10.

11D/12

DIGITAL LOGIC QUIZ 1 SET 3

Name:	Gan Mei Lee
Metric Number:	A25CS0225
Section:	3

Answers:

1. A	2. B	3. A	4. ~~B~~ C	5. B
6. B	7. B	8. B	9. C	

1. Which of the following statements is TRUE? (1m)

A → D

A. ADC is needed if the speaker is using analog system ✓
B. Frequency is presented in a non-periodic waveform X
C. A measure of the duration of the pulse is known as pulse width
D. For negative logic, HIGH = 1 X

2. If an 'off state' is 10 ms, and period is 25 ms, its duty cycle is: (1.5m)

15ms

A. 40%
B. 60%
C. 6%
D. 4%

3. If a signal has a time period of 100 ms, its frequency is: (1.5m)

T f

A. 10 Hz
B. 100 Hz
C. 1 KHz
D. 10 KHz

$f = \frac{1}{100m}$

$= 10\,Hz$

4. In logic gates if the output is LOW when both inputs A and B are HIGH: (1m)

A. AND X
B. XOR
C. XNOR
D. OR X

5. Arrange the complexity for fixed-function ICs from largest to smallest. (1m)

A. SSI, MSI, LSI, VLSI, ULSI
B. ULSI, VLSI, LSI, MSI, SSI
C. ULSI, LSI, VLSI, MSI, SSI
D. ULSI, VLSI, MSI, LSI, SSI

6. The decimal equivalent of 1101.0101_2 is approximately: (1.5m)

A. 133.125 ✗
B. 13.3125 ✓
C. 13.125
D. 13.325

$1 \times 2^{-2} + 1 \times 2^{-4} = 0.3125$ ✓

7. The octal number of 361.45_8 can be expressed in decimal as: (1.5m)

A. 214.723 ✗
B. 241.578
C. 224.723 ✗
D. 242.327 ✗

$4 \times 8^{-1} + 5 \times 8^{-2}$
$= 0.578125$ ✓

8. Find the equivalent gray code for binary value 11101101. (1.5m)

A. 00010010 ✗
B. 10011011 ✓
C. 10110011
D. 10110010

11101101
↓
10011011

9. Using the ASCII Table (Table 2), fill Table 1 with the correct characters and values. (1.5m)

Table 1

Character	Hexa	Binary (7 bit)	EVEN Parity (8 bit)	New Hexa
(i) W	~~87~~ 57	1010111	(ii)	(iii) D7

5 (odd) 11010111

A. (i) V, (ii) 0 1010111, (iii) 57 ✗
B. (i) W, (ii) 0 1010111, (iii) 57
C. (i) W, (ii) 1 1010111, (iii) D7 ✓
D. (i) T, (ii) 1 1010111, (iii) D7 ✗

Table 2: ASCII Table

Decimal	Hex	ASCII	Decimal	Hex	ASCII	Decimal	Hex	ASCII	Decimal	Hex	ASCII
0	00	NUL	32	20	(blank)	64	40	@	96	60	`
1	01	SOH	33	21	!	65	41	A	97	61	a
2	02	STX	34	22	"	66	42	B	98	62	b
3	03	ETX	35	23	#	67	43	C	99	63	c
4	04	EOT	36	24	$	68	44	D	100	64	d
5	05	ENQ	37	25	%	69	45	E	101	65	e
6	06	ACK	38	26	&	70	46	F	102	66	f
7	07	BEL	39	27	'	71	47	G	103	67	g
8	08	BS	40	28	(	72	48	H	104	68	h
9	09	HT	41	29	)	73	49	I	105	69	i
10	0A	LF	42	2A	*	74	4A	J	106	6A	j
11	0B	VT	43	2B	+	75	4B	K	107	6B	k
12	0C	FF	44	2C	,	76	4C	L	108	6C	l
13	0D	CR	45	2D	-	77	4D	M	109	6D	m
14	0E	SO	46	2E	.	78	4E	N	110	6E	n
15	0F	SI	47	2F	/	79	4F	O	111	6F	o
16	10	DLE	48	30	0	80	50	P	112	70	p
17	11	DC1	49	31	1	81	51	Q	113	71	q
18	12	DC2	50	32	2	82	52	R	114	72	r
19	13	DC3	51	33	3	83	53	S	115	73	s
20	14	DC4	52	34	4	84	54	T	116	74	t
21	15	NAK	53	35	5	85	55	U	117	75	u
22	16	SYN	54	36	6	86	56	V	118	76	v
23	17	ETB	55	37	7	87	57	W	119	77	w
24	18	CAN	56	38	8	88	58	X	120	78	x
25	19	EM	57	39	9	89	59	Y	121	79	y
26	1A	SUB	58	3A	:	90	5A	Z	122	7A	z
27	1B	ESC	59	3B	;	91	5B	[	123	7B	{
28	1C	FS	60	3C	<	92	5C	\	124	7C	|
29	1D	GS	61	3D	=	93	5D	]	125	7D	}
30	1E	RS	62	3E	>	94	5E	^	126	7E	~
31	1F	US	63	3F	?	95	5F	_	127	7F	(delete)