DIGITAL LOGIC & DESIGN (EE-1005) ASSIGNMENT #1

ID: 122-1899 NAME: Huzaifa Jamil SECTION: D

Read the Instructions Carefully

- Base 3, base 4, base 5, base 6 means the one you used in QUESTION 1
- Your assigned number is given to you in excel sheet provided with assignment FOR

EXAMPLE: Assigned Number if your assigned number is 7821

EXAMPLE: Assigned Number if your assigned number is 7821				Assign Digit 3		
	Assign Digit 0	Assign Digit 1	Assign Digit 2	A3		
Short for Assigned Digit	AO	A1	A2	8		
Write Assigned Number		7	4	8		
Digit By Digit	and a					

FOR EXAMPLE: Name is HAMAZADAUD

- Use your name instead of HAMZA
- If your name starts with MUHAMMAD kindly use your second name
- Convert repeated character to small letter or to other symbols to make them unique (see example for A,

(A)	SIXTH CHARACTER OF YOUR NAME	FIFTH CHARACTER OF YOUR NAME	FOURTH CHARACTER OF YOUR NAME	THIRD CHARACTER OF YOUR NAME	SECOND CHARACTER OF YOUR NAME	FIRST CHARACTER OF YOUR NAME	ZERO CHARACTER OF YOUR NAME
Short for CHARACTER	со	C1	C2	СЗ	C4	CS	C6
YOUR NAME CHARACTER BY CHARACTER							

1. Fill the table given below and Count in given base NOTE: Use Assigned number & Your Name

- Base 3 (Zero Digit is Assign0 (A0), First Digit is Assign1 (A1), Second Digit is Assign2 (A2))
- Base 4 (Zero Digit is Assign0 (A0), First Digit is Assign1 (A1), Second Digit is Assign2 (A2), and Third Digit is Assign3 (A3))
- Base S (Zero Digit is Character0 (CO) of your name, First Digit is Character1 (C1) of your name, Second Digit is Character2 (C2) of your name, Third Digit is Character3 (C3) of your name, Four Digit is Character04 (C4) of your name)

ASSIGNMENT # 1 [EE-1005] Assigned Number: Base 6 (Zero Digit is Character0 (CO) of your name, First Digit is Character1 (C1) of your name, Second Digit is Character2 (C2) of your name, Third Digit is Character3 (C3) of your name, Four Digit is Character04 (C4) of your name and Fifth Digit is Character05 (C5) of your name)

TABLE

0 0 2 2 H H O O 1 1 7 7 U U I I 3 11 72 8 A A 3 3 4 100 77 72 I I 4 H 6 110 12 71 UU UH 6 6 110 12 71 UU UH 6 6 110 12 71 UU UH 6 8 1000 11 12 UA UZ 10 8 10 1010 727 11 ZH UI 12 A 11 101 721 18 ZU UF 13 B 11 101 77 87 87 ZA ZU 15 D 12 110 77 88 AH ZA 17 F 15 111 712 88 AH ZA 17 F 16 1000 717 722 AU ZI 20 10 18 10010 122 721 AA AH 22 12 10 10100 121 772 IH AZ 2U 10 10 10 10 121 772 IH AZ 2U 10 10 10 10 121 772 IH AZ 2U 10 10 10 121 772 IH AZ 2U	BASE 10 DECIMAL	BINARY	BASE 3	BASE 4	BASES	BASE (BASE 16 HEXA
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TH AZ III	20				147	AU		
		10100	121	172	111	AZ	24	14

ın.		Δς	SIGNMENT # 1	[EE-1005]	Assi	gned Numb	
BASE 10	BASE 2 BINARY	BASE 3	BASE 4	BASE 5	BASE 6	BASE 8 OCTAL	BASE 16 HEXA
21	10101	172	777	UZ	AA	25	15
22	10/10	177	771	ZZ	IA	26	16
23	10111	171	778	TA	AF	27	17
24	11000	112	712	II	741	30	18
25	11001	117	717	HHU	VZ	31	19
26	11010	111	711	UHU	72	72	1A
27	11011	7222	710	0117	AI	33	13
28	11100	7227	782	OHA	77	34	10
29	11101	7221	787	UHJ	IF	35	10
30	11110	7272	731	UUH	FH	36	IE
31	11111	7277	788	UVU	FU	37	IF
32	100000	7 271	122	UUZ	FZ	40	20
33	100001	7212	127	AUU	FA	41	21
34	100010	7217	121	IUU	FI	45	22
35	100011	7211	128	UZH	FF	43	23
36	10000	7722	172	020	UHH	ų u	24
37	100101	7727	177	UZZ	UHU	45	52
38	10011	0 7721	171	021		46	26
39	10011	7772		UZI	AHU	47	27
40	10100	0 7777	112	UAH	OHI	50	28
4:	10/00	17771	117	UAI	JUHF	51	29
4	10/01	0 7712	111	UAZ		52	2 A
4	3 10101	1 7717	118	UAZ			
4	1011	0 7711	187	CAU.	1 UUZ	54	20
	15 1 211	017122		ZU			
	16 1011	10 7127	181	12	U 001	56	2E

ID:			ASSIGNMENT	Assigned Number:			
47	101111	7121	1881	UZZU	UF	57	21
48	110000	7172	322	UZAU	24	60	30
49	110001	7177	827	UIIU	ZU	611	31
50	110010	7171	820	ZHHO	77	62	32

- 2. Perform the following conversion to check your counting in question 1
 - · (22) 10 = (?)3 Base 3 used in Question #1

$$\frac{\frac{3}{2^{2}}}{\frac{7}{2-1}} = -\frac{2}{1}$$

$$= (477)_{3}$$

• (32) 10 = (?)4 Base 4 used in Question # 1

$$\frac{4|32}{|3-3|} = (122)4$$

. (41) 10 = (?)5 Base 5 used in Question # 1

ID:

ASSIGNMENT # 1 [EE-1005]

Assigned Number:

. (49) 10 = (?)6

Base 6 used in Question # 1

6 49

121 (UZU)6

864

- Convert Decimal (Assigned Number) 10 to (?)3, (?)4, (?)5 and (?)6 check results by recovering them to decimal
- Convert Decimal fraction (0. Last two digits of the Assigned Number) 10 to (?) 3, (?) 4, (?) 5 and (?)6 check results by reconverting them to decimal
- Perform addition to result of Question 3 to base in Question 1 as follow
 - (Assigned number)₃ + (question 1 number 46)₃ $(721222)+(7127)_3$ (Assigned number)₄ + (question 1 number 49)₄ $(111371)_4 + 827$ (Assigned number)₅ + (question 1 number 35)₄ $(111371)_4 + 827$

 - (Assigned number)₅+ (question 1 number 35)₅. = $112656 A^{-3}$ (Assigned number)₆+ (question 1 number 24)₆ = $112656 A^{-3}$
- Perform subtraction to result of Question 3 from base in Question 1 as follow: 23003+TH

(Assigned number)3 - (question 1 number 46)3 = (714 = 15) (Answer)

- (Assigned number)₄ (question 1 number 49)₄(111344)
- (Assigned number)5 (question 1 number 35)5 (42013)5 Answer
- (Assigned number) 6- (question 1 number 50) 6 (2296)) 4
- Perform R's and (R-1)'s complement to the results of question 3 to generate negative number
 - R's and (R-1)'s of (Assigned number)3 of results from Q3
 - R's and (R-1)'s of (Assigned number)4 of results from Q3
 - R's and (R-1)'s of (Assigned number), of results from Q3
 - R's and (R-1)'s of (Assigned number), of results from 03

K 3 and (K-1) 30	(Assigned number)	or results from Q3	
3) 3/2718 Base 3	Base 4	Raje J	Base 6
	222312)4	133	(23003)
3/31-1	For my number	(47133) ZANAN	ZAHHA)
3/11-3	2718-9	5/2718	6 2713
1/3-	679-3		5 75-3
(102000) 5 = (721222)	1 4.2	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	6 2-2
Verification? - 1 x 36 + 0 x 3 + 1 x 3 + 2 + 3 + 0	x 3+0x3+0x3		

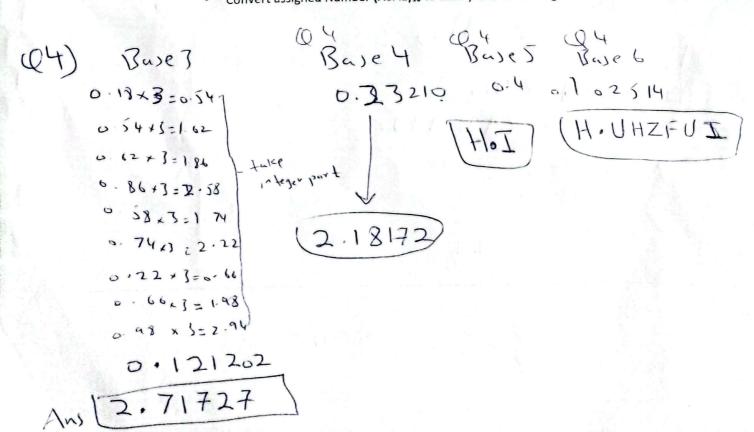
- 8. Perform R-1's complement subtraction using values from Question 7 and Question 1
 - (question 1 number 15)₃ (R-1)'s of (Assigned number)₃ results from Q7
 - (question 1 number 25)4 (R-1)'s of (Assigned number)4 results from Q7
 - (question 1 number 33)5 (R-1)'s of (Assigned number)5 results from Q7
 - (question 1 number 37)₆ (R-1)'s of (Assigned number)₆ results from Q7
- 9. Perform R's complement subtraction using values from Question 7 and Question 1
 - (question 1 number 13)₃ (R)'s of (Assigned number)₃ results from Q7
 - (question 1 number 17)4 (R)'s of (Assigned number)4 results from Q7
 - (question 1 number 23)5 (R)'s of (Assigned number)5 results from Q7
 - (question 1 number 44)₆ (R)'s of (Assigned number)₆ results from Q7

10. Number Multiplication

- Multiply Last two digits of your assigned number(A2A3)₁₀ with (17)₁₀
- Multiply (15)₃ x (5)₃ =(?)₃ Result should be in base 3 as well
- Convert assigned Number A3 to binary and multiply with given number (A3.011)₂ with (101.011)₂

11. Number Division

- Divide First two digits of your assigned number(A0A1)₁₀ with (3)₁₀
- Convert assigned Number (A0A1)₁₀ to binary and divide in given number (A0A1)₂ with (11)₂



(Off of) Last to a 11-2-1 no = 18 (iii) Asis 8 (18)12 x (17)10 In Ginary: 1000 [1000,011] 2 continu 126 (1347) 1000011 + 18 (13x 2), shifted one south to Dot! 110.161 > 306 (Add to gentral product lava, all = 306 Amer of Oldi) 0 0 00,000 1 100001 1 100 / of 1 (ii) (1231 x (2)2 10/01/11/10/ 15 (5 Han T : ~ 6-16) Anner at alalin) (171)3 Amer (EDID'-(1) First two dists (2-7)-(3), = (9) 10 1100 (ii) - birer J (27)10 ... U 10 (11.011)2 After division there will be no reminder in solult.