Chapter 8 Questions: 8.4, 8.6, 8.13

8.4)

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **7** | **0** | **1** | **2** | **0** | **3** | **0** | **4** | **2** | **3** | **0** | **3** | **2** | **Faults** | **M** |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| FIFO |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7 | 7 | 7 | 0 | 0 | 1 | 2 | 3 | 0 | 4 | 2 | 2 | 2 |  |  |
|  | 0 | 0 | 1 | 1 | 2 | 3 | 0 | 4 | 2 | 3 | 3 | 3 |  |  |
|  |  | 1 | 2 | 2 | 3 | 0 | 4 | 2 | 3 | 0 | 0 | 0 | **7** | **70%** |
| LRU |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7 | 7 | 7 | 2 | 2 | 2 | 2 | 4 | 4 | 4 | 0 | 0 | 0 |  |  |
|  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 3 | 3 |  |  |
|  |  | 1 | 1 | 1 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | **6** | **60%** |
| Opt. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7 | 7 | 7 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |  |  |
|  | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 4 | 0 | 0 | 0 |  |  |
|  |  | 1 | 1 | 1 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | **4** | **40%** |

8.6)

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 0 | 2 | 2 | 1 | 7 | 6 | 7 | 0 | 1 | 2 | 0 | 3 | 0 | 4 | 5 | 1 | 5 | 2 | 4 | 5 | 6 | 7 | 6 | 7 | 2 | 4 | 2 | 7 | 3 | 3 | 2 | 3 |
| A |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
|  | 0 | 0 | 0 | 0 | 0 | 6 | 6 | 6 | 6 | 2 | 2 | 2 | 2 | 2 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
|  |  | 2 | 2 | 2 | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 2 | 2 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 |
|  |  |  |  |  | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 3 | 3 | 3 | 3 | 1 | 1 | 1 | 1 | 1 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 3 | 3 | 3 | 3 |
| B |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 2 | 7 | 6 | 6 | 1 | 0 | 3 | 3 | 4 | 4 | 4 | 5 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 6 | 6 | 7 | 7 |
|  | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 2 | 7 | 7 | 6 | 1 | 1 | 0 | 3 | 4 | 4 | 5 | 5 | 5 | 1 | 2 | 2 | 2 | 2 | 6 | 6 | 6 | 7 | 7 | 4 | 4 |
|  |  | 2 | 2 | 2 | 2 | 7 | 7 | 7 | 6 | 6 | 1 | 0 | 0 | 3 | 4 | 5 | 5 | 1 | 1 | 1 | 2 | 6 | 6 | 6 | 6 | 7 | 7 | 7 | 4 | 4 | 3 | 3 |
|  |  |  |  |  | 7 | 6 | 6 | 6 | 1 | 1 | 0 | 3 | 3 | 4 | 5 | 1 | 1 | 2 | 2 | 2 | 6 | 7 | 7 | 7 | 7 | 4 | 4 | 4 | 3 | 3 | 2 | 2 |

LRU had 13 faults to FIFO’s 13 faults. In this particular instance, FIFO matches LRU in terms of faults.

Hit ratio of 16/33