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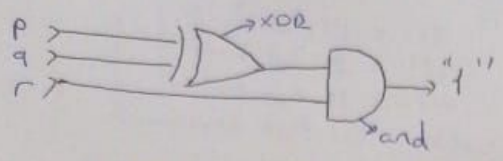
19011025

1)



p	q	r	p⊕q	(p⊕q)∧r
0	0	0	0	0
0	0	1	0	0
0	1	0	1	0
0	1	1	1	1
1	0	0	1	0
1	0	1	1	1
1	1	0	0	0
1	1	1	0	0

p=0		p=1
q=1	or	q=0
r=1		r=1

2) a. 0110 1010 1111 0010
6 A F 2

6AF2

000 0110 1010 1111 0010
0 6 5 3 6 2

65362

b. 1110 1000 0101 0101 0001 0111
E 8 5 5 1 7

E8557

111 0100 0010 1010 1000 1011 1
7 2 0 5 2 4 2 7

72052427

c. 0100 1000
4 8

48

0 0100 1000
1 1 0

110

d. 0001 1111
1 F

1F

011 111
3 7

37

	Onaltılık	Sekizlik
a	6AF2	65362
b	E8557	72052427
c	48	110
d	1F	37

3) a. ABCD

$16^0 \cdot 13 = 13$
$16^1 \cdot 12 = 192$
$16^2 \cdot 11 = 2816$
$16^3 \cdot 10 = 40960 +$
43981

43981

ABCD

D(13) = 1101
C(12) = 1100
B(11) = 1011
A(10) = 1010

1010101111001101

b. 0100

$16^0 \cdot 0 = 0$
$16^1 \cdot 0 = 0$
$16^2 \cdot 1 = 256$
$16^3 \cdot 0 = 0$

256

0100

0=0000

100000000

c. 5432

$16^0 \cdot 2 = 2$
$16^1 \cdot 3 = 48$
$16^2 \cdot 4 = 1024$
$16^3 \cdot 5 = 20480 +$
21554

21554

5432

2=0010
3=0011
4=0100
5=0101

0101 0100 0011 0010

d. 10A0

$16^0 \cdot 0 = 0$
$16^1 \cdot 10 = 160$
$16^2 \cdot 0 = 0$
$16^3 \cdot 1 = 4096 +$
4256

4256

10A0

0=0000
A=1010

1000010100000

	עשרוני	בינארי
a	43981	1010 1011 1100 1101
b	256	1 0000 0000
c	21554	101 0100 0011 0010
d	4256	1 0000 1010 0000

4) 1 KB = 1024 Byte

1 Byte = 8 Bit

4 . 1024 . 8 = 32768 bit veri depolanabilir.

5) a. 11.01 (2^1 2^0 2^{-1} 2^{-2})

$2 + 1 + \frac{1}{4} = \boxed{3,25}$

b. 101.111 (2^2 2^1 2^0 2^{-1} 2^{-2} 2^{-3})

$4 + 1 + \frac{1}{2} + \frac{1}{4} + \frac{1}{8} = \boxed{5,875}$

c. 0.101 (2^0 2^{-1} 2^{-2} 2^{-3})

$\frac{1}{2} + \frac{1}{8} = \boxed{0,625}$

d. 110.011 (2^2 2^1 2^0 2^{-1} 2^{-2} 2^{-3})

$4 + 2 + \frac{1}{4} + \frac{1}{8} = \boxed{6,375}$

6) a.
$$\begin{array}{r} 11011 \\ 01100+ \\ \hline 100111 \end{array}$$

$\boxed{100111}$

b.
$$\begin{array}{r} 1010.001 \\ 0001.101+ \\ \hline 1011.110 \end{array}$$

$\boxed{1011.110}$

c.
$$\begin{array}{r} 11111 \\ 00001+ \\ \hline 100000 \end{array}$$

$\boxed{100000}$

d.
$$\begin{array}{r} 111.11 \\ 000.01+ \\ \hline 1000.00 \end{array}$$

$\boxed{1000}$

7) a. 0000 0110
işaret biti

işaretli büyüklük 1'e tümleyen 2'ye tümleyen

b. 10010001 → 11101110 + 1 → 11101111

c. 1000 0001 → 1111 1110 + 1 → 1111 1111

d. 00010001
işaret biti

8) a. 0101
0010 +
$(0111)_2 = (7)_{10}$

b. 0101
1010 +
1111 → 2's → $(0001)_2$
$(-1)_{10}$

c) 1110
0011 +
$(\times 0001)_2 = (1)_{10}$

d) 1010
1110 +
$\times 1000$ → 2's → $(1000)_2 = (-8)_{10}$

9) a. | 0 | 100 | 1010 | => $(0.1010)_2$

+1 , 0

$0,5 + 0.125 = \boxed{0,625}$

b. | 0 | 011 | 1001 | => $(0.01001)_2$

+1 , -1

$0.25 + 0.03125 = \boxed{0,28125}$

10) a. $5.25 \Rightarrow (\underbrace{101.01}_{5\text{ bit}})_2$ 1 bit dost: (Truncation)

0 1 1 1 1 0 1 0 = 5

0 , +3

0,25'i iz kaybı

b. $4.375 \Rightarrow (\underbrace{100.011}_{6\text{ bit}})_2$ 2 bit dost: (Truncation)

1 1 1 1 1 0 0 0 = -4

-, +3

-0,375'i iz kaybı