ON QUASI SEMI-COMMUTATIVE RINGS

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In this paper we introduce the notion of quasi semi commutative rings. We call an element \( x \in R \), where \( R \) is a ring to be quasi semi commutative if there exists a \( y \in R \), \( (y \neq 0) \) such that \( yx - xy \) commutes with every element of \( R \). We define quasi semi commutator of \( x \) by \( Q(x) = \{ p \in R / xp - px \text{ commutes with every element of } R \} \). Clearly \( Q(x) \neq \emptyset \) for \( 1, 0 \in Q(x) \) if \( R \) is a ring with unit. We state \( R \) to be a quasi semi commutative ring if every element in it is quasi semi commutative. Analogous to centre here we define the concept of quasi semi centre of the ring \( R \) as \( Q(R) = \{ x \in R / xp - px \text{ is quasi commutative} \} \). Clearly \( Q(R) \) is nonempty. One of the interesting observations is that the centre of the ring \( Z(R) \) of \( R \) is a subset of \( Q(R) \). We finally prove that \( Q(x) \) for any \( x \in R \) is not in general a multiplicatively closed set. Several interesting results in this direction are obtained.