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Operating System Project 7

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Q.1.

TLB hit rate = 75 %

TLB miss rate = 25%

TLB access time = 40ns

Main memory access time = 180

So, effective memory access time

=> 0.75(40 + 180) + 0.25(40 + 180 + 180 + 180)

=> 165 + 145

=> 310

Q.2.

20-> Physical address: 8k +20=> 8192+20 =>8212

4100-> Physical address: 4k + (4100-4k)=> 4100

8300-> Physical address: 24k +(8300-8k) => (24000 +(24\*24))+108 => 24576 + 108 =>24684

Q.3.

Page size = 8KB = 8 \* 2^10 = 2^13

Offset = 13

No. of page entries = 2^(31-13) = 2^19

Page table Load time = PTL

T = Run time of a process

PTL = 2^19 \* 100 ns = 52,4288 ms

So, PTL/T = 0.52

Therefore, 52 percent of the CPU time 8s required to load the page table.

Q.4.

a-> Memory address => Frame No:14, Offset: 3

b-> Segmentation fault because segment 0 can only Read/Execute not store

c-> Page fault because the Page frame number is on Disk

d-> Memory address => Frame No: 6, Offset: 32