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10SCS333

Third Semester M.Tech. Degree Examination, December 2012

Information Security

Time: 3 hrs.

Max. Marks:100

Note: Answer any FIVE full questions.

- 1 a. Why is a methodology important in the implementation of information security? Explain the security systems development life cycle, in detail. (10 Marks)
b. List and describe the continuity strategies. (10 Marks)
- 2 a. Describe how the various types of firewalls interact with the network traffic at various levels of the OSI model. (10 Marks)
b. List and describe the three control strategies proposed for intrusion detection/prevention system (IDPS) control. (10 Marks)
- 3 a. Explain five categories of security services defined by X.800. (10 Marks)
b. With a neat block diagram, explain AES encryption and decryption algorithm, in detail. (10 Marks)
- 4 a. What are the requirements for public-key cryptography? (06 Marks)
b. Explain RSA algorithm. (08 Marks)
c. Perform encryption and decryption using RSA algorithm for $P = 7$, $Q = 11$, $e = 17$ and $M = 8$. (06 Marks)
- 5 a. With a neat labeled diagram, discuss the general format of a X.509 certificate. (12 Marks)
b. What are the principle differences between Ver. 4 and Ver. 5 Kerberos? (08 Marks)
- 6 a. Explain the operational description of PGP. (10 Marks)
b. With a neat diagram, discuss IPSec authentication header along anti-reply service and integrity check value. (10 Marks)
- 7 a. Explain the overall operation of secure socket layer record protocol, in detail. (10 Marks)
b. Discuss the business requirements, key features of secure electronic transaction along with the participants in SET transaction. (10 Marks)
- 8 Write short notes on:
a. Diffe-Hellman key exchange
b. Limitations of SMTP
c. Software-based attacks
d. Secure Hash functions. (20 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg. 42+8 = 50, will be treated as malpractice.