B14 · Extra practice

Original diploma-style practice | Items 1-2

Extra practice for this lesson. Original questions, not released diploma items. Select one option for multiple choice; other tasks state the required response.

Use the givens and conditions in each prompt. Enter the requested count, coefficient, oxidation number or potential with the stated unit and precision.

B14-D01 · Numerical response

Zn^{2+}/Zn is −0.76 V and Cu^{2+}/Cu is +0.34 V. What is the predicted E°cell, in volts to two decimal places?

Response: _____

B14-D02 · Numerical response

Fe^{2+}/Fe is −0.45 V and Cu^{2+}/Cu is +0.34 V. What is the predicted E°cell, in volts to two decimal places?

Response: _____

B14 · Extra practice

Original diploma-style practice | Items 3-4

B14-D03 · Multiple choice

In an investigation of how the metal affects cell voltage, which is the dependent variable?

A. The metal
B. The voltage
C. The concentration
D. The salt bridge

Response: _____

B14-D04 · Multiple choice

A silver half-cell (+0.80 V) is joined to a copper half-cell (+0.34 V). Which statement is correct?

A. Silver is the anode
B. Copper is the anode
C. Both are cathodes
D. Neither electrode changes

Response: _____

B14 · Extra practice

Original diploma-style practice | Items 5-6

B14-D05 · Numerical response

A device needs 5.0 V and each cell gives 1.10 V. How many cells in a row are needed? Enter an integer.

Response: _____

B14-D06 · Select all that apply

Select every variable that should be controlled when comparing metals joined to copper.

A. The concentration of the solutions
B. The temperature
C. The size of the electrodes
D. The metal being tested

Response: _____

B14 · Extra practice

Original diploma-style practice | Items 7-8

B14-D07 · Multiple choice

What does the salt bridge do in the design?

A. It lets ions move to balance charge
B. It supplies electrons
C. It measures the voltage
D. It speeds up the metals

Response: _____

B14-D08 · Select all that apply

Select every correct safe handling step for solutions that contain metal ions.

A. Read the label and safety data sheet
B. Wear goggles, gloves and an apron
C. Collect the waste in a container
D. Pour the waste down the drain

Response: _____

B14 · Extra practice

Original diploma-style practice | Items 9-10

B14-D09 · Numerical response

Ni^{2+}/Ni is −0.26 V and Ag^{+}/Ag is +0.80 V. What is E°cell, in volts to two decimal places?

Response: _____

B14-D10 · Multiple choice

Which statement is a prediction and not an observation?

A. The voltmeter read 1.07 V
B. The zinc strip lost mass
C. The table gives E°cell = +1.10 V
D. The copper strip gained a coating

Response: _____

B14 · Extra practice

Original diploma-style practice | Items 11-12

B14-D11 · Matching

Match each part of the design to its job.

Items to match:

1. Salt bridge
2. Voltmeter
3. Anode label
4. Waste container

Targets:

A. Reads the voltage
B. Marks where oxidation occurs
C. Balances charge
D. Holds metal-ion solutions

Response: _____

B14-D12 · Ordering / ranking

Put the planning steps in order.

First to last

1. Predict the anode and voltage
2. Write a testable question
3. Plan safe handling and disposal
4. Draw and label the design

Response: _____