(i) $x_1' \notin q$ and $x_2' \in q$ (or $x_1' \in q$ and $x_2' \notin q$)

(ii) $x_1', x_2' \notin q$.

In the first case if x_1' is not a unit, x_1' belongs to a subfamily of the family of valued primes containing x(and hence x_2') and so $x_1' | x_2'$, that is $x_1 | x_2$. And in the second case $x_i'^{\,n} | d$ (i = 1,2.) for each n and so $x_1 | x_2^2$ and $x_2 | x_1^2$.

Combining all the above cases we conclude that (p_2) holds for x. In other words x is a packet.

Conversely let x be a packet in an HCF domain R and let $\{P_\beta\}$ be the family of all the valued primes containing x, further let P,Q be two distinct minimal subvalued primes of x and consider $y \in P - Q$, then $(x,y) = d \in P - Q$ (can be verified easily by using the fact that R is an HCF domain and R_P is a valuation domain), and d has P as one of its minimal subvalued primes. We claim that there exists a positive integer n such that $d^n \nmid x$. For if not let $d^n | x$ for each n, then $d^n | x$ for each n in R_P and so $x \in \bigcap d^n R_P = P_1 R_P$ where $P_1 R_P$ is a prime ideal properly contained in PR_P i.e. $x \in P_1 R_P \cap R$, and by the one-one correspondence between primes in R_P and those contained in P, x has $P_1 R_P \cap R$ as its minimal subvalued prime a contradiction to the assumption that P is one of the minimal subvalued primes of x, and hence there exists a positive integer n such that $d^n \nmid x$.

Now consider $h = (x,d^n)$ where $d^n \nmid x$ in R_P then $d^n = ah$ $x = bh$ and $(a,b) = 1$. We claim that $b \notin P$ for if $b \in P$, then $a \notin P$ and so $a|b$ in R_P and consequently $ah|bh$ in R_P that is $d^n | x$ in R_P , a contradiction establishing the claim.

Further $h | d^n \notin Q$ and so $h \notin Q$ but since $bh \in Q; b \in Q$ (Q being a prime) that is we have $x = bh$ where