

REGULAR BAER RINGS AND THE ANNIHILATOR CONDITIONS

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This dissertation deals with regular Baer rings and the annihilator conditions. We are concerned with the cardinality of idempotents of regular Baer rings. Actually we show that regular Baer rings with countably many idempotents are semisimple Artinian, thereby we can generalize K.M. Rangaswamy's theorem. As a byproduct of this result we can give a partial answer to S.K. Berberian's conjecture, that is, every regular Baer ring with countably many idempotents is compressible by adapting L. Jeremy's result.

Moreover we observe a class of rings in which every principal left (resp. right) ideal is a left (resp. right) annihilator. Indeed we show that a ring satisfies the condition that every principal left (resp. right) ideal is a left (resp. right) annihilator and satisfies ascending chain condition (ACC) on right (resp. left) annihilator is semiprimary. Consequently by this result we can generalize C.R. Yohe's result and get another version of B. John's theorem.

Finally we study reduced rings with countably many idempotents. Really we prove that self-injective reduced rings with countably many idempotents are quasi-Frobenius. By this fact a theorem of J. Lawrence is partially extended.

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