$M_2 = 1000101$

$N_{16} = 45$

Answer: ① $M_2 = 1000101$   $N_{16} = 45$

1. Student ID ends with 6P

Hence $A_{10} = 6P$ $\implies$

$M_2 = 1000101$

$6P \div 2 = 34 \cdots 1$ ↑
$34 \div 2 = 17 \cdots 0$
$17 \div 2 = 8 \cdots 1$
$8 \div 2 = 4 \quad 0$
$4 \div 2 = 2 \quad 0$
$2 \div 2 = 1 \quad 0$
$1 \div 2 = 0 \cdots 1$

2. $A_{10} = 6P$ $\implies$   $6P \div 16 = 4 \cdots 5$ ↑
   $4 \div 16 = 0 \cdots 4$

$N_{16} = 45$

Q2   Answer: ① $10001001 0$   ② DE

1)   $M_2 + 1100110 1$

   $1000101$
$+$ $1100110 1$
_____
$1000100 10$

2) $N_{16} + 99_{16}$

$^{16}$↑ 45
$+$ 99 → 's
_____
D E

① $B_{10} = -69$

$M_2 = 1000101$

$N_{16} = 45$

$C_2 = 1011 1011$

$+69_{10} = M_2 = 01000101$

$-69_{10} = inverse(01000101) + 1$

$= 10111010 + 1$

$C_2 = 10111011$

① $M_2$: $01000101$
$C_2$: $+ 10111011$
$\overline{1\ 00000000}$
↑
overflow

② $C_2$: $10111011$
$+ 01001101$
$\overline{1\ 00001000}$
↑
overflow

a): Tommer Hu

b) Answer: Each Hex digit obtain
4 bits. My name comes with 18
digits in Hex. hence it's $4 \times 18 = 72$ bits