



Dept. of Computer Science and Engineering
Operating Systems (521453A)
Examination 07.11.2014

1. Explain (6p)
 - a) Deadlock
 - b) External fragmentation
 - c) SJF scheduling and how using pre-emption affects it

2. Present the requirements of a solution to the critical-section problem. Does the following algorithm satisfy all these requirements (justify)? If not, how would you modify the solution so that it would? (6p)

```
do {
    flag[i] = true;
    while (flag[j])
        ; /* do nothing */

    critical section

    flag[i] = false;

    remainder section

} while(1);
```

3. Page replacement algorithms. (Present different algorithms available. What are the pros and cons of each algorithm?) (6p)

4. Present the different multithreading models. (6p)