CS 4/53201 **Exam #3** **Operating Systems**

Wednesday 9 December 1998

1. List those items for which memory space is allocated by each of the following methods. (12 points)

    a. Static memory allocation

    b. Dynamic memory allocation

2. It is possible for a single instruction to page fault more than one time? Explain your answer. (8 points)

3. Compare the following four methods of memory management in a mulitprogrammed operating systems, with respect to (i) how much of the program must be loaded into memory, (ii) any constraints on where the program must be loaded in memory, and (iii) what kind of fragmentation is possible and why. (30 points)

    a. Fixed-size partitions

    b. Segmentation

    c. Paging

    d. Demand paging

4. List several features of each of the following types of networks. (10 points)

    a. Wide area networks

    b. Metropolitan area networks

    c. Local area networks

5. List those items stored in a typical file descriptor. (10 points)

6. Draw a diagram showing the contents of a UNIX disk partition, including at least one file and one directory. (15 points)

7. In the changes that were made to UNIX, resulting in Berkeley BSD 4.2 UNIX, (15 points)

    a. Why was it desirable to increase the size of the disk blocks?

    b. Why was it desirable to not increase the size of the disk blocks?

    b. How was this conflict resolved?