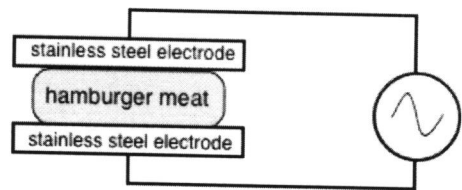


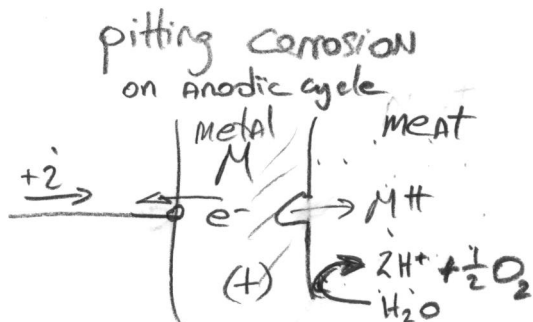
You may use your books and notes. Your signature shows that you agree with the answers. No discussions are allowed between the different teams. Each team returns one signed copy to Prof. Burleigh. Do not go onto a second page.

Name	signature
	Solution

A frozen hamburger patty may be uniformly cooked in less than thirty seconds by placing it between two stainless steel electrodes and zapping it with a large alternating current (AC). Unfortunately the stainless steel electrodes corrode and the hamburger tastes metallic.

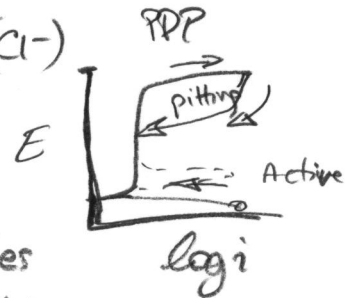


(a) Why do the electrodes corrode?



meat contains salt (Cl<sup>-</sup>)

electric current in wires and electrodes is changing to ionic current in



(b) How can you build non-corroding electrodes for cooking the hamburgers?

- lower voltage to < pitting potential (?)
- increase frequency (?) → but might hit active region, depending on Alloy.
- place insulator on surfaces so only capacitive elect, no ionic transfer.
- plate electrodes with Pt to stop pitting ?

→ I do not know what is used commercially for ohmic cooking. ← IR = V