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**Question Paper Code : 71194**

M.E./M.Tech. DEGREE EXAMINATION, JUNE/JULY 2013.

Second Semester

Computer Science and Engineering

CS 9224/CS 924 – INFORMATION SECURITY

(Common to M.E. Software Engineering and M.Tech. Information Technology)

(Regulation 2009)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. State the limitations of the Bell-LaPadula models for computer security.
2. Name the policies for preserving the data integrity by Lipner.
3. List the problems that could occur due to password aging.
4. Define the term "Transport Adjacency".
5. List the seven levels of assurance proposed by CC for security evaluation.
6. State the evaluation phases in TCSEC.
7. Name the types of sanitization in an auditing system.
8. What are the roles of autonomous agents?
9. Name the components of the users policies framed for user security.
10. What are the requirements needed to program security?

PART B — (5 × 16 = 80 marks)

11. (a) (i) Write short notes on :
- (1) Clark-Wilson model
  - (2) Chinese wall models.
- (ii) Explain in detail about the integrity policies based on Biba Integrity model.

Or

- (b) (i) Explain why the implementation of the security control in an organization is complex.
- (ii) What are the roles of trust to understand the nature for computer security?
12. (a) (i) If one-time pads are provably secure, why are they so rarely used in practice?
- (ii) When the IVC for the AH protocol is computed, why are mutable fields set to 0 rather than omitted?

Or

- (b) (i) Explain in detail about the X.509 Certificate signature chains with an illustration.
- (ii) Discuss in detail about the provision of security at the Network Layer with IPSEC.
13. (a) (i) Write a short note on TCSEC evaluation classes.
- (ii) Compare and contrast the principles of least common mechanism with principle of least privilege.

Or

- (b) (i) Describe in detail about the static and dynamic identifiers on the web.
- (ii) Explain in detail about the creation and maintenance of access control lists.
14. (a) (i) Write short notes on :
- (1) Boot Sector Infectors
  - (2) Stealth Viruses
- (ii) Explain in detail about the principles and models available for intrusion detection techniques.

Or

- (b) (i) Enumerate in detail about the Aslam's Model for Vulnerability Analysis.
- (ii) With a neat labeled block diagram, explain the Anatomy of an Auditing System.

15. (a) (i) Write in detail about the goals of the Drib policy development with its associated data and user classes.
- (ii) Describe the various issues that could arise due to the improper choice of initial protection domain.

Or

- (b) (i) Describe in detail about the Web Server system in the DMZ.
- (ii) Explain in detail about how to restrict the access of the user in order to provide security to systems.
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