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ENERGY OF COMPLEMENTS OF CERTAIN DOUBLE GRAPHS

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Abstract: The energy of a graph is that the total of absolute values of its eigenvalues. In this paper, we investigate the energy of complement of extended bipartite double graphs, complement of strong double graphs and complement of double graphs in terms of energy of underlying graph or its complement. As a consequence of energy of these graphs, various energy types are discussed. The obtained results generalize some of the existing results on equienergetic graphs. Moreover, some new class of equienergetic graphs are characterized.

Keywords and Phrases: Extended bipartite double graph, Strong double graph, Double graph, Equienergetic graphs, Orderenergetic graphs, Hyperenergetic graphs.
2020 Mathematics Subject Classification: 05C50, 05C76.

1. Introduction and Preliminaries

All of the graphs considered throughout the paper are simple and undirected. The order $\mathfrak{o}(\Gamma)$ and size $\mathfrak{s}(\Gamma)$ of a graph Γ are the number of vertices and edges in Γ, respectively. The degree d_i of a vertex x_i is the number of edges incident to x_i. The