

NAME: \_\_\_\_\_ (FIRST NAME FIRST) SCORE: \_\_\_\_\_

COSC 6360

FINAL EXAMINATION

MAY 10, 2007

This exam is **closed book**. You can have **two pages** of notes. UH expels cheaters.

1. **Advantages and disadvantages:** Please answer in one or two sentences to each question. (6×5 points)
  - a) What is the main advantage of *stateless servers*?
  - b) What is the main advantage of adding *non-volatile RAM* to an *NFS server*?
  - c) What is the main advantage of file *hoarding*?
  - d) What is the main advantage of journaling file systems using *asynchronous log writes*?
  - e) What is the main disadvantage of journaling file systems using *asynchronous log writes*?
  - f) What is the main advantage of the *Elephant file system* over other file systems?
2. How does the file system recovery policy of BSD-LFS combine the respective advantages of the recovery policies of the Fast File System and Sprite-LFS? (2×5 points)
3. What does *close-to-open consistency* guarantee? (10 points)
4. What is the function of *write queues* in the Blue file system? (5 points) How do they ensure the *serializability of updates*? (5 points) How do they create *bursty device access patterns*? (5 points) How does that result in a *lower device power consumption*? (5 points)
5. What is the role of the *CRUSH function* in the *Ceph distributed file system*? (5 points) How does it simplify the architecture of the *metadata server cluster*? (5 points) How does it allow the object data servers to operate in a *more autonomous fashion*? (5 points)
6. What is the main advantage of Coda *callbacks*? (5 points) What does a Coda server do when one of its callbacks get *lost*? (5 points) What does the client do to detect this situation? (5 points)

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