

In the name of god
Operating Systems – Shiraz University



Homework #3
Fall 2021

Question #1

Will the following technique for synchronization protect the critical section?

```
Pj  
-----  
flag[i] = True;  
while flag[j] and turn = j  
    Do No-Op  
Critical-Section  
Turn = j  
flag[j] = false
```

Question #2

Solve the readers and writers problem with mutex.

Question #3

Assume that there is a n 8KB frame size, 31 bit logical address and 32 bit physical address, configure the paging system.

Question #4

Compute the number of page faults using LRU, optimal and second chance algorithms while we have 3-frame memory with the following reference string:

7,0,1,2,0,3,0,4,2,3,0,3,2,1,2,0,1,7,0,1

Question #5

Compute the number of page faults using LRU and clock algorithms while we have 4-frame memory with the following reference string:

1,2,3,4,2,1,5,6,2,1,2,3,7,6,3,2,1

Best wishes

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