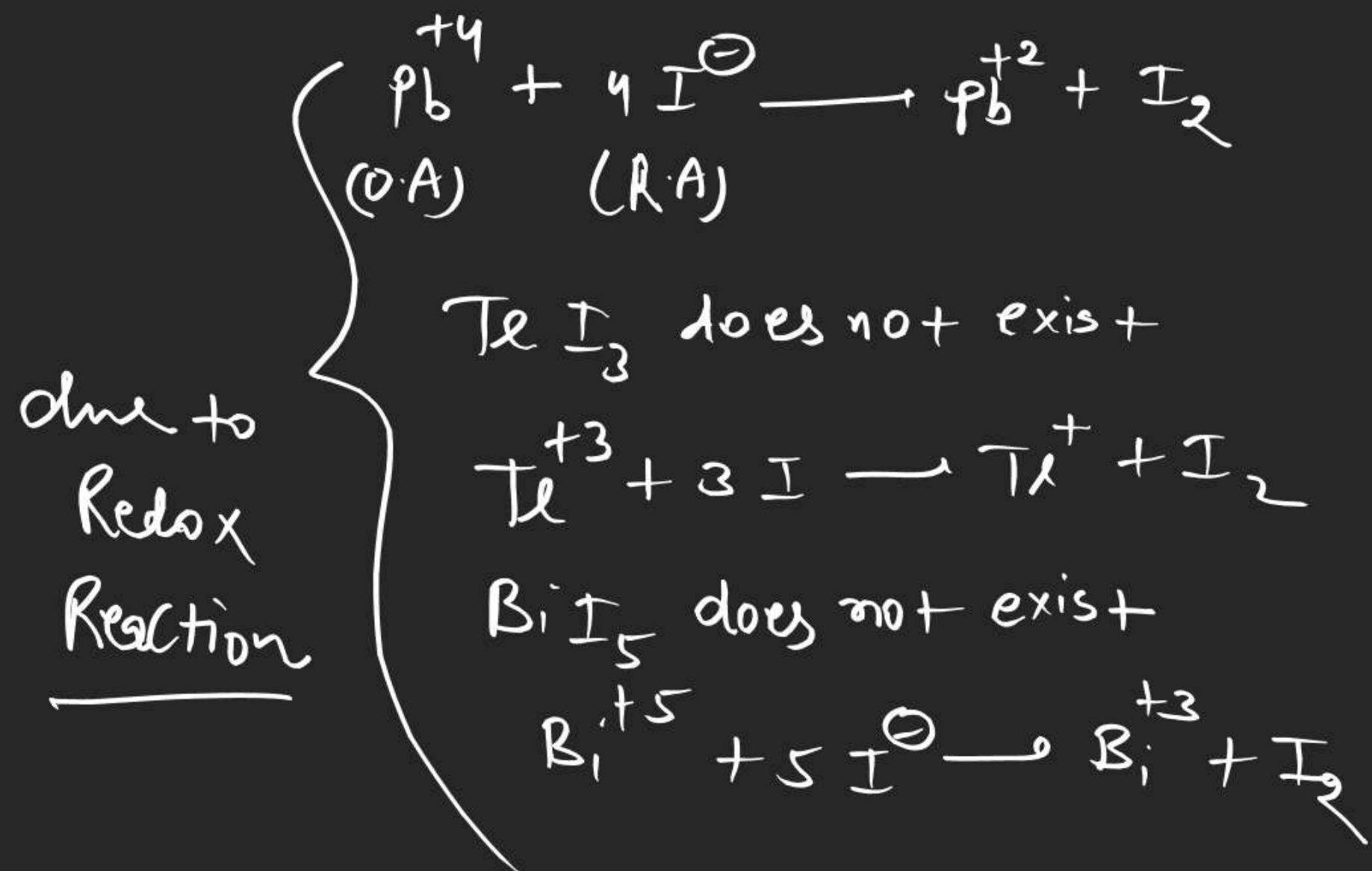
Ques Which of the comp. is oxidising agent

- ① CO_2 ② SiO_2 ③ GeO_2 ④ PbO_2

Order

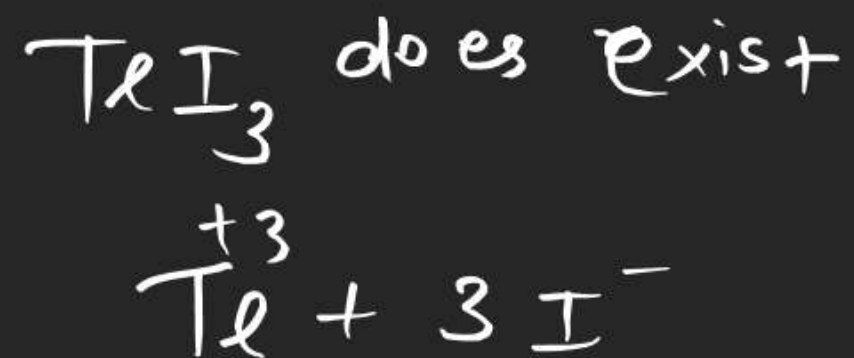
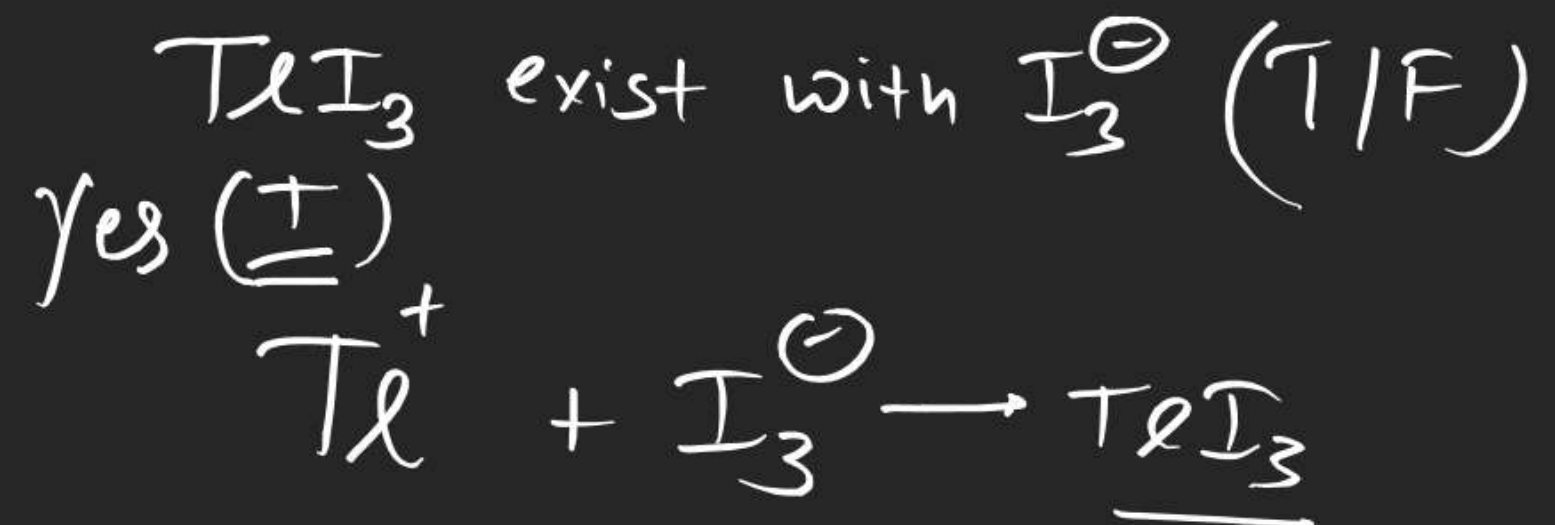


ex PbI_4 does not exist



Reducing power

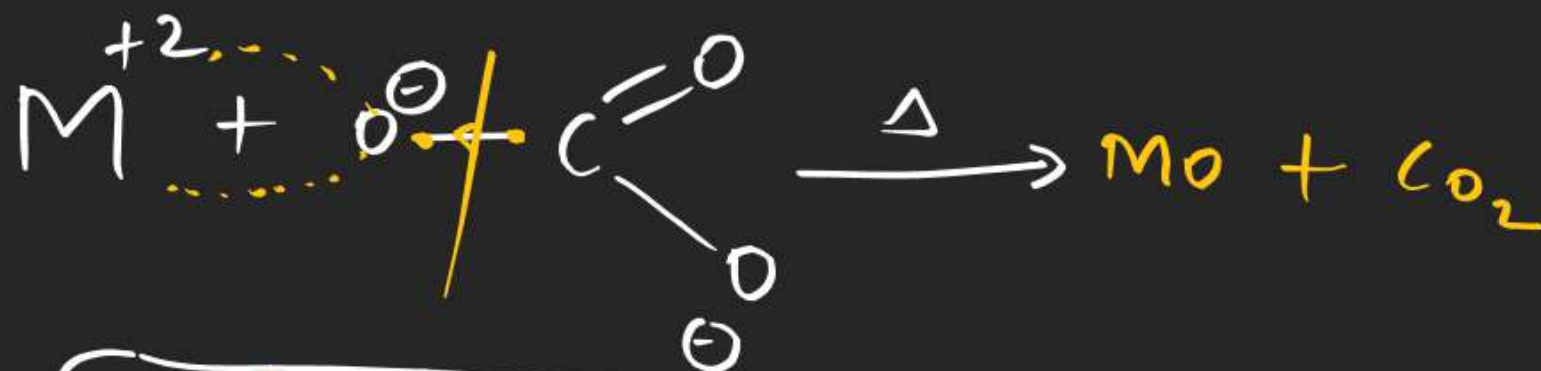




Application of Fajan's Rule

① Thermal Stability

① T.S of Ionic compound having polyatomic anion



* $\phi \uparrow$ T.S of I-C having polyatomic anion \downarrow

anion	
Polyatomic	mono atomic
CO_3^{-2}	F^{-}
HCO_3^{-}	O^{2-}
NO_3^{-}	N^{3-}
SO_4^{-2}	

Key point

Li	Be
Na	Mg
K	Ca
Rb	Str
Cs	Ba

$\phi = \frac{\text{charge}}{\text{size}}$

$\phi \downarrow$ T-s of polyatomic \uparrow

Order of T-s

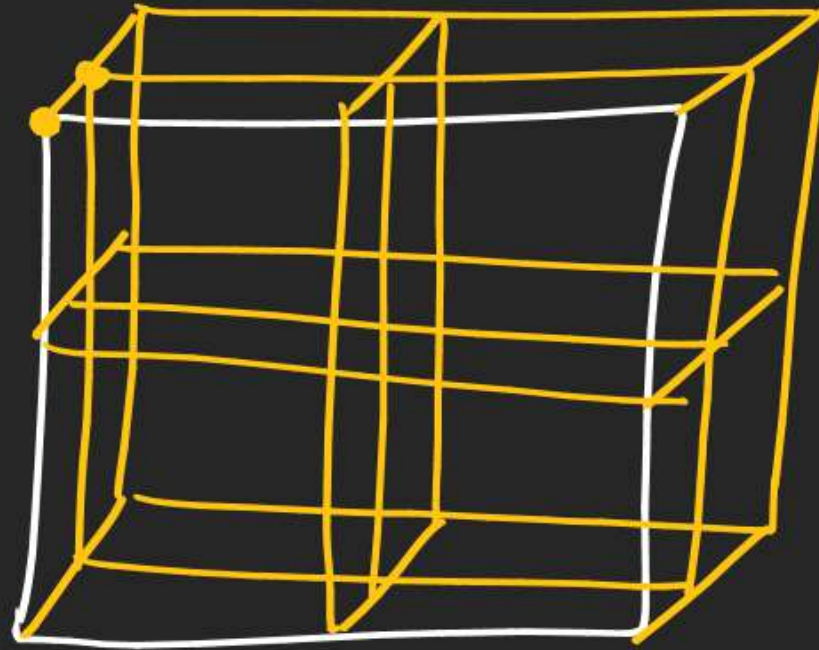


Heating effect

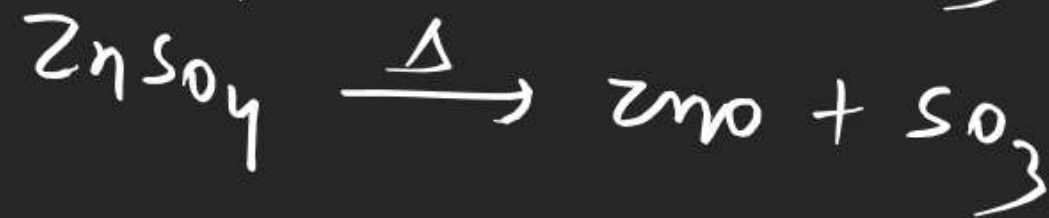
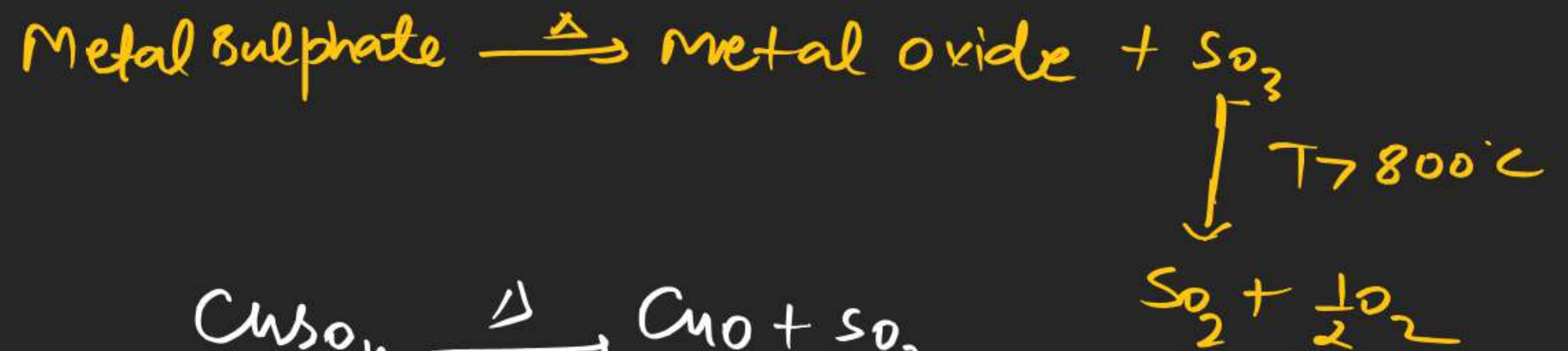
Metal carbonate $\xrightarrow{\Delta}$ metal oxide + CO_2



Note \Rightarrow Carbonate salts of Na K Rb Cs
do not decompose on heating
because they melt on high temp.



Heating of sulphate



Li
 K
 Ca
 Na
 Mg
 Al
 Mn
 Zn
 Cr
 Fe
 Cd
 Co
 Ni
 Sn
 Pb
 Hg
 Cu
 Hg
 Ag
 Au

Metal nitrate $\xrightarrow{\Delta}$ Metal oxide + NO_2 + $\frac{1}{2}\text{O}_2$

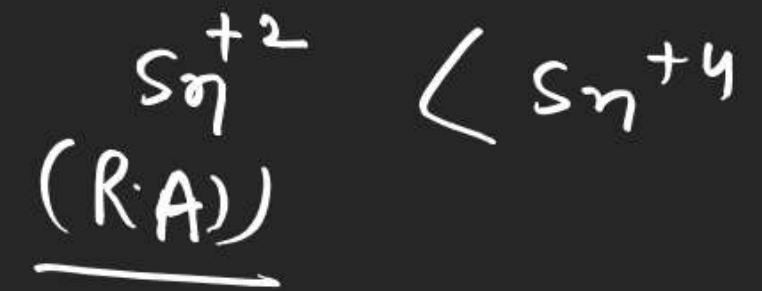


Note \Rightarrow Pt Hg Ag these are native (less reactive)
 metal so their metal oxides are
 less stable so further decompose in
 metal and oxygen.



Ques Which of the following compound give metal and oxygen on heating

- ① KNO_3 ② NaNO_3 ③ ~~AgNO_3~~ ④ $\text{Pb}(\text{NO}_3)_2$



Ques HgCl_2 and SnCl_2 do not exist together
explain why

