

Your name:

## CSE 30341 Operating Systems: Module 5 Exam

*OPEN BOOK, OPEN NOTES, CLOSED ELECTRONIC SEARCHES*

*INDIVIDUAL EFFORT*

*DURATION: 30 MINUTES*

**Keep It Simple. You may write your justification for your answer in the space below. I may look at the argument to give partial credit. You can also use these argument to convince me in person that your answer was correct (using only the assumptions and arguments written by you in the answer). Football penalty rules do not apply to his exam, there will be no penalty for you in trying to convince me**

---

- 1) True or False (with justification): Doubling the rotation speed of a 10K RPM disk doubles its peak transfer bandwidth, but improves its throughput for random 8KB reads only marginally
- 2) True or False (with justification): Given a sufficiently fast CPU and appropriate block allocation policies, delayed write mechanisms can enable sequential disk writes at the storage system's peak transfer bandwidth, independent of the write size, but at the cost of reducing file system reliability in the presence of failures
- 3) True or False (with justification): To preserve data integrity, file system software must control the order in which disk writes complete.
- 4) You are in the market to buy a new hard disk for your laptop. You are debating between two hard disks, disk A: offers 100 GB of storage at operates at 7200 RPM while disk B: offers 200 GB of storage operating at 4200 RPM. They both cost the same. Assume that you only require 50GB of storage. Under these circumstances, which hard disk would you choose and why? (your answer should specify the expected workload in justifying your answer)