

introduction to the theory of the rings of Krull type because these rings are not very widely known. Section 1, of this chapter includes an introduction to the theory of rings of Krull type. Briefly for the sake of completeness of the present section we note that

- (1) if  $R$  is an integral domain,  $K$  its field of fractions and  $S$  an integral domain such that  $R \subseteq S \subseteq K$  then  $S$  is called an overring of  $R$ ,
- (2) if  $R$  is an integral domain and  $S$  a valuation overring of  $R$  then  $S$  is called an essential valuation overring of  $R$  if  $S = R_P$  for some prime ideal  $P$  in  $R$ ,
- (3) an integral domain  $R$  is called essential if it can be expressed as an intersection of essential valuation domains
- (4) an essential integral domain  $R = \bigcap R_P^\alpha$ ;  $\alpha \in I$  is a ring of Krull type, if for each non zero non unit  $x$  in  $R$ ,  $x$  is a non unit in only a finite number of  $R_P^\alpha$ ;  $\alpha \in I$ .

If  $P$  is a prime ideal such that  $R_P^\alpha$  is a valuation domain, we shall call  $P$ , a valued prime, and every prime

ideal  $Q$  such that  $0 \neq Q \subseteq P$ , will be called a subvalued prime in  $P$ . In section 2, we show that if  $P$  is a valued prime and  $0 \neq x \in P$  then there exists a unique minimal subvalued prime which is minimal with respect to containing  $x$  such that

$x \in Q \subseteq P$ , and this we shall call the minimal subvalued prime of  $x$  in  $P$ . In the same section we show that if an element  $p$  in an HCF ring of Krull type has only one minimal subvalued prime  $w.b.t.$  all the valued primes containing  $x$  then

$p$  is such that if  $p = p_1 p_2 \dots p_l$  non units then  $(p_1, p_2) \neq 1$  and there exists a positive integer  $n$  such that  $p_1 | p_2^n$  or  $p_2 | p_1^n$ . Such an element will be called a packet. Finally we shall

prove in the same section that a non zero non unit in an HCF