

COAL
BS CS Fall 2022
Quiz 1

Time allowed: 20 min

Total marks: 20

Roll Number: _____

Name: _____

Q#1:

[6]

Consider the two segments, named as Segment 'A' and Segment 'B' in a memory Layout. If segment A begins at address 120C:0000 and ends at address 120C:FFFF, similarly the second segment B begins at address 130E:0000 and ends at address 130E:FFFF. Are these segments disjoint or overlapping. Calculate the common number of locations between these two segments if these are overlapping?

Yes, Overlapping.

Ending PA of 120C is = 220BF

Starting PA of 130E is = 130E0

220BF-130E0=EFDF

Q#2: Give the short answers of the following questions?

[2*4]

i) What should be the size of address (in bits) to access a memory of 128 Mega Bytes?

27 bit

ii) What is the binary equivalent form of the decimal number $(-256)_{10}$?

100000000

iii) Which maximum signed value can be stored in a variable of size two bytes?

-2^{16-1} to $2^{16-1}-1 = -2^{15}$ to $2^{15}-1 = -32786$ to 32785

iv) A memory location has physical address 80A32 .In what segment does it have offset BA32?

7500

Q#3: Consider the following memory area

[2+2+2]

74

0AE3:0110 98 32 C0 EB 06 34 02 22-C4 D0 E8 0A 34 00 D2 0A .2...4."....4...

34 31 34 31 34 31 34 31 34 31 34 31 34 31

0AE3:0120 13 96 D0 E0 D0 E0 A2 1E-99 80 3E 20 99 00 75 24> ..u\$

34 31 34 31

0AE3:0130 A2 24 99 0A C9 75 1D 0A-C0 74 19 8B 0E 21 96 E3 .\$....u...t...!..

0AE3:0140 13 B0 1A 06 33 FF 8E 06-00 96 F2 AE 07 75 05 4F3.....u.O

0AE3:0150 89 3E 21 96 BB 06 97 80-3E 13 96 00 74 03 BB 4C .>!.....>...t..L

Give output of the following debugger commands in above memory area:-

i) **E 11B 74**

ii) **F 120 133 '41'**

iii) Which Logical address in the above Memory area is equal to Physical address **0AF7D?**

014D