

TEE 843 – Sistem Telekomunikasi

Catatan Tambahan



universitas
MALIKUSSALEH

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**Jurusan Teknik Elektro FT-Unimal
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Contoh soal.xlsx - Microsoft Excel

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C6 fx =B5-2*B6

Konversi bilangan desimal ke bilangan biner

| | Desimal | Sisa | | Desimal | Sisa |
|----------------|---------|------|----------|----------------|------|
| NIM: 100170100 | | | | NIM: 100170125 | |
| 50085050 | 0 | | 50085062 | 1 | |
| 25042525 | 0 | | 25042531 | 0 | |
| 12521262 | 1 | | 12521265 | 1 | |
| 6260631 | 0 | | 6260632 | 1 | |
| 3130315 | 1 | | 3130316 | 0 | |
| 1565157 | 1 | | 1565158 | 0 | |
| 782578 | 1 | | 782579 | 0 | |
| 391289 | 0 | | 391289 | 1 | |
| 195644 | 1 | | 195644 | 1 | |
| 97822 | 0 | | 97822 | 0 | |
| 48911 | 0 | | 48911 | 0 | |
| 24455 | 1 | | 24455 | 1 | |
| 12227 | 1 | | 12227 | 1 | |
| 6113 | 1 | | 6113 | 1 | |
| 3056 | 1 | | 3056 | 1 | |
| 1528 | 0 | | 1528 | 0 | |
| 764 | 0 | | 764 | 0 | |
| 382 | 0 | | 382 | 0 | |
| 191 | 0 | | 191 | 0 | |
| 95 | 1 | | 95 | 1 | |
| 47 | 1 | | 47 | 1 | |
| 23 | 1 | | 23 | 1 | |
| 11 | 1 | | 11 | 1 | |
| 5 | 1 | | 5 | 1 | |
| 2 | 1 | | 2 | 1 | |

↑ Biner

↑ Biner

DTMF(2) DTMF(3) NilaiInformasi DecToBin NF PR-5 PR-5 (2) PR-5 (3)

Ready 100% 11:06 AM 03-04-2018

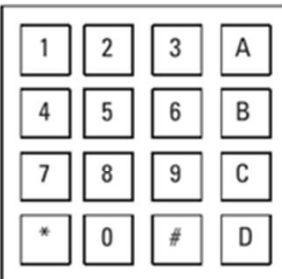


| | A | B | C | D | E | F | G | H | I |
|----|---|--------------|-------------|----------------|----------------------|---|----------------|-----------------------|---|
| 1 | | | | | | | | | |
| 2 | Menghitung nilai informasi setiap huruf dalam suatu dokumen | | | | | | | | |
| 3 | | | | | | | | | |
| 4 | | Huruf | Banyaknya | Peluang, p | Nilai Informasi, I | | $p \times I$ | | |
| 5 | | a | 200 | 0.15314 | 2.71 | | 0.41456 | | |
| 6 | | b | 75 | 0.05743 | 4.12 | | 0.23672 | | |
| 7 | | c | 50 | 0.03828 | 4.71 | | 0.18021 | | |
| 8 | | d | 100 | 0.07657 | 3.71 | | 0.28385 | | |
| 9 | | e | 123 | 0.09418 | 3.41 | | 0.32101 | | |
| 10 | | f | 15 | 0.01149 | 6.44 | | 0.07401 | | |
| 11 | | g | 34 | 0.02603 | 5.26 | | 0.13703 | | |
| 12 | | h | 55 | 0.04211 | 4.57 | | 0.19244 | | |
| 13 | | i | 76 | 0.05819 | 4.10 | | 0.23877 | | |
| 14 | | j | 13 | 0.00995 | 6.65 | | 0.06620 | | |
| 15 | | k | 12 | 0.00919 | 6.77 | | 0.06217 | | |
| 16 | | l | 34 | 0.02603 | 5.26 | | 0.13703 | | |
| 17 | | m | 80 | 0.06126 | 4.03 | | 0.24680 | | |
| 18 | | n | 65 | 0.04977 | 4.33 | | 0.21543 | | |
| 19 | | o | 33 | 0.02527 | 5.31 | | 0.13409 | | |
| 20 | | p | 12 | 0.00919 | 6.77 | | 0.06217 | | |
| 21 | | q | 2 | 0.00153 | 9.35 | | 0.01432 | | |
| 22 | | r | 87 | 0.06662 | 3.91 | | 0.26033 | | |
| 23 | | s | 34 | 0.02603 | 5.26 | | 0.13703 | | |
| 24 | | t | 53 | 0.04058 | 4.62 | | 0.18761 | | |
| 25 | | u | 111 | 0.08499 | 3.56 | | 0.30228 | | |
| 26 | | v | 3 | 0.00230 | 8.77 | | 0.02014 | | |
| 27 | | w | 5 | 0.00383 | 8.03 | | 0.03074 | | |
| 28 | | x | 1 | 0.00077 | 10.35 | | 0.00793 | | |
| 29 | | y | 31 | 0.02374 | 5.40 | | 0.12810 | | |
| 30 | | z | 2 | 0.00153 | 9.35 | | 0.01432 | | |
| 31 | | Total | 1306 | 1.00000 | | | 4.10527 | --> Entropy | |
| 32 | | | | | | | | | |
| 33 | | | | | | | | | |

DTMF(2) DTMF(3) NilaiInformasi DecToBin NF PR-5 PR-5 (2) PR-5 (3)

Ready

| Upper frequency band/Hz | Lower frequency band/Hz | Button | f1 | f2 | P1 | P2 |
|-------------------------|-------------------------|--------|-----|------|--------|--------|
| 1,209 | 697 | 1 | 697 | 1209 | 0.0014 | 0.0008 |
| 1,336 | 770 | 2 | 697 | 1336 | 0.0014 | 0.0007 |
| 1,477 | 852 | 3 | 697 | 1477 | 0.0014 | 0.0007 |
| 1,633 | 941 | 4 | 770 | 1209 | 0.0013 | 0.0008 |
| | | 5 | 770 | 1336 | 0.0013 | 0.0007 |
| | | 6 | 770 | 1477 | 0.0013 | 0.0007 |
| | | 7 | 852 | 1209 | 0.0012 | 0.0008 |
| | | 8 | 852 | 1336 | 0.0012 | 0.0007 |
| | | 9 | 852 | 1477 | 0.0012 | 0.0007 |
| | | * | 941 | 1209 | 0.0011 | 0.0008 |
| | | 0 | 941 | 1336 | 0.0011 | 0.0007 |
| | | # | 941 | 1477 | 0.0011 | 0.0007 |



Push buttons A, B, C, and D are not available in ordinary telephones

DTMF = Dual tone multifrequency

$$v(t) = A \sin(2\pi ft)$$

Tombol 1

| t [ms] | v1(t) | v2(t) |
|--------|-------|-------|
| 0.00 | 0.000 | 0.000 |
| 0.02 | 0.087 | 0.151 |
| 0.04 | 0.174 | 0.299 |
| 0.06 | 0.260 | 0.440 |
| 0.08 | 0.343 | 0.571 |
| 0.10 | 0.424 | 0.689 |
| 0.12 | 0.502 | 0.790 |
| 0.14 | 0.575 | 0.874 |
| 0.16 | 0.645 | 0.938 |
| 0.18 | 0.709 | 0.979 |
| 0.20 | 0.768 | 0.999 |
| 0.22 | 0.821 | 0.995 |
| 0.24 | 0.868 | 0.968 |
| 0.26 | 0.908 | 0.919 |
| 0.28 | 0.941 | 0.849 |
| 0.30 | 0.967 | 0.760 |
| 0.32 | 0.986 | 0.652 |
| 0.34 | 0.997 | 0.530 |
| 0.36 | 1.000 | 0.396 |
| 0.38 | 0.996 | 0.252 |
| 0.40 | 0.984 | 0.103 |

