(i) This is false in general, since it could be that $g(n) = 1$ for all n, $f(n) = 2$ for all n, and then $\log_2 g(n) = 0$, whence we cannot write $\log_2 f(n) \leq c \log_2 g(n)$.

On th other hand, if we simply require $g(n) \geq 2$ for all n beyond some n_1, then the statement holds. Since $f(n) \leq cg(n)$ for all $n \geq n_0$, we have $\log_2 f(n) \leq \log_2 g(n) + \log_2 c \leq (\log_2 c)(\log_2 g(n))$ once $n \geq \max(n_0, n_1)$.

(ii) This is false: take $f(n) = 2n$ and $g(n) = n$. Then $2^{f(n)} = 4^n$, while $2^{g(n)} = 2^n$.

(iii) This is true. Since $f(n) \leq cg(n)$ for all $n \geq n_0$, we have $(f(n))^2 \leq c^2(g(n))^2$ for all $n \geq n_0$.

[1] ex66.350.972