CS238 HW 3 SOLUTION

1) A) 52 octal to hexa decimal?
   First convert the 52 octal to binary=00101010b
   And then convert the binary to hexa decimal=2Ah
   52 octal to hexa=2Ah
   B)-250 decimal to hexa decimal?
   |-250|=250=FAh
   by performing the 2's complement on the FAh=06h
   -250 decimal to hexa decimal=06h
   c)8088 hexa decimal to decimal
   by performing the 2's complement on 8088=7f78
   =7*16^3+15*16^2+7*16^1+8*16^0=**-32632**
2) A)VALID
   B)VALID
   C)INVALID

3) a) in standard pipelineing K+(N-1) clock cycles are required.

Inthis case K=6,N=10 then

Number of clock cycles required=6+(10-1)

=6+9=15 clock cycles

For 1 clockcycle =1/f=1/16mhz=0.0625 micro seconds

For 15 clock cycles the execution time is =15*0.0625=0.9375 micro seconds.

b) in (u,v) pipelining the number of clock cycles required=k+n

k=6,n=10

the number of clock cycles required=10+6=16 clock cycles

the execution time is=16*0.0625micro seconds=1 micro seconds

3) A) physical address=(segment address*10h)+offset
   =1020*10+FEFE

=10200+FEFE

=200FEh

B) physical address=FF00*10+1100

=FF000+1100

=100100h

c) physical address=20430*10+ABC0

=204300+ABC0

=2AFFOh

5)

RAM 448K
VRAM 192K
ROM 256K

1)ROM starting address is=00000h

256*1024=262144=40000h

ROM ending address=40000-1

= 3FFFF

2. VRAM starting address =40000

192*1024=30000

VRAM ending address =30000-1

=2FFFF+3FFFF

=6FFFE

3.RAM starting address=6FFFF

448*1024=70000

RAM ending address =70000-1

=6FFFF+6FFFE

=DEFFD.

Given address belongs to **VRAM**.

6)

Offset	value
001D	
0016-001C	NUMBERS 10,20,-25
0011-0015	MY ARRAY ABC,30.20H
0008-0010	MY STRING GOOD LUCK
0004-0007	DOUBLE WORD
0000-0003	0A

DATA VALUE=10 IS USE 4

DOUBLE WORD USE 4

MY STRING USES “GOOD LUCK” USE 9

MY ARRAY BYTE “ABC”,30,20H USE 5

NUMBERS SWORD 10,20H,-25 USE 6