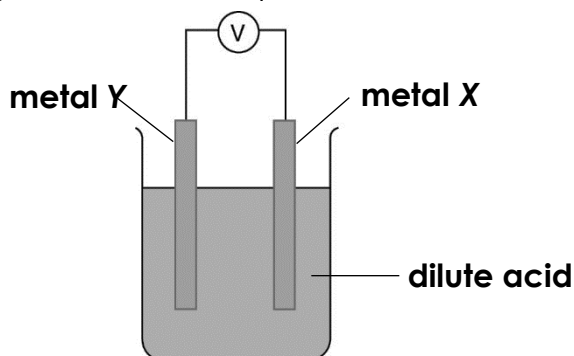


Quiz (Simple Chemical Cells)

Section A: Multiple-choice

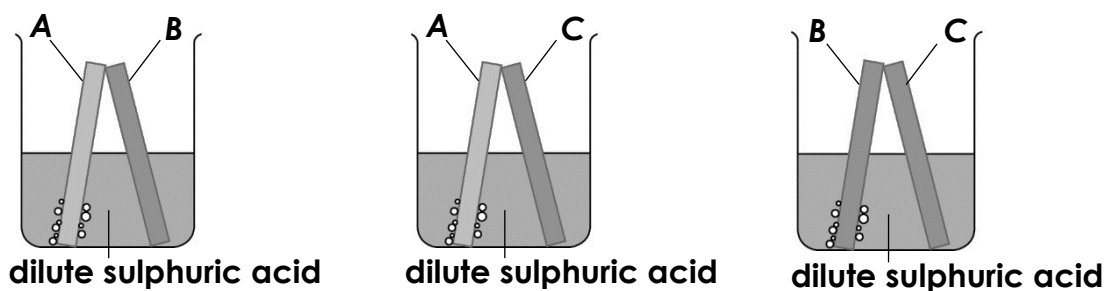
- Which of the following is the correct descending order of metals in the Electrochemical Series of metals?
A. $K > Ca > Na > Al$
B. $K > Na > Ca > Al$
C. $Al > Ca > Na > K$
D. $Al > Na > Ca > K$
- The following diagram shows a simple chemical cell.



Metal X is more reactive than metal Y. Which of the following methods can increase the voltage of the cell?

- (1) Replace metal Y with a metal which is more reactive than X
 - (2) Replace the dilute acid with a more concentrated acid
 - (3) Replace metal Y with a metal which is less reactive than Y
- (1) and (2) only
 - (1) and (3) only
 - (2) and (3) only
 - (1), (2) and (3)
- Which of the following chemical cells would give a negative voltage when iron is connected to the positive terminal of the voltmeter?
A. Pb/Fe
B. Zn/Fe
C. Al/Fe
D. Mg/Fe

7. Which of the following methods would increase the current in the cell?
- Add water to dilute sulphuric acid
 - Place the two metal electrodes further apart
 - Use zinc to replace the copper electrode
 - Use silver to replace the copper electrode
8. The following set-ups can be used to investigate the reactivity of metals A, B and C. Hydrogen evolves only on one of the metals.

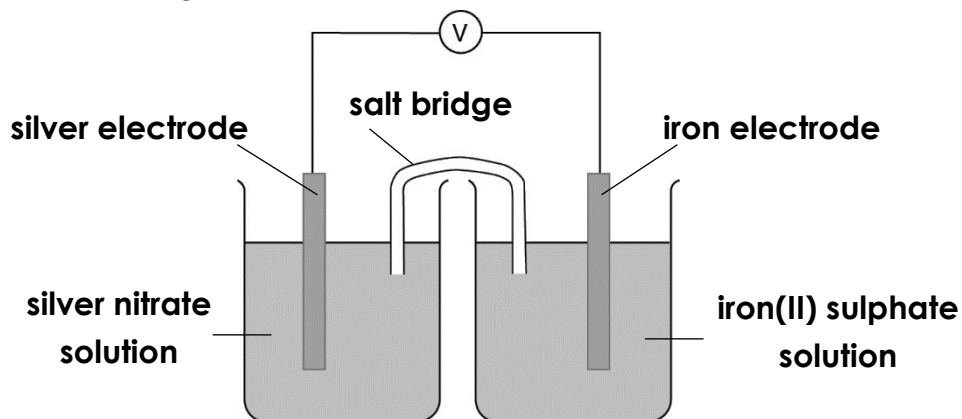


The order of reactivity of the metals is

- $A > B > C$.
- $C > A > B$.
- $B > C > A$.
- $C > B > A$.

Section B: Structured questions

Consider the following simple chemical cell:



- With the aid of a chemical equation, explain why it is NOT appropriate to prepare the salt bridge by soaking a strip of filter paper with potassium chloride solution.
 - Suggest how to prepare the salt bridge.
 - State the direction of electron flow in the external circuit.
 - With the aid of a half equation, state and explain the observable change in the iron-iron ion half cell.
-

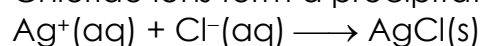
Suggested Answer

Section A

1.	A	5.	B
2.	C	6.	C
3.	A	7.	D
4.	B	8.	D

Section B

(a) Chloride ions form a precipitate with silver ions.



(b) Soak a strip of filter paper with potassium nitrate solution
(Accept other reasonable electrolytes)

(c) From iron to silver

(d) The colour of the solution becomes deeper
as the concentration of iron(II) ions increases.

