POWERS OF CYCLE GRAPH WHICH ARE k −SELF COMPLEMENTARY AND k −CO-SELF COMPLEMENTARY

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Abstract - E Sampath Kumar and L Pushpalatha [2], defined a new type of complement as follows; Let $G = (V, E)$ be a graph and $P = \{V_1, V_2, \dots, V_k\}$ be a partition of V of order $k \geq 1$. The k −complement G_k^P of G (with respect to P) is defined as follows: For all V_i and V_j in $P, i \neq j$, remove the edges between V_i and V_j , and add the edges which are not in G. The graph G is k −self complementary ($k - s.c.$) with respect to P if $G_k^P \cong G$.
A graph G is k −co-self complementary ($k - co.s.c.$) if $G_k^P \cong \bar{G}$.
The m^{th}power G^m of an undirected graph G is another graph that has the same set of vertices, but in which two vertices are adjacent when their distance in G is at most k.
In this paper, we obtain some results on the k −self complementary and k −co-self complementary powers cycle graph. Also we obtain all C_n^2 which are k −self complementary and k −co-self complementary.

Keywords - k −complement, k −self complementary, k −co-self complementary, Powers of Cycle Graph.

REFERENCES

[1] D. B. West, (1996). Introduction to Graph Theory, Prentice Hall.
[2] E. Sampath Kuamr and L. Pushpalatha (1998). Complement of a graph a generalization. Graphs and Combinatorics 14. 377-392.
[3] E. Sampath Kuamr, L. Pushpalatha, Venkatachalam and Pradeep G Bhat(1998). Generalized complements of a graph. Indian Journal of pure and applied Mathematics. 29(6). 625-639.

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