PREFACE

The pioneer theorem of Wedderburn on commutativity of division rings was proved in 1906. Aside from its own intrinsic beauty and its important role in many diverse parts of algebra, the theorem serves as the starting point for the investigation of certain kinds of conditions that render a ring commutative. A large part of the results in this area was developed in the hands of Jacobson, Herstein, Kaplansky, Faith, Martindale, Nakayama, Bell, Adil Yaqub and many others.

The object of the present dissertation entitled "A STUDY OF COMMUTATIVITY OF CERTAIN SPECIAL TYPES OF RINGS" is to collect and arrange some of the recent research work in the area.

The present exposition consists of four chapters. Chapter I contains basic algebraic notions, concepts and important terminologies used in the subsequent chapters. Some well-known classical commutativity theorems are also included in this chapter.

Chapter II is based on some papers which discuss the commutativity of prime and semi-prime rings. Commutativity of \((n,k)\)-rings and \((n,k)^*\)-rings has also been investigated.
Chapter III deals with the commutativity of rings with unity satisfying certain polynomial conditions, whereas Chapter IV is devoted to the study of commutativity of some wider classes of rings. We know that in a ring $R$ with unity, $x \in xR \cap Rx$ for every $x \in R$. However, there exist rings without unity in which $x \in Rx$ (respectively $x \in xR$). We call such rings right (respectively left) $s$-unital. More generally, a ring $R$ is said to be $s$-unital if $x \in xR \cap Rx$ for every $x \in R$. The commutativity of these rings is discussed in the last chapter which begins with some results showing that under certain appropriate conditions, one sided $s$-unital rings turn to be $s$-unital.

Suitable examples are provided at proper places to illustrate that the restrictions imposed on the hypotheses of various results are not superfluous altogether.

In the end, a comprehensive bibliography of books and research papers which were consulted during the preparation of the present exposition has been given.

Articles, definitions, remarks, examples and theorems have been numbered chapter wise. A double point system is adopted to specify them. For example, Theorem 3.2.5 in reference means Theorem 5 appearing in section 2 of chapter III.