AFFINGE GROUP SCHEMES 05

Let G be a finite group Then for any field $\Bbbk$,

(1)
$$C(G;\Bbbk) = \{G \to \Bbbk\}$$
is a Hopf algebra. The multplication is the point-wise multiplication.
$$\Delta(\phi)(g_1, g_2) = \phi(g_1 g_2)$$

(2) $\Bbbk[G] = \otimes_{g\in G}\Bbbk g$ is a (non-commutative) Hopf algebra. The mutiplication is given by $m(g_1, g_2) = g_1 g_2$ $(g_1, g_2 \in G)$. $\Delta(x) = x \otimes x (x \in G)$.