



SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)

Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai

Accredited by NAAC-UGC with 'A++' Grade (Cycle III) &

Accredited by NBA (B.E - CSE, EEE, ECE, Mech & B.Tech.IT)

COIMBATORE-641 035, TAMIL NADU



DEPARTMENT OF MATHEMATICS

Bounded lattice:

A lattice which has both 0 and 1 element is called a bounded lattice. It is denoted by $(L, \wedge, \vee, 0, 1)$.



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Complement of an element :

In a bounded lattice $(L, \wedge, \vee, 0, 1)$, an elt. $b \in L$ is called a complement of $a \in L$, if $a \wedge b = 0$ and $a \vee b = 1$.

Complemented lattice :

A lattice $(L, \wedge, \vee, 0, 1)$ is said to be complemented lattice if every elt. of L has atleast one complement.

Complete Lattice :

A lattice (L, \wedge, \vee) is said to be complete lattice if every non empty subsets of L has both GLB & LUB.

Eg: $(P(A), \subseteq)$

Modular lattice :

A lattice (L, \wedge, \vee) is said to be modular lattice, if it satisfies the following condition M_1 : If $a \leq c$ then $a \vee (b \wedge c) = (a \vee b) \wedge c$, $\forall a, b, c \in L$.

1. Check the given lattice is the complemented lattice or not.

Now

$$a \wedge b = a \neq 0$$

$$a \vee b = b \neq 1$$

$\Rightarrow b$ is not the complement of a .

and $b \wedge c = a \neq 0$

$$b \vee c = 1$$

$\Rightarrow b$ is not the complement of c .

\therefore It is not a complemented lattice.

