Solution for DD1951T1

1.

a. $+11.8125_{10}$

$11_{10} \rightarrow 1011_2$, $0.8125 \times 2^5 \div 2^5 = 26 \div 2^5$

$= 11010_2 \div 2^5 = 0.11010$

$\rightarrow +11.8125_{10} = 01011.11010_2$

b. 10000.0010_2

c. 01011110.1_2

d. $0B.D_{16}$, $5E.8_{16}$

e. 10000011.0_2

f. $Y = 01111110.10$, $X = 11001_0$

$$\begin{array}{rl} & 00011001_0 \leftarrow X \\ +) & \underline{11010000.10} \leftarrow Y \text{의 2의 보수} \\ & 11100111.10 \leftarrow X - Y = 11100111.10_2 \end{array}$$

$= -(00011001.10_2)$

$= -44.5_{10}$

2.

latch — non clocked
immediate change with input change

flip flop

clocked device
output changes shortly after a clock transition
appropriate for synchronous system

RS

Q \ RS	00	01	11	10
0	0	1	X	0
1	1	1	X	0

JK

Q \ JK	00	01	11	10
0	0	0	1	1
1	1	0	0	1

b

Q \ D	0	1
0	0	1
1	0	1

T

Q \ T	0	1
0	0	1
1	1	0