

H.W

1) D

2) D

3) C

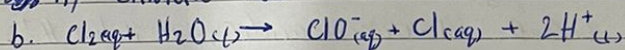
4) D

5) D

6) B

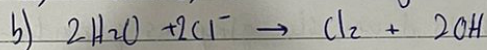
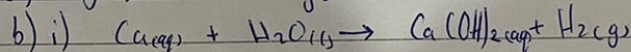
7) a) i) +1

ii) chlorate ion



Cl_2 changes from 0 to +1 in ClO^- and -1 in Cl^-
disproportionation since chlorine has been oxidised and reduced.

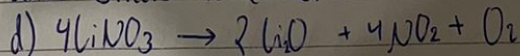
c. oxidation # changes from +5 in $\text{KClO}_3 \rightarrow +7$ in KClO_4 & -1 in KCl . So it has gone through disproportionation.

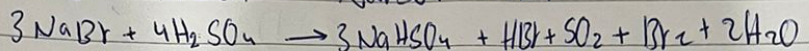
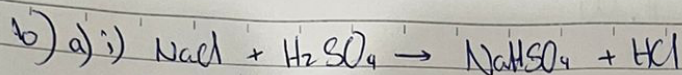
8) a) i) oxidation loses e^- , while reduction gains e^- .ii) chlorine, since it gained e^- 's, reducing agent.9) a) MgO and Mg_3N_2 ~~ii) reactivity increases~~

ii) down the group, it increases. Size increases, so more quantum shells, so less force of attraction, hence e^- are more readily given up so reactivity increases.

iii) ~~stability~~ increases

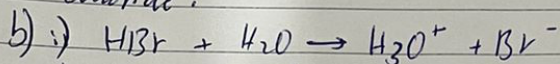
c) Carbonates in group 2 are solids, so when heated, they will decompose forming metal oxide and CO_2 . anions ^{ions} gains stability and binds to cation.





ii) HCl is weaker than HBr, so it can't reduce H_2SO_4 , so HBr reduces $\text{H}_2\text{SO}_4 \rightarrow \text{SO}_2$. HBr oxidises from -1 \rightarrow 0 in Br_2 .

i) reacts with HCl forming white precipitate, ammonium chloride.



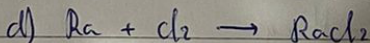
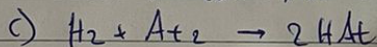
check ii) turns red because solution is acidic, since it has H^+ .

*) c) Add HNO_3 and silver nitrate ~~and~~ ammonia (aq), filter \rightarrow white ppt, proving presence of Cl^- ions. add (conc. ammonia (aq), solid won't dissolve, proving presence of iodide ions.

11) a) i) ~~shiny~~ shiny.

ii) black solid.

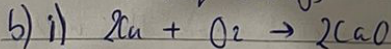
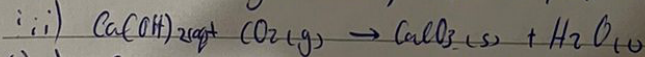
b) reactivity of halogens decreases down the group, as quantum shells increase, so less force of attraction.



e) ~~D~~ D

12) a) i) exothermic reaction.

ii) Calcium hydroxide, ~~is~~ IO, alkali/basic.



ii) down the group = temp increases.

Cations become larger so charge density decreases \rightarrow polarising power decreases, so nitrate ions polarise less.