Definition 3. A quantum q in an integral domain R will be called a prime quantum if

(1) for every n and for every $q_1, q_2 \mid q^n$, $q_1 \mid q_2$ or $q_2 \mid q_1$

(2) if q is non co-prime to ab then for every n and for every $q_1 \mid q^n$ which divides ab, $q_1 = q_r q_s$ such that $q_r \mid a$ and $q_s \mid b$ i.e. every factor of q^n is primal.

We recall that an element x in an integral domain is called primal if $x \mid ab$ implies that $x = yz$; $y \mid a$ and $z \mid b$ and an integrally closed integral domain in which every non zero element is primal is a Schreier domain. More over an HCF domain is a Schreier domain (cf [5] p.254).

Looking back at the Definitions 1 and 3, we note that an atom vacuously satisfies the condition for an element to be a quantum, while a prime p is a prime quantum because every factor of p^n is primal and this marks the basic difference between the concepts of a quantum and of a prime quantum.

Definition 4. Two prime quanta will be called similar if they are non co-prime and dissimilar or distinct otherwise.

Lemma 1. In any integral domain R.

(1) Any non unit factor of a prime quantum is a prime quantum.

(2)If q_1, q_2 are similar prime quanta then $q_1 \mid q_2$ or $q_2 \mid q_1$.

(3) If q_1, q_2 are similar prime quanta then $q_1 q_2$ is a prime quantum similar to them.

(4) If a prime quantum q divides ab completely, that is there is no prime quantum $q' \mid ab$ such that $q \mid q'$ properly; then $q = q_1 q_2$ where $a = a_1 q_1$, $b = b_1 q_2$ and $(a_1, q) = 1 = (b_1, q)$.

(5) The relation of similarity between prime quanta is