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SOME NEW CLASSES OF EQUIENERGETIC GRAPHS

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Abstract: The eigenvalue of a graph G is the eigenvalue of its adjacency matrix and the energy $E(G)$ of graph G is the sum of absolute values of its eigenvalues. Two non-isomorphic graphs G_1 and G_2 of the same order are said to be equienergetic if they have same energies. The complement of a graph G is the graph $\overline{G}$ with vertex set $V(G) = V(\overline{G})$ and two vertices are adjacent in $\overline{G}$ if and only if they are not adjacent in G. In the present work three pairs of equienergetic graphs have been obtained using graph complement.

Keywords and Phrases: Eigenvalue, Energy of Graph, Equienergetic Graphs.

2020 Mathematics Subject Classification: 05C50, 05C76.

1. Introduction and Preliminaries

All the graphs considered here are simple, finite and undirected. For standard terminology and notations related to graph theory we follow Balakrishnan and Ranganathan [2] while for the concept related to algebra, we follow Lang [7]. Let G be a simple graph with vertex set $V(G) = \{v_1, v_2, \cdots, v_n\}$.