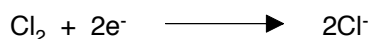


## Chemguide – questions

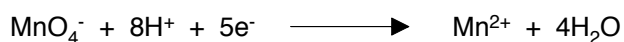
### REDOX EQUATIONS

1. Use each of the following pairs of electron-half-equations to work out the ionic equation for the reaction concerned.

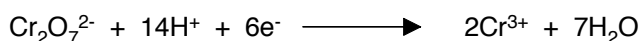
- a) The reaction between chlorine gas and bromide ions:



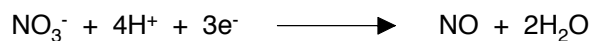
- b) The reaction between iron(II) ions and acidified potassium manganate(VII) solution:



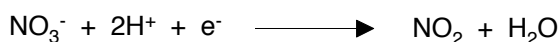
- c) The reaction between ethanol and acidified potassium dichromate(VI) solution to give ethanal:



- d) The reaction between copper and moderately concentrated nitric acid to give nitrogen monoxide:



- e) The reaction between copper and concentrated nitric acid to give nitrogen dioxide:



2. Work out electron-half-equations similar to the ones above for:

- The oxidation of sulphite ions,  $\text{SO}_3^{2-}$ , to sulphate ions,  $\text{SO}_4^{2-}$ .
- The reduction of chlorate(V) ions,  $\text{ClO}_3^-$ , to chlorine gas,  $\text{Cl}_2$ .
- The reduction of manganese(IV) oxide,  $\text{MnO}_2$ , to manganese(II) ions,  $\text{Mn}^{2+}$ .
- The reduction of xenon(VI) oxide,  $\text{XeO}_3$ , to xenon gas,  $\text{Xe}$ .
- The oxidation of hydrogen sulphide,  $\text{H}_2\text{S}$ , to sulphur,  $\text{S}$ .