# TUGAS REVIEW



**Dosen Pengampu :**

**I Ketut Purnamawan, S.Kom., M.Kom.**

**Disusun Oleh :**

**I Gede Gelgel Abdiutama ; 2115101014**

**MATA KULIAH ARSITEKTUR DAN ORGANISASI KOMPUTER**

**UNIVERSITAS PENDIDIKAN GANESHA**

**SINGARAJA**

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1. **PERMASALAHAN**

**Permasalahan ke-1:**

Konversi bilangan-bilangan biner berikut menjadi bilangan desimal!

1. 0000

2. 1011

3. 1111

4. 00000000

5. 00000001

6. 10000000

7. 10011011

8. 01001100

9. 11111111

10. 100000000

**Permasalahan ke-2:**

Konversi bilangan-bilangan desimal berikut menjadi bilangan biner 4 bit!

1. 0

2. 15

3. 1

4. 14

5. 2

6. 13

7. 3

8. 12

9. 5

10. 10

**Permasalahan ke-3:**

Konversi bilangan-bilangan desimal berikut menjadi bilangan biner 8 bit!

1. 0

2. 1

3. 150

4. 255

5. 300

**Permasalahan ke-4:**

Konversi bilangan-bilangan biner berikut menjadi bilangan heksadesimal!

1. 11001010

2. 11110000

3. 10000000

4. 00000000

5. 11111111

6. 1011001010

7. 10111001010

**Permasalahan ke-5:**

Konversi bilangan-bilangan heksadesimal berikut menjadi bilangan biner!

1. CA

2. F0

3. 80

4. 00

5. FF

6. 2CA

7. 5CA

**Permasalahan ke-6:**

Buat rangkaian digital dari komponen-komponen berikut!

1. 4-to-1 MUX (Multiplexer) .

2. 2-to-4 Decoder

3. Half Adder

4. Full Adder

5. Memory cell (Binary cell for RAM)

6. up counter 3 bit

7. up-down counter 3 bit

1. **PENYELESAIAN**

**Permasalahan ke-1:**

Konversi bilangan-bilangan biner berikut menjadi bilangan desimal!

1. 0000 = 0

2. 1011 = 20 + 21 + 23

= 1 + 2 + 8

= 11

3. 1111 = 20 + 21 + 22 + 23

= 1 + 2 + 4 + 8

= 15

4. 00000000 = 0

5. 00000001 = 1

6. 10000000 = 27

= 128

7. 10011011 = 27 + 24 + 23 + 21 + 20

= 128 + 16 + 8 + 2 + 1

= 155

8. 01001100 = 26 + 23 + 22

= 64 + 8 + 4

= 76

9. 11111111 = 27 + 26 + 25 + 24 + 23 + 22 + 21 + 20

= 128 + 64 + 32 + 16 + 8 + 4 + 2 + 1

= 255

10. 100000000 = 29

= 256

**Permasalahan ke-2:**

Konversi bilangan-bilangan desimal berikut menjadi bilangan biner 4 bit!

1. 0

= 0

1. 15

= 15/2 = 7 sisa 1

= 7/2 = 3 sisa 1

= 3/2 = 1 sisa 1

= 1/2 = 0 sisa 1

= 1111

1. 1

= 1/2 = 0 sisa 1

= 0/2 = 0 sisa 0

= 0/2 = 0 sisa 0

= 0/2 = 0 sisa 0

= 0001

1. 14

= 14/2 = 7 sisa 0

= 7/2 = 3 sisa 1

= 3/2 = 1 sisa 1

= 1/2 = 0 sisa 1

= 1110

1. 2

= 2/2 = 1 sisa 0

= 1/2 = 0 sisa 1

= 0/2 = 0 sisa 0

= 0/2 = 0 sisa 0

= 0010

1. 13

= 13/2 = 6 sisa 1

= 6/2 = 3 sisa 0

= 3/2 = 1 sisa 1

= 1/2 = 0 sisa 1

= 1101

1. 3

= 3/2 = 1 sisa 1

= 1/2 = 0 sisa 1

= 0/2 = 0 sisa 0

= 0/2 = 0 sisa 0

= 0011

1. 12

= 12/2 = 6 sisa 0

= 6/2 = 3 sisa 0

= 3/2 = 1 sisa 1

= 1/2 = 0 sisa 1

= 1100

1. 10

= 10/2 = 5 sisa 0

= 5/2 = 2 sisa 1

= 2/2 = 1 sisa 0

= 1/2 = 0 sisa 1

= 1010

1. 5

= 5/2 = 2 sisa 1

= 2/2 = 1 sisa 0

= 1/2 = 0 sisa 1

= 0/2 = 0 sisa 0

= 0101

**Permasalahan ke-3:**

Konversi bilangan-bilangan desimal berikut menjadi bilangan biner 8 bit!

1. 0

= 00000000

1. 1

= 00000001

1. 150

= 150/2 = 75 sisa 0

= 75/2 = 37 sisa 1

= 37/2 = 18 sisa 1

= 18/2 = 9 sisa 0

= 9/2 = 4 sisa 1

= 4/2 = 2 sisa 0

= 2/2 = 1 sisa 0

= 1/2 = 0 sisa 1

= 10010110

1. 300

= 300/2 = 150 sisa 0

= 150/2 = 75 sisa 0

= 75/2 = 37 sisa 1

= 37/2 = 18 sisa 1

= 18/2 = 9 sisa 0

= 9/2 = 4 sisa 1

= 4/2 = 2 sisa 0

= 2/2 = 1 sisa 0

= 1/2 = 0 sisa 1

= 100101100

1. 255

=255/2 = 127 sisa 1

= 127/2 = 63 sisa 1

= 63/2 = 31 sisa 1

= 31/2 = 15 sisa 1

= 15/2 = 7 sisa 1

= 7/2 = 3 sisa 1

= 3/2 = 1 sisa 1

= 1/2 = 0 sisa 1

= 11111111

**Permasalahan ke-4:**

Konversi bilangan-bilangan biner berikut menjadi bilangan heksadesimal!

1. 11001010 = CA

2. 11110000 = F0

3. 10000000 = 80

4. 00000000 = 00

5. 11111111 = FF

6. 1011001010 = 2CA

7. 10111001010 = 5CA

**Permasalahan ke-5:**

Konversi bilangan-bilangan heksadesimal berikut menjadi bilangan biner!

1. CA = 11001010

2. F0 = 11110000

3. 80 = 10000000

4. 00 = 00000000

5. FF = 11111111

6. 2CA = 1011001010

7. 5CA = 10111001010

**Permasalahan ke-6:**

Buat rangkaian digital dari komponen-komponen berikut!

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1. **LAMPIRAN**