A compact Hausdorff space is called an <u>F-space</u> if the closures of two disjoint open F_σ-sets are disjoint and is called a <u>Stonean</u> (res., <u>σ-Stonean</u>) space if the closure of every open set (res., open F_σ-set) is open. Every σ-Stonean space is an F-space.

<u>Theorem</u> 3.6. Every strongly continuous semigroups of operators on one of the following Banach spaces is uniformly continuous:

1) $C(K)$, where K is a compact F-space.
2) $L^\infty(S,\Sigma,\mu)$ for any measure space (S,Σ,μ).
3) The Banach space $B(S,\Sigma)$ of bounded Σ-measurable functions on S if Σ is a σ-algebra of subsets of S.
4) The Banach space $\mathcal{H}(O)$ of bounded continuous solutions of
$$\sum_{1\leq i\leq n} (\partial^2 f/\partial x_i^2) = 0$$
on an open subset O of $\mathbb{R}^n$.
5) The Banach space $\mathcal{W}(O)$ of bounded continuous solutions of
$$\sum_{1\leq i\leq n} (\partial^2 f/\partial x_i^2) = (\partial f/\partial x_{n+1})$$
on an open subset O of $\mathbb{R}^{n+1}$.
6) The Banach space $H^\infty(O)$ of bounded analytic functions on a finitely connected domain O of the complex plane.

<u>Proof</u>. By Theorem 3.5 it suffices to show that the space listed above are Grothendieck spaces with the Dunford-Pettis property.

1) If K is compact, then $C(K)$ has the Dunford-Pettis property [Grothendieck (1953) Théorème 4]. If K is a compact F-space, then $C(K)$ is a Grothendieck space [Seever (1958) Theorem 2.5]; the special cases for Stonean and σ-Stonean spaces are due to [Grothendieck (1953), Théorème 9] and [Ando (1961)] respectively.

2) and 3) It is well known that every σ-order complete AM-space with unit is isometric to a space $C(K)$ where K is a compact σ-Stonean space. Obviously, the spaces under 2) and 3) are σ-order complete AM-spaces with unit and therefore by 1) Grothendieck spaces with the Dunford-Pettis property.

4) and 5) These spaces are order complete vector lattices. This follows from [Bauer (1966) pp.18-22, Standardbeispiele 1 and 2 p.55]. Since these spaces contain the constant functions on O they are complete for the supremum-norm. Indeed if (f_n) is a Cauchy-sequence for this norm, it is easily seen that (f_n) converges in norm to $\inf_n \sup(f_k : n < k)$. Therefore these spaces are σ-order complete AM-spaces with unit and so as before Grothendieck spaces with the Dunford-Pettis property.

6) Bourgain [(1980), Cor. 3] proves that $H^\infty(D)$ has the Dunford-Pettis property and in [(1984), Proposition III.1], that $H^\infty(D)$ is a