1. Calculate $\Lambda^0_{HNO_3}$ and Λ^0_{HOAc} using appropriate molar conductances of the electrolytes listed below at infinite dilution in H_2O at $25^\circ C$.

Electrolyte	$\Lambda^0(S\ cm^2\ mol^{-1})$
KCl	149.9
$NaCl$	126.5
HCl	426.2
KNO_3	145.0
$NaOAc$	91.0

A. $\Lambda^0_{HNO_3} = 390.7\ S\ cm^2\text{mol}^{-1}$
$\Lambda^0_{HOAc} = 517.2\ S\ cm^2\text{mol}^{-1}$

B. $\Lambda^0_{HNO_3} = 517.2\ S\ cm^2\text{mol}^{-1}$
$\Lambda^0_{HOAc} = 149.8\ S\ cm^2\text{mol}^{-1}$

C. $\Lambda^0_{HNO_3} = 421.3\ S\ cm^2\text{mol}^{-1}$
$\Lambda^0_{HOAc} = 390.7\ S\ cm^2\text{mol}^{-1}$

D. $\Lambda^0_{HNO_3} = 149.8\ S\ cm^2\text{mol}^{-1}$
$\Lambda^0_{HOAc} = 444.7\ S\ cm^2\text{mol}^{-1}$

2. According to Kohlrausch law, the limiting value of molar conductivity of an electrolyte $Fe_2(SO_4)_3$ is given by:

A. $3\lambda^0_m(Fe^{3+}) + 2\lambda^0_m(SO_4^{2-})$

B. $\lambda^0_m(Fe^{3+}) + \lambda^0_m(SO_4^{2-})$

C. $2\lambda^0_m(Fe^{3+}) + 3\lambda^0_m(SO_4^{2-})$

D. $\dfrac{2\lambda^0_m(Fe^{3+}) + 3\lambda^0_m(SO_4^{2-})}{6}$

3. The limiting molar conductivities Λ^0 for $NaCl,\ KBr$ and KCl are $126,\ 152$ and $150\ S\,cm^2mol^{-1}$ respectively. The Λ^0 for $NaBr$ is:

   A. $128\ S\,cm^2mol^{-1}$

   B. $176\ S\,cm^2mol^{-1}$

   C. $278\ S\,cm^2mol^{-1}$

   D. $302\ S\,cm^2mol^{-1}$

4. The molar conductances at infinite dilution for electrolytes BA and CA are 140 and $120\ ohm^{-1}cm^2mol^{-1}$ respectively. If the molar conductance at infinite dilution of BX is $198\ ohm^{-1}cm^2mol^{-1}$, then at infinite dilution, the molar conductance of CX is:

   A. $178\ ohm^{-1}cm^2mol^{-1}$

   B. $198\ ohm^{-1}cm^2mol^{-1}$

   C. $218\ ohm^{-1}cm^2mol^{-1}$

   D. $130\ ohm^{-1}cm^2mol^{-1}$

5. At 300 K molar conductivity of solution A is 350 units. and at infinite dilution the molar conductivity of the same sample is 480 unit. Predict the percentage dissociation of the electrolyte.

   A. 73.0 %

   B. 37.0 %

   C. 63.0 %

   D. 137.0 %