The known binary sequences having the asymptotic merit factor $\geq 6$ are the modifications to the prime character sequences. In this paper, we show that at $N = pq$, there are many modifications other than the modified Jacobi sequences proposed by Jensen and Hoholdt in 1991. Furthermore, we will give new modifications to the character sequences of length $N = p_1p_2\ldots p_r$, where $p_i$'s are distinct odd primes. Based on these new modifications, we can construct a binary sequence of length $2N$ so that such families of sequences have asymptotic merit factor 6.0 without cyclic shifting on the base sequences. (Received September 11, 2009)