

COAL
BS DS 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 430C:0000 and ends at address 430C:FFFF, similarly the second segment B begins at address 530D:0000 and ends at address 530D:FFFF. Are these segments disjoint or overlapping. Calculate the common number of locations between these two segments if these are overlapping?

No, these segments are disjoint.

Ending PA of 430C is = 530BF

Starting PA of 530D is = 530D0

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 $(-128)_{10}$?

10000000

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

-2^{8-1} to $2^{8-1}-1 = -2^7$ to $2^7-1 = -128$ to 127

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