As the energy states of H_s only depend on I_s not I_{s3}

$$A_c = \frac{\sqrt{2}}{3} A_a - \frac{\sqrt{2}}{3} \langle \tfrac{1}{2}, -\tfrac{1}{2} | H_s | \tfrac{1}{2}, -\tfrac{1}{2} \rangle$$

writing $\langle \tfrac{1}{2}, -\tfrac{1}{2} | H_s | \tfrac{1}{2}, -\tfrac{1}{2} \rangle$ as $A_{1/2}$ for simplicity

$$\therefore \quad A_b = \frac{1}{3} A_a + \frac{2}{3} A_{1/2}$$

$$A_c = \frac{\sqrt{2}}{3} A_a - \frac{\sqrt{2}}{3} A_{1/2}$$

Since rate of each process is proportional to $|A|^2$ (c.f probability in quantum mechanics)

$$\therefore \quad Rate|_a : Rate|_b : Rate|_c =$$

$$= |A_a|^2 : \left|\frac{1}{3} A_a + \frac{2}{3} A_{1/2}\right|^2 : \left|\frac{\sqrt{2}}{3} A_a - \frac{\sqrt{2}}{3} A_{1/2}\right|^2$$

In limit where $|A_a|$ dominates *

$$\therefore \quad 1 : \frac{1}{9} : \frac{2}{9} \quad \therefore \quad 9 : 1 : 2 = Rate|_a : Rate|_b : Rate|_c$$

* This occurs when eg the C.o.M energy of the $\pi^{+/-} p$ interactions is at ~ 1232 MeV ie mass of $\Delta^+, \Delta^{++}, \Delta^0$ which is a $I_s = \frac{3}{2}$ bound state. In this case you see a large "bump" in the mass of πp system due to process:

$\pi p \rightarrow \Delta \longrightarrow \pi p$. As we know I_s of Δ is $\frac{3}{2}$ $\therefore$ we expect A_a to dominate