

Name:
State all assumptions necessary to answer the questions.

CS 585 Test 1
Feb. 2, 2005

For each of the following describe a situation for which it would be more appropriate than the others and explain why: a) Access Control List, b) Capabilities, c) Access Control Matrix.

Draw a Take-Grant graph in which nodes x and z “Can-Share” a right r over y that z has. There must be at least three nodes between x and z and at least two of the nodes must be an object. All edges must be fully labeled. Explain why z can share the right with x.

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Consider how the Schematic Protection Model might be used to model security for students accessing a test. Assume there are two types of subjects (Student and Teacher) and that there is an object Test. The teacher wants to give the students read access to the Test but not before test is to begin. Describe what link predicates and filter functions would be appropriate and why.

Describe an example where a violation of integrity of the computer system can lead to a violation of confidentiality.

What are the advantages of security mechanisms at lower levels of a system, and what are the advantages of security mechanisms at higher levels of a system?