Quiz 1, IS2935, September 18, 2003

1. Which of the following correctly models a component of the Take-Grant model?

[ ] $link(\mathbf{X}, \mathbf{Y}) = \mathbf{X}/g \in dom(\mathbf{Y})$ v $\mathbf{Y}/t \in dom(\mathbf{X})$
[X] $link(\mathbf{X}, \mathbf{Y}) = \mathbf{Y}/g \in dom(\mathbf{X})$ v $\mathbf{X}/t \in dom(\mathbf{Y})$
[ ] $link(\mathbf{X}, \mathbf{Y}) = \mathbf{Y}/t \in dom(\mathbf{X})$ v $\mathbf{X}/t \in dom(\mathbf{Y})$
[ ] $link(\mathbf{X}, \mathbf{Y}) = \mathbf{Y}/g \in dom(\mathbf{X})$ v $\mathbf{X}/g \in dom(\mathbf{Y})$

2. Which of the following statements is not true?

[ ] SPM model does not allow deletion and destroy operations as HRU does
[ ] SPM model subsumes multilevel security
[ ] HRU model subsumes Take-grant model
[X] SPM subsumes Take-grant as well as HRU model

3. Which of the following statements about confidentiality models is incorrect?

[ ] Confidentiality models are aimed at controlling flow of information
[ ] Confidentiality models are more applicable in military than commercial environments
[X] Confidentiality models only address information flow that occurs because of transfer of rights
[ ] Confidentiality models do not give primary importance to who can alter information

4. Explain *Separation of Duty*? Does it refer to confidentiality or integrity requirements?

Answer:

Separation of Duty requires that different steps (tasks) of a critical function be carried out by different people.

SoD refers to the integrity requirements, mainly in transaction oriented systems.

5. Write the simple security and *property of the Bell-LaPadula Model. Use $l(s)$ and $l(o)$ to mean the security clearance and classification of the subject s and object o respectively.

Answer:

a. s can read o iff l(s) =l(o) & s has read permission over o
b. s can write o iff l(o) =l(s) & s has write permission over o