1057-26-28   **Jafar Zafarani*** (`jzaf@zafarani.ir`), Department of Mathematics, Sheikhbahaee University and University, of Isfahan, Isfahan, Isfahan 81745-163. *Approximation for Baire functions.* Preliminary report.

Let X be a perfectly normal Hausdorff topological space and E be a Banach space. Suppose that $C^\circ(X, E)$ is the set of all of E-valued continuous functions with relatively compact ranges. Then for each ordinal α, the class of ambiguous sets of class α is denoted by $\mathcal{H}_\alpha$ and the Baire functions of class α is defined by: $\beta_0^\circ(X, E) = C^\circ(X, E)$, and $\beta_\alpha^\circ(X, E)$ as the set of all $f : X \to E$ such that f is the point-wise limit of some sequence in $\beta_{\alpha-1}(X, E)$ and range of f is relatively compact. Here we show that the uniform closure of $\sigma_{\alpha,E}$ is $\beta_\alpha^\circ(X, E)$, where $\sigma_{\alpha,E} = \{\sum_{i=1}^n e_i \chi_{H_i} : n \in \mathbb{N}, e_i \in E \text{ and } H_i \in \mathcal{H}_\alpha \text{ for each } i\}$. As application of our results, we obtain a dual representation of the space $\beta_\alpha^\circ(X, E)$. (Received December 25, 2009)

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