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A NOTE ON IDEAL BASED ZERO-DIVISOR GRAPH OF A COMMUTATIVE RING

A. Mallika, R. Kala

and

K. Selvakumar

Department of Mathematics
Manonmaniam Sundaranar University
Tirunelveli 627 012, TamilNadu, India

e-mail: mallikamsu2010@yahoo.in
karthipyi91@yahoo.co.in
selva_158@yahoo.co.in

Abstract

In this paper, we consider the ideal based zero divisor graph $\Gamma_I(R)$ of a commutative ring R. We discuss some graph theoretical properties of $\Gamma_I(R)$ in relation with zero divisor graph. We also relate certain parameters like vertex chromatic number, maximum degree and minimum degree for the graph $\Gamma_I(R)$ with that of $\Gamma(\frac{R}{I})$. Further we determine a necessary and sufficient condition for the graph to be Eulerian and regular.

Keywords: zero-divisor graph, chromatic number, ideal based zero divisor graph, clique number.

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