 Copyright © 2017 Dan Dill dan@bu.edu

[TP] What is true about the process
$Cl^-(1\ M) \rightarrow Cl^-(0.0001\ M)$?

25% 1. $E^o > 0$
25% 2. $E^o = 0$
25% 3. $E^o < 0$
25% 4. More information needed

BOSTON UNIVERSITY

Response Counter

10

1

Lecture 29 CH102 A1 (MWF 9:05 am)

Friday, April 7, 2017

- Complete: Concentration cells: Mixing → electric current

Next lecture: Begin ch17: Spontaneous change: How far?

Notes: Spontaneity: Second law of thermodynamics
http://quantum.bu.edu/courses/ch102-spring-2017/handouts.html

BOSTON UNIVERSITY

Lecture 29 CH102 A1 (MWF 9 am) Spring 2017 Copyright © 2017 Dan Dill dan@bu.edu

[TP] What is true about the process
$Cl^-(1\ M) \rightarrow Cl^-(0.0001\ M)$?

25% 1. $E^o > 0$
25% 2. $E^o = 0$
25% 3. $E^o < 0$
25% 4. More information needed

BOSTON UNIVERSITY

Response Counter

10

5

Lecture 29 CH102 A1 (MWF 9 am) Spring 2017 Copyright © 2017 Dan Dill dan@bu.edu

[TP] The process
$Cl^-(1\ M) \rightleftarrows Cl^-(0.0001\ M)$
is spontaneous. The correct cell line notation is ...

20% 1. Pt(s) | $Cl^-(0.0001\ M)$ | Cl_2 (1 bar) || $Cl^-(1\ M)$ | Cl_2 (1 bar) | Pt(s)
20% 2. Pt(s) | $Cl^-(0.0001\ M)$ | Cl_2 (1 bar) || Cl_2 (1 bar) | $Cl^-(1\ M)$ | Pt(s)
20% 3. Pt(s) | $Cl^-(1\ M)$ | Cl_2 (1 bar) || $Cl^-(0.0001\ M)$ | Cl_2 (1 bar) | Pt(s)
20% 4. Pt(s) | $Cl^-(1\ M)$ | Cl_2 (1 bar) || Cl_2 (1 bar) | $Cl^-(0.0001\ M)$ | Pt(s)
20% 5. None of the above

BOSTON UNIVERSITY

Response Counter

10

6

 Copyright © 2017 Dan Dill dan@bu.edu

Concentration cell construction

A concentration cell is constructed with Q corresponding to the Cl^- concentration difference between sea water and river water at 25 °C. Assume that the Cl^- concentration (due to dissolved NaCl) of sea water is 35 g/L and than that of river water is 1.0 mg/L.

BOSTON UNIVERSITY

 Copyright © 2017 Dan Dill dan@bu.edu

[Group Quiz] A concentration cell is constructed with Q corresponding to the Cl^- concentration difference between sea water and river water at 25 °C. Assume that the Cl^- concentration (due to dissolved NaCl) of sea water is 35 g/L and than that of river water is 1.0 mg/L. The voltage of this cell is …

20% 1. $E = +0.13$ V
20% 2. $E = +0.27$ V
20% 3. $E = +0.54$ V
20% 4. $E = +1.08$ V
20% 5. Something else

BOSTON UNIVERSITY

Response Counter

10

Copyright © 2017 Dan Dill dan@bu.edu