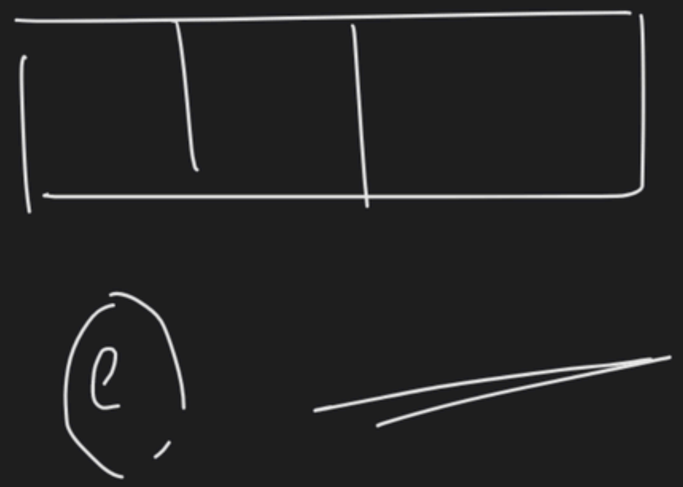
Calculation of Oxidation Number - II

Course on Redox Reaction and Equivalent Concept

Akhilesh • Lesson 2 • Oct 1, 2021



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FIND OXIDATION NUMBER OF UNADERLINED ELEMENTS

1.	$\underline{C}O_2$	**2.**	$H_2\underline{C}_2O_4$	**3.**	$\underline{C}_2O_4^{2-}$	**4.**	$H_2\underline{S}$	**5.**	$H_2\underline{S}O_4$
6.	$\underline{S}OCl_2$	**7.**	$\underline{N}_2O_5$	**8.**	$H\underline{N}O_3$	**9.**	$Ba(\underline{N}O_2)_2$	**10.**	$\underline{N}H_4^+$
11.	$\underline{P}_4(s)$ 0	**12.**	$H_3\underline{P}O_4$ 5	**13.**	$\underline{P}H_3$ -3	**14.**	$\underline{Cl}^-$ -1	**15.**	$\underline{Cl}_2$ 0
16.	$H\underline{Cl}O_4$ 7	**17.**	$\underline{Cl}_2O$ 1	**18.**	$\underline{Xe}O_6^{4-}$ 8	**19.**	$K\underline{Mn}O_4$ 7	**20.**	$K_3\underline{Mn}F_6$ 3
21.	$K_2\underline{Fe}O_4$ 6	**22.**	Cr^{3+} +3	**23.**	$\underline{Fe}_{0.9}O$ 2/9	**24.**	$\underline{I}_3^-$ -1/3	**25.**	$K_3[\underline{Fe}(CN)_6]$
26.	$K[\underline{Co}(C_2O_4)_2(NH_3)_2]$ 3			**27.**	$\underline{Ni}(CO)_4$ 0	**28.**	$\underline{Fe}(CO)_5$ 0	**29.**	$\underline{C}_{12}H_{22}O_{11}$ 0
30.	$\underline{Fe}SO_4.(NH_4)_2SO_4.6H_2O$ (+2) Mohr salt								

$1 + x - 4 + 0 = 0$

$x = 3$

$K_4[Fe(CN)_6]$

Legends

ligands

	O.NO
CN^-	−1
Cl^-	−1
H_2O	0
NH_3	0
CO	0
$C_2O_4^{2-}$	−2

$K_4[\underline{Fe}(CN)_6]$

$4 + x - 6 = 0$

$x = 2$

By structure

if B is more EN

A^{+} B^{-}

(+1) (−1)

A^{2+} B^{2-}

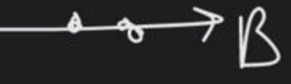
+2 −2

A^{0} A^{0}

0 0

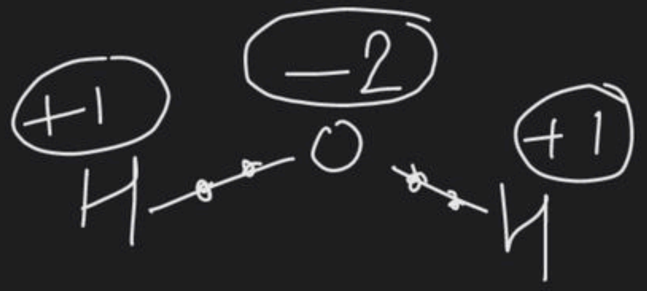
if B is more EN

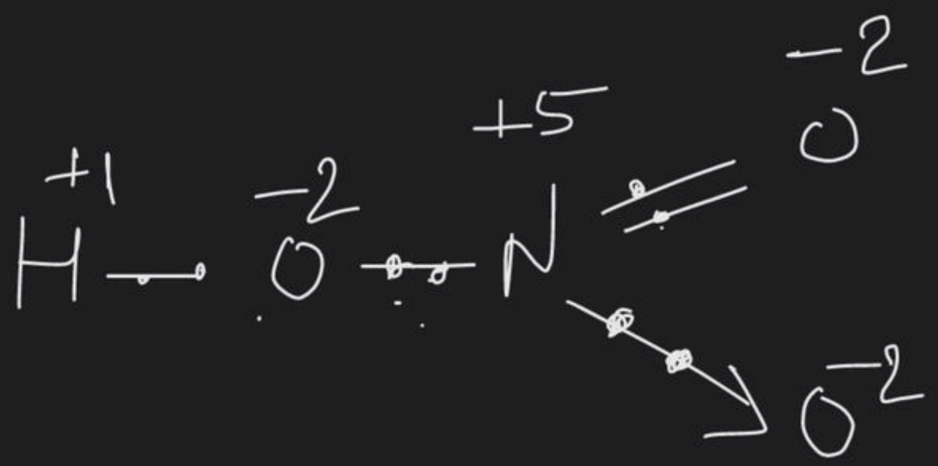
A^{2+} B^{2-}



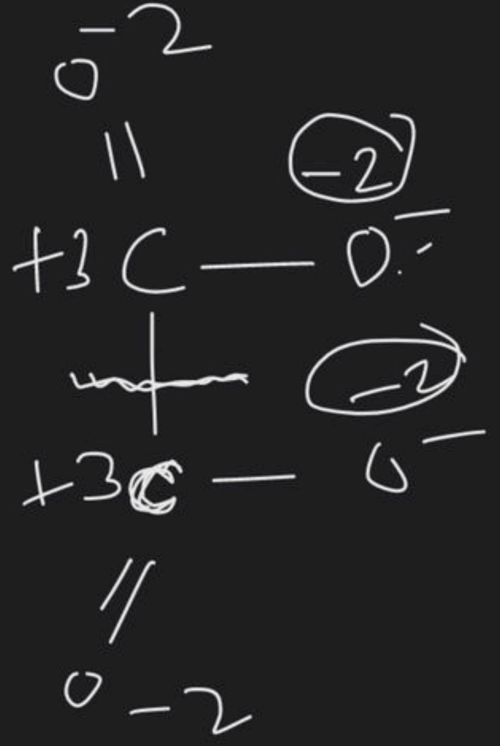
if A more EN

A^{0} B^{0}

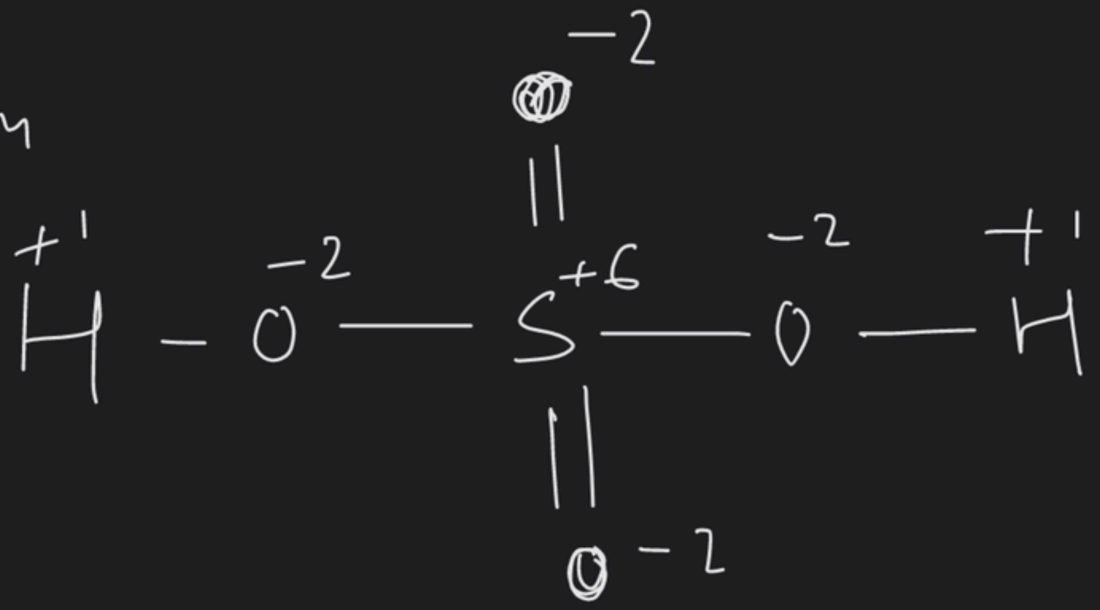




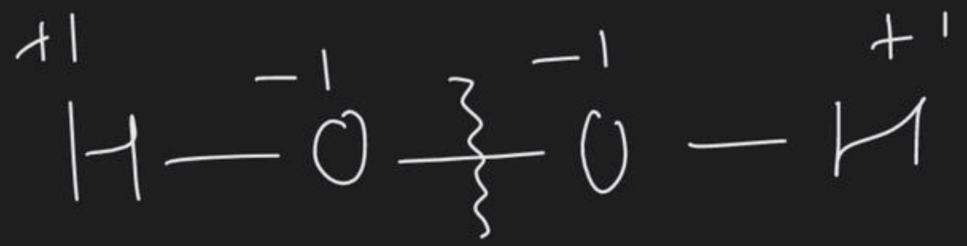
$C_2O_4^{2-}$



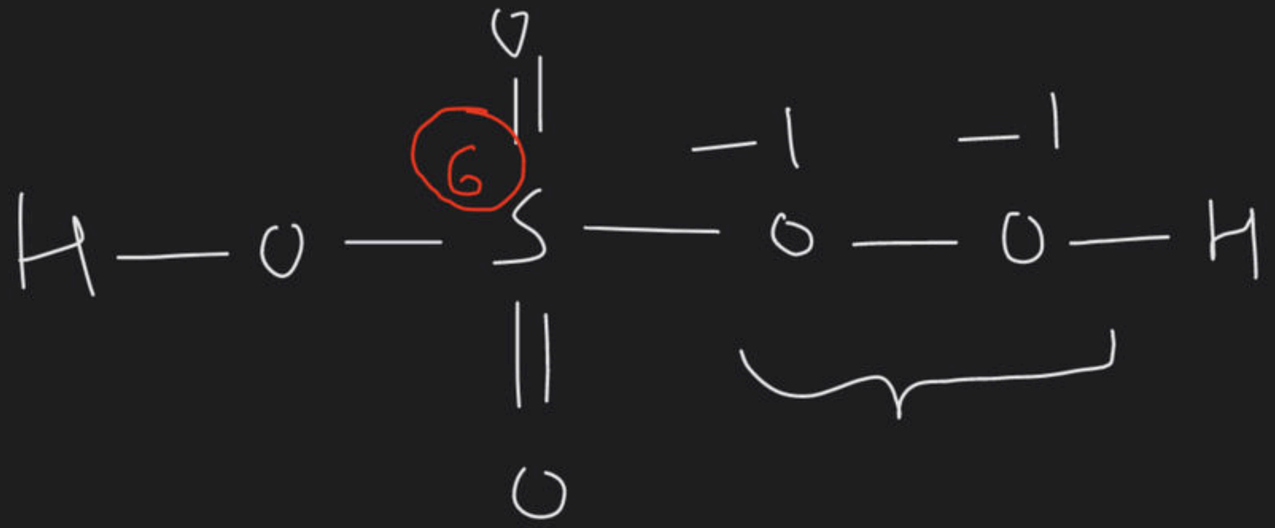
H_2SO_4



H_2O_2



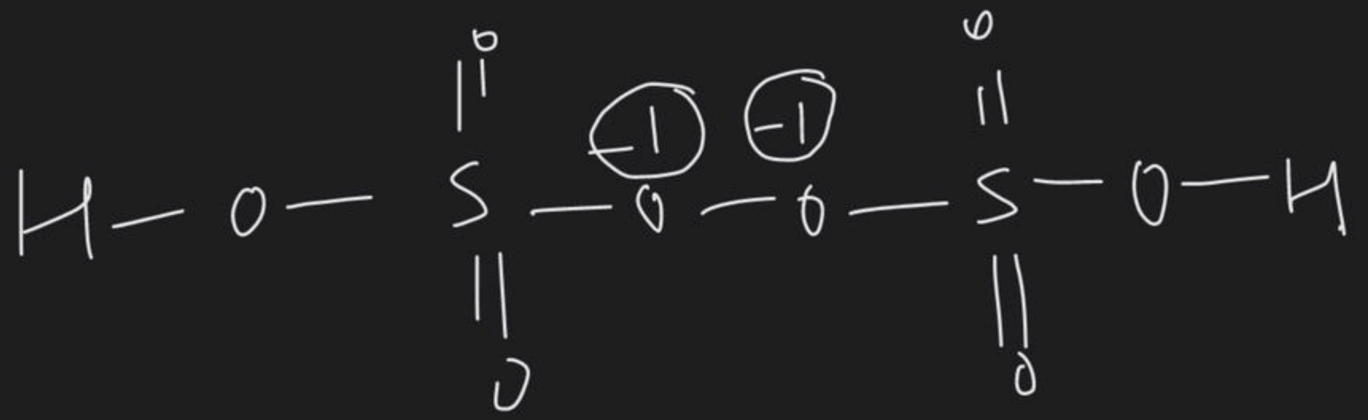
H_2SO_5



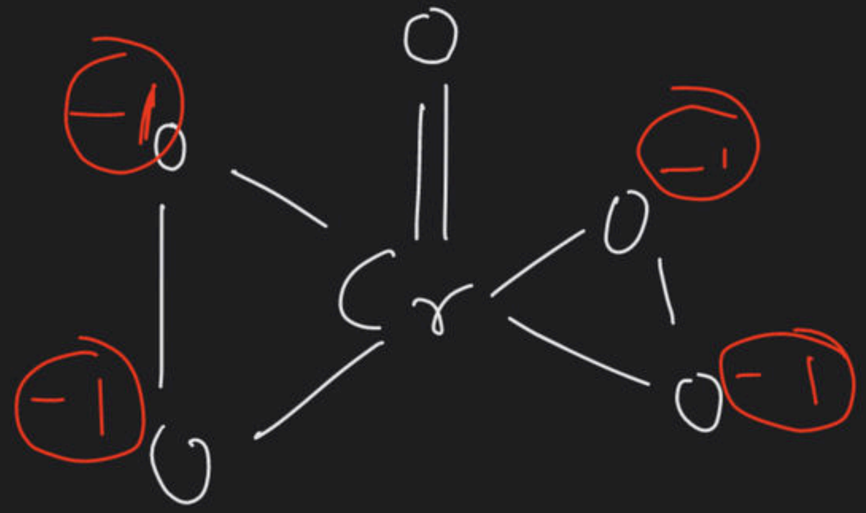
$2 + x - 10$

$x = 8$

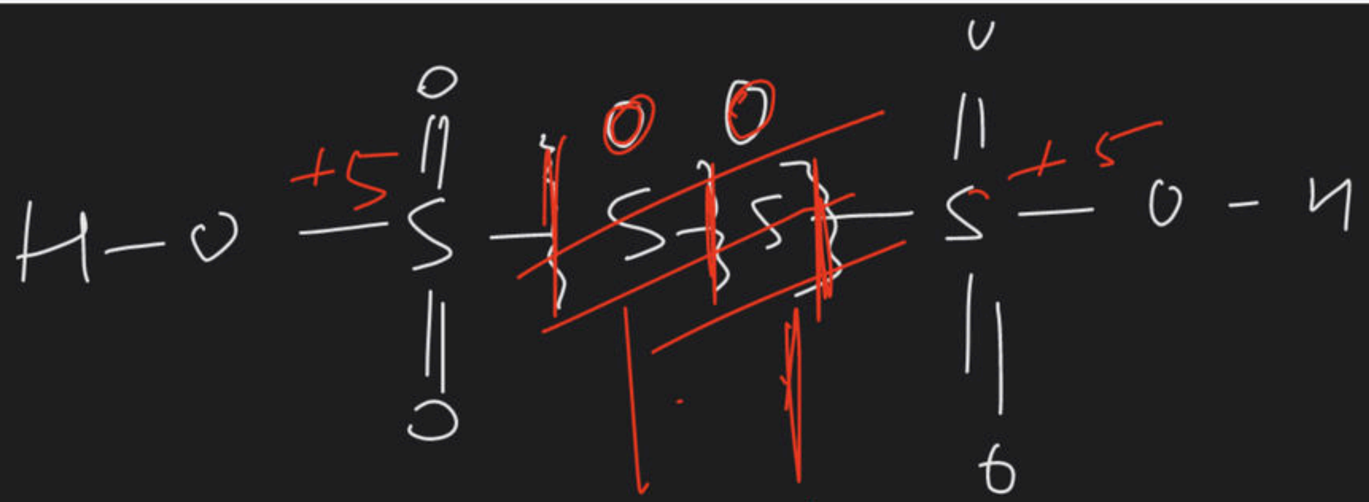
$H_2S_2O_8$



CrO_5



$H_2S_4O_6$



$$avg = \frac{16}{4} = 2.5$$

+1 +2 −3

H−C≡N

HNC

+1 −3 +2

H—N→C

SCN⁻

−2 +4 −3

S=C=N⁻

K^+ CNO^-

−2 +4 −3

$^-O-C\equiv N$

$\Rightarrow$ PH_3

-3 $+1$

CS_2

$+4$ -2

$+2$ -2 CuS $\quad$ $+1$ -2 Cu_2S

Fe^{2+} $\quad$ Fe^{3+}

Cu^{+} $\quad$ Cu^{2+}

Sn^{2+} $\quad$ Sn^{4+}

Pb^{2+} $\quad$ Pb^{4+}

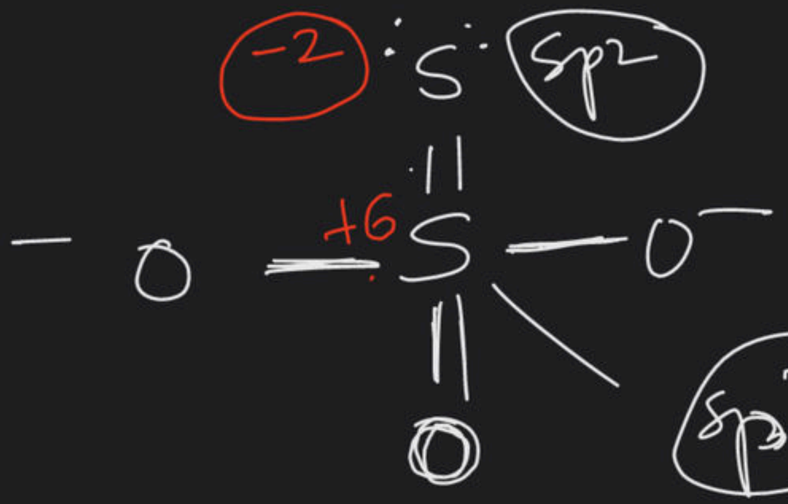
Cr^{3+} $\quad$ Cr^{+6}

$+2$ -1

FeS_2

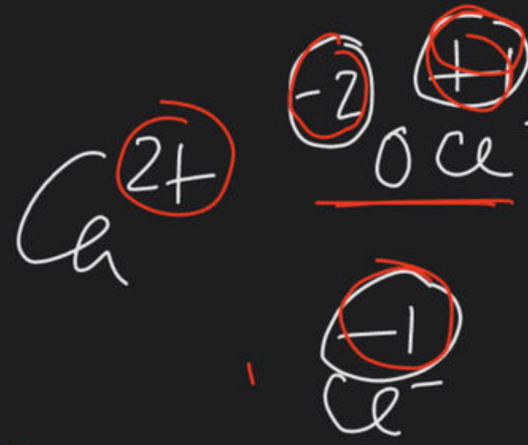
$Na_2S_2O_3$

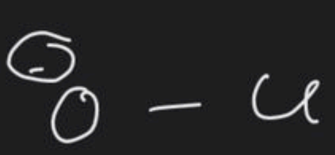
+2



Avg = 2

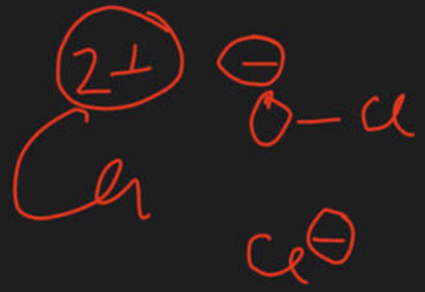
$CaOCl_2$ (Bleaching powder)





avg = 0

O.No. of Cl



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FIND OXIDATION NUMBER OF UNADERLINED ELEMENTS

1. $\underline{C}H_4$
2. $\underline{C}$(graphite)
3. $\underline{S}_8$
4. $\underline{N}H_3$
5. $\underline{Al}N$
6. $\underline{N}_2H_4$
7. $H\underline{P}O_3^-$
8. $\underline{P}_2O_7^{4-}$
9. $\underline{Cl}O_3^-$
10. $H\underline{Cl}$
11. $\underline{Xe}OF_4$
12. $\underline{Mn}^{2+}$
13. $\underline{Fe}C_2O_4$
14. $K_2\underline{Cr}_2O_7$
15. $\underline{I}O_4^-$
16. $K_4[\underline{Fe}(CN)_6]$
17. $[\underline{Cr}(H_2O)_6]Cl_3$
18. $[\underline{Cr}(NH_3)_4]Cl_2$
19. $\underline{Ca}O_2Cl_2$
20. $Na_2\underline{Mo}O_4$

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FIND OXIDATION NUMBER OF UNADERLINED ELEMENTS

1. $H_2\underline{O}_2$
2. $H_2\underline{S}O_5$
3. $H_2\underline{S}_2O_8$
4. $CaO\underline{Cl}_2$
5. $\underline{N}H_4\underline{N}O_3$
6. $\underline{Fe}\underline{S}_2$
7. $\underline{Cu}_3\underline{P}$
8. $\underline{A}\underline{S}_2\underline{S}_3$
9. $\underline{A}\underline{S}_2\underline{S}_5$
10. $H\underline{C}\underline{N}$

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FIND OXIDATION NUMBER OF UNADERLINED ELEMENTS

1. $\underline{Cr}O_5$
2. $H_2\underline{S}_4O_6$
3. $\underline{Fe}_3O_4$
4. $\underline{Cu}_2S$
5. $\underline{Cr}\underline{I}_3$
6. $\underline{Fe}_{0.95}O$
7. $S\underline{C}\underline{N}^-$
8. $Na_2\underline{S}_2\underline{O}_3$
9. SnS_3^{2-}
10. $S_2O_6^{2-}$

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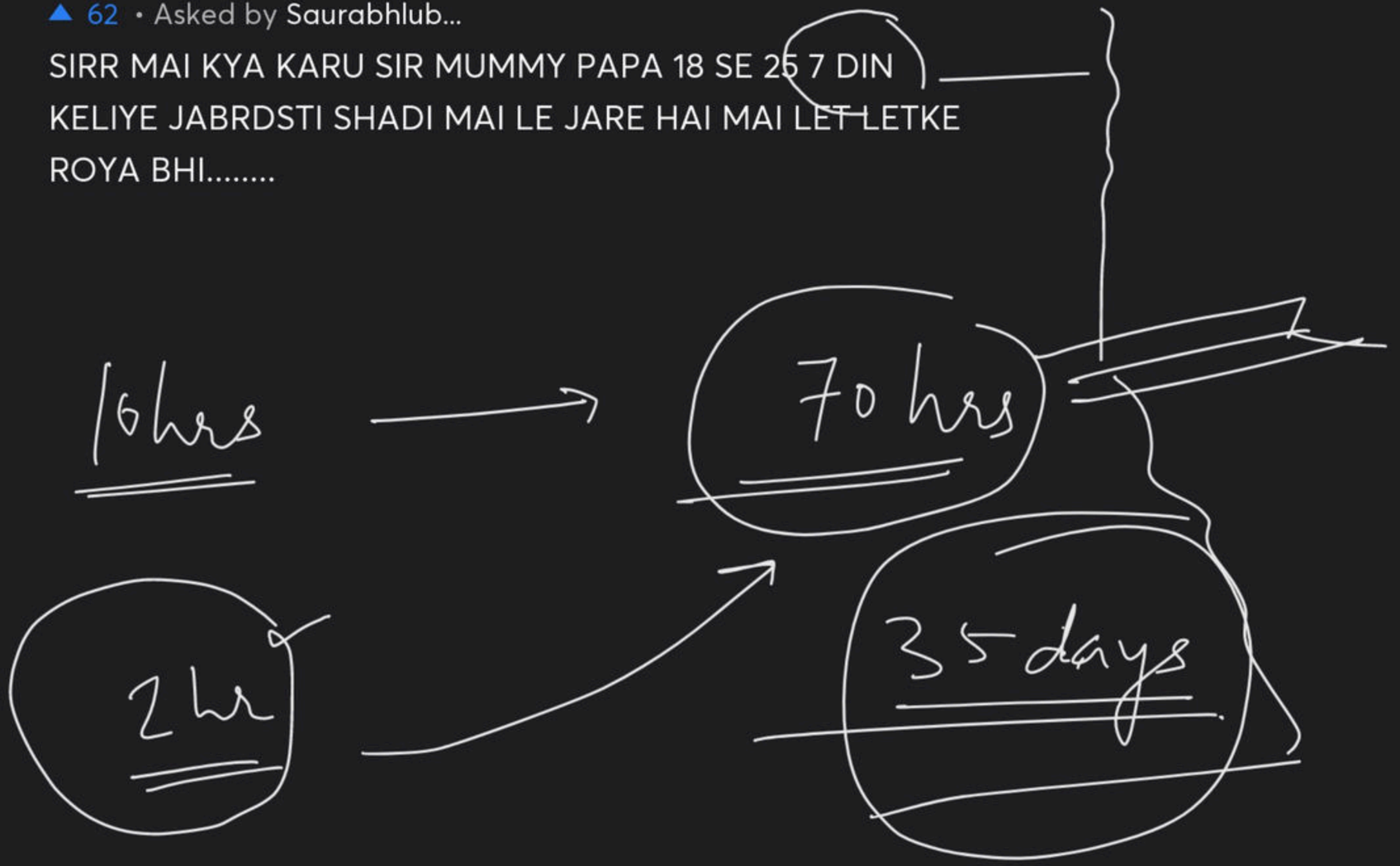
▲ 62 • Asked by Saurabhlub...

SIRR MAI KYA KARU SIR MUMMY PAPA 18 SE 25 7 DIN KELIYE JABRDSTI SHADI MAI LE JARE HAI MAI LET LETKE ROYA BHI.....



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▲ 15 • Asked by Khush Pate...

FOOLS GOLD

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▲ 3 • Asked by Raviraj

sir ji School se matha kharab na ho isilye bihar board mein admission karwa liya no project, no copy, no school only unacademy

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▲ 14 • Asked by Abhishek

SIR SCHOOL WAALO NE NOTES. PROJECTS, ASSIGNMENT, LAB MANUAL, TEST, PRACTICALS DEKE ZINDAGI BARBAAD KAR RAKHI HAI. ISKI WAJAH SE JEE KO TIME NHI MIL PAEGA. HOW TO MANAGE?

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▲ 44 • Asked by Mani

sir physical chem ca course cab chatam hoga sirb

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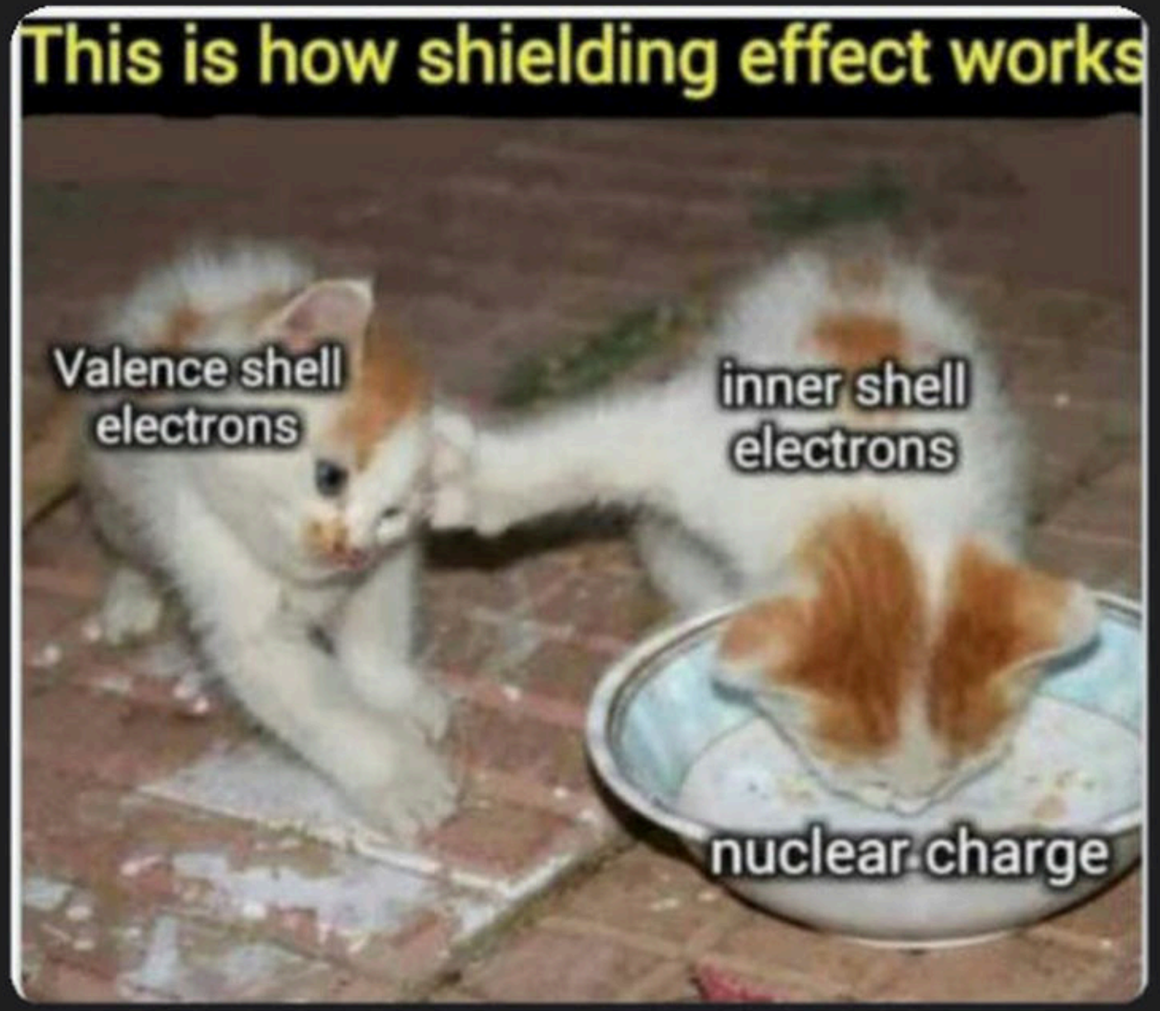
▲ 14 • Asked by Ankur

Please help me with this doubt



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▲ 13 • Asked by Krishnapat...

SIR MERA SAPNA THA KI EKK BAAR SCHOL SE SUSPEND HONEKA BUT VO ADHURA RAHEGAYA

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▲ 10 • Asked by Nikitasing...

Sir that's why ghr pe disturbance hoti kahi bhi le jate or emotionally blackmail krte

CaO_2Cl_2

(+2) OCl^-

Ca

OCl^-

A) No

B) Daily

C) Once in a week. (1-2)

D) 1-2 time in a month

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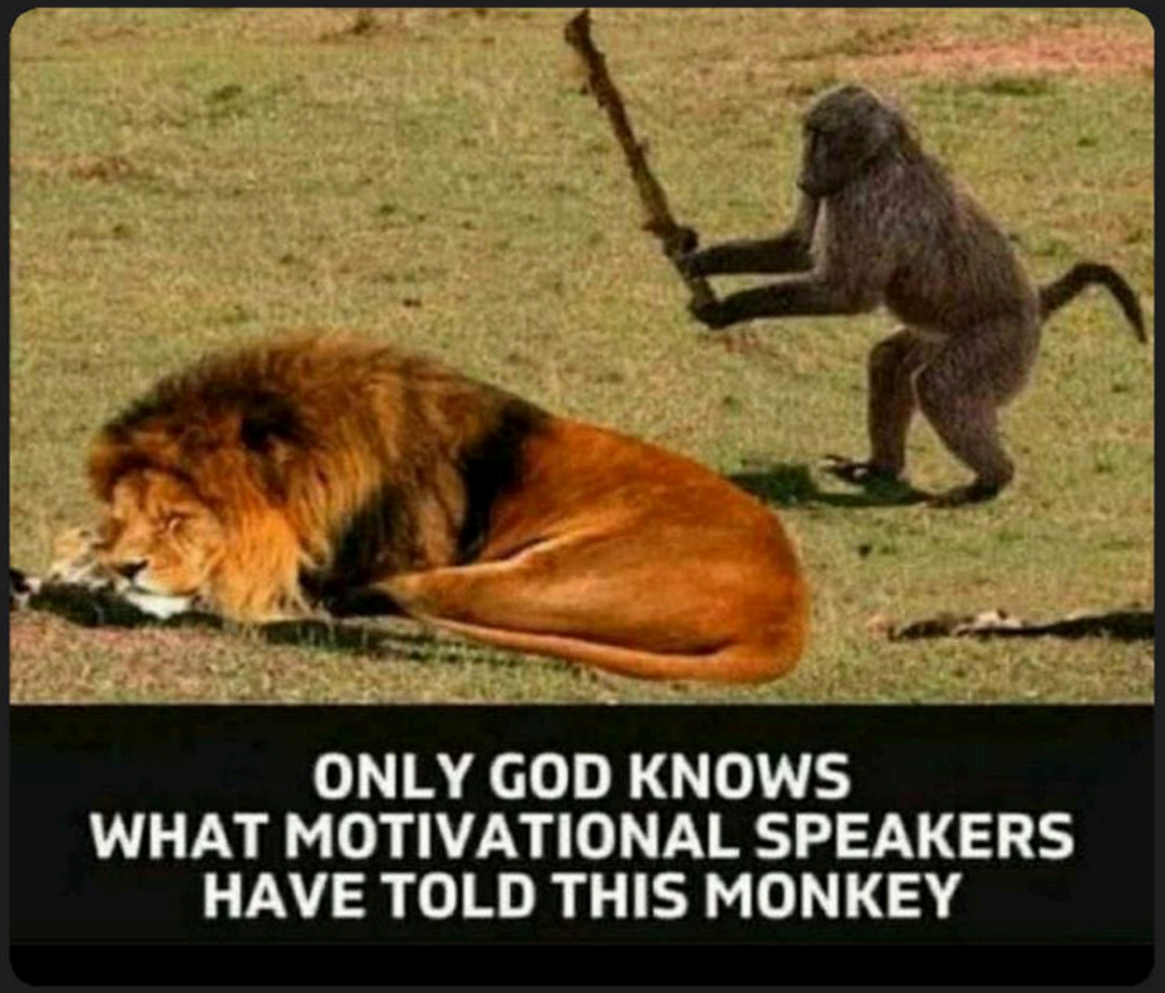
▲ 33 • Asked by Arnavgupta

Sir motivation to esi honi chahiye XDXD



Fe^{2+} Fe^{3+}

6

JEE Main Sept 2020

1. The oxidation states of transition metal atoms in $K_2Cr_2O_7$, $KMnO_4$ and K_2FeO_4, respectively are x, y and z. The sum of x, y and z is _____. **[Redox Equivalent]**

7 6

(A) 16
(B) 18
(C) 19
(D) 21