Proceedings of the International Conference on
Groupoids, Semigroups and Automata
University of Kerala, Thiruvananthapuram, 2010, pp. 137–140

Semiprime Accessible Rings

C. Jaya Subba Reddy[1], D. Prabhakara Reddy[2]
Department of Mathematics
S. V. University
Tirupati - 517502, A. P., India.
praney2007@yahoo.co.in[1], *cjsreddysvu@gmail.com*[2]

Abstract

In this paper we see that accessible rings satisfy the identity $((w, x, y), z) = 0$, i.e., the associator commutes with all elements of the ring. Also we prove that the associator is in the nucleus of an accessible ring. Using this property, we prove that a semiprime accessible ring of characteristic $\neq 2, 3$ is associative.

Key words: Nonassociative ring, Accessible ring, Prime ring, Semiprime ring, Nucleus, Characteristic and Associator.

1 Introduction

Albert [1] defined standard ring. Kleinfeld obtained some identities of standard and accessible rings [2] and proved that simple accessible rings are either associative or commutative. Thedy [3] studied the rings, in which the associator commutes with all elements of the ring, i.e., $((w, x, y), z) = 0$. He proved that simple nonassociative rings satisfying this identity are either associative or commutative. In this section we see that accessible rings satisfy the identity $((w, x, y), z) = 0$. Also we prove that the associator is in the nucleus of an accessible ring. Using this property, we prove that a semiprime accessible ring of char. $\neq 2, 3$ is associative.

2 Preliminaries

Let R be a nonassociative ring. We shall denote the commutator and the associator by $(x, y) = xy - yx$ and $(x, y, z) = (xy)z - x(yz)$ for all x, y, z in R respectively. The nucleus N of a ring R is defined as $N = \{n \in R/(n, R, R) =$