Part A)

2^n		count	365_{10} RT	RM	binary
2^8	256	1	256	109	
2^7	128	0	256	109	
2^6	64	1	320	45	
2^5	32	1	352	13	
2^4	16	0	352	13	
2^3	8	1	360	5	
2^2	4	1	364	1	
2^1	2	0	364	1	
2^0	1	1	365	0	101101101

1) Answer = 101101101_2

A B C D E F
10, 11, 12, 13, 14, 15

2^n		count	$45,001_{10}$ RT	Rm	binary
2^{15}	32768	1 ✓	32,768	12232	
2^{14}	16384	0 ✓	32,768	12232	
2^{13}	8192	1 ✓	40,960	4040	
2^{12}	4096	0 ✓	40,960	4040	
2^{11}	2048	1 ✓	43,008	1992	
2^{10}	1024	1 /	44,032	968	
2^9	512	1 ✓	44,544	456	
2^8	256	1 ✓	44,800	200	
2^7	128	1 ✓	44,928	72	
2^6	64	1 ✓	44,992	8	
2^5	32	0 ✓	44,992	8	
2^4	16	0 ✓	44,992	8	
2^3	8	1 ✓	45,000	0	
2^2	4	0	45,000	0	
2^1	2	0	45,000	0	
20	1	0	45,000	0	

2)
Answer:
1010111111001000

Part B)

1)

$2^{16}\ 2^{15}\ 2^{14}\ 2^{13}\ 2^{12}\ 2^{11}\ 2^{10}\ 2^{9}\ 2^{8}\ 2^{7}\ 2^{6}\ 2^{5}\ 2^{4}\ 2^{3}\ 2^{2}\ 2^{1}\ 2^{0}$

$1\ 0\ 1\ 1\ 0\ 0\ 1\ 0\ 0\ 1\ 1\ 1\ 0\ 1\ 0\ 1$

$+(1 \times 16384)\ (1 \times 8192) + (1 \times 1024)\ (1 \times 128)\ (1 \times 64) + (1 \times 32) + (1 \times 8) + (0 \times 2) + (1 \times 1)$

$(1 + 65536)$

$65536 + 16384 + 8192 + 1024 + 128 + 64 + 32 + 8 + 2 + 1$

Answer $= 91341$

2)

$2^{5}\ 2^{4}\ 2^{3}\ 2^{2}\ 2^{1}\ 2^{0}\ 2^{-1}\ 2^{-2}\ 2^{-3}\ 2^{-4}\ 2^{-5}\ 2^{-6}\ 2^{-7}\ 2^{-8}\ 2^{-9}\ 2^{-10}$

$1\ 0\ 1\ 1\ 1\ 0\ .\ 1\ 0\ 0\ 1\ 1\ 1\ 1\ 0\ 1\ 1$

~~$(0 \times$ e ~~1~~ 0 2 2 0$~~

~~$(1 \times 128) + (1 \times 256) + (1 \times 512) + (1 \times 1024)$~~

$(1 \times 32) + (1 \times 8) + (1 \times 4) + (1 \times 2) + (1 \times 2) + (1 \times 16) + (1 \times 32) + (1 \times 64) + (1 \times 128) + (1 \times 512) + (1 \times 1024)$

$32 + 8 + 4 + 2\ \ .\ 2 + 16 + 32 + 64 + 128 + 512 + 1024$

Answer $= 46.1778$

Part c)   1001 0111
1)   +0101, 1,1,11   = 1111 0110 $_2$
         1111 0110

2) 1001.01010
  + 00,10.1,1101   = 1100.00111 $_2$
    1 100.001 11