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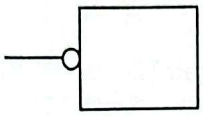
DIGITAL LOGIC QUIZ 1 SET 2

Name:	LIM YU HAN
Metric Number:	A23CS0241
Section:	02

Answers:

1. D	2. B	3. D	4. C	5. D
6. D	7. B	8. A	9. A	10. A

1. What is the meaning of the symbol? (1m)



A. on-state
B. pulse state
C. active high
D. active low

2. Which of the following is used to measure the rate of information transmitted in a digital signal? (1m)
A. Amplitude
B. Duty Cycle
C. Phase
D. Bandwidth

3. Which of the following is a fixed-function integrated circuit used in digital electronics? (1m)
A. FPGA
B. CPLD
C. PLD
D. AND gate

4. _____ is used to route data from one source to multiple destinations? (1m)
A. Encoder
B. Decoder
C. MUX
D. DEMUX

5. Which numbering system uses the digits 0 to 7? (1m)
   A. Binary
   B. Decimal
   C. Hexadecimal
   D. Octal

6. Assuming a 25% duty cycle and a 40 Hz frequency, find the period time (T) and the system's pulse width (tw) in seconds (s). (2m)
   A. T = 0.00625 s, tw = 0.025 s
   B. T = 0.625 s, tw = 0.025 s
   C. T = 0.0625 s, tw = 0.25 s
   D. T = 0.025 s, tw = 0.00625

$DC = \left(\frac{t_w}{T}\right)100\%$

$25 = \left(\frac{t_w}{0.025}\right)100\%$

$0.25 = \frac{t_w}{0.025}$

$t_w = 6.25 \times 10^{-3}$

$f = \frac{1}{T}$

$40 = \frac{1}{T}$

$T = 0.025$

7. Which of the following represents the binary number 101100.0111 in octal? (2m)
   A. 35.24
   B. 54.34
   C. 45.43
   D. 65.53

5 4 . 3 4

8. What is the BCD equivalent of the decimal number 12.45? (2m)
   A. 00010010.01000101
   B. 00010001.01101001
   C. 11000010.10010011
   D. 10010001.01100001

1 2 . 4 5

0001 0010 . 0100 0101

9. What is the decimal equivalent of the binary number 10111.0011? (2m)
   A. 23.1875
   B. 11.0875
   C. 16.5255
   D. 26.1255

$27.14_8 = 10$

$(2 \times 8^1) + (7 \times 8^0) + (1 \times 8^{-1}) + (4 \times 8^{-2})$

$= 23.1875_{10}$

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

Table 1

Character	ASCII Hexa	Binary (7 bit)	ODD Parity (8 bit)	New ASCII Hexa
G	(i) 47	1000111	(ii)	(iii)

4 even

1 1000111

C7

   A. (i) 47, (ii) 1 1000111, (iii) C7
   B. (i) 75, (ii) 1 1000111, (iii) D7
   C. (i) 46, (ii) 1 1001011, (iii) C5
   D. (i) 64, (ii) 1 1100111, (iii) A4

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)