

1. Determine the physical address of a memory location given by $0A51:CD90h$

⇒ find physical address formula

$$= \text{segment} * 10 + \text{offset}$$

~~loc~~ location : $0A51 : \cancel{CD90} CD90h$.

$$\text{segment} = 0A51$$

$$\text{offset} = CD90$$

$$\therefore \text{Physical Address} : 0A51 * 10 + CD90$$

$$= 0A510 + CD90$$

$$= 172A0h.$$

2. A memory location has a physical address $4A37Bh$, compute.

(2.1) The offset address if the segment number is $40FFh$

(2.2) The segment number if the offset address is $123Bh$.

(2.1) \Rightarrow physical address = $4A37Bh$
segment = $40FFh$

$$\text{Physical address} = \text{Segment} * 10 + \text{offset}$$

$$4A37Bh = 40FFh * 10 + \text{offset}$$

$$4A37Bh = 40FF0h + \text{offset}$$

$$\therefore \text{offset} = 4A37Bh - 40FF0h$$

$$\text{offset} = 938Bh$$

2.2

⇒ we know that

$$\text{physical address} = \text{segment} * 10h + \text{offset}$$

thus

$$\text{segment} * 10h = \text{physical address} - \text{offset}$$

in this example

$$\text{physical address} = 4A37Bh$$

$$- \text{offset} = 123Bh$$

$$\text{segment} * 10h = 49140h$$

∴ so the segment = 4914h.

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