ON THE t-EXTENDABILITY OF THE

GENERALIZED PETERSEN GRAPHS

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Introduction. In an earlier paper (see [5]) we investigated the existence of full sets of states and full sets of dispersion free states on the orthomodular lattices and posets arising from the dualization of the generalized Petersen graphs. In particular, investigation of those orthomodular structures admitting full sets of dispersion free states led in a natural way to the question of 2-extendability (as defined by Plummer [4]) of the generalized Petersen graphs and was partially answered in [6] and [7].

In this paper we answer completely the question of t-extendability (also defined by Plummer [4]) on the generalized Petersen graphs where t is not equal to 2.

Terminology. All graphs in this paper are in the sense of Harary [2]. Recall that a _perfect matching_ of a graph G is a set of independent (i.e., non-adjacent) edges which together cover all the points of G.

Following M. D. Plummer [4], we define a graph G to be $t - extendable$ if it is connected, contains a set of t independent edges and every set of t independent edges extends to (i.e. is a