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CPSC 300

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Homework 4

1. Convert (D1AF)16 to binary and decimal. Convert (11011101001)2 to decimal and hexadecimal. [10]

1	convert (DIAF) to binary as	nd decimal
	DIAF	1 A F
	1101 0001 1010 1111 13	11.62+10.16' + 15.16' = 53679.
	(DIAP) = (1101 0001 1010 1111)2	-1 - 5 & - 1 1 - 1 - 2 - 1
	(D) AF)6 = (5 3679)10	Commission of the
	(onvert (110 1110 1001), to de	cimal + hexadecimal
	110 1110 1001	0110 1110 1001
		19 / Ja
210.1+2	1+21.1+26.1+25.1+2.1+2.1=	6 E 9
1024+ 51	2+128 + 64 + 32 + 8 + 1 = 1769	
		11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	110 1110 1001 = 1769,0	
	(10 110 1001 = 6E916	No. of MA

2. Using 4-bit Twos complement, write the binary number for +5 and -4. [5]

2.	U b:	Sing 4	6.7 Tumb	2's c	on p	liment write the
4	17	10111	{ -1	unt		2s compliment
	6	0110	1 2	1110	4	+5 → 0101
	5	0101	( -3	1101		-4 -> 1100
	4	0100	-4	1100		
	3	0011	-5	1011	11	1 8 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	2	0010	-6	1010		
-	1	000 (	-7	1001		5 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
	0	0000	-8	1000	No. Marine	

- 3. Write Python or Java code to convert a binary number to decimal and vice versa. [10]
- 4. Write Python or Java code to convert hexa-decimal number to binary and vice versa. [10]

Both 3 and 4 are in the python file submitted

5. Draw the memory layout for the byte-sized (all elements are 1 byte wide) list,  $pixel = \{0x10, 0xFF, 0x56\}$ . The base address is 0x1FFF. [10]

5 Draw the m	emon layout for the lyte 5 lbyte wide) lot, pixel = { 0x10, 0xFF, 0.56} dress is 0x1FFF
- sized Call item	5 lby te wide ) ist, pixel = { 0x10, 0xFF, 6, 56}
The base ad	dress is Ox IFFF
on 0 = 1 byte	side > G15
	EFF
exIFFF ox10	-21
0x2000 0x FF	2000
0x2001 0x56	

6. Draw the memory layout for the half-word-sized (all elements are 2 byte wide) list, *pixel* =  $\{0x1000, 0x03, 0x56FF\}$ . The base address is 0x1FF0. [10]

6	Draw th	ememor	layout for	the hal	f word si	red
	I all ilems 2	byte wide	) list Pixe =	\$ 0x1000,0	0x03,0x	56FF}
T	ebase add	lress is	ox IFFO.		T.	
	,		Big Endian	oxlo oxon	0400 0403	
	0×0	41 byfe →	MSB in		Ok	56 or FF
	•		radiess			
	oxJFFO	0x 10				
	oxIFFI	ox 00		1 1		
	Ox1FF2	0x 00	, est 1 gr	ĺ .		
	OKIFF3	0x 03			= W	10
	ox 1 FF4	ox 56	8 8		1	
	or IFF 5	OXFF	- 2		×	1 1 20 44 451
				W - 25 y 1		