

Name: \_\_\_\_\_

Score: \_\_\_\_\_

UNIVERSITY OF HOUSTON  
Department of Computer Science  
COSC 6360--Operating Systems  
**QUALIFYING EXAMINATION**  
**Graduate Part**  
**FINAL EXAMINATION**  
May 1 2000

**THIS EXAM IS CLOSED BOOK. YOU CAN HAVE TWO SHEETS (I.E., FOUR PAGES) OF NOTES.**

1. **OBJECT CACHING:** *Most object-oriented systems allow for remote clients to cache entire pages of their address space. You are to discuss a system allowing clients to cache individual objects, all smaller than a page. What are the advantages and disadvantages of this approach? How would you make it work? (20 points)*
2. **WIDE-AREA FILE SERVICES:** *The early nineties saw many proposals for building wide-area file services, that is, services that would allow people to access files maintained by different organizations at often considerable distances. None of these proposals ever succeeded. Why? (20 points)*
3. What is the major disadvantage of *logical clocks* over *physical clocks*? (10 points)
4. What does Amoeba do to reduce the overhead of *remote procedure calls* (or *remote operations* as they are known in Amoeba parlance)? (10 points)
5. What is the difference between a *hint* and any other cached data item?(10 points)
6. Explain in a few words how you could launch a denial of service attack on a Kerberos-based service without flooding it with an inordinate amount of messages. (10 points)
7. Present an updated design for Sprite prefix tables (20 points)