A (4,6)-fullerene graph $G$ is a plane cubic graph whose faces are squares and hexagons. A resonant set of $G$ is a set of pairwise disjoint faces of $G$ such that the boundaries of such faces are $M$-alternating cycles for a perfect matching $M$ of $G$. A resonant set of $G$ is referred to as sextet pattern whenever it only includes hexagonal faces. We get the following conclusions. i) The Clar (resp. Fries) number of $G$ is equal to its maximum forcing (resp. anti-forcing) number, which extends some known results for hexagonal systems with a perfect matching. Moreover, two formulas dependent only on the order of $G$ are obtained, which count the Clar number and Fries number of $G$ respectively. Hence we can compute the maximum forcing number of a (4,6)-fullerene graph in linear time. This answers an open problem proposed by Afshani et al. (2004) in the case of (4,6)-fullerene graphs. ii) All the maximum sextet patterns of $G$ are characterized. Via such characterizations, a formula only depending on the order of $G$ and the number of a fixed subgraph of $G$ is obtained for counting the maximum sextet patterns of $G$, where the count equals the coefficient of the term with largest degree in its sextet polynomial. (Received August 03, 2020)