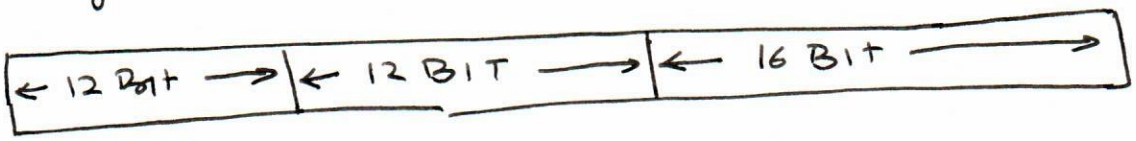
Q2 Logical Address 1 TB $\Rightarrow 2^{40}$

Page Size 64K $\Rightarrow 2^{16}$

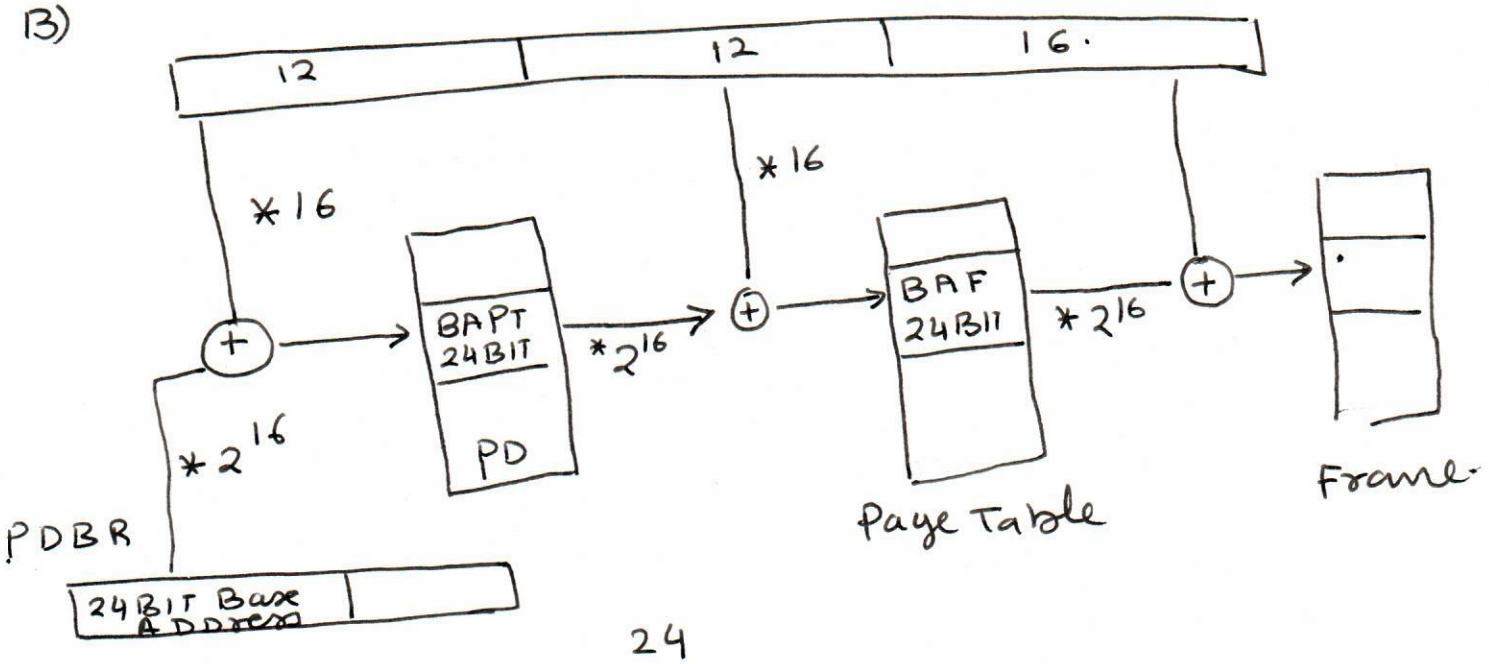
Page Table entay = 16 Byte = 2^4

No of entries in Page Table = $2^{16}/2^4 = 2^{12}$



A) 2 Level

B)



(C) Max Pages = 2^{24}

Max Page Table = 2^{12}, one Page Directory.

(D) Max entries in Page Table = $\frac{2^{16}}{2^4} = 2^{12}$

(E) one Frame for Page Directory
one Frame for Page Table.
Seven Frames for Process Data.
Total Frames = 9 Frames.

Process	Allocation					Process	Maximum Claim					Need				
	R1	R2	R3	R4	R5		R1	R2	R3	R4	R5	R1	R2	R3	R4	R5
P1	2	3	2	0	0	P1	4	4	4	3	5	2	1	2	3	5
P2	2	3	1	0	1	P2	4	6	3	2	4	2	3	2	2	3
P3	0	1	1	2	2	P3	1	1	2	3	2	1	0	1	1	0
P4	1	0	0	1	3	P4	2	1	1	2	5	1	1	1	1	2
P5	2	3	3	2	2	P5	7	9	5	5	7	5	6	2	3	5
	7	10	7	5	8											

3
1
2

Total Available 10 10 8 8 8
Allocation 7 10 7 5 8
Available 3 0 1 3 0

Work = 3 0 1 3 0

P3 0 1 1 2 2
3 1 2 5 2

P4 1 0 0 1 3
4 1 2 6 5

P1 2 3 2 0 0
6 4 4 6 5

P2 2 3 1 0 1
8 7 5 6 6

P5 2 3 3 2 2
10 10 8 8 8

< P3, P4, P1, P2, P5 >.

Safe Sequence.

(b) 2 0 0 2 0