

## J-IDEALS OF COMMUTATIVE RINGS

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**ABSTRACT.** Let  $R$  be a commutative ring with identity and  $N(R)$  and  $J(R)$  denote the nilradical and the Jacobson radical of  $R$  respectively. A proper ideal  $I$  of  $R$  is called an  $n$ -ideal if for every  $a, b \in R$ , whenever  $ab \in I$  and  $a \notin N(R)$ , then  $b \in I$ . In this paper, we introduce and study  $J$ -ideals as a new generalization of  $n$ -ideals in commutative rings. A proper ideal  $I$  of  $R$  is called a  $J$ -ideal if whenever  $ab \in I$  with  $a \notin J(R)$ , then  $b \in I$  for every  $a, b \in R$ . We study many properties and examples of such class of ideals. Moreover, we investigate its relation with some other classes of ideals such as  $r$ -ideals, prime, primary and maximal ideals. Finally, we, more generally, define and study  $J$ -submodules of an  $R$ -modules  $M$ . We clarify some of their properties especially in the case of multiplication modules.

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