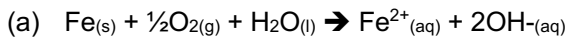
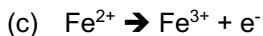


AP WORKSHEET 09GHIJ: ANSWERS

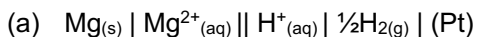
1.



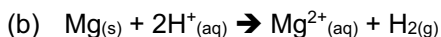
(b) +0.84 V



2.



+2.37 V



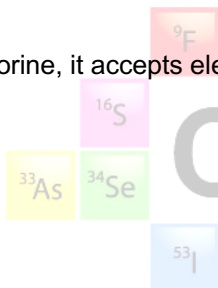
(c) Mg metal

(d) More vigorous, since the potential difference between the Ca and the hydrogen half-cells is greater than the potential difference between the magnesium and hydrogen half-cells

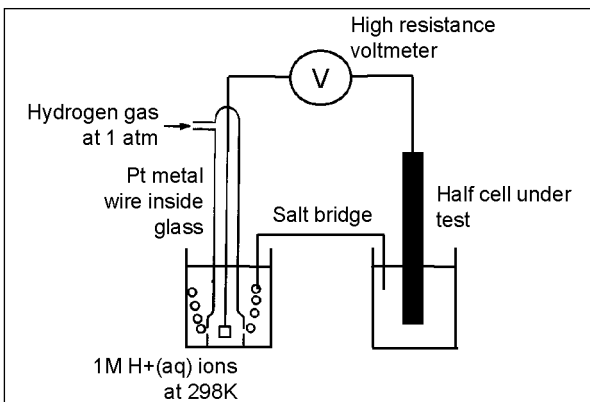
3. Fluorine, it accepts electrons most readily, it is most easily reduced making it the best oxidizing agent

4.

(a)



Chemistry Pages



The practical use of the hydrogen half-cell for determining E^\ominus values suffers from three main problems.

- It is difficult to set up the $\text{H}_{2(g)}$ at precisely 1 atm pressure
- It is fragile and non-portable
- The equilibrium $\text{H}^{+}_{(aq)} + e^{-} \leftrightarrow \frac{1}{2}\text{H}_{2(g)}$ is only established slowly

(b) 298K, 1 atm, 1M

5.

- (a) It completes the circuit by allowing the flow of ions and balancing the charge
- (b) A piece of filter paper soaked in an inert, ionic solution
- (c) It draws no current and therefore the potential difference reading is not affected
- (d) -1.18 V

6.

- (a) No. Reaction that is suggested has a negative E_{cell} . The reverse reaction has a positive E_{cell} and is the spontaneous one
- (b) Yes. Reaction that is suggested has a positive E_{cell}

