Biclique Accessibility Polynomial of Graphs

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Abstract: *Let G be a connected simple graph. A balanced biclique in G is a biclique in G with equivalent partitions. Given a balanced biclique H of G, the H-accessibility of G is the minimum number k for which G\H is (H,k)-accessible. That is, for every vertex v in G\H, there exists a vertex u in H whose distance from v is less than or equal to k. The biclique accessibility polynomial of G is the polynomial in indeterminates x and y where the powers of x is the cardinality of the balanced biclique and the powers of y correspond to the H-accessibility of the given graph G for a balanced biclique H. In this paper, we give the properties of the balanced biclique polynomial of graphs and establish the balanced biclique polynomial of some special graphs and graphs resulting from the join and the corona of two connected graphs.*

Keywords: *biclique, balanced biclique, biclique accessibility polynomial, graph polynomial*