Morning session.

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Course : logic design
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Sem : IV Sem.

Report :

* Boolean algebra -

It is defined with set of elements, a set of operator & a number of axioms / postulates.

set of elements (0,1)

set of operation : AND, OR

AND	OR
$0 \cdot 0 = 0$	$0 + 0 = 0$
$0 \cdot 1 = 0$	$0 + 1 = 1$
$1 \cdot 0 = 0$	$1 + 0 = 1$
$1 \cdot 1 = 1$	$1 + 1 = 1$

The addidative identity - 0
The multiplication identity - 1

laws of Boolean algebra

1) Commutative law - $A + B = B + A$
2) Associative law - $x + (y + z) = (x + y) + z$
3) Distributive law - $x(y + z) = (xy) + (xz)$

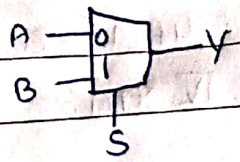
Theorem :

1) Absorption theorem - $x + xy = x$

NOR to logic gates :

NAND, NOR - Universal gates.

Universal logic

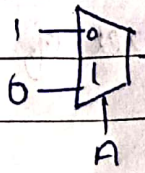


$2^n = 1$

2^n = inputs

n - selection lines

inverter design :



$Y = A\bar{S} + BS$

$V = 1 \cdot \bar{A} + 0 \cdot A$

$Y = \bar{A}$

OR - A+B

AND - A.B

Ex-OR - $A \oplus B$

Ex-NOR $A \odot B$

BCD to 7 segement decoder :