

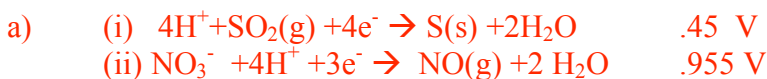
Group Quiz KEY

Work with your group in the proper seating. One solution per group. Signed by participants. Turn in your solutions by 9:15am even if you are not yet finished! (if you have time: If you want to change your group name, you can but keep the first letter. There may be extra credit in the end for the most voted-for group name!)

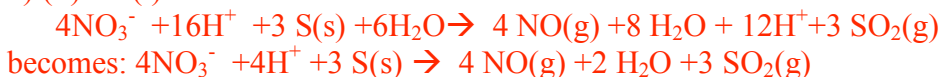


Consider the following: $E^\circ_{\text{SO}_2/\text{S}} = 0.45 \text{ V}$ and $E^\circ_{\text{NO}_3^-/\text{NO}} = 0.955$

- Write each reduction half reaction and balance each one (acidic conditions).
- Write the balanced spontaneous redox reaction involving these two(2) redox couples.
- Determine the reductant and oxidant.
- Determine the reaction's standard redox potential for the spontaneous.
- Determine the maximum work this reaction can do.



b) (ii)x4- (i)x3 :



c) reductant is oxidized so, it's S. oxidant is reduced so it's NO_3^-

d) $E^\circ_{\text{cell}} = .955 - .45 = .505 \text{ V}$

e) $W_{\text{max}} = \Delta G^\circ = -nFE^\circ = -(12)(96484 \text{ C/mol})(.505\text{V}) = 585 \text{ kJ/mol}$