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CS 4/53201 **Exam #2** **Operating Systems**

Monday 10 November 1997

1. (10 points) How do the first-come-first-served and round-robin CPU scheduling algorithms compare with respect to response time? Explain your answer.

2. (20 points) Draw an example of a resource allocation graph with multiple instances of some resources, and explain what the nodes and edges of the graph represent. Also, what does a cycle in this graph imply?

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3. (20 points) Explain the terms "static memory allocation" and "dynamic memory allocation", and give examples of what items are allocated space using each technique.

4. (15 points) Explain the concept of swapping.

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5. (15 points) Draw a diagram and explain how a virtual address is translated into a physical address using segmentation.

6. (20 points) Compare static relocation, dynamic relocation, and segmentation:

   a. Which technique(s) puts more of a burden on the assembler and linker, and why?

   b. Which technique(s) requires support from the hardware, and what support do they require?