ACM - Recruitment - Questline - 5

Binary Logic & Number Systems

Task: Convert the following

① a) 101011 (binary) → decimal & ~~hex~~

(5) (4) (3) (2) (1) (0)

1 0 1 0 1 1

$= 1 \times 2^5 + 0 \times 2^4 + 1 \times 2^3 + 0 \times 2^2 + 1 \times 2^1 + 1 \times 2^0$

$= 32 + 8 + 2 + 1$

$= 43$ (decimal)

b) 101011 (binary) → hex

0010 1011

0010 = 2

1011 = B

= 2B (hex)

② a) 93 (decimal) → binary

2	93	
2	46	1
2	23	0
2	11	1
2	5	1
2	2	1
	1	0

Answer = 1011101 (binary)

b) 93 (decimal) → hex

16	93
	5 (13)

(13 is D in hexadecimal)

Answer = 5D