Lecture 8: Identity and Access Management

QUESTION 1

a. Briefly explain the following concepts related to identity management.
   (i) Entity.
   (ii) Identity.
   (iii) Name (identifier).
   (iv) Digital identity
b. Briefly explain what is meant by the concept "identity management".
c. Explain what is meant by AAA services, and why this name partially is a misnomer

QUESTION 2

a. Name the 3 phases of identity and access management
b. Name the functional steps related to identity and access management that are required before an authorized party can access a resource during operations.
c. Explain the two interpretations of authorization.

QUESTION 3

a. Briefly describe the silo identity model for management of user identities.
b. Describe advantages and disadvantages of the silo model.

QUESTION 4

a. Briefly describe the federated model for management of user identities.
b. Describe advantages and disadvantages of the federated model.

QUESTION 5

SAML specifies two different protocol profiles for browser SSO (single sign-on)
a. Name and briefly explain the two profiles.
b. Which profile could be considered more secure and why?

QUESTION 6

a. What is required to become an IdP (Identity Provider) for OpenId?
b. What is the format of a name (identity) in OpenId?
c. How can a service provider make sure that a user with an identity for OpenId has registered the identity with a serious OpenId IdP?

QUESTION 7

a. Briefly define the concept of discretionary access control (DAC) according to TCSEC.
b. Briefly define the concept of mandatory access control (MAC) according to TCSEC.
c. Which form(s) of access control is/are typically implemented in
   i) Commercial systems
   ii) Military systems

QUESTION 8

The Bell-LaPadula model is a formal model of a computer security policy designed to provide access control based on information sensitivity and subject authorizations.
a. Identify the major security goal of the Bell-LaPadula security model.
b. Give an example of an environment where the Bell-LaPadula model is appropriate.
c. Briefly describe the security properties of the Bell-LaPadula security model:
   (i) Simple security property (ss),
   (ii) Star property (*), and
   (iii) Discretionary security property (ds).

QUESTION 9

RBAC is suitable for enforcing the separation of duties and least privilege principles.
a. What is separation of duties, and why is it useful?
b. How can the principle of separation of duties be implemented with RBAC?
c. What is least privilege, and why is it useful?
d. How can the principle of least privilege be implemented with RBAC?

QUESTION 10

What is the role of OAuth in the Web 2.0 environment?