1014-11-1468 **Judith Canner**, **Lenny Jones** and **Joseph Purdom*** (`lkjone@ship.edu`), Department of Mathematics, Shippensburg University, 1871 Old Main Drive, Shippensburg, PA 17257. *Sequences of Reducible $\{0,1\}$–Polynomials over $\mathbb{F}_p$.*

Let p be a prime, let $k \geq 1$ be an integer and let $f := f(x)$ be a $\{0,1\}$–polynomial with $f(0) = 1$. Define a sequence of $\{0,1\}$–polynomials in $\mathbb{F}_p[x]$, denoted (f, k, p), by: $f_1 := f$ and $f_i := f_{i-1} + x^{kn}$, for $i \geq 2$, where kn is the smallest multiple of k larger than the degree of f_{i-1}, such that $f_{i-1} + x^{kn}$ is reducible over $\mathbb{F}_p$. Let $\mathcal{M}$ denote the set of positive integer multiples of k larger than the degree of f that are not degrees of terms in (f, k, p). We investigate conditions on f, k and p which determine whether $\mathcal{M}$ is empty, finite or infinite, and which guarantee, in the situation when $\mathcal{M}$ is empty or finite, that the terms of (f, k, p) are periodic with respect to roots of these terms. In addition, we prove that if $\mathcal{M}$ is empty for the sequence $(1, k, p)$, with $k \geq 2$, then this sequence is infinite. Finally, for $p \geq 5$, we show that there exists a $\{0,1\}$–polynomial f such that the sequence $(f, 1, p)$ is infinite. (Received September 28, 2005)