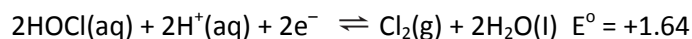


## Redox reactions - revision

### Lesson 7c

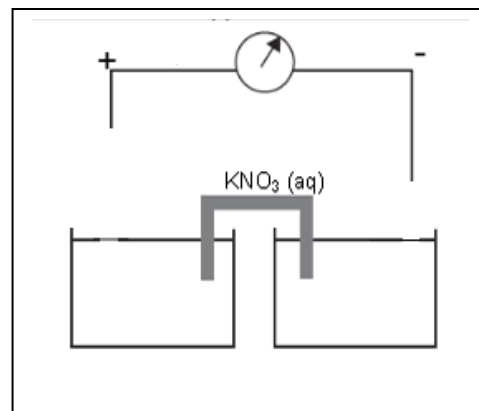
- 1) A galvanic cell can be constructed that uses the following two half-reactions



- a) Complete the diagram, shown on the right, of this galvanic cell. Indicate

- appropriate electrodes
- the ions in solution in each half cell
- the oxidant
- the reductant

- b) As the cell discharges what happens to the pH of each half cell? Explain



- c) Bubbles are seen forming at the negative electrode. Identify this substance and give a reason for your choice.

- 2) A student was given strips of two metals, nickel and silver and a solution of copper sulphate. The student placed one of the metals in the copper sulphate solution and left the room. Upon returning he noticed that copper metal had deposited on the metal which had almost dissolved.

- a) What was the likely metal placed in the solution? Explain



- b) The student observed that no more copper is being deposited even though there is still metal present in the solution. What ions are present in the solution?

- c) Which of the following metals, lead or iron, can be used to precipitate these ions, identified in b) above, out of solution? Explain

- d) Explain what you would expect to observe and write the oxidation and reduction half equations when:

i. Calcium metal is added to a 0.1 M  $\text{Mn}(\text{NO}_3)_2$  solution.

ii. Zinc metal is added to a 0.1 M HCl solution

