22-06-24

1. 2BCA3 h

(a) Assuming non-overlaping Segmentation, determine the logical address.

logical address = Seg : offset

2000 : BCA3

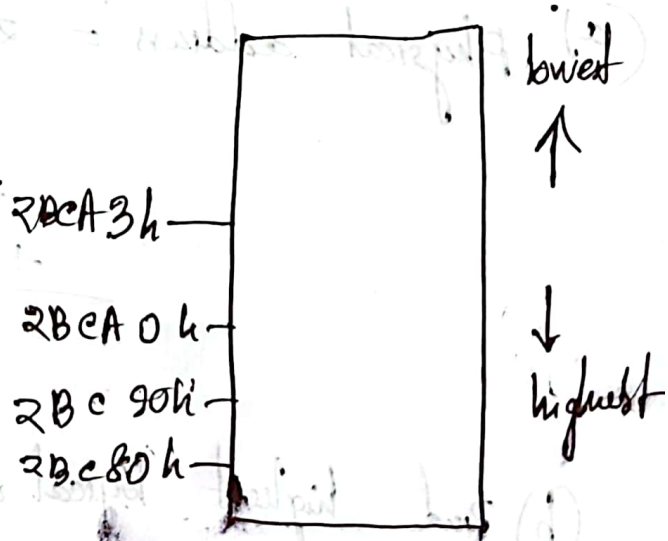
(b) Determine highest, 2nd highest, 3rd higest lowest " lowest, 3rd lowest logical address.

highest logical address = Seg : offset
2BCA : 0003h

2nd " " " = 2BC9 : 0013h

3rd " " " = 2BC8 : 0023h

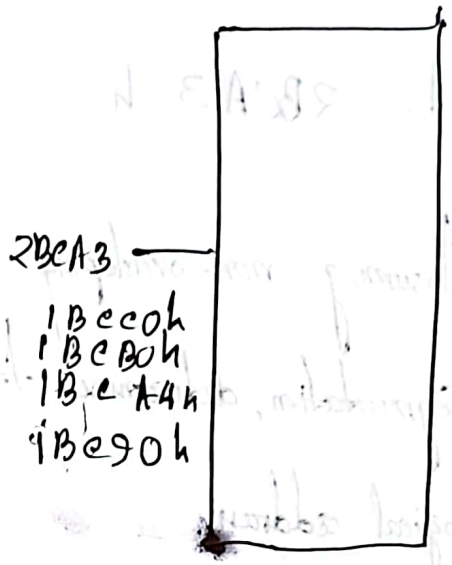
~~lowest logical address~~



lowest logical address = 1BCB0 h

seg : offset

1BCB : FFF3 h



2nd lowest 1BCC : FFE3 h

(1BCC0h)

3rd lowest

Quiz-2

29th June

lec 3 – memory addressing

seg : off

logical address : 2ABO : 1F3F

(a) Physical address = 2ABOX10 + offset

$$\begin{array}{r} 2ABOO \\ +\ 1F3F \\ \hline 2CA3F \end{array}$$

(b) 3rd highest logical address = 2CA3 : 002F

4th lowest " " = 1CA40 : FFCF

lowest 2CA3F → 1CA40
−FFFF

8086 → 16 bit

- Data Bus
- Register
- Control bus
- ALU

16 bit

Address bus = 20 bit

Memo → 20 bit

↳ 2^{20} = 1 Mb

24 bit

↳ $2^{24} = 2^{20} \times 2^4 = 16\,MB$

1 MB

000 10h

highest = 0001 : 0000

2nd highest = 0000 : 0010

3rd " = Invalid

lowest = 0000 : 0010

2nd " = 0009 : 0000

3rd " = Invalid

Register

General purpose Register = AX, BX, CX, DX] 16 bit

AH AL

8 bit 8 bit

Segment Register : CS - code segment
DS - Data segment
SS - Stack segment
ES - Extra segment

Offset registers

PA = Seg x 10 + offset

IP — Instruction pointer

SI — Source Index

DI — Destination Index

SP — Stack pointer

BP — Base pointer

BX — Base Register

MAP

Segment Register	→	offset Register
CS	→	IP
DS	→	SI, DI, BX
SS	→	SP, BP
EX	→	SI, DI, BX