

## **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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## **A. 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

## B. PENYELESAIAN

### Permasalahan ke-1:

Konversi bilangan-bilangan biner berikut menjadi bilangan desimal!

1. 0000 = 0

2. 1011 =  $2^0 + 2^1 + 2^3$   
=  $1 + 2 + 8$   
= 11

3. 1111 =  $2^0 + 2^1 + 2^2 + 2^3$   
=  $1 + 2 + 4 + 8$   
= 15

4. 00000000 = 0

5. 00000001 = 1

6. 10000000 =  $2^7$   
= 128

7. 10011011 =  $2^7 + 2^4 + 2^3 + 2^1 + 2^0$   
=  $128 + 16 + 8 + 2 + 1$   
= 155

8. 01001100 =  $2^6 + 2^3 + 2^2$   
=  $64 + 8 + 4$   
= 76

9. 11111111 =  $2^7 + 2^6 + 2^5 + 2^4 + 2^3 + 2^2 + 2^1 + 2^0$   
=  $128 + 64 + 32 + 16 + 8 + 4 + 2 + 1$   
= 255

10. 100000000 =  $2^9$   
= 256

**Permasalahan ke-2:**

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

1. 0

$$= 0$$

2. 15

$$= 15/2 = 7 \text{ sisa } 1$$

$$= 7/2 = 3 \text{ sisa } 1$$

$$= 3/2 = 1 \text{ sisa } 1$$

$$= 1/2 = 0 \text{ sisa } 1$$

$$= 1111$$

3. 1

$$= 1/2 = 0 \text{ sisa } 1$$

$$= 0/2 = 0 \text{ sisa } 0$$

$$= 0/2 = 0 \text{ sisa } 0$$

$$= 0/2 = 0 \text{ sisa } 0$$

$$= 0001$$

4. 14

$$= 14/2 = 7 \text{ sisa } 0$$

$$= 7/2 = 3 \text{ sisa } 1$$

$$= 3/2 = 1 \text{ sisa } 1$$

$$= 1/2 = 0 \text{ sisa } 1$$

$$= 1110$$

5. 2

$$= 2/2 = 1 \text{ sisa } 0$$

$$= 1/2 = 0 \text{ sisa } 1$$

$$= 0/2 = 0 \text{ sisa } 0$$

$$= 0/2 = 0 \text{ sisa } 0$$

$$= 0010$$

6. 13

$$= 13/2 = 6 \text{ sisa } 1$$

$$= 6/2 = 3 \text{ sisa } 0$$

$$= 3/2 = 1 \text{ sisa } 1$$

$$= 1/2 = 0 \text{ sisa } 1$$

$$= 1101$$

7. 3

$$= 3/2 = 1 \text{ sisa } 1$$

$$= 1/2 = 0 \text{ sisa } 1$$

$$= 0/2 = 0 \text{ sisa } 0$$

$$= 0/2 = 0 \text{ sisa } 0$$

$$= 0011$$

8. 12

$$= 12/2 = 6 \text{ sisa } 0$$

$$= 6/2 = 3 \text{ sisa } 0$$

$$= 3/2 = 1 \text{ sisa } 1$$

$$= 1/2 = 0 \text{ sisa } 1$$

$$= 1100$$

9. 5

$$= 5/2 = 2 \text{ sisa } 1$$

$$= 2/2 = 1 \text{ sisa } 0$$

$$= 1/2 = 0 \text{ sisa } 1$$

$$= 0/2 = 0 \text{ sisa } 0$$

$$= 0101$$

10. 10

$$= 10/2 = 5 \text{ sisa } 0$$

$$= 5/2 = 2 \text{ sisa } 1$$

$$= 2/2 = 1 \text{ sisa } 0$$

$$= 1/2 = 0 \text{ sisa } 1$$

$$= 1010$$

**Permasalahan ke-3:**

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

1. 0

$$= 00000000$$

2. 1

$$= 00000001$$

3. 150

$$= 150/2 = 75 \text{ sisa } 0$$

$$= 75/2 = 37 \text{ sisa } 1$$

$$= 37/2 = 18 \text{ sisa } 1$$

$$= 18/2 = 9 \text{ sisa } 0$$

$$= 9/2 = 4 \text{ sisa } 1$$

$$= 4/2 = 2 \text{ sisa } 0$$

$$= 2/2 = 1 \text{ sisa } 0$$

$$= 1/2 = 0 \text{ sisa } 1$$

$$= 10010110$$

4. 255

$$= 255/2 = 127 \text{ sisa } 1$$

$$= 127/2 = 63 \text{ sisa } 1$$

$$= 63/2 = 31 \text{ sisa } 1$$

$$= 31/2 = 15 \text{ sisa } 1$$

$$= 15/2 = 7 \text{ sisa } 1$$

$$= 7/2 = 3 \text{ sisa } 1$$

$$= 3/2 = 1 \text{ sisa } 1$$

$$= 1/2 = 0 \text{ sisa } 1$$

$$= 11111111$$

5. 300

$$= 300/2 = 150 \text{ sisa } 0$$

$$= 150/2 = 75 \text{ sisa } 0$$

$$= 75/2 = 37 \text{ sisa } 1$$

$$= 37/2 = 18 \text{ sisa } 1$$

$$= 18/2 = 9 \text{ sisa } 0$$

$$= 9/2 = 4 \text{ sisa } 1$$

$$= 4/2 = 2 \text{ sisa } 0$$

$$= 2/2 = 1 \text{ sisa } 0$$

$$= 1/2 = 0 \text{ sisa } 1$$

$$= 100101100$$

**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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## **C. LAMPIRAN**