Hardware & Software for Information Technology
Practical exercises (Batch 2)

1) We will soon celebrate the "armistice day" that ended the First World War, on 11/11/1918. Write that date in binary, octal, and hexadecimal

In Binary:_____ In Octal:_____In Hexadecimal:_____

2) Represent the numbers +128, 1, +12 and -12, if possible, in natural binary, sign and magnitude, two's complement, and BCD, using in all cases **8 bits**.

	+128	1	+12	-12
Natural Binary				
Sign and magnitude				
Two's Complement				
BCD				

3) Perform the following operations in binary:

0100011 + 0010001 **1011 x 101** **01000 - 00010**

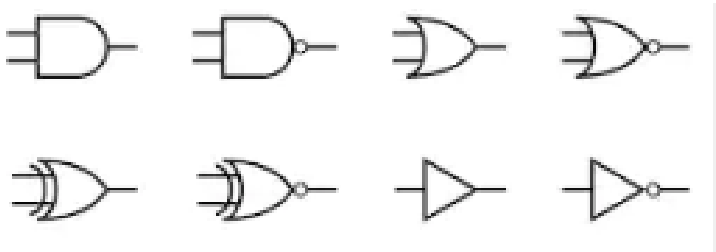
4) Assuming that your computer uses ASCII, and 8 bit words, use the table shown to determine how the next "NovaIMS" is stored in memory. Show the result in binary and in hexadecimal

ANSWER:_____

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

4) Simplify the Boolean expression $S = AB\bar{C} + ABC + (\,CA\bar{C})$

5) What is the Boolean function implemented by each of the following logical gates:



GOOD WORK !