Class VII

Answer key for Class VII Ch-1 Practice zone (HW-1)

1. -> Binary / Machine 2. -> Mnemonics 3. -> High-level 4. -> Basic, C++

Answer key for Home work given in the video Class VII-Computer-Ch-1 [Part 3]

Convert the following Decimal numbers to Binary numbers:

1) 48 →

2 | 48		
2 | 24	**0**	**LSB**
2 | 12	**0**	
2 | 6	**0**	
2 | 3	**0**	
2 | 1	**1**	
0	**1**	**MSB**

$\therefore$ **$(48)_{10} \Rightarrow (110000)_2$**

2) 21 →

2 | 21		
2 | 10	**1**	**LSB**
2 | 5	**0**	
2 | 2	**1**	
2 | 1	**0**	
0	**1**	**MSB**

$\therefore$ **$(21)_{10} \Rightarrow (10101)_2$**

3) 59 →

2 | 59		
2 | 29	**1**	**LSB**
2 | 14	**1**	
2 | 7	**0**	
2 | 3	**1**	
2 | 1	**1**	
0	**1**	**MSB**

$\therefore$ **$(59)_{10} \Rightarrow (111011)_2$**

4) 15 →

2 | 15		
2 | 7	**1**	**LSB**
2 | 3	**1**	
2 | 1	**1**	
0	**1**	**MSB**

$\therefore$ **$(15)_{10} \Rightarrow (1111)_2$**

5) 139 ⟶

2	139		
2	69	**1**	**LSB**
2	34	**1**	
2	17	**0**	
2	8	**1**	
2	4	**0**	
2	2	**0**	
2	1	**0**	
	0	**1**	**MSB**

$\therefore$ **$(139)_{10} \Rightarrow (10001011)_2$**

Convert the following Binary numbers to Decimal numbers:

1) $(110000)_2$

$\Rightarrow 1^5\,1^4\,0^3\,0^2\,0^1\,0^0$

$\Rightarrow 1X2^5 + 1X2^4 + 0X2^3 + 0X2^2 + 0X2^1 + 0X2^0$

$\Rightarrow$ (1X2X2X2X2X2) + (1X2X2X2X2) + (0X2X2X2) + (0X2X2) + (0X2) + (0X1)

$\Rightarrow$ 32+16+0+0+0+0

$\Rightarrow$ 48

$\therefore$ **$(110000)_2 \Rightarrow (48)_{10}$**

2) $(10101)_2$

$\Rightarrow 1^4\,0^3\,1^2\,0^1\,1^0$

$\Rightarrow 1X2^4 + 0X2^3 + 1X2^2 + 0X2^1 + 1X2^0$

$\Rightarrow$ (1X2X2X2X2) + (0X2X2X2) + (1X2X2) + (0X2) + (1X1)

$\Rightarrow$ 16 + 0 + 4 + 0 + 1

$\Rightarrow$ 21

$\therefore$ **$(10101)_2 \Rightarrow (21)_{10}$**

3) $(111011)_2$

$\Rightarrow 1^5\,1^4\,1^3\,0^2\,1^1\,1^0$

$\Rightarrow$ (1X2X2X2X2X2) + (1X2X2X2X2) + (1X2X2X2) + (0X2X2) + (1X2) + (1X1)

$\Rightarrow$ 32 + 16 + 8 + 0 + 2 + 1

$\Rightarrow$ 59

$\therefore$ **$(111011)_2 \Rightarrow (59)_{10}$**

4) $(101010)_2$

$\Rightarrow 1^5\,0^4\,1^3\,0^2\,1^1\,0^0$

$\Rightarrow$ (1X2X2X2X2X2) + (0X2X2X2X2) + (1X2X2X2) + (0X2X2) + (1X2) + (0X1)

$\Rightarrow$ 32 + 0 + 8 + 0 + 2 + 0

$\Rightarrow$ 42

$\therefore$ **$(101010)_2 \Rightarrow (42)_{10}$**

5) $(1111)_2$

$\Rightarrow 1^3 1^2 1^1 1^0$

$\Rightarrow$ (1X2X2X2) + (1X2X2) + (1X2) + (1X1)

$\Rightarrow$ 8 + 4 + 2 + 1

$\Rightarrow$ 15

$\therefore \mathbf{(1111)_2 \Rightarrow (15)_{10}}$

- **MATCH THE ANSWERS WITH YOURS AND CORRECT IN YOUR COPY**.