

UTS DASAR SISTEM KOMPUTER 01



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UTS DSK 01

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I. Sistem Bilangan

A. 187.26	260	
187/2 = 1	<u>2</u>	
93/2 = 1	0 520	
46/2 = 0	<u>2</u>	
23/2 = 1	1 040	Nilai biner = 10111011.0100
11/2 = 1	<u>2</u>	
5/2 = 1	0 80	
2/2 = 0	<u>2</u>	
1	0 160	

B. 111.010101

$2^2 \quad 2^1 \quad 2^0 \quad 2^{-1} \quad 2^{-2} \quad 2^{-3} \quad 2^{-4} \quad 2^{-5} \quad 2^{-6}$ $1 \quad 1 \quad 1 \quad 0 \quad 1 \quad 0 \quad 1 \quad 0 \quad 1$	Nilai desimal = 7.3281
$4 + 2 + 1 \cdot \frac{1}{4} + \frac{1}{16} + \frac{1}{64}$	
$= 7 \cdot \frac{21}{64}$	

C. 1111 x 1011

$\begin{array}{r} 1111 \\ 1011 \\ \hline 11111 \\ 1111 \\ 0000 \\ 1111 \\ \hline 10100101 \end{array}$	Nilai Perkalian = 10100101
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2. 2's Complement

A. 25 - 14

$$1101 - 1110$$

$$\begin{array}{r} 0001 \\ \underline{1} + \\ 0010 \end{array} + \begin{array}{r} 11001 \\ \underline{0010} + \\ 11011 \end{array} = 11$$

Nilai operasi = 11

Hasil operasi = 11011

B. 34 - 45

$$10010 - 101101$$

$$\begin{array}{r} 010010 \\ \underline{1} + \\ 010011 \end{array} + \begin{array}{r} 100010 \\ \underline{010011} + \\ 110101 \end{array}$$

Nilai operasi = -11

Hasil operasi = 01011

$$\begin{array}{r} 001010 \\ \underline{1} \\ 001011 = -11 \end{array}$$

3. De Morgan

$$F = ((x'y) + (yz)' + (xyz'))' + xy$$

$$F' = ((x'y) + (yz)' + (xyz'))' + xy$$

$$= ((x'y) + (yz)' + (xyz')) + (xy)'$$

$$= ((x'y) + (y'+z') + (xyz')) + (x'+y')$$

4. Sederhanakan persamaan

$$(x+y)(x+y')(x'+z) = xz$$

$$(x+(y.y'))(x'+z)$$

$$(x+(0))(x'+z)$$

$$x(x'+z) = xz$$