1079-05-310 **Younjin Kim*** (kyounjin@msri.org), MSRI, 17 Gauss Way, Berkeley, CA 94720, and **Janos Barat** (janos.barat@monash.edu), **Zoltan Furedi** (z-furedi@illinois.edu), **Ida Kantor** (ida@kam.mff.cuni.cz) and **Balazs Patkos** (patkos@renyi.hu). *Large B_d-free and union-free subfamilies.*

For a property Γ and a family of sets $\mathcal{F}$, let $f(\mathcal{F},\Gamma)$ be the size of the largest subfamily of $\mathcal{F}$ having property Γ. For a positive integer m, let $f(m,\Gamma)$ be the minimum of $f(\mathcal{F},\Gamma)$ over all families of size m. A family $\mathcal{F}$ is said to be B_d-free if it has no subfamily $\mathcal{F}' = \{F_I : I \subseteq [d]\}$ of 2^d distinct sets such that for every $I, J \subseteq [d]$, both $F_I \cup F_J = F_{I\cup J}$ and $F_I \cap F_J = F_{I\cap J}$ hold. A family $\mathcal{F}$ is a-union-free if $F_1 \cup \cdots \cup F_a \neq F_{a+1}$ whenever $F_1, \ldots, F_{a+1}$ are distinct sets in $\mathcal{F}$. We verify a conjecture of Erdős and Shelah that $f(m, B_2\text{-free}) = \Theta(m^{2/3})$. We also obtain lower and upper bounds for $f(m, B_d\text{-free})$ and $f(m, a\text{-union free})$. (Received January 18, 2012)