More Paging

5.11.1

We suppose that the entry with valid bit 0 is replaced first. After that, we replace others in order in which they are given (since we are not given enough information to see which of them is the least recently used).

4669: 4669/4*1024 = 1.14, the index of the corresponding virtual page is 1.

Looking at TLB, there is no entry with tag 1, so we have a miss. In page table, the page with index 1 has valid bit 0, so we have a page fault. Add this entry to page table (its physical address is 13)

2227: 2227/4*1024 = 0.54. Tag: 0. TLB: miss, Page table: valid bit is 1, so hit. Physical address is 5.

13916: 13916/4*1024 = 3.40. Tag: 3. TLB: hit.

34587: 34587/4*1024 = 8.44. Tag: 8. TLB: miss. Page table: valid bit is 0, so we have a page fault. Physical address: 14.

48870: 48870/4*1024 = 11.93. Tag: 11. TLB: miss. Page table: valid bit is 1, so we have a hit. Physical address: 12.

12608: 12608/4*1024 = 3.08. Tag: 3. TLB: hit.

49225: 49225/4*1024 = 12.02. Tag: 12. TLB: miss. Page table: valid bit is (implicitly) 0, so we have a page fault. Physical address: 15.

Valid	Physical Page / Disk
1	5
1	13
0	Disk
1	6
1	9
1	11
0	Disk
1	4
1	14
0	Disk
1	3
1	12
1	15

5.11.2
4669: Page table: valid bit is 1, so hit. Physical address is 5.
2227: Tag: 0. TLB: hit.
13916: Tag: 0. TLB: hit.
34587: Tag: 2. TLB: miss. Page table: valid bit is 0, so we have a page fault. Physical address: 13.
48870: Tag: 2. TLB: hit.
12608: Tag: 0. TLB: hit.
49225: Tag: 3. TLB: hit.

Valid	Physical Page / Disk
1	5
0	Disk
2	13
1	6
1	9
1	11
0	Disk
1	4
0	Disk
0	Disk
1	3
1	12