CHAPTER I

INTRODUCTION

A ring R is called a right V-ring if every simple right R-module is injective. This notion was introduced by Villamayor in 1973. In 1975, Cozzen and Faith [3] studied V-rings and obtained characterizations of V-rings and found that:

If R is a commutative ring, then R is a V-ring if and only if R is a regular ring.

In 1992, Yue Chi Ming [6] studied P-V-rings and obtained characterizations of P-V-rings

We now extend V-rings to cyclically injective rings. A ring R is called a right cyclically injective ring (C-ring) if every simple right R-module is principally N-injective for all cyclic right R-modules N.

The purposes of this research are :

1. To find some basic properties of principally N-injective modules,

2. To find some relations between C-rings and regular rings,

3. To find some conditions which make P-V-rings to be C-rings and C-rings to be V-rings,

4. To find some characterizations of C-rings.

We devide this thesis into four chapters and chapter I is for the introduction. In chapter II we list some basic knowledge of module theory that will be use in the later chapters. Chapter III, we present some basic properties of principally N-injective modules and characterizations of C-rings. The relation between C-rings and regular rings. Also some connections among V-rings, C-rings, P-V-rings and regular rings are provided in this chapter. Chapter IV is used for the conclusion.